

Six Petitioners

Kealoha Pisciotto, Mauna Kea Anaina Hou
Deborah J. Ward
E. Kalani Flores & B. Pualani Case, Flores-Case ‘Ohana
Clarence Kūkauakahi Ching
Kumu Hula Paul Neves
Marti Townsend, KAHEA

**BOARD OF LAND AND NATURAL RESOURCES
STATE OF HAWAII**

In Re Conservation District Use Permit) DLNR File No. HA-11-05
Application HA-3568 for the Thirty Meter) (CDUA HA-3568)
Telescopes on the Northern Plateau in the)
Mauna Kea Conservation District, Ka’ohe,) PETITIONERS’ COMBINED NARRATIVE
Hamakua District, Hawai‘i TMK (3) 4-4-) EXCEPTIONS TO THE HEARING
015:009) OFFICER’S FINDINGS OF FACT,
) CONCLUSIONS OF LAW, AND DECISION
) & ORDER; DETAILED EXCEPTIONS TO
) HEARING OFFICER’S FINDINGS OF
) FACT, CONCLUSIONS OF LAW, AND
) DECISION & ORDER; CERTIFICATE OF
) SERVICE
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PETITIONERS’ COMBINED NARRATIVE EXCEPTIONS TO THE HEARING OFFICER’S
FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION & ORDER

I. INTRODUCTION

Pursuant to Minute Order No. 20 dated December 7, 2012, Petitioners, Kealoha Pisciotta, President of Mauna Kea Anaina Hou (MKAH), Deborah J. Ward, E. Kalani Flores and B. Pualani Case of the Flores-Case ‘Ohana, Clarence Kūkauakahi Ching, Paul K. Neves, and Marti Townsend, representing KAHEA, file their exceptions to the Hearing Officer’s report and Proposed Findings of Fact, Conclusions of Law, and Decision and Order (Report).

Petitioners (Pet.) respectfully submit that the Report submitted by Hearings Officer (HO) contains substantial factual and legal errors and omissions that the Board of Land and Natural Resources (BLNR/ Board) must consider before making its final decision on the Thirty-Meter

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Telescope Corporation's conservation district use application (CDUA) submitted by the Applicant (App.), the University of Hawai'i (University/UHH).

Petitioners' Exceptions consist in the present Narrative Exceptions, a Detailed Exceptions matrix, identifying grounds for Petitioners' corrections to specific errors in the Report's Findings of Fact (FOF), Conclusions of Law (COL), and Decision and Orders (DnOs), and a chart for a quick reference and overview of Petitioners' Exceptions. These Exceptions are discussed in substance below and Detailed Exceptions, in compliance with HAR § 13-1-42(b). For the benefit of the Board and parties to this contested case, the Petitioners' exceptions and responses have been combined in this document in order to avoid any duplication if there were six individual submittals. However, the Petitioners reserve the right to present individual oral arguments to the BLNR as parties to this contested case.

Hearing Officer's Report (Report) did not provide a balanced perspective of this contested case because it omits relevant, persuasive, and substantiated information and includes irrelevant, inaccurate, incomplete, and misleading information. Petitioners highlighted relevant and persuasive evidence that is contrary to many of the Reports' FOFs, COLs, and DnOs in Petitioners' Combined Response to UHH's Proposed FOFs, COLs, & DnOs. Because the Report fails to include substantive address to Petitioners' Responses, it appears that the vast majority of the Petitioners' responses were not properly considered in compiling this Report.

The Report is unreliable. The Report identically reproduces inaccurate, misleading, and unverified claims and information from UHH's Proposed Findings of Fact, Conclusions of Law and Decision and Order (11/18/2011). For instance, UHH and the Report make the identical error of attributing the following quotation to *Kalipi v. Hawaiian Trust Co., Ltd.*, 66 Haw. 1, 656 P.2d 745 (1982) when it was actually written in *PASH*: “[d]epending on the circumstances of

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each case, once land has reached the point of ‘full development’ it may be inconsistent to allow or enforce the practice of traditional Hawaiian gathering rights on such property.” *PASH*, 79 Haw. 425, 451, 903 P.2d 1246, 1272 (1995) (emphasis in original; supra note removed); *compare* HO Report COL 30 and UHH CDUA Proposed FOFs, COLs, & DnO 77 at 94. Such identical reproduction of errors show that the Report was compiled from UHH’s FOFs, COLs, and DnOs without verifying them for accuracy. As a result, irrelevant, inaccurate, and misleading information was included in this Report.

The Report’s many errors and global failure to properly consider the entire record and argumentation from both sides means that BLNR should not rely upon it in making their final decision.

MAUNA A WAKEA, MAUNA KAPU

E ala ē me ke aloha, e pili i ka piko o ke aloha o Mauna a Wākea.
Awaken with aloha, connecting in the piko of love and light of Mauna a Wākea.

The Report did not include proper findings on the widely- acknowledged sacred nature of Mauna Kea. Therefore, the Petitioners are reiterating the following significant and relevant information that was omitted from the Report in order to provide a comprehensive perspective to this contested case.

Mauna a Wākea (Mountain of Wākea) is the name given breath to by the ancestors because the summit region of this mountain stands majestically above the cloud stratum into the heavenly realms of Wākea (Sky Father) who is personified in the atmosphere that envelops Papahānaumoku (Earth Mother). It is a sacred landscape, also known as Mauna a Kea or Mauna Kea, that provides a genealogical, physical, and spiritual connection between Ke Akua (The Creator), ancestral realms, and *kanaka* (humans). It is a *piko* (portal) for life forces and energies

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to flow into these islands that requires a pristine environment free of any physical and spiritual obstructions. Pet. FOF/COL 289, 293 p. 39, 310-311 p. 42-43.

Mauna a Wākea has long been regarded as an extremely sacred place in Ka Pae ‘Aina o Hawai‘i (the Hawaiian Islands) by Native Hawaiians of the past and still remembered and cherished by those today, and it has been, and continues to be used as a place to conduct traditional and customary practices. Mauna Kea remains a place of significant worship for Hawaiians, as well as non-Hawaiians. Pet. FOF/COL 290, 292, 294 p. 39.

Mauna a Wākea or Mauna Kea represents many things to the Native Hawaiian peoples and to many peoples from around the world. The upper regions of Mauna Kea reside in Wao Akua, the realm of the Akua-Creator, It is also considered the Temple of the Supreme Being and is acknowledged as such in many oral histories and written histories throughout Polynesia which predate modern science by millennia. It is home of Nā Akua (the Divine Deities), Nā `Aumākua (the Divine Ancestors) and it is the meeting place of Papa (Earth Mother) and Wākea (Sky Father) who are considered the progenitors of the Hawaiian People. It is said Mauna Kea 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 peoples ancestral ties to Creation itself. Exhibit C-01 at 1-2.

The University has affirmed the understanding of the significance and importance of Mauna a Wākea as a sacred landscape in several of their reports and documents. Pet. FOF/COL 295-297 p. 39-40. In addition, the University acknowledges that the past construction of observatories on Mauna a Wākea has resulted in substantial, significant, and adverse cumulative impacts. App. FOF 126 p. 19. Yet, despite what has been written or documented about this sacred mountain, the University intends to push forward the proposed TMT Project

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notwithstanding it will contribute further to these impacts. So, why is this project still being proposed on this sacred landscape? It is apparent that the University and proponents of the TMT Project have either decisively disregarded its significance or do not fully understand why Mauna a Wākea is still sacred, significant, and afforded multiple layers of protection. Otherwise, they would not be proposing to build this project of such an immense scale on an open space area still pristine, pure, and in its natural state where no other observatory exists today.

Perhaps there is a need to restate why this mountain is still significant and sacred. Beloved Mauna a Wākea is a temple. She is a holy site, comparable to many sacred sites in the world, protected by Poli‘ahu and others. Yet by some, Mauna a Wākea is not afforded the same respect as other significant holy sites of the world. It is important to remember that many peoples, including Native Hawaiians have a reverential relationship with the living conscious Earth. As a result, huge structures or *heiau* (temples) were never built on the summit to avoid creating a disturbance to this sacred landscape. Instead, Mauna a Wākea is a site of pilgrimage confirmed by the several hundred shrines found on the mountain. One entity, one corporation, or one conglomeration of entities does not have the right to occupy this hallowed space and desecrate a temple. Our sacred sites are necessary for healing, blessings, prayers, and connections between ourselves and the spiritual realms found on this mountain. Alterations of the landscape not only have a significant effect on the mountain itself, but also have a damaging effect on everything and everyone that is physically, genealogically, spiritually, and culturally tied to these islands of Hawai‘i. Pet. FOF/COL 235 p. 31, 290-301 p. 39-40.

The law mandates the protection of sacred places, like Mauna a Wākea, and the practices that occur there, from inappropriate land uses. Everyone is responsible and accountable for their own actions that would adversely impact this sacred landscape. The true aspect of stewardship

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entrusted with the BLNR for our precious and public lands in the conservation district is to insure that these significant areas are acknowledged and preserved for present and future generations. In essence, the development on the summit of Mauna a Wākea is a commercial enterprise under the guise of science, educational, and economic opportunities.

As you stand upon Mauna Kea, you must remember that you stand upon sacred ground. Remember, while you stand on this mountain looking heavenward into the realm of Wākea, you have a responsibility to care for your foundation, the mountain itself.

Mauna a Wākea is our *piko*. Our Mauna is still sacred.

II. EXCEPTIONS

A. TMT CDUA FAILS TO SATISFY THE EIGHT CRITERIA OF HAR 13-5-30(C)

To be granted a conservation district use permit, the Applicant must demonstrate compliance with each and all of the permit pre-requisites detailed in Haw. Admin. R. 13-5. Relevant to this application, there are at least nine permit requirements that must be met: the eight requirements of HAR 13-5-30(c) and the permit requirements of HAR 13-5-24.

Haw. Admin. R. 13-5-30(c) lists eight inclusive requirements:

- 1) The proposed land use is consistent with the purpose of the conservation district;
- 2) The proposed land use is consistent with the objectives of the subzone of the land on which the use will occur;
- 3) The proposed land use complies with provisions and guidelines contained in chapter 205A, HRS, entitled “Coastal Zone Management” where applicable;
- 4) The proposed land use will not cause substantial adverse impact to existing natural resources within the surrounding area, community or region;
- 5) The proposed land use, including buildings, structures and facilities, shall be compatible with the locality and surrounding areas, appropriate to the physical conditions and capabilities of the specific parcel or parcels,

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- 6) The existing physical, and environmental aspects of the land, such as natural beauty, and open space characteristics, will be preserved or improved upon, whichever is applicable;
- 7) subdivision of land will not be utilized to increase the intensity of land uses in the conservation district, **and**
- 8) The proposed land use will not be materially detrimental to the public health, safety, and welfare.

HAR sec. 13-5-30(c) (emphasis added to the word “and”)

In the plain reading of the law, Haw. Admin. R. 13-5-30(c) lists eight inclusive requirements. The list is inclusive because it concludes with “and”. It does not conclude with “or”, a comma, or with any discussion on prioritizing the requirements. Therefore, **all** eight criteria of Haw. Admin. R. 13-5-30(c) must be satisfied before a CDUP can be issued. If the rules intended to allow the BLNR a choice in which of the criteria to satisfy, then the rules would have used language such as “one or more of the following,” as is used in HAR sec. 13-5-30(b), in the section immediately preceding the criteria. The rules would also indicate a method of weighing or prioritizing the criteria to be satisfied. The rules do not provide any authorization for an Applicant or the Board to pick and choose from the eight criteria. Without such regulatory guidance, the HO’s COLs 49-51 and misinterpretation of these rules that all eight criteria need not be satisfied cannot be substantiated. The HO offers an unprecedented opinion of this regulation that breaks with the Department’s longstanding practice of requiring compliance with all eight criteria. Such a departure from agency practice is unwarranted in this case. Therefore, all eight criteria must be satisfied before a CDUP can be issued.

The University, as applicant for the TMT CDUA, did not prove by a preponderance of the evidence that it met all of the eight requirements of Haw. Admin. R. 13-5-30(c) for the granting of the CDUP for the TMT Project. The Petitioners have provided substantial, relevant, reliable, and probative evidence and arguments in the contested case and record to substantiate

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and support this conclusion. It is for this reason that the Petitioners object to HO FOF 242-473 and COL 47-161 on the grounds that they are inaccurate, irrelevant, incomplete, and/or misleading.

It is for this reason that the Petitioners object to the following HO COLs as it pertains to the following 1st Criterion) 53-61; 2nd Criterion) 63-78; 3rd Criterion) 80-87; 4th Criterion) 89-90, 92-115; 5th Criterion) 117-123; 6th Criterion) 125-141; 7th Criterion) 143-151; and 8th Criterion) 153-161 on the ground they are inaccurate, irrelevant, incomplete, unsupported, mischaracterized, and/or misleading.

1. TMT Not Consistent with Purpose of Conservation District

A plain reading of the entire relevant statute and regulation makes clear that conservation of natural resources is the purpose of conservation districts. It is for this reason that the Petitioners object to HO FOFs 243-260, and COLs 53-61 on the ground they are inaccurate, irrelevant, and/or misleading.

The Conservation District is the most restrictive of the four land use classifications authorized under Hawai`i's Land Use Law, Chapter 205. The Conservation District is defined to include:

areas necessary for protecting watersheds and water sources; preserving scenic and historic areas; providing park lands, wilderness, and beach reserves; conserving indigenous or endemic plants, fish, and wildlife, including those which are threatened or endangered; preventing floods and soil erosion; forestry; open space areas whose existing openness, natural condition, or present state of use, if retained, would enhance the present or potential value of abutting or surrounding communities, or would maintain or enhance the conservation of natural or scenic resources; areas of value for recreational purposes; other related activities; and other permitted uses not detrimental to a multiple use conservation concept.

Haw. Rev. Stat. § 205-2(e).

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The law provides for distinct districts, such as urban, agriculture, and conservation, because these land areas have characteristics suited to each district designation; the activities allowed in each district are consistent with characteristics of those land areas. Conservation districts are designated to provide for public uses and purposes (i.e. protecting watershed zones, conservation, public parks, open spaces, protection of endangered indigenous and endemic species, and protection of historic resources etc.). Haw. Rev. Stat. § 205-2(e),(f). No land use is allowed in the Conservation District without a permit. Indeed, the conservation district rules specifically state that “land uses shall not be undertaken in the conservation district.” HAR 13-5-30(b). The rules allow only those land uses that comply with all eight criteria – that is to say, land uses that do not have a “substantial adverse impact” -- to be undertaken in the conservation district. HAR 13-5-30(c)(4).

The Board manages the Conservation District consistent with Article XI, Section 1 of the Hawai'i Constitution and Chapter 183C. Article XI, Section 1 provides:

For the benefit of present and future generations, the State and its political subdivisions shall conserve and protect Hawaii's natural beauty and all natural resources, including land, water, air, minerals and energy sources, and shall promote the development and utilization of these resources in a manner consistent with their conservation and in furtherance of the self-sufficiency of the State. All public natural resources are held in trust by the State for the benefit of the people.

The Board and the Department of Land and Natural Resources administer lands within the Conservation District pursuant to Haw. Rev. Stat. 183C as further outlined in HAR §13-5-1 as noted below in Subchapter 1: (emphasis added)

The purpose of this chapter is to regulate land-use in the conservation district for the **purpose of conserving, protecting, and preserving the important natural resources** of the State through appropriate management and use to promote their long-term sustainability and the public health, safety, and welfare.

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Moreover, the HO's report relies heavily on the University's multiple management plans to justify compliance with this first criterion, while ignoring the inadequacy of these plans. This finding is supported by the recent Intermediate Court of Appeals ruling on the "Comprehensive Management Plan." The ICA held in January 2012 that the University's Comprehensive Management Plan is essentially a plan to plan that does not in and of itself accomplish anything of consequence. *Mauna Kea Anaina Hou v. Bd. of Land & Natural Resources*, 126 Hawaii 265, 272 (2012, unpublished). For these reasons, HO COLs 58-61 must be rejected.

2. TMT Not Consistent with Objectives of Resource Subzone

The proper interpretation of HAR 13-5-30(c)(2) provides that where a proposed land use is not consistent with the subzone of the conservation district in which it is proposed, then it cannot be granted a permit. Contrary to the HO's findings and conclusions, identifying astronomy facilities as one of many possible land uses does not exempt the Applicant from demonstrating it complies with all eight criteria. It is for this reason that the Petitioners object to HO FOFs 261-272 and COLs 63, 65-78 on the ground they are inaccurate, irrelevant, and/or misleading.

According to HAR § 13-5-13(a), "[t]he objective of this [Resource] subzone is to develop, with proper management, areas to **ensure sustained use of the natural resources of those areas.**" *Id.* (emphasis added). Ensuring *sustained* use of Mauna Kea's natural resources necessarily means ensuring that the "plants, aquatic life and wildlife, cultural, historic, and archeological sites, and minerals" are actually conserved, maintained, or enhanced; not degraded. HAR § 13-5-2, (definition of "natural resources"). When this version of the conservation district rules were adopted in 1993, DLNR published a report entitled "Conservation District Review Project: The Discussion Draft" to explain the purpose and function of the hierarchical permitting

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requirements in these rules (in descending order of appropriateness to the conservation district: Allowable Uses, Administrative Permits, BLNR Permits). Atwater Report, Exhibit B-34 at 16. DLNR's Report stated that astronomy facilities as an identified use in the Resource Subzone requiring a BLNR Permit, meaning they must meet BLNR criteria for a CDUP (or apply for a variance). *Id.* at 19, 26. Astronomy facilities may be constructed in the conservation district *only if* it meets, amongst other criteria, the requirement that it will not entail substantial adverse impacts on conservation district natural resources. *See* HAR 13-5-2(c)(4). Because the TMT Project cannot mitigate the substantial adverse impact of existing telescope development to a less than substantial level, TMT project-specific adverse impacts will thus be "substantial" and in violation of another CDUP criterion. TMT- EIS, Exhibit A-309 at 3-34. Thus, the TMT does not comply with criterion two and the CDUA must be denied. HAR §13-5-30(c)(2).

3. TMT Not Consistent with Provisions & Guidelines of Coastal Zone Management

The conservation district rules require that the proposed land use be consistent with the provisions and guidelines of the Coastal Zone Management Act, regardless if the proposal triggers additional permitting through that Act. Moreover, the Coastal Zone Management Act requires compliance with its objectives and policies, regardless of the Special Management Area. Haw. Rev. Stat. §205A-4(b).

Moreover, the statute states that:

In implementing the objectives of the coastal zone management program, the agencies shall give full consideration to ecological, cultural, historic, esthetic, recreational, scenic, and open space values, and coastal hazards, as well as to needs for economic development. HRS § 204A-4(a).

Thus, the question before the BLNR, under this criterion, is whether issuing a CDUP for the TMT would be consistent with the following relevant objectives:

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(2) Historic resources: Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture

(3) Scenic and open space resources: Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.

(6) Coastal hazards: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution. HRS §205A-2(a).

The TMT would undermine important scenic viewplanes, destroy areas of historic importance, and increase the risk of water pollution. The issues of important viewplanes, scenic and open space resources, historic sites and risks to water quality are addressed in the analysis of criterion four, six, and eight respectively. The fact that the Applicant's proposal would have a substantial adverse impact on these important resources under those criteria, is grounds for also denying the request under this criterion. It is for this reason that the Petitioners object to HO FOFs 274-280 and COLs 80, 82-83, 85-87 on the grounds they are inaccurate, irrelevant, and/or misleading.

4. TMT Would Cause Substantial Adverse Impacts to Existing Natural Resources

Contrary to HO FOF 281, the TMT Project would cause substantial adverse impacts to existing natural resources on Mauna Kea. It is for this reason that the Petitioners object to HO FOF 281 and COLs 89-90, 92-115 on the grounds they are inaccurate, irrelevant, and/or misleading.

a. Substantial Adverse Impacts to Cultural Resources & Historic Properties

The proposed TMT Project would cause substantial, significant, and adverse impacts to cultural resources as well as historic and traditional cultural properties (TCPs) contained within the Mauna Kea Summit Region Historic District (MKS RHD). It is for this reason that the

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Petitioners object to HO FOFs 316-318, 320-333, 335, 337-342 on the ground they are inaccurate, irrelevant, incomplete, and/or misleading. Furthermore, the Petitioners are reiterating the following significant and relevant information that was omitted from the Report.

“It is our view that the effect of astronomy development on cultural resources and on the landscape of Mauna Kea has been significant and adverse. While a project such as the TMT can bring new resources into play that may mitigate certain cultural impacts... **we believe the project will increase the level of impact on cultural resources, which remains significant and adverse.**“ (emphasis in bold) Pet FOF 996 p. 136 (citing Laura Thielen, Chair, DLNR; Ex A-309, FEIS Vol II p. 17 of 531)

The TMT would be the first observatory to be constructed at the elevation and the specific zone on the north plateau that includes several hundred shrines and other religious structures. Likewise, the proposed TMT observatory would drastically alter the surrounding environment and cause visual and alignment obstructions for many of these cultural and religious sites, thus adversely impacting the constitutionally protected traditional and customary practices exercised by Hawaiian practitioners.

The CDUA for the TMT Project is inaccurate and incomplete because it failed to address the actual adverse impacts upon the whole historic district, failed to properly identify important historic and cultural sites within the project area, and failed to adequately analyze the visual impacts that the project would have on the traditional and customary practices exercised by Petitioners and Native Hawaiian cultural practitioners.

The DLNR-SHPD determined the Mauna Kea Summit Region Historic District to be significant under all four criteria (A, B, C, & D) of the National Register of Historic Places. With the recognition of the MKSRHD as eligible for the National Register, there is now a single frame of reference that can be used in evaluating site significance for all of the historic properties on the top of Mauna Kea. It was reiterated by SHPD and repeated in archaeological reports that,

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“Within the historic district, the effect of a project on the historic district as a whole needs to be assessed as well as the project's effect on individual historic properties located within or immediately adjacent to the project area. The effect of a project on the historic district must be addressed even if no individual historic properties are found within or immediately adjacent to the project area.” (emphasis added) Furthermore, to be listed in the National Register of Historic Places, a property must not only be shown to be significant under the National Register criteria, but it also must have integrity. The retention of specific aspects of integrity is paramount for a property to convey its significance. A district is not eligible if it contains so many alterations or new intrusions that it no longer conveys the sense of a historic environment. The CDUA was also incomplete because it failed to assess the impact of the TMT Project upon the Historic District’s integrity and eligibility to the National Register. Pet. FOF/COL 619-625, p. 84-85; 834-835, p.115.

Both the Applicant and Petitioners agree that the proposed TMT Observatory site, the TMT Access Way, and the Batch Plant Staging Area are all within the Mauna Kea Summit Region Historic District (SHPD No. 50-10-23-26869) which includes a concentration of significant historic properties that are linked through their setting, historic use, traditional associations, and ongoing cultural practices. The properties include shrines, adze quarry complexes and workshops, burials, stone markers/memorials, temporary shelters, historic campsites, traditional cultural properties, historic trails, and sites of unknown function. They are also in agreement that the Mauna Kea Summit Region Historic District was determined by the DLNR - State Historic Preservation Division to be significant under all five criteria (A, B, C, D, & E) of the Hawai‘i Register of Historic Places and as defined in §13-275 of the Hawai‘i Administrative Rules. App. FOF 332-333, p. 53-4; Pet. FOF/COL 618-621, p. 84-5.

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An assessment of the TMT Project's impacts upon the collective arrangement of 263 historic properties and 339 cultural resources ("find spots") situated within the Historic District was omitted from the CDUA. The locations of these sites are identified in Figure 3.7: Historic Properties, Traditional Cultural Properties, and Find Spots. See, Exhibit A-309b FEIS Vol. III Appendix I at 3-12. The largest concentration of historic properties and cultural resources is on the northern slope of Mauna Kea below the summit cones where TMT Observatory and facilities propose to be placed at the same elevation where no other observatory presently exists among the "ring of shrines". In spite of this, the CDUA did not include any assessment of the TMT Project's impacts upon these particular sites. Pet. FOF/COL 641, p. 88; 643, 645-648, p. 89; 665, p. 90.

According to Ms. Collins, PCSI's "**survey work was not conducted in support of the TMT**. We conducted the survey work as survey work, so any reassessments we made of that site was based on our work and **not based on TMT**." (emphasis added) Pet. FOF/COL 636 at 88.

Another example of the incompleteness of the CDUA was the failure to provide a visual analysis of the TMT Observatory's visual impacts upon the historic properties and cultural resources located on the northern slope within the Historic District. According to the Cultural Resources Management Plan done by PCSI, "**Effects on the historic district would consider the visual impact of a facility on the surrounding landscape (i.e., the various land forms creating the setting and context of the multiple historic properties encompassed by the district) and on those individual historic properties that contribute to the significance of the district.**"

(emphasis added) Exhibit A-303 at 4-38. However, it was confirmed by Ms. Collins and Mr. Hayes that a visual analysis was never done from those sites within the cultural landscape of the northern slope. A viewshed analysis on top of Mauna Kea was only limited to the summit region

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of Kūkahau‘ula. Pet. FOF/COL 637-639, p. 88; 642, p. 89. In addition, the Mauna Kea Science Reserve Master Plan (2000) recommended that the placement of new observatories and facilities should have “Minimum visual impact from significant cultural areas. Views from the pu‘u and archaeological sites will be respected in the siting of future facilities. The location of new facilities will avoid interference with the visual connections between the major pu‘u and the shrine complexes.” Exhibit A-21 at IX-22.

There are blatant errors in the Report especially when sections of the Applicant’s document were copied verbatim. Another case in point, HO FOF 328 (copied exactly from App FOF 341) is actually an opinion rendered by the Applicant’s legal counsel that was erroneously presented as a fact. It was asserted that “*‘find spots’ are modern, are not historic properties, and are not contributing properties to the Historic District.*” However, the Applicant’s exhibits absolutely contradict this statement. It is for this reason that the Petitioners object to HO FOF 328 on the ground it is inaccurate, misleading, and unsubstantiated. According to the Archaeological Inventory Survey of the Astronomy Precinct in the Mauna Kea Science Reserve conducted by Pacific Consulting Services, Inc. (PCSI), “*Find spots are cultural resources that are either obviously modern features or features that cannot be classified with any level of confidence as historic sites because of their uncertain age and function.*” (emphasis added) Exhibit A-28 at i & 5-20; Pet. FOF/COL 663 at 91.

Based upon the Archaeological Inventory Survey of the Mauna Kea Science Reserve conducted by PCSI, out of the 339 “find spots” identified, only about 25 (less than 14%) have been identified as potentially being modern features. The functions of the remaining sites have been listed as being *Unknown* or *Markers*. Also stated in this report, “It is highly likely that some of these are actually historic properties, but to demonstrate this would require a more

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detailed analysis of their morphology and location.” Consequently, because a more detailed archaeological analysis has not been completed for the vast majority of these potential historic properties within the Historic District, they remain in a limbo state as only “find spots”. Exhibit A-133 at ii & Appendix E; Pet. FOF/COL 665-670 at 91. Correspondingly, SHPD has also concurred that, “Some of the find spots could not be definitely dated and could possibly be over 50 years in age and would instead be classified as historic properties.” Exhibit A-37 at 1; Pet. FOF/COL 669, p. 91. In addition, Ms. Collins stated in her written direct testimony, “Some of the ‘find spots’ may also be associated with ongoing religious practices, but their function is ambiguous or unclear in most cases.” If this is the case for some, then their connection with ongoing Native Hawaiian traditional and customary practices would need to be properly assessed. Exhibit A-8 at 7; Pet. FOF/COL 672, p. 91. Finally, if some of these “find spots” are actually historic properties or potentially eligible to be distinguished as historic properties, then they need to be considered as contributing properties to the Historic District.

In addition, HO FOF 325, 327 are inaccurate, incomplete, and misleading as the Applicant limited the discussion in Section 4 - Cultural Resources of the CDUA to only a select few historic properties (4 in Area E & 2 near the Batch Plant) and cultural resources (2 “find spots” in Area E) even though there are several other historic properties and cultural resources in the locality of the TMT Project.

Such omissions mask the TMT Project’s actual adverse impacts upon historic properties in the locality of the TMT Observatory, Access Way, and associated facilities as well as surrounding areas. This can be seen when comparing Figure 4.1: Historic Properties in the Vicinity of the TMT Project Areas in the CDUA (Exhibit A-311 at 4-2; Exhibit G-20) with Figure 5.1: Location of Historic Properties and Find Spots in the Astronomy Precinct and

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Surrounding Areas in the Final Report: Archaeological Inventory Survey of the Astronomy Precinct in the Mauna Kea Science Reserve (Exhibit A-28 at 5-5). The Applicant formulated a ‘telescoping effect’ by zooming into the Astronomy Precinct in Figure 4.1 so that one’s perspective would be drastically constrained when compared to the original archaeological survey map in Figure 5.1. Furthermore, Figure 4.1 in the CDUA when compared to Figure 5.1 demonstrates that the CDUA does not properly represent the archaeological survey information required to evaluate significant impacts to the cultural and natural resources of the Mauna Kea Summit Region Historic District and the associated Traditional Cultural Properties (TCPs). The testimony of Sara Collins, PCSI Senior Archaeologist, acknowledged there was some alteration to the original figure created by Pacific Consulting Services Inc.. Pet. FOF/COL 678-679, p. 92. For example, **all the Statewide Inventory Historic Properties (SIHP) Numbers for the adjacent historic properties (on right-hand side of the figure) and all the “find spots” were eliminated from Figure 4.1**. Similarly, any discussion about historic properties (SIHP Nos. 16169 and 2144) was omitted from the CDUA even though these sites are identified in Figure 4.1 and are clearly located within the Astronomy Precinct. Pet. FOF/COL 1223, p. 165. In contradiction to HO FOF 328, Figures 4.1 and 5.1 are competent and credible evidence that these sites were omitted from the CDUA resulting in it being inaccurate and incomplete.

Consequently, when the HO FOFs 325, 327 are presented with the omission of the other such sites in this locality and surrounding areas, it obscures the potential and actual adverse impacts of the TMT Project upon the contributing historic properties and cultural resources within the Mauna Kea Summit Region Historic District. Likewise, the CDUA failed to assess the impacts of the TMT Project upon the Mauna Kea Summit Region Historic District as a whole as

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the historic preservation laws require. It is for these reasons that the CDUA is considered inaccurate and incomplete. Exhibit A-311 at 4-1 – 4-5. Pet. FOF/COL 676-677, p. 92.

The Report omitted significant and relevant information provided by the Petitioners as noted below. The Applicant conceded that by constructing observatories near and on the slopes of the cinder cones that comprise the Historic Property of Kūkahau‘ūla, spiritually the most important area of Mauna Kea, little consideration was given to the potential impact on traditional cultural resources. As a result, construction of these observatories has had cumulative impacts on cultural, archaeological, and historic resources that are substantial, significant, and adverse. Pet. FOF 126 at 19. The Applicant also admits that existing astronomical observatories are prominent visual elements on the summit of Mauna Kea. At the summit, the existing observatories obscure portions of the 360-degree panoramic view from the summit area. Overall, the existing level of the cumulative visual impact from past projects at the summit is considered to be substantial, significant, and adverse. Pet. FOF 127 at 19.

HO FOF 343 is inaccurate because Native Hawaiian cultural resources and practices should be considered under HAR §13-5-30(c)(4) because they are directly connected to the natural resources. *See* HAR § 13-5-2 (definition of “natural resources” includes “cultural, historic, . . . and archeological sites”). Any significant, substantial, and adverse impacts upon the natural resources would directly impact Native Hawaiian cultural resources and practices. This is also affirmed in the Applicant’s Mauna Kea Science Reserve Master Plan (2000), “The first integration in the Physical Planning Guide is the relationship of natural resources and cultural resources. From a Hawaiian perspective, there is not a differentiation between the natural and cultural resources of the land, rather they are a unity.” Exhibit A-21 at IX-3.

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HO FOFs 349-350 are misleading because they attempt to bracket the northern plateau from the rest of the Mauna Kea summit region, which thereby mischaracterizes both the geographic location of the northern plateau (which is part of the summit region) *and*, more egregiously, the cultural practices that use the entire Mauna Kea summit region.

SHPD rejects the approach taken by FOF 349-50 -- bracketing the northern plateau's cultural and historic significance from that of the entire Mauna Kea summit region. The proposed TMT project location is within the Mauna Kea Summit Region Historic District (MKS RHD) (State Inventory of Historic Place #50-10-23-26869) which SHPD determined to be historically and culturally significant under all five criteria (A, B, C, D, & E) of the Hawai'i Register of Historic Places and Hawai'i Administrative Rules (§13-275) and under all four criteria (A, B, C, & D) of the National Register of Historic Places. Exhibit A-37, SHPD letter at 1. SHPD reports, "[w]ithin the historic district, the effect of a project on the historic district as a whole needs to be assessed as well as the project's effect on individual historic properties located within or immediately adjacent to the project area. The effect of a project on the historic district must be addressed even if no individual historic properties are found within or immediately adjacent to the project area." Exhibit A-309b, TMT FEIS at G-59. SHPD's Mauna Kea Historic Preservation Plan (2000) likewise asserts:

Within the [Mauna Kea Summit Region] historic district, the significance of properties is not evaluated individually because the summit region as a whole is considered eligible for inclusion in the National Register. Instead, the required assessments consider how each newly or previously recorded property potentially affected by a project contributes to the significance of the historic district as a whole.

Exhibit A-309b, TMT FEIS at G-55; Petitioners' FOF/COL 233.

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Just as MKSRHD historic properties are not evaluated in isolation, neither do cultural practices use discrete areas of the Mauna Kea summit. The Mauna Kea summit region in its entirety is a ‘cultural landscape’ -- a geographically definable area that clearly reflects patterns of occupation and land use over a long time period, as well as the cultural values and attitudes which guide and regulate human interaction with the physical environment. Exhibit A-21, App. N at 45, Pet. FOF/COL 630. DLNR-SHPD archaeologists have also referred to the summit region as a ‘ritual landscape’ with all of the individual parts contributing to the integrity of the whole summit region.” Exhibit A-21, App. I, at 3; Pet. FOF/COL 631 (emphasis added).

Based on the Native Hawaiian traditional cultural practices and beliefs associated with Mauna Kea, as documented in the Maly (1999) oral history and consultation study, UHH consultants have considered the MKSRHD to be a special type of cultural landscape referred to by the National Park Service as “ethnographic landscapes”: “those landscapes imbued with such intangible meanings that they continue to be deemed significant or even sacred by contemporary people who have continuous ties to the site or area.” Exhibit A-21, App. N at 45; Petitioners’ FOF/COL 632. Likewise, Maly has employed a landscape-wide approach to assessing the connection of many Native Hawaiians to Mauna Kea.” Exhibit A-21, App. N at 45; Pet. FOF/COL 633. Such connections are “cultural attachments”:

“[cultural attachment] embodies the tangible and intangible values of a culture. It is how a people identify with and personify the environment (both natural and manmade) around them. Cultural attachment is demonstrated in the intimate relationship (developed over generations of experiences) that a people of a particular culture share with their landscape--for example, the geographic feature, the natural phenomena and resources, and traditional sites, etc., that make up their surroundings. This attachment to environment bears direct relationship to their beliefs, practices, cultural evolution, and identity of a people. In Hawai`i, cultural attachment is manifest in the very core of Hawaiian spirituality and attachment to landscape. The creative forces of nature which

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gave birth to the islands (e.g., Hawai`i), the mountains (e.g. Mauna Kea) and all forms of nature, also gave birth to *na kanaka* (the people), thus in Hawaiian tradition, island and human kind share the same genealogy...”

Exhibit A-21, App. I at 27; Pet. FOF/COL 634.

FOF 349 further fails to acknowledge that the largest concentration of historic properties and cultural resources is on the northern slope of Mauna Kea below the summit cones where TMT Observatory and facilities propose to be placed at the same elevation where no other observatory presently exists among the “ring of shrines”. Exhibit A-28, FAIS-AP at 6-1; K, Pisciotta, Tr. 9/30/11 at 138:19-25, 139:1; Petitioners’ FOF/ COL 748. The term ‘shrine’ is used by Archaeologist [McCoy] to describe all of the religious structures that exist in the summit region of Mauna Kea. Exhibit A-21, App. N at 21. Shrines were placed in prominent location with commanding views of the landscape. Exhibit A-21, App. N at 21. FOF 349 is also misleading because it focuses on “known” cultural practices “associated with a specific historic property” -- thus mischaracterizing the cultural value of the northern slope.

Numerous historic properties and cultural resources (find spots) on the northern plateau that have been identified in the Archaeological Inventory Survey of the Mauna Kea Science Reserve (AIS-MKSR). Exhibit A-28, AIS-MKSR at 3-12. The largest concentration of historic properties and cultural resources is on the northern slope of Mauna Kea below the summit cones. Exhibit A-28, FAIS-AP at 6-1. Many of these sites are located within a narrow 220-ft contour interval, between the 12,900-ft and 13-100-ft elevations on the northern slope. Exhibit A-28, FAIS-AP at 6-1. Findings by UHH consultants, and emphasized by Petitioners, demonstrate that the entire summit district, including Area E and the historic properties contained therein, are associated with

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traditional and customary practices. *See also* Pet. FOF/COL 641 at 88; 643, 645-648 at 89; 665 at 90.

Contrary to FOF 350, the northern plateau is an undeveloped, wide open space that is critical to Hawaiian cultural practices, as well as and recreational uses, of Mauna Kea. Petitioners have provided substantial evidence that their traditional and customary practices involve viewplane alignments that pass through the proposed TMT project areas and will thus be substantially adversely impacted by the TMT, as they have been by other observatories. *See e.g.* Exhibit C-01 (K. Pisciotta, WDT 6/28/11 at 7); Pisciotta, Tr. 9/26/11 at 101:21-25, 102:1-25, 103:1-25, 104:1-3, 141:11-17; Petitioners' FOF/ COL 755-56.

b. Substantial Adverse Impacts to Biological Resources

Development of astronomy facilities, utility corridors, and roads causes substantial adverse impacts to the fragile floral and faunal ecosystems on Mauna Kea. Moreover, mitigation actions proposed by the Applicant do not appropriately address the adverse impact to the habitat of the wekiu bug or other arthropods in the area of the proposed Project nor do they restore arthropod habitat damaged by the Applicant's actions. It is for this reason, the Petitioners object to HO FOFs 298-311 on the ground these statements are misleading by attempting to downplay the actual adverse impacts to the Wekiu bug habitat and population.

Furthermore, the Petitioners are reiterating the following significant and relevant information that was omitted from the Report. Overall, the entire TMT project area including the Observatory site and Access Way would destroy and disturb over 8.7 acres of Wekiu bug habitat that is comprised of Type 3, 4, 5, and 6 habitats as well as kill Wekiu bugs in these areas. The primary loss, degradation, and reduction of Wekiu bug habitat on the summit of Mauna Kea

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was the result of astronomy development of telescope facilities and associated roads. Exhibit A-302 at 2.2-43-44. Eiben, Tr. 8.18.11 at 133: 8-12, WDT Eiben at 4. WDT Ward at 14.

Mr. Eiben, University witness, recommended in 2009 that that the access road alignment should avoid Wekiu bug habitat and that rapid response plans and permits should be in place to address alien species introductions. New alien arthropod and plant species detected during monitoring should be eradicated immediately. Mr. Eiben conceded in his testimony that virtually none of the mitigation actions proposed in his comments on the Draft EIS document were implemented (Ex. A-309, Vol III, Appendix K). Nor were the recommendations of the Bishop Museum researchers hired by OMKM acted upon. See Exhibit A-309 Vol III Appendix K (Results of the 2009 Alien Species and Wekiu Bug (*Nysius wekiuicola*) Surveys on the Summit of Mauna Kea, Hawaii Island. Final Report, July 2010). The initial proposal recommended by the Applicant's experts to restore Wekiu bug habitat were withdrawn from the TMT FEIS. Restoration would be studied, but implementation was not a condition imposed by DLNR. Eiben Tr. 8.18.11 at 139, 142-143, 153-154; Exhibit A-309, Vol II; Exhibit A-313.

The HO FOF 312 is misleading as it pertains to Douglas' bladderfern (*Cystopteris douglasii*), considered a *Species of Concern* by the USFWS, because the potential impacts were not adequately addressed in the CDUA even though it was found throughout Area E. *Species of Concern* are those species about which regulatory agencies have some concerns regarding status and threats, but for which insufficient information is available to indicate a need to list the species under the Endangered Species Act. Pet. FOF/COL 573-574 p. 78. The TMT Project site is habitat to Species of Concern and has in the past been habitat for a species identified as Federal and State Endangered Species. No mitigation measures have been described to address

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the vegetation or its habitat. No mitigation measures are proposed to conserve, protect or restore habitat in the Project area.

The summit of Mauna Kea supports an interesting variety of species, many of which are found nowhere else in the world. Of the 25 different lichens found in a 1982 botany survey, half of the species were endemic to Hawaii, with two occurring only on Mauna Kea. Of the twelve mosses found in the summit area, less than a quarter were endemic. The fern *Cystopteris douglasii* was one of six vascular plants found at the summit, and the Mauna Kea Silversword, a sub-species unique to the mountain, was once reported in the summit region. Pet. FOF/COL 202 p. 26, 211 p.27.

HO FOFs 287-291 are inaccurate and/or misleading because the botany inventory and assessment conducted by Dr. Smith for the TMT Project was incomplete and not comprehensive for Area E because the botanical survey and collection of specimens in this area was **only conducted within a 2 day period.** Identification to the species level for all specimens was not feasible in the time frame for this study. A walk-through survey method, confined to Area E, a 34-acre zone near the 13N Site located on the northern plateau of the Mauna Kea Science Reserve, was used to inventory the lichens and bryophytes in this area on September 29-30, 2008. Dr. Smith disclosed that “a concise determination of some species is not possible under the time constraints of this study even though fruiting bodies may be present. Species growing in such severe habitats, particularly those growing on rocks, produce spores only during favorable conditions. **The only sure way of finding good specimens would be to conduct monthly collections for at least one year.**” Furthermore, Dr. Smith stated that “Large specimens were collected of **species of whose identity were uncertain** so they could be sent to other lichen experts for confirmation of their identity.” Dr. Smith also disclosed that **there are 4**

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species still not identified within the proposed TMT site. As a result, the botanical inventory and assessment for this project is incomplete at this time. (emphasis in bold) Pet. FOF/COL 566-572 pp. 77-78.

According to the Applicant's expert witness, Dr. Smith, **it would take 100 years before flora would regenerate to its natural state** after the proposed excavation and disturbance at TMT site. (emphasis added) Pet. FOF/COL 1039 p. 143. This fact alone would be considered a substantial adverse impact to the biological resources resulting from the proposed TMT Project. Even though this FOF is considered relevant to this contested case and was previously submitted as evidence by the Petitioners, it is one of numerous Petitioners' FOFs that were omitted from the Report without any apparent justification. According to HO FOF 282, reliable, probative, substantial, and credible evidence supports Dr. Smith's opinions in the afore-mentioned matters.

c. Substantial Adverse Impacts to Geological Resources

The Petitioners object to the omission of references in the Report to the impacts of the TMT Project upon the geological resources and therefore reiterate the following.

The development of the existing observatories also significantly modified the preexisting terrain. The tops of certain *pu'u* or cinder cones were flattened to accommodate the foundations for observatory facilities. Consequently, the existing level of cumulative impact on geology, soils, and slope stability is considered to be substantial, significant, and adverse. App FOF 128, p. 19. The TMT project would cause additional impact to the geological resources of the particular lava flow morphology and glacial features on the northern plateau. Moreover, there will be substantial grading and excavation involved with the construction of the TMT Project. Over 100,000 cubic yards of landscape would be excavated and over 8.7 acres would be disturbed during construction. Pet. FOF/COL 818 p. 112, 995 p. 136; App. 443 p. 74. In

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addition, Applicant's witness and TMT Project Manager, Mr. Sanders, testified that even if the TMT was decommissioned, "the restoration of the site is unlikely to be perfect and back to a pristine state." Tr. 8/15/11 at 91.

According to Rory Westberg, NPS Acting Regional Director, "The National Park Service contends that the permanent destruction of any surface geologic structures within the Mauna Kea National Natural Landmark is significant and it denigrates from its overall status as a national natural landmark." It was also stated, "[T]he review of the DEIS has brought to our attention the incremental addition with resultant impacts of ten observatories to Mauna Kea NNL since its establishment as a national natural landmark in 1972. Realizing that additional observatories may be a consideration in the future, the NPS intends to review the current NNL designation and at the very least may consider removal of the 525 acre Astronomy Precinct from the current MK NNL designation." Pet. FOF 180, p. 23; 558-559, p. 76.

d. Substantial Adverse Impacts to Visual Resources

HO FOFs 384, 394-395, 446 are inaccurate by downplaying the substantial adverse impacts to visual resources and by asserting in the CDUA review process that the TMT Project's visual impact will be "*less than significant*". It is obvious that the TMT Project's visual impact would have a significant effect on the natural and visual resources both if assessed individually or cumulatively per HAR § 11-200-12. Pet. FOF/COL 773 p. 106. It is for this reason that the Petitioners object to HO FOFs 436-446 on the ground they are inaccurate, irrelevant, and/or misleading. Several critical errors in the Report as well as the CDUA regarding the assessment of the TMT Project's visual impacts are discussed further in detail in Criteria 5.

e. Proposed Mitigation Measures Inadequate & Insufficient to Reduce Substantial Adverse Impacts

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The proposed TMT will have a substantial adverse impact on the natural resources of Mauna Kea – both in terms of the project-specific harms and the cumulative impact of astronomy activities on the mountain. *See* Exhibit 309, FEIS Vol 1, at S-8, S-9. The Applicant admits that during the construction and decommissioning, there will be temporary adverse impacts due to noise, traffic, dust, visual intrusion, and the increase in human presence on the mountain; possible adverse impacts during construction and decommissioning also include potential disturbance beyond project limits. As with other activities, there is a potential for accidents, including fire, and accidental release of hazardous materials or solid waste, including trash and construction materials. *Id.*, FEIS at S-7. “The magnitude or significance of cumulative impact to the alpine stone desert ecosystem from activities to date is not fully determined. . . . 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, due to grazing by hoofed animals and establishment of invasive plants. . . In general the Project will add a limited increment to the current level of cumulative impact.” *Id.*, FEIS at S-8. These substantial and adverse impacts are not reduced to a level that is less than significant based on the mitigation measures proposed by the Applicant in its CDUA. It is for this reason that the Petitioners object to COLs 88-115 on the grounds that they are inaccurate, irrelevant, and/or misleading.

First, the University’s mitigation measures fail to address the existing substantial adverse impact of telescope activity on the conservation resources of Mauna Kea. The TMT FEIS concedes that the cumulative impact of past, present, and reasonably foreseeable telescope activities is already significant, substantial, and adverse. Exhibit 309, FEIS Vol 1, at S-8, S-9.

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The TMT would contribute to this existing state of substantial adverse impact. The fourth criterion, however, prohibits land uses that cause substantial adverse impact. Because the BLNR and the University have failed to address the existing substantial impact on the mountain's resource, it is improper to consider any new projects that would contribute to that substantial impact in anyway. There are no exceptions to the fourth criterion. The threshold of significance has already been surpassed on Mauna Kea, the TMT Project would contribute to that existing significant impact, thus it cannot be granted a construction permit. The method and extent of any remediation is the topic of a separate permit application that is not before the BLNR at this time. This is to say, given the context of substantial adverse harm from current telescope activities, consideration of the TMT CDUA is unreasonable.

Second, the mitigation measures proposed by the University are indirect and insufficient to reduce the substantial adverse impacts identified here. In Morimoto v. Bd. of Land & Natural Res., 107 Haw. 296 (2005), the question posed to the Court was whether BLNR had the authority to consider mitigation measures when applying the 8 criteria of HAR 13-5-30(c). In addition to concluding that the BLNR does have the authority to consider mitigation measures when evaluating a CDUA, the Court also gave direction as to characteristics of adequate mitigation. The court specifically found that the mitigation actions imposed on the Federal Highway Administration's (FHA) road realignment project actually served to "protect and enhance the natural environmental, cultural, historical, and other resources" of the district. *Id.* at 303, fn. 20. The harmful impact of the proposed project – paving over *Palila* habitat – was *directly* ameliorated by the legally binding requirement to restore habitat nearby – specifically, the re-vegetation of 10,000 acres of prime *Palila* habitat. In *Morimoto*, the FHA had considered several alternative paths for the realignment of Saddle Road. The U.S. Fish and Wildlife Service

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reviewed the many alternatives and issued a Biological Opinion (BO) in which the agency agreed that redesigning the highway project to create more habitat and reintroduce endangered species would mitigate project-related disturbances to *palila* and *Silene hawaiiensis*.^[4] The mitigation measures were memorialized and made enforceable through a Memorandum of Understanding between the FHA and the BLNR. *See, Morimoto v. BLNR*, 107 Haw. 296, 299; 113 P.3d 172, 175 (2005).

By contrast, the Applicant in this case has not designed the TMT Project mitigation actions in accord with guiding documents nor demonstrated that the proposed mitigation actions would *directly* reduce the admitted significant impacts of the project to a level that is less than significant. The University's own self-made management plans are not of the same quality of guidance as that provided by a federal agency, such as a biological opinion from the Fish and Wildlife Service. And if they were, then the TMT does not even comply with its own guidance documents because it did not follow the recommendations in the cultural impact assessment to construct the TMT on a recycled telescope site. It is important to note that the Applicant has the burden of proving that mitigation measures offered would actually reduce the significant impact of the TMT Project proposal to a level that is less than significant. They have not done that here. The Applicant's proposed mitigations can be categorized into three groups:

1) **Location.** The Applicant contends that locating the TMT project on the northern plateau minimizes the substantial impact of the project on visual and scenic resources. The Applicant has not shown that locating the TMT on the ridge would have been desirable or even possible. Indeed, the Cultural Impact Assessment (CIA) specifically "recommended that the TMT Observatory project be built on a recycled site of an outdated telescope on the summit instead of Area E". Ex. A-309, p. 204-5. Furthermore, the Mauna Kea Science Reserve Master

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Plan (MKSRRMP) states, “Siting Areas A, B and C are already developed with observatories...There is little area available for new telescope development in these three siting areas, however, redevelopment of existing facilities would be possible.” Exhibit A-21/ C-11 at IX-23. Instead of considering this alternative location, the Applicant summarily dismissed this recommendation as “not deemed feasible.” Ex. A-308, p. 3-32. The fact is, the Applicant’s siting process only considered “Area E” on the northern plateau. Ex A-308, p. 4-5. Due to the fact that there is no available space on the summit, locating the five-acre TMT Project on the northern plateau cannot be claimed as a mitigation measure for its unsightliness.

2) **Size.** The Applicant has not shown that the size of the project would reduce the significant impact of the project as proposed to a level that is less than significant. The fact that the project designers could have engineered a bigger, uglier structure but didn’t, does not prove that the significant impacts of the project that is proposed will be minimized to a level that is less than significant. Without evidence, the Applicant cannot prove that “it could have been worse” is any mitigation at all.

3) **Money.** The promise to pay “substantial rent” is not a mitigation measure. Not only is such a claim too indefinite and uncertain to serve as a basis for any decision, it also pits compliance with one law against another. Pursuant to HRS 171-17 and -18, fair-market rent is required to be paid into the general fund for the private use of public lands. All telescope facilities should be paying rent to the general fund, regardless of any other requirements or pre-requisites for permission to be on Mauna Kea. It is improper for the DLNR staff to suggest that compliance with this requirement – paying fair market rent – mitigates the substantial adverse impact of the proposed TMT project “because management costs money.” (Ex. B-33). The requirement to pay rent is not a management fee, it is not a fine, and it is not a rationalization for

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authorizing a land use that otherwise fails to comply with the basic requirements for a permit. If a proposed land use has unmitigated substantial adverse impacts, then its CDUA cannot be granted, in which case the BLNR never reaches the question of what would be fair-market rent for that land use.

The additional offers of money for educational services and workforce development are completely irrelevant to the BLNR's consideration of whether this CDUA complies with the eight requirements for a permit. No matter how many jobs or classes the Applicant promises to provide in exchange for permission to build in the conservation district, the BLNR cannot base its decision on such factors for they are outside the confines of the eight criteria for a permit and the BLNR's jurisdiction over the conservation district.

The cacophony of additional mitigation measures offered by the Applicant (furnishing items with a sense of place, ride-sharing, paving some roads while remediating others, monitoring Wēkiu bugs, painting facilities, complying with laws, etc.) do not directly address the harm caused by the proposed TMT or telescope activities in general. The Applicant failed to present evidence that these mitigation measures would actually reduce the substantial impact of the project to a level that is less than substantial. By contrast, the Petitioners presented evidence that demonstrates the mitigation measures do not minimize the substantial and adverse impacts of the project and in some instances actually worsen the injury (highly reflective aluminum-like coating) or add insult to the injury of the proposed project on Mauna Kea (art and furnishing in the project for a sense of the place just recently destroyed). In fact, the Applicant admits that even with proposed mitigation measures for the TMT, significant impacts on the Mauna Kea conservation district will persist. Applicant Opening Brief, p. 17.

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Lastly, unlike the *Morimoto* case, where the mitigation actions were legally enforceable through a separately binding Memorandum of Agreement, the proposed mitigation measures suggested through the UH CMP are not legally enforceable. *See* Part II: Detailed Exceptions to HO COL 37. There is no mechanism or trigger to ensure that the UH CMP does not “remain[] an unimplemented plan.” Ex. B-16, p. 4. Because the substantial harms of the telescopes on Mauna Kea cannot be mitigated to a level that is less than substantial, the BLNR could not approve this CDUA.

In HO COL 96, the HO relies on *Geer v. Fed. Highway Admin.*, 975 F. Supp. 47, 73-4 (D. Mass. 1997) in his analysis of the fourth criterion, which is misleading and improper. *See*, also, HO’s COL 126, 127. *Geer* concerns the application of a federal highway transportation rule that seeks to prevent the deleterious effects of roadway construction on nearby park lands. *See*, 23 CFR 774.15 Under this rule, a district court in Massachusetts found that a bridge over the Charles River did not “substantially diminish” the recreational boating areas because there was already a bridge over the river in the same sight-line as the newly proposed bridge. That court held that “For a constructive use to occur, there must be substantial impairment of the property over its existing use and significance.” *Geer*, *Id.* This is so far removed from the relevant requirement before the Board, as to be misleading and counterproductive.

The standard of law before the Board today is not whether there was “constructive use” of Mauna Kea under the Federal Highway Administration’s regulations, but whether there is a substantial adverse impact to existing natural resources in the conservation district. The EIS clearly states that the proposed TMT will contribute to the substantial adverse impact of telescope activity on Mauna Kea. Images of the affected viewplanes

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analyzed in the TMT EIS clearly demonstrate that there are no man-made structures currently visible when looking from the northern ridge of Kukahau`ula towards Haleakala. Ex. A-308, TMT EIS, page 3-100, fig. 3-23. This is wholly unlike the situation found in the *Geer* case. All references to the *Geer* case should be removed from the HO's report. See also, Pet. Exceptions to HO COL 127.

5. TMT Not Compatible with the Locality & Surrounding Areas

Proposing the TMT Project to be constructed in the Astronomy Precinct along with other existing observatories does not automatically make this new development appropriate and compatible with the locality and surrounding areas of Mauna Kea. It is important to remember that that the locality and surrounding areas being considered for this new observatory development are within the **conservation district** of the Mauna Kea Science Reserve that is also encompassed by the Mauna Kea Summit Region Historic District. It is for this reason that the Petitioners object to HO FOFs 421-428 on the grounds they are inaccurate, irrelevant, and/or misleading.

This project is *incompatible with the surrounding area*, which is 11,288 Acre MKSR within the conservation district, which extends from 6,000 feet to the summit. The proposed location of the TMT – the northern plateau – is undeveloped land, wide open space important to cultural practices and recreational uses on Mauna Kea. See Exhibit A-308, TMT EIS at 3-100, fig. 3-23.

The immense size and height of the TMT observatory is a significant reason why this project is inappropriate and incompatible for this conservation district. Due to the TMT observatory's enormous size of 216 feet in diameter and its extreme height of over 180 feet, it would be the LARGEST observatory on Mauna Kea as well as the TALLEST building on

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Hawai‘i Island surpassing the maximum height limits of 90 feet (120 feet for Hilo) for any commercial or resort buildings on this island based upon Hawai‘i County zoning codes. Hawai‘i County restricts the height of buildings to protect the cherished island landscape from obtrusive development. Yet, the Applicant proposes a man-made structure in the conservation district that would be at least twice as high as most existing commercial and resort buildings on the island and over 60 feet high of a select few buildings in Hilo. Hence, the TMT Project is not only inappropriate and incompatible for Mauna Kea, but it is also inappropriate and incompatible for the entire Hawai‘i County. Pet. FOF/COL 775 p. 106; 817 p. 111, 1009 p. 138.

Contrary to HO FOF 422, locating the TMT Project in Area E does not result in its impacts being “*less than significant*” upon historic properties, cultural resources, and customary and traditional cultural practices, as well as on viewplanes, species habitat, and existing facilities. The University conceded that the past construction of these observatories had cumulative impacts on the cultural, archaeological, and historic resources **that are substantial, significant, and adverse**. App. FOF 126 p. 19. The TMT FEIS also affirms that, “**From a cumulative perspective, the impact of past and present actions on cultural, archaeological, and historic resources is substantial, significant, and adverse; the impacts would continue to be substantial, significant and adverse with the consideration of the Project and other reasonably foreseeable future actions.**” (emphasis in bold) Pet. FOF/COL 1059 p. 145. As such, the TMT Project would not reduce or diminish these impacts. Instead, it would contribute further to these cumulative impacts that will be substantial, significant, and adverse. If the existing observatory development on Mauna Kea (many of which were retroactively permitted after construction) resulted in such cumulative impacts, then these projects were never in fact

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appropriate and compatible for this conservation district. The proposed TMT Project cannot be considered appropriate and compatible at this time.

Building the TMT in Area E would introduce a new, gigantic, metallic dome into a viewplane that is currently natural and intact. The view from the northern ridge of Kūkahau‘ūla towards Haleakala is one of the last intact natural viewplanes from the summit region. There are **currently no telescope structures visible on the northern plateau**. Exhibit A-308 at 3-100. The northern plateau of Mauna Kea is relatively untouched by modern astronomy. Therefore, building the TMT on the northern plateau would not be compatible with the surrounding locality of that area. Indeed, the Cultural Impact Assessment (CIA) to the TMT EIS recommended that the TMT be built on a recycled telescope site, instead of breaking new ground and allowing the industrialization of the mountain to spread to a wider area, and obstructing an otherwise intact viewplane. Exhibit A-309, TMT EIS Vol. 2, CIA. This recommendation was similar to the proposal by the U.S Air Force in 2006 to build the Pan-STARRS telescope in place of an existing telescope site. *See* Group 70 Int’l, EIS Preparation Notice for the Panoramic Survey Telescope & Rapid Response System, TMK 4-4-15:09 Summit of Mauna Kea, Island of Hawai‘i, 47 (Dec. 2006) (“preferred option. . . require[d] that [project conceptual] designs must stay within the two dimensional footprint of the existing UH 88” telescope”). The TMT Corporation, however, refused to accept that recommendation; opting instead to build in area where there are no telescopes.

The statements presented in HO FOF 425 are misleading and thus downplay the substantial adverse impacts of the TMT Project in the proposed locality of the 13N site in Area E. The TMT Project on the northern plateau is incompatible with the natural resources (inclusive

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of plants, aquatic life, wildlife, cultural, historic and archaeological sites, and minerals as defined in HAR §13-5-2) of this locality and surrounding areas. In addition to disturbing over 8.7 acres and excavating over 100,000 cubic yards of this sacred landscape during construction, the TMT observatory would be situated amongst the ‘ring of shrines’ consisting of several hundred historic properties and cultural resources that contribute to the significance of the Mauna Kea Summit Region Historic District. In addition, the northern plateau is not a built environment, it is still in a natural state with an open vista, notable for its breathtaking views, and one of the last open space areas with unhindered views from the summit region down to the sea, along the coasts, and across the island chain. Pet. FOF/COL 805-806 p.110; 995 p. 136; App. 443 p. 74.

Likewise, the TMT Observatory will be highly visible to island residents and visitors that reside within the viewshed areas in addition to those who reside outside the viewshed areas who will be able to see this structure when they are travelling through or visiting locations within the viewshed. Exhibit A-309 at 3-86, 3-99. These aspects are covered in further detail in Exceptions to HO FOF/COLs concerning CDUP Criteria 4 and 6 in Part II: Petitioners’ Detailed Exceptions..

The HO FOFs 384, 394-395, 446 are inaccurate by downplaying these adverse visual impacts and by asserting in the CDUA review process that the TMT Project’s visual impact will be “*less than significant*” per HAR § 11-200-12.[5] However, it is very obvious that the TMT Project’s visual impact would have a significant effect on the environment both if assessed individually or cumulatively per HAR § 11-200-12. Pet. FOF/COL 773 p. 106. It is for this reason that the Petitioners object to HO FOFs 436-446 on the ground they are inaccurate, incomplete, irrelevant, and/or misleading. Several critical errors in the Report as well as the CDUA regarding the assessment of the TMT Project’s visual impacts are discussed below.

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Both the University and Petitioners agree that the TMT Observatory will be visible from locations within the summit region, particularly from the northern plateau and the northern ridge of Kūkahau‘ula. In addition, the TMT Observatory will add a substantial new visual element in the open space that will be visible from viewpoints along the northern ridge of Kūkahau‘ula, Pu‘u Poli‘ahu, and by people as they travel within the northern portion of the summit region. App. FOF 404, 407 p. 67; Pet. FOF/COL 797-802 p. 109.

When Native Hawaiian cultural practitioners as well as visitors go to the summit region, there are very few areas where one can stand and peer into the horizon without having the existing man-made observatories, associated facilities, and infrastructure obstructing one’s view plane. There are no unobstructed 360-degree views on the summit region. Open view planes are limited to where and however one can get around the existing observatories to find an open space. Also, one is restricted to positioning oneself on the summit roadway looking east or at the northern edge of the observatories looking north in order to avoid the existing adverse visual impacts. Should the TMT Observatory be built on the northern plateau, the only unobstructed view plane from the summit region remaining would be on the eastern side of Kūkahau‘ula. Therefore, eliminating one of last two unobstructed views from the summit region is a prime example of why the TMT Project’s visual impacts would be substantial, significant, and adverse and not compatible with this particular locality. Pet. FOF/COL 753, 755 p. 103.

The CDUA was incomplete because it failed to disclose the visual impacts upon the surrounding cultural landscape and on those several hundred historic properties and cultural resources located on the northern plateau which contribute to the significance of the Mauna Kea Summit Region Historic District. In addition, the CDUA did not consider the visual impact upon Hawaiian cultural practitioners, ancestral *akua*, *aumakua*, and *kupua* connected to Mauna a

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Wakea. Important alignments, both physical and spiritual, would be blocked, interfering with the ability of cultural practitioners to perform those ceremonies and customary, cultural, and religious practices associated with those alignments. As noted by cultural practitioner Neves, “When we look out on the plateau where the TMT is proposing to site their project-- it is not just that it will now be blocking our eyes (depending on where we are looking from) but it will be the most dominant feature in our eyes and therefore the most dominant feature in our customary and traditional view plane. It is this view plane that we use to look and to honor the high maunas down the island chain.” Likewise, as stated by cultural practitioner Pisciotta, “The TMT will impact us and many other people that seek to observe the sunset from Mauna Kea. The TMT will be in direct line of site of many traditional spiritual and religious view planes, including those towards Haleakala, the sunset and other sacred sites.” Also, the CDUA did not analyze the impact to cultural practitioners’ nighttime viewing. Pet. FOF/COL 738 p. 101, 741 p. 102, 756-757, 760 p. 104, 782-783 p. 107, 796 p. 109, 811-813 p. 110-111, 819-827 p. 112-113.

The CDUA outlined three project-level mitigation measures for the known visual impacts of the proposed TMT observatory:

(A) The location of the TMT project is the primary impact avoidance measure, as it is north of and below the summit.

Contrary to HO FOF 392, the proposed location of the TMT is a function of available space, not mitigation. Figure 1-3: Mauna Kea Summit Region: Existing Facilities, Features, & Future Development Areas in the CDUA shows that the location of TMT north of and below the summit is due to the fact there is no available room on the summit for a project of an enormous size within the Astronomy Precinct due to the existing observatories. According to the TMT FEIS, “When it comes to siting new optical/infrared observatories on Maunakea, the 2000 Master Plan states "the height and diameter

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restrictions in Areas A and B are related to a number of factors, including visibility, potential impacts to existing observatories, and wind forces." "The second priority for siting new [optical/infrared observatories] will be at two new [areas] within the Astronomy Precinct, and only if a suitable summit ridge site cannot be utilized for redevelopment."

The two new areas identified in the 2000 Master Plan are Areas E and F. Recycling an existing optical/infrared observatory is not an option for the TMT observatory because the TMT Observatory would exceed the diameter and height requirements." Ex. A-308 at 2-8.

Likewise, the University has never provided any alternative sites on the summit other than Area E in any of its documents or witness testimonies. Therefore, locating the TMT Observatory on the northern plateau is not a mitigation measure for eliminating the visual impact of the TMT observatory. This area was designated for the TMT Observatory because the University has presently utilized all available and suitable sites on the summit.

App. FOF 410 p. 68-69; Pet. FOF/COL 1014 p. 139.

(B) The design of the observatory mitigates the visual impact.

Contrary to HO FOF 392, despite the observatory dome being designed to fit very tightly around the telescope and the telescope being designed to be much shorter than usual, the immense size of the structure has been mitigated. The design of the TMT observatory would actually utilize a Calotte type dome because of its (a) overall smaller dome size, (b) improved air flow/lower air turbulence around the dome, (c) simplified mechanical components, and (d) better shedding of snow. This is not a mitigation measure for eliminating the visual impact of the TMT dome which would still be over 184 feet above the finished grade and with an exterior radius of 108 feet [216 feet in diameter] and a dominant feature in the existing open space. Pet. FOF/COL 814 p. 111, 1009 p. 138.

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At over 180 feet, the TMT would be the TALLEST building on Hawai‘i Island, surpassing the maximum height limits of 90 feet (120 feet for Hilo) for any commercial or resort buildings on this island based upon Hawai‘i County zoning codes. Pet. FOF/COL 775 p. 106.

(C) The coating of the dome will be a reflective aluminum-like coating, which during the day reflects the sky and reduces the visibility of the structure.

Contrary to HO FOF 392, the proposed aluminum-like coating would actually be more visible due to the reflective nature of the dome shape that would instead reflect the sunlight back into one’s eyes when viewing it. The proposed mitigation of utilizing the aluminum-like coating on the TMT dome is contradictory to the Design Guidelines section of the UH’s Mauna Kea Science Reserve Master Plan 2000, which states; “As much as possible, surfaces should be **non-reflective in the visible spectrum to minimize glare and visibility from distant areas.**” (emphasis in bold) Pet. FOF/COL 777-781 p. 106-107.

The HO FOFs 392, 422 as well as the CDUA are also inaccurate because it states that the proposed aluminum-like finish for the TMT dome would minimize the adverse visual impacts by reflecting the sky and ground. This statement can be confirmed as erroneous by simply viewing the existing observatories. The TMT Observatory will be more visible, similar to the existing visual impacts of the Gemini Observatory with its aluminum-like coating and dome shape that does not reflect the sky or ground during the day to reduce the visual impacts as implied. The comparison of the TMT Observatory with the Subaru Observatory was an inaccurate analysis because their reflective characteristics differ due to the TMT being a dome shape and the Subaru being a cylinder-like shape. The TMT dome shape would more appropriately be compared to the existing Gemini Observatory dome. As a result, the photo simulations in the CDUA that depicted the aluminum-like coating were inaccurate, particularly in Figures 7.5 and 7.8. To clarify the HO FOF 443, the visual simulations included in the EIS and CDUA were only done

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for the “mid daytime” according to Mr. Hayes’ testimony and not during the “bulk of the day” as it was erroneously stated in this FOF. Tr. Hayes 8/16/11 p. 108:16-22.

The viewshed analysis, Visual Impact Assessment Technical Report (VIATR) of the FEIS, included several deficiencies and inaccuracies. Consequently, when such information was inserted into the Report as well as the CDUA, it still remained incomplete and inaccurate. For example, Pu‘ukohola Heiau National Historic Site, one of the culturally significant viewpoints in the visual analysis, was inaccurately identified in the photos (Viewpoint 6) of the VIATR. In another example, the data was actually altered from the original VIATR when inserted into the CDUA to downplay the visual impacts. Upon comparison, Table 7.5 in the CDUA inaccurately stated “No” to the question if the TMT Observatory was “*Visible in silhouette?*” from viewpoint #18 – North ridge of Kūkahau‘ula. Yet, this same exact question was answered as “*Full*” in Table 4-4 in the VIATR. Moreover, Figure 7.8 of the CDUA confirms that the TMT would cast a full silhouette view from the north ridge of the Pu‘u Kūkahau‘ula State Historic Property. Pet. FOF/COL #789-795 p. 108-109; Ex. A-311, p. 7-8 & 7-12, Ex. A-27, p. 42.

The Report as well as the CDUA were also in error for omitting relevant and significant facts that would have provided a comprehensive view of the adverse visual impacts of the proposed TMT observatory. In order to downplay these impacts, the CDUA also narrowed the viewshed analysis to only 18 select viewpoints sites and to a limited “primary view” discussion. Significant areas such as the large residential/resort communities of Waikoloa Village [with a population of 4,806 and 1,750 households according to 2000 Census], Puako, Mauna Kea Resort, Kuki‘o, and Kona Village as well as areas of South Kona and North Kohala have been excluded from this viewshed analysis resulting in this CDUA being incomplete. The CDUA did not provide a complete visual impact analysis that includes any data or statistics on the number of

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visitors and island residents that reside outside the viewshed who would be able to see the TMT Observatory when they travel through and visit locations within the viewshed. In addition, there are significant numbers of visitors that reside at the resort areas within the TMT viewsheds as well as residents who commute regularly from outside of the TMT viewsheds to work in these resort areas who have not been accounted for in the visual impact analysis. Also, the potential impact upon the Hawai'i Island visitor industry that promotes the island's natural resources and scenic vistas was not addressed in the CDUA. App. FOF 402 p. 67; Pet. FOF/COL 784-787 p. 107-108.

The CDUA also omitted significant information or inserted misleading statements to downplay the visual impacts that do not conform to the Hawai'i County General Plan (2005). For example, the Applicant narrowed the discussion to only one goal (b) and eliminated any assessment on the other established goals (a & c) in the area of Natural Beauty (7.2 Goals) as noted below; (a) Protect, preserve and enhance the quality of areas endowed with natural beauty, including the quality of coastal scenic resources. (b) Protect scenic vistas and view planes from becoming obstructed. (c) Maximize opportunities for present and future generations to appreciate and enjoy natural and scenic beauty. In addition, the CDUA failed to disclose that the TMT Project does not conform to the General Plan goals established for the Natural Resources. App. FOF #400-401 p. 67, Pet. FOF/COL #815-816 p. 110. It is for this reason that the Petitioners object to HO FOFs 383-384 on the ground they are inaccurate and/or misleading.

The existing observatories occupy the summit region of Mauna a Wākea and create a substantial, significant, and adverse visual impact on this sacred landscape. This assessment of the visual impacts of the past and present astronomy-related activities in the Mauna Kea Science Reserve was affirmed by Mr. Hayes and the Outrigger Telescopes Project FEIS. Observatory

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construction on Pu‘u Kūkahau‘ula State Historic Property have caused substantial alteration to the landscape that have impacted the viewplanes from the summit. It is difficult to escape these man-made structures on the mountain where they are visible from approximately 43% of Hawai‘i Island. Accordingly, when the TMT Observatory is combined with the existing conditions, the cumulative visual impact of development on or near the summit of Mauna Kea will continue to be significant as noted in the TMT FEIS. However, if TMT Project is not built under the No Build Alternative, it would not create a new visual impact or contribute to the existing adverse impacts. App. FOF 400 p. 67; Pet. FOF/COL 739-740 p. 101, 742-743 p. 102, 768 p. 105, 770-772 p. 106, 810 p. 110.

The existing development on the summit is causing adverse impacts and significant disturbances to the natural electromagnetic fields and vortexes on the mountain. In addition, the electrical substation, power lines, and high voltage current that runs to the top of the summit is interfering and disturbing the electromagnetic fields and vortexes that naturally occur on the mountain. The TMT Project would cause further disturbance to these electromagnetic fields and vortexes especially with the increased current and voltage associated with the electrical upgrades. The CDUA is incomplete for not conducting an electromagnetic analysis and assessment for the TMT Project. Pet. FOF/COL 501-509 pp. 69-70; 856-857 p. 118; 1221 p. 165.

When the summit region is obstructed with the physical excavation of the landscape, asphalt and cement pavement, metal posts implanted in ground, buildings, and construction, it curtails or prevents the flow of energy and life forces into these islands through this *piko*. Therefore, the TMT Project construction would contribute to additional obstructions to this *piko*. Pet. FOF/COL 855 p. 117; 858 p. 118.

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Moreover, construction of the TMT would not be compatible with recreational and other public uses in the surrounding areas of the Mauna Kea conservation district. Recreational users visit Mauna Kea for trail hiking, snow play, amateur astronomy, hunting, nature study and wilderness experience, including unfettered vistas, silence, spiritual peace, natural beauty, and cultural significance. WDT Ward at 2. Visitors from the world over, and average of 302 commercial tours per month, or as many as 240 visitors per day, and 11,900 visitor trips per year, ascend the mountain for sightseeing, hiking, amateur astronomy, hunting, sled, ski, snowboard, and enjoy the unique conditions. In addition, Mauna Kea's unique natural landscape is a popular site for commercial film activities. Exhibit A-309 Vol 1 at p-3, 3-153, 3-165.

Consequently, the proposed land use with the construction of the TMT observatory, structures, paved access way, and associated development are incompatible and inappropriate for this cultural and recreational landscape of the northern plateau and the surrounding sacred areas within the conservation district that encompasses the Mauna Kea Summit Region Historic District.

6. Will Not Preserve or Improve upon the Existing Physical & Environmental Aspects of the Land, such as Natural Beauty & Open Space

The TMT Project, as proposed, neither preserves nor improves upon Mauna Kea's existing physical and environmental aspects, such as its natural beauty and open space. The Applicant has not and cannot meet the requirement under the sixth criterion. Likewise, the information inserted by the Applicant into the CDUA (2.6 Preservation of Environment) Exhibit A-311 at 2-27 – 2-28 is inaccurate and exceedingly irrelevant to this criteria. It is for this same reason that the Petitioners object to HO FOFs 429-446 on the ground they are just as inaccurate,

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irrelevant, and/or misleading. The vast majority of these particular FOFs are irrelevant to this criteria.

The TMT Observatory is an industrial massive man-made structure that unequivocally impacts the existing physical and environmental aspects of Mauna Kea. As such, no evidence was presented to demonstrate the TMT Project would **preserve or improve upon the existing physical and environmental aspects** as required in the sixth criterion of the CDUA.

Firstly, the observatory's footprint, support buildings, parking lot, access way, and area disturbed during construction will adversely impact the proposed site within the conservation district. Moreover, there will be substantial grading and excavation involved with the construction of the TMT Project. Pet. FOF/COL 818 p. 112. Over 100,000 cubic yards of landscape would be excavated and over 8.7 acres would be disturbed during construction. Pet. FOF/COL 995 p. 136; App. 443 p. 74. According to the Applicant's expert witness, Mr. Smith, it would take 100 years before flora would regenerate after the proposed excavation and disturbance at TMT site. Pet. FOF/COL 1039 p. 143. In addition, Applicant's witness and TMT Project Manager, Mr. Sanders, testified that even if the TMT was decommissioned, "the restoration of the site is unlikely to be perfect and back to a pristine state." Tr. 8/15/11 at 91. Hence, this further demonstrates that the TMT Project will not preserve or improve upon the existing physical and environmental aspects of Mauna Kea.

Secondly, the TMT Observatory would cause substantial, significant, and adverse visual impacts to the open space, scenic viewplane, cultural landscape, and sacred slopes on Mauna a Wākea due to its immense size at 216 feet in diameter and its extreme height of over 180 feet, it would be the TALLEST building on the island as well as on the mountain. It is proposed to be located on the northern plateau amongst the 'ring of shrines' consisting of several hundred

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historic properties and cultural resources, which, significantly, is one of the last open space areas with unhindered views from the summit region down to the sea, along the coasts, and across the island chain. The TMT Project would intrude upon the currently unobstructed view of Haleakala Mountain from the northern ridge of Kūkahauʻula, as well as the primary view of the setting sun from the mountain. It will also obstruct viewplanes used for traditional, customary, spiritual, and religious Native Hawaiian practices. Likewise, this project will impede upon the open space and degrade the natural beauty cherished by residents, visitors, and recreational users. Pet. FOF/COL 49-50 p. 9, 58-59 p. 10, 775 p. 106, 805-806 p.110, 817 p. 111, 1009 p. 138.

Contrary to the HO FOFs 388, 432, Area E in the northern plateau has not been substantially altered and is not already populated by any observatories and other related facilities. It is still a natural, open vista, notable for its breathtaking views. To characterize the northern plateau as anything but open space – as the Applicant attempts to do – belies the facts in this record. The site visit to Mauna Kea made clear that the view from the northern ridge of Kūkahauʻula looking towards Haleakala is still wide open and all-natural. Figure 7.7 in the CDUA with a view from the northern plateau clearly indicates there are no structures on the plateau. Whereas, Figure 7.8 depicts how the proposed TMT 18-story observatory, 5-acre industrial infrastructure, and support building would be the dominant and only man-made feature on the northern plateau. Pet. FOF/COL 41 p. 8, 59 p. 10; Exhibit A-311 at 7-12; *See also*, attached exhibit images. Indeed, the Applicant concedes that “[t]he TMT Observatory will add a substantial new visual element in the landscape that will be visible from viewpoints along the northern ridge of Kūkahauʻula.” App. FOF 404, p. 68.

The presence of the Project in the currently undeveloped northern plateau would introduce new elements, including the observatory, a new road, vehicle traffic, noise, dust, and

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an increased number of visitors, 24 TMT employees on average, UH management personnel, and tourists, in addition to cultural practitioners. The TMT employees and visitors would be accessing a portion of the Historic District that is not usually visited. The increase of employee and visitor traffic in the vicinity of the north plateau may result in some potential impacts to individual historic properties. It may also result in the alteration of existing historic properties by non-TMT employees. Exhibit A-309 Vol 1 at 3-28, 3-45, 3-50, 3-51.

The natural beauty of Mauna Kea embraces the vast pristine landscape, the scenic views and visual resources, the geologic terrain, the circle of shrines, the silent interaction of light and shadow, the interplay of mist and snow on the plateau -- a conservation resource treasured by the world. The loss of this resource would be irrevocable, is unacceptable, and is counter to the laws that protect the conservation district. Pet. FOF/COL 971 p. 132.

Because the massive TMT Observatory, Access Way, and associated facilities would not preserve or improve upon the existing physical and environmental aspects, such as its natural beauty and open space of the Mauna Kea conservation district, the sixth criterion is not satisfied and the TMT CDUA must be denied.

7. TMT Would Further Subdivide Conservation District

The Applicant claims there is no subdivision at issue in the TMT CDUA because a formal subdivision was not requested (App. COL #214, p. 112), and because if it were, then not only would all existing telescope subleases constitute a subdivision (App. COL #209, p. 111), but no future CDUPs could be issued because any construction would constitute a subdivision (App. COL #215). This is a misstatement of the requirement of HAR 13-5-30(c)(7). It is for this reason that the Petitioners object to HO FOFs 447-452 on the grounds that they are inaccurate, irrelevant, and/or misleading.

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To begin, “subdivision” is defined in the conservation district rules as “the division of a parcel of land into more than one parcel.” HAR §15-3-2. This definition is consistent with *BLACK’S LAW DICTIONARY*, where “subdivision” is defined as “1) The division of a thing into smaller parts, 2) A parcel of land in a larger development.” Such a division, in and of itself, is not prohibited by the rules. However, where such a division of land is undertaken in order to “intensify land uses” on the parcel, it is forbidden under HAR 13-5-30(c)(7).

While it is true that the University has not officially requested permission to subdivide the Mauna Kea conservation district in this CDUA, the Applicant’s actions on Mauna Kea have resulted in the *de facto* subdivision of this land for the purpose of intensifying land uses undertaken there. This improper, *de facto* subdivision takes two forms: 1) Astronomy Precinct, 2) Subleases to telescope operators. The Astronomy Precinct, as Ms. Nagata confirmed, was subdivided from the remainder of the “UH managed lands” in order to focus future telescope construction in a 500-acre area of the conservation district. In addition, the TMT would operate on a sublease, which as other similar subleases indicate, effectively result in the division of the Mauna Kea Science Reserve into a many separate parcels under the control of different telescope operators.

Despite these facts, the Applicant makes several attempts to claim compliance with the seventh criterion. First, the Applicant contends that because it did not apply for a subdivision in its CDUA for the TMT, there is no subdivision of land. Not so. In the definition of “subdivision,” *BLACK’S LAW DICTIONARY* offers a very useful example of an “illegal subdivision.” “The division of a tract of land into smaller parcels in violation of local subdivision regulations, as when a developer begins laying out streets, installing sewer and utility lines, and constructing

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houses without the authorization of the local planning commission.” *BLACK’S LAW DICTIONARY*, 7th ed, (2000) at 1155.

BLACK’S makes clear that a subdivision of land can occur regardless if the applicant properly applies for permission or not. Land use in the summit region of the Mauna Kea conservation district has the hallmarks of a *de facto* subdivision: facilities and improvements cost sharing, planned development, and defined, independent property interests. As the site visit and the record indicate, the telescope subleases intensified land use by increasing the burden of vehicles, visitors, and long-term personnel that use access roads, sewage, electricity, utilities, and base-level and mid-level facilities. HAR §13-5-30(c)(7) specifically guards against the intensification of land use like that found on Mauna Kea that is usually associated with the subdivision of land.

Second, the Applicant contends that a completely separate law exempts the University from the requirements of this law. The Applicant offers no reason to look outside the four corners of HAR 13-5 or HRS 183C for guidance in the interpretation of the conservation district rules. HAR 13-5-30(c)(7) is not ambiguous or unclear, as such there is no reason to refer to other statutes for interpretation, especially where that interpretation contradicts the plain meaning of the rule in question. Because there is no reason to reference Hawaii’s Uniform Land Sales Practices Act, the Applicant’s reliance on the government exception is misplaced. There is no exception to HAR 13-5-30(c)(7).

However, if even there were an exception, the University is not entitled to “government” status in this situation because the University is more akin to a developer than a government agency when it comes to development in the Mauna Kea conservation district. The University has undertaken sublease agreements to gain telescope resources, viewing time, and other benefits

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and thus demised Mauna Kea conservation district land parcels to other telescope vendors. The University continues to be the primary advocate for construction in the Mauna Kea conservation district. *See*, Ex. B-3 thru B-13. Indeed, the University is the ONLY applicant listed on the CDUA.

Third, the Applicant contends that reading the plain meaning of HAR 13-5-30(c)(7) would lead to an absurd result and thus should not be followed. The plain reading of the rule is that a CDUA cannot be granted where subdivision is used to increase the intensity of land uses in the conservation district. This does not say, as the Applicant contends, that nothing could ever be built in a conservation district. Rather, it directs that when construction is proposed in the conservation district the land cannot be subdivided -- that is divided into smaller parcels -- in order to increase the intensity of the land uses in the district.

Unfortunately, that is exactly what has happened on Mauna Kea in both regards. The University has “subdivided” the lands under its general lease to ensure more land use in the astronomy precinct AND it has facilitated subleases with individual telescope owners and operators as a basis for construction of many industrial structures in the Mauna Kea conservation district. Indeed, by the University’s own requirement, the TMT could not be built without a sublease.

Because the proposed TMT project is premised on and would further the subdivision of land in the Mauna Kea conservation district, the CDUA is not consistent with criterion seven and cannot be approved.

8. TMT Would be Materially Detrimental to Public Health, Safety & Welfare

The HO FOFs 468-473 are irrelevant to the CDUA and this criteria. In the context of BLNR’s rules and responsibility, it is tasked with protecting the conservation district for the

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benefit of the public. BLNR's rules do not authorize the BLNR to destroy conservation district resources in exchange for economic benefits. What is relevant to the BLNR's consideration of this CDUA is how the impact of the TMT Project on Mauna Kea will affect a significant public resource? The TMT Project will exacerbate risks to water quality, contribute to the multi-generational trauma of desecration on Mauna Kea, and ruin a wilderness important for reprieve and rejuvenation.

a. Water Quality

The Report, including HO FOF 453-456, is incomplete because it fails to take into account the potential detrimental impacts upon the water aquifers located associated with Mauna Kea. The Mauna Kea Science Reserve is located above five State of Hawai'i delineated aquifers. Exhibit A-301 at 5-32. The TMT project would increase telescope activities at the proposed project site Area E, as well as the Batch Plant, Access Way, the roadway, Hale Pohaku, and the electrical substation, thus potentially affecting more than just the one aquifer near Area E.

While the HO FOF 453 states the TMT Observatory facilities would have a zero-discharge wastewater system, the Applicant cannot claim to have a zero-accident spill system. As observatory operators have demonstrated, spills and run-off from telescopes, the Access Way, and a potential Mid-Level Facility have been allowed to "percolate into the ground[.]" Ex. A-308, FEIS Vol.1, p. 3-120. In May 2009, as much as twelve gallons of spilled hydraulic fluid at Caltech Submillimeter Observatory flowed down a drain pipe that opened directly into a cinder cone of the summit, where evidence of a previous spill was unearthed as well. Exhibit B-15. In March 2008, as much as 1,000 gallons of sewage overflowed onto the ground and was "quickly absorbed" into highly porous ground beneath which also flows to aquifers. Ex. A-301, CMP, p.

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6-10. The CMP further acknowledges the high probability of impact to natural resources from vehicle accidents, petroleum products, and human waste. Pet. FOF/COL 533, 534 p. 72. The Final EIS states that a spill protection and response plan will be developed for accidental spills of hazardous materials, petroleum products, sewage waste. The Applicant confirmed that the TMT CDUA does not contain this document and the spill prevention and response plan is not available for review. White Tr. 8.15.11 p. 44: 7-21, Hayes Tr 8.16.11 p 135 1-7. Pet. FOF 523, p. 72

Not only does the University lack a vehicle accident spill response plan to address the contamination that results from vehicle accidents, the University has no method of assessing the risk to water resources from transporting waste down the mountain. Pet. FOF/Col 522, 523, p. 72, citing Ex. A-302, CMP NRMP.

It is undisputed that beneath the summit is a “high level” aquifer comprised solely of fresh water. Pet. FOF/COL 155, 157 p. 21, 166, p. 22. Four components of the hydrology of the Mauna Kea summit region remain unknown: 1) watershed calculations of snow-water distribution, 2) outcomes of leachate and liquid waste from septic and cesspool systems, 3) distribution and impacts of permafrost, and 4) groundwater maps of water levels, flow paths, and recharge rates. Pet FOF 160. p.21. The Applicant’s evidence also indicates that surface runoff at the summit does not extend below an elevation of 6,000 feet, which means that “the majority of the water ultimately ends up percolating and **becoming groundwater recharge** with only a small amount lost to evaporation. Pet FOF 159. p.21. A series of springs lead occur on the southern slopes of Mauna Kea above 11,000 feet and contribute to Pōhakuloa Gulch. Maly 2005, p. 257. Pet FOF 169. p.22 These springs are fed by Ka-wai-hū-a-Kāne and lie in the vicinity of Houpo-a-Kāne, the sacred region of Mauna Kea (between the 10,000-11,000 foot elevation. Maly 2005, p. 154, n. 22. Pet FOF 168. p.22. No studies have been conducted of the

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groundwater system of Mauna Kea. Also, the Applicant's witness, Mr. Nance, is not qualified to speak to groundwater issues and did not conduct any studies specific to the TMT Project. Nance Tr. 8.16.11, P. 169: 23-25, 170: 1-4, P. 171: 3-5, p. 172: 2-4.

“The main activities that have potential to result in a release of contaminants include vehicle travel (on and off road) and accidents; release of hazardous material and petroleum product use by observatories and support operations; sewage generation; and transport of hazardous materials and sewage off-site,” citing Ex A-301 CMP, p. 6-14. Pet FOF 534. p.72.

This record indicates that groundwater resources are at risk from telescope activities on Mauna Kea. The Applicant failed to present evidence to the contrary and moreover failed demonstrate the increased telescope activities from the TMT would not further jeopardize underground water resources on Mauna Kea. Operation of the TMT would increase the use and storage of chemicals on Mauna Kea. The chemicals will be stored underground and transported by truck -- although the number of trucks and frequency of trips was not known by the Applicant's witness on the CDUA. White TR. 8.15.11, p 47: 6-25, 48: 1-3. The TMT project would require the use, handling and storage of hazardous materials at Mauna Kea including: propylene glycol, acetone, methyl ethyl ketone, at least 2,000 gallons of diesel fuel, ethylene glycol, hydraulic fluid, liquid adhesives, coating metals, acids, paints, solvents, and other cleaning chemicals. Ex A-308 CMP FEIS Vol. 1, p. 3-129. Pet FOF 525. p.72 Without evidence proving otherwise, the Applicant cannot demonstrate compliance with criterion eight and the CDUA must be denied.

b. Noise Levels

The impact of noise on the esthetic wilderness experience for the recreational user has been discounted and dismissed by HO FOF 457-462 in the Report. The conclusions are

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misleading and do not reflect the evidence in the record. The noise and dust generated by Project activities will adversely affect the spiritual and sacred quality of Maunakea and the Historic District. (Ex. A-309b, TMT FEIS, p. G-61) Pet FOF 840 p. 115. As a recreational user Ward has experienced the noise of observatory air conditioning, blowers, generators, associated vehicles and industrial activity and has found it disturbing to other recreational users. Pet. FOF 972 p. 132. Noise level in the vicinities of the existing observatories varied from 38 dBA to 77dBA Leq, and 40-78 dBA L10, with noise levels at or below 60 dBA Leq beyond a distance of 50 feet from HVAC exhausts. The loudest noise levels of 68 and 77 dBA Leq and 69 and 78 dBA L10, were measured at locations within 15 feet of HVAC exhaust outputs. (Ex A-308 FEIS Section 3.13 Noise p 3-175, 176) Pet. FOF 986, p. 134. The Applicant does not define “noise sensitive areas.” (Ex A-308 FEIS Section 3.13 Noise p 3-179) Pet. FOF 987, p. 134. Applicant does not analyze the cultural impacts of noise levels and offers no analysis of noise from culturally significant places like Pu`u Poliahu. (Ex A-308 FEIS Section 3.13 Noise p 3-179) Pet. FOF 988, p. 134. The Applicant concedes that significant noise would result from construction activities such as excavation, trenching, grading, pouring of foundations, and erection of structures. (Ex A-308, FEIS, p 3-202) Pet. FOF 990, p. 134. Construction of the proposed project would violate noise regulations, such that a noise variance would be required under HAR 11-46-8 for construction of the TMT Observatory. (Ex A-308 FEIS, p 3-202) Pet. FOF 991, p. 135. The Applicant acknowledges the proposed project would generate construction-related noise in the 80-100 dBA range at 50 feet for front-end loaders, backhoes, tractors, scrapers, graders, pavers, trucks, concrete mixers, concrete pumps, cranes, compressors, pneumatic wrenches, jack hammers, and rock drills. Short periods of blasting may also be necessary to dig foundations for the TMT Observatory. (Ex A-308 FEIS, p 3-202) Pet. FOF 992, p. 135

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c. Multi-Generational Trauma upon the Health of Native Hawaiians

Contrary to HO FOFs 464, there are long-term health implications for Native Hawaiians directly tied to multi-generational trauma resulting from the desecration of the *‘āina* (land) due to the existing and planned astronomy development on the sacred Mauna a Wākea. Yet, it is no one else's burden to prove compliance with criterion eight, but the Applicant's. That is to say, the Applicant holds the burden of proof. The Applicant must prove by a preponderance of the evidence that the proposed land use will not be materially detrimental to public health.

The connection between the welfare of the people and the fate of the land of Hawai'i is well documented. The 1993 Apology Resolution recognizes that "the health and well-being of the Native Hawaiian people is intrinsically tied to their deep feelings and attachment to the land[.]" (Joint Resolution, U.S. Public Law 203-150). Pet FOF 976, p. 133. Hawai'i Revised Statute 711-1107 on Desecration specifically prohibits desecration of "a place of worship or burial," and the statute defines "desecrate" as "defacing, damaging, polluting, or otherwise physically mistreating in a way that the defendant knows will outrage the sensibilities of persons likely to observe or discover the defendant's action." Pet FOF 863, p. 119. Even, the Applicant's own documents demonstrate that it knew or should have known of the connection between the people of this land and this place of such immense significance.

Construction of industrial structures on the summit of sacred Mauna Kea is a known source of pain for some Native Hawaiians. Pet. FOF/COL 864, p. 119, more cites The analysis of Dr. Liu confirms that the evidence of pain and distress can translate into anxiety, depression, or other ailments that affect the quality of one's health. Pet. FOF/COL 981, p. 104. impacts to continued cultural practices on Mauna Kea. Pet. FOF/Col 901, 902, 903 p. 124.

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In terms of multi-generational trauma, the preponderance of the evidence on the record demonstrates that culturally affiliated Native Hawaiians suffer pain and distress because of the massive industrial structures on the summit of Mauna Kea. *See*, Pet. FOF/COL 55, 758, 822, 851, 859, 879; P. Neves, Tr. 8/25/11, p. 111:12-112:3; P. Case, Tr. 8/25/11, p. 67:1-15. The record indicates that the construction of the TMT would exacerbate the existing harm suffered by culturally affiliated Native Hawaiians. Pet. FOF/COL 865, p. 119.

Yet, instead of researching the health claims of Native Hawaiians well-documented in their own records and what contribution the TMT would add to that, the University chose to ignore these facts and instead focused solely on economic stimulation. The University did not investigate many potential impacts of the TMT Project on culturally affiliated Native Hawaiians, from noise to night-time sky views. Pet FOF/COL 988, p. 135; J. Hayes, Tr. 8/16/11, p. 86:5-14; Ex. C-1, WDT Pisciotta at 5; Neves, Tr. 8/30/11, p. 43:3-7. Indeed, expert witness, Dr. Kauanui found no evidence in the record to demonstrate the health or wellbeing of the Native Hawaiian people was considered in the UH/TMT analysis of the TMT projects impacts on the health and wellbeing of the people of Hawai`i. Pet FOF 979, p. 133.

The Applicant offered no evidence of any kind to counter the expert witness testimony of Dr. Kawika Liu and Dr. Kehaulani Kauanui that the pain and distress suffered by some Native Hawaiians related to telescopes on Mauna Kea fits the elements of multi-generational trauma suffered by other groups exposed to long-term, unequal and detrimental harm. It is not the Petitioners' burden to prove that the proposed TMT will harm public health. Rather, it is the Applicant's burden to prove that it will not. The refusal to consider and analyze the harm suffered by culturally affiliated Native Hawaiians is deeply offensive, unauthorized, and should not be rewarded with a construction permit. For as Dr. Kauanui's analysis makes clear:

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Telescope development, and the economic benefits it entails, comes at a cost to the cultural and religious heritage and practices of the Hawaiian people. By claiming that the economic benefits of a project that is anathema to Hawaiian religion, culture, and well-being outweigh its adverse impacts, the Applicant discriminates in favor of a "public" that is specifically defined to not include Hawaiian religious practitioners. Pet FOF 978, p. 133. The Applicant has not met this burden for criterion eight and the CDUA should be denied.

d. Rest and Rejuvenation Lost

The wilderness of the Mauna Kea conservation district is important to the health and welfare of the public. The Applicant dismisses this, again opting to focus solely on economic growth – a consideration that is outside the scope of Haw. Admin. R. §13-5 and BLNR’s jurisdiction. Focusing, however, on those factors BLNR is responsible for, it is apparent the TMT will further undermine the quality of the wilderness on Mauna Kea and thus the public health and welfare that relies on it.

Construction of the TMT on Mauna Kea would pollute the conservation district with dust, fumes, and noise – all of which are categorically inapposite to the tranquility and purity that one can still find on the northern plateau of Mauna Kea. The Applicant concedes that air quality and noise levels are directly related to human activity on the mountain – the more human activity the greater the air pollution and louder the ambient noise. Pet. FOF/COL 985, p. 134.

Construction of the TMT would not only increase the basic level of human activity on Mauna Kea, but would specifically generate “vehicle exhaust, chemical fumes from construction and maintenance activities, and fugitive dust”. Pet. FOF/COL 982, p. 134. Construction activities, such as excavation, trenching, grading, pouring of foundations, and erection of structures, would

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generate significant noise levels in excess of 80-100 dBA, which violates noise restrictions. Pet. FOF/COL 990-992, p. 135.

Creating an urban environment at the top of Mauna Kea undermines the character of the conservation district for which people rely on it for rest, rejuvenation, and spiritual connection. The Petitioners are just a few examples of the kinds of people who walk out to the northern plateau to escape the sight and sounds of buildings and roads that have intruded on the natural vista of the summit. Building the TMT on the northern plateau would expand the degradation and destruction found on the summit area to the northern plateau and irrevocably harm the ability of people to find a quiet, natural environment on the northern plateau of the mountain. Pet. FOF/COL 62-64, p. 10; Exhibit D-1 at 2..

Because construction of the TMT would undermine the one of the last remaining wilderness area on Mauna Kea where people go for rest and rejuvenation, the TMT CDUA does not satisfy criterion 8 and must be denied. It is for these reasons that the Petitioners object to HO FOFs 460, 462 on the ground they are inaccurate.

e. Welfare of All

The Report is incomplete for not including Petitioners' cultural insight provided through cultural consultation with those *akua* and *kupua* of Mauna a Wākea connected to Native Hawaiian cultural practitioners through genealogical ties as well as through customary cultural and traditional practices, even though Ms. Nagata, Interim Director for the Office of Mauna Kea Management, stated in her testimony that she would welcome such information. Tr. Nagata 8/17/11 p.177:5-9.

It was disclosed by ancestral *akua* and *kupua* connected to the mountain that the proposed new TMT Project would exceed the mountain's carrying capacity and cause further disharmony that

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would tip the scales of balance between human's interactions with Papahānaumoku (Earth Mother) resulting in further desecration of this natural and sacred landscape. If built, the TMT would cause substantially new disruptions to the life forces and energies that flow into the *piko* of Mauna a Wākea. The outcome could result in a natural response by the mountain with a great shaking (earthquake) or other natural incident to restore harmony and balance back to the mountain. Such a natural event, would be detrimental to the health, safety, and welfare of all those residing in these islands of Hawai'i because it will not only be isolated to mountain. Such an event will impact most residents in these islands. We have all witnessed the increases of such natural disasters around the world as well as experienced how earthquakes and tsunamis have previously impacted our islands. In addition, such a project has the potential to affect changes in the weather patterns on the mountain as well as on the lands below. Consequently, the TMT Project would be materially detrimental to the health, safety, and welfare of the general public of Hawai'i as well as to the health of these islands. Pet. FOF 90. Exhibit G-1 at 5, 9.

The source of this information and cultural insights are reliable and credible and provided to broaden the understanding and awareness for those who are responsible and accountable for the appropriate management of Mauna a Wākea. In addition, the Applicant offered no evidence of any kind to counter the afore-mentioned expert witness testimony of Ms. Case and Mr. Flores as it relates to their cultural practices relating to Mauna Kea.

For these many reasons, the TMT CDUA does not satisfy any of the eight criteria required by HAR 13-5-30(c) and thus must be denied. It is also for these reasons that the Petitioners object to HO FOFs 467-8 on the ground it is inaccurate, irrelevant, and/or misleading.

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B. TMT CDUA FAILS TO SATISFY THE REQUIREMENTS OF HAR 13-5-24

The University, as applicant for the TMT CDUA, did not prove by a preponderance of the evidence that it met all of the requirements of Haw. Admin. R. 13-5-24 for the granting of the CDUP for the TMT Project. To be granted a conservation district use permit, the Applicant must demonstrate compliance with each and all of the permit pre-requisites detailed in Haw. Admin. R. 13-5. An approved management plan is required for proposals to use resource conservation lands for an astronomy facility. HAR §13-5-24, see also, Mauna Kea Anaina Hou v. BLNR, Civ. No. 4-1-397, 7 (3rd Cir. Haw. Jan, 19, 2007), Ex. B-15. In its CDUA, the Applicant relies heavily on the CMP and its four subplans, as well as UH's 2000 Master Plan, and the TMT Management Plan, to justify approving the project. This is a mistake.

In 2007, the Third Circuit Court overturned the BLNR's decision to approve the Keck Outrigger telescope CDUA because the management plan offered did meet the standards of HAR §13-5-24. In making this decision, the court concluded that a truly comprehensive management has the following attributes:

- it is concerned with conservation of the natural and cultural resources of the district
- it is "all-covering, all-embracing, all-inclusive..." of the conservation district
- it provides a numerical limit on construction in the conservation district
- it is approved by the BLNR.

Despite their combined girth, the many plans cited by the Applicant do not meet these standards and therefore cannot be used to justify approval of a CDUA. The TMT Management Plan is incomplete because it is specific only to the project area, thus not "all-inclusive." UH's 2000 Master Plan is irrelevant because it was not approved by the BLNR. The CMP, together with its subplans, is incomplete because

- 1) it fails to manage the entire Mauna Kea conservation district, it concerns only "UH Management Areas,"

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2), it fails to provide any measurable limitation on the extent of construction in the Mauna Kea Science Reserve and indeed, specifically identified the TMT as outside its scope (CMP, p. 2-3).

In addition, the CMP should also be discredited because it identifies the wrong land manager responsible for protecting conservation district resources. The document attempts to legitimize UH's long-standing effort to serve the conflicting roles of both land developer and land manager for part of the Mauna Kea conservation district. BLNR is the only agency authorized to manage conservation district resources; that responsibility cannot be delegated to the applicant and the primary advocate for development on Mauna Kea.

Lastly, the Third Circuit Court ruled in 2009 that the CMP was not yet ripe for review because "the CMP did not determine the rights, duties, or privileges" of the Petitioners. The court did note, however, "it may be that a future implementation of the CMP might trigger a requirement for a contested case" to assess the quality of the CMP. BLNR's consideration of the TMT CDUA is that "future implementation" of the CMP. The University relies heavily on the CMP, in order to downplay the substantial adverse impact this proposal would have on the conservation district. The CMP, however, lacks the basic elements of a management to justify that reliance. See, Third Circuit 2009 decision, Exhibit B-16.

1. CMP Encompassed Only a Limited Subset of the Conservation District

To be comprehensive, management plans for the conservation district must be "all encompassing" and manage for protection of the natural and cultural resources of the district. Mauna Kea Anaina Hou, Civ. No. 4-1-397 at 14, Exhibit B-18. The UH CMP, however, is not all-encompassing of the Mauna Kea conservation district for it only concerns the areas that the University deems important for astronomy (sometimes referred to as "UH Management Areas," which includes the Science Reserve, access roads, and mid-level facilities at Hale Pohaku). The

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conservation district encompasses the entire mountain from the Saddle Room (approximately the 6,000-foot elevation) up to the summit itself. The 2009 UH CMP does not encompass the basic scope of the Mauna Kea conservation district and thus cannot serve as a basis for approving construction of any astronomy facilities.

2. CMP Lacks Numerical Limits on Telescope Construction

In its 2007 ruling, the Third Circuit Court considered the 1995 management plan for the mountain presented by the University for the Keck Outrigger telescopes project. The court found that unlike previous management plans, the 1995 plan did not provide adequate scope and coverage for the Outrigger telescope and that was in fact “virtually silent” on the question of future development. Mauna Kea Anaina Hou, Civ. No. 4-1-397 at 7, Exhibit B-18. The management plan offered by the University for the proposed Keck Outrigger telescopes was not comprehensive, in part, because it did not have a carrying capacity or numerical limit on telescope construction in the conservation district. See, Id. at 9. The court was concerned that the plan’s failure to impose a limit on observatory development would facilitate piecemeal construction in the district that would ultimately undermine the protections that the conservation district is supposed to afford for natural resources. Id. at 24-27.

Likewise, without any upward limit on the size and number telescopes, it is possible under this CMP for telescopes to consume every area large and flat enough to bare a structure. Like the 1995 management plan, the current CMP does not place any meaningful limitation on the number and size of future telescopes construction. Instead of providing these limits, the CMP relies on a complicated and University-centric decision-making tree from the 2000 Master Plan. Exhibit A-21. This decision-making structure facilitates piecemeal development by deeming UH responsible for some decisions and BLNR responsible for others. Nor does the CMP include

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specific telescopes within its scope. The TMT proposal, which is specifically identified as outside of the CMP's scope, was well underway when the CMP was adopted. Ex. A-301, UH CMP, p. 2-3. This is not comprehensive management of the Mauna Kea conservation district, thus this document cannot be used as a basis for approving the TMT CDUA.

3. TMT Lacks a Burial Treatment Plan

The Applicant failed to satisfy the requirements of HAR §13-5-24 by not having completed a burial treatment plan as part of the CDUA. As such, a permit should not have been issued by the BLNR for the TMT Project. There is no question that an approved burial treatment plan is required under the law. Ex. A-301 at 7-56; Pet. FOF 658, p. 91. There is no approved burial treatment plan in place for the ancestors buried in the Mauna Kea conservation district even though a plan was also recommended in PSCI's survey report. Pet. FOF 1238, p. 168; Pet. FOF 657-658, p. 91.

The University has been aware of the fact that Mauna Kea is a burial ground for at least a decade. Mauna Kea is a known burial ground used for the internment of Hawai'i's most sacred and revered ancestors. Native Hawaiian burials are TCP's (Traditional Cultural Properties) that means the burials contribute to the significance and continuity of the Mauna Kea Historic District. Because Mauna Kea summit area is a known burial ground, it means burials have been previously identified, and in fact the record states that "... 48 features recorded in MKSR that are interpreted as Burials or Possible Burials" and that these features can include sites with multiple human skeletal remains. Ex. A-133 at 5-44 & 5-45; Ex. A-21, App. N, p. 39; Pet. FOF 1237, p. 168; Pet. FOF 259, p. 35.

Other relevant FOF and/or COL include the following to be found at Pet. FOFs 244, 245, p. 34; 259, p. 35; 656-658, p. 91; 864, p. 119; 1237, 1238, p. 168.

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4. TMT Lacks a Invasive Species Rapid Response Plan

The Applicant concedes that the development of an Invasive Species Rapid Response Plan in conjunction with an Invasive Species Monitoring Plan for specific species considered to be the highest risk, referred to as Contingency Plans, should be in place for response to these species prior to detection. Early detection and eradication is often the most significant phase of the invasion process. However, the Invasive Species Monitoring Plan and Rapid Response Plan for the MKSR have not yet been developed. As such, a permit should not have been issued by the BLNR for the TMT Project. Eiben Tr. 8/18/11 at 143; Exhibit A-302 at 4.2 28-29; Pet FOF 615, p. 84, Nagata TR. 8/18/11 at 21, Exhibit A-3 at NR-2. Pet FOF 612, p 83; Exhibit A-302 at 4.2 21-36.

The applicant's natural resource plan acknowledged that since 2005, several new alien predatory species have been found on Mauna Kea that could adversely impact the Wekiu bug. These included several new alien predatory beetles, including dermestids, staphylinids, and carabids, which are predaceous both as larvae and adults. The recent discoveries underscore the need for regular monitoring of the Mauna Kea alpine environment for alien predatory insects. Because Wekiu bugs are much more restricted in their habitat, it is expected that wekiu bugs would be even more vulnerable to ant invasions than moths and spiders. Because of the predatory and social nature of ants, and because ants have caused the extinction and decline of native arthropods throughout Hawaii, both the endemic wolf spider (*Lycosa* sp.) and the Wekiu bug would be expected to precipitously decline if ants ever become established. Ex A-302 NRMP 2.2 p. 36-45.

DLNR staff concurred that "The introduction of non-native species, specifically predators such as ants, is the greatest threat to the persistence of populations of native arthropods on

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Mauna Kea. It is imperative that general arthropod monitoring be performed on all alpine desert habitat affected by TMT construction (access way, staging areas, and construction sites).” Ex A-309 FEIS Vol 2; DLNR Division of Forestry and Wildlife Administrator Paul J. Conry, in his CDUA Comments for the Thirty Meter Telescope wrote, on November 29, 2010, in response to Table 2.1 p. 2-16.

Also, DLNR Chair Laura Thielen wrote “An eradication protocol must be developed and in place (along with supporting supplies/trained personnel) if/when establishment of new invasive species is detected. The above tasks should not be completed by untrained personnel. Recommend that a biological technician or biologist be hired by the TMT project to complete surveys. And /or funding be provided to DLNR or an appropriate agency.” Ex A- 309 FEIS Volume 2.

Despite requests from DLNR and the Applicant’s witness, Mr Eiben, the TMT Corporation consigned development of the requested plans to the CDUA process, and those who prepared the CDUA postponed the effort again, delegating it to the construction specifications. This is to say, no plans have been written at all. Ex- A-311, CDUA Page 174.

The Applicant’s repeated promises, at every stage, to complete these species protection and control plans later demonstrate the continued old paradigm of neglected management for Mauna Kea’s natural resources.

3. The University Serves Conflicting Roles

In transactions over Mauna Kea, the University attempts to sit on both sides of the table. On one side, the University -- in one form or another -- facilitates telescope construction on Mauna Kea, going so far as to take on the interests of telescope owners as their own. While, at

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the same time on the other side, claiming to serve as “land manager” of “UH’s Mauna Kea Lands,” enforcing laws and protecting the resources destroyed by telescope construction. Ex. A-301, UH CMP, P-7 (“[d]evelop and implement protocol of oversight and compliance with CDUPs”) and Ex. A-301, UH CMP P-8 (“enforce conditions contained in Special Use permits”). Exhibit A-1, p. 2.[7] The purpose and function of these two sides of the table are mutually exclusive and cannot be fulfilled by one entity -- no matter how many aliases the University establishes. The awkward relationship between the University and TMT in this application is only the most recent example of this deeply seeded conflict of interest.

The fundamental problem with the University serving conflicted roles is demonstrated in the current dismal state of the Mauna Kea conservation district. The University concedes that telescope construction has substantially undermined the long-term sustainability of the natural resources on Mauna Kea, and yet the University is again proposing to build another telescope. Ex. A-309 at S-8. The destruction on Mauna Kea is directly facilitated by the University at the expense of the natural and cultural resources of the conservation district. The success of the University’s Institute for Astronomy is based in large part on the fact that Mauna Kea is exploited and promoted as a premier location for telescopes. That is why, despite its own admissions, the University simply cannot bring itself to conclude what is readily apparent:

Mauna Kea is overbuilt.

Given the University’s conflicting roles on Mauna Kea, it is an improper delegation of authority for the BLNR to empower the University to make “management” decisions about the mountain’s resources and the practices that rely on them. *Ka Pa'akai O Ka 'Aina v. Land Use Commission*, 94 Haw. 1, 21-23 (2000). The BLNR’s relationship to the University in this situation is notably similar to the illegal “wholesale delegation” of authority from the Land Use

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Commission to Kapulehu Development in *Kapa`akai O Ka Aina v. LUC*. Like Kapulehu Development, the University is the primary developer of the land, promising to implement protections for constitutionally protected practices after the proposed project is approved. It is an abuse of BLNR's discretion to trust the Applicant will protect traditional and customary practices once the project is approved.

C. TMT CDUA IS SUBJECT TO STANDARD CONDITIONS OF HAR 13-5-42

The Report was in error for not providing a thorough examination of the materials submitted as evidence, including but not limited to exhibits and testimonies, for this contested case. Furthermore, the Petitioners presented evidence demonstrating that significant information and data included in the conservation district use application for issuing of the CDUP HA-3658 for the Thirty Meter Telescope project was false, incomplete, and/or inaccurate. However, the Hearing Officer systematically omitted such evidence and discussion in the Report. It is for this reason that the Petitioners object to this Report on the ground of such omissions and lack of adequate examination of such evidence. State of Hawai'i laws are explicit in that any land use allowed within the conservation district is subject to the standard conditions as outlined in HAR § 13-5-42.

Amongst the list of standard conditions is the following that was included in Conservation District Use Permit [CDUP] HA-3658 for the Thirty Meter Telescope project as condition No. 16.

§13-5-42 Standard conditions. (a) Any land use allowed within the conservation district is subject to the following standard conditions:

(11) In issuing the permit, the department and board have relied on the information and data which the applicant has provided in connection with the permit application. If, subsequent to the issuance of the permit such information and data prove to be false,

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incomplete, or inaccurate, this permit may be modified, suspended, or revoked, in whole or in part, and the department may, in addition, institute appropriate legal proceedings;

In issuing the CDUP HA-3568, the Board and Department of Land and Natural Resources relied on the information and data that the Applicant provided in connection with this permit application. All information and data included and referenced within the CDUA are subject to further review, examination, and scrutiny through this permitting process for land use in the conservation district. Subsequent to the issuance of this permit and through the contested case, substantial evidence was discovered to demonstrate that the TMT CDUA included false, incomplete, and inaccurate information and data. Ultimately, the Board and Department of Land and Natural Resources have the legal responsibility to investigate these findings further.

Be it resolved, there are significant findings of false, incomplete, and inaccurate information and data submitted as part of CDUA HA-3568 that would warrant the BLNR to thoroughly examine and investigate these findings further. In addition, the Petitioners urge the State of Hawai‘i Board of Land and Natural Resources to revoke the CDUP HA-3568 and to institute appropriate legal proceeding against the Applicant based upon HAR § 13-5-42 (a) (11), also noted in the CDUP HA-3568 as condition No. 16.

D. THE TMT PROJECT WOULD VIOLATE THE PUBLIC TRUST DOCTRINE

HO COL 186 cites *Waiāhole* in support of his mischaracterization of Petitioners’ position that “nothing can be built.” Petitioners’ do not argue that economic and social benefits of public trust resources are irrelevant to article XI, section 1’s mandate of conservation. *Waiāhole*, 94 Haw. at 40, 9 P.3d at 452. This COL erroneously concludes that the proposed TMT project satisfies the state’s obligations of protection and maximizing reasonable and beneficial use, and it is consistent w/ the constitutional,

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statutory, and regulatory mandates of “conservation.” This conclusion is not substantiated by either the *Waiāhole* case cited nor the constitutional public trust doctrine. Telescope development, and the economic benefits it entails, comes at a cost to the cultural and religious heritage and practices of the Hawaiian people. By claiming that the economic benefits of a project that is anathema to Hawaiian religion, culture, and well-being outweigh its adverse impacts, the Applicant discriminates in favor of a “public” that is specifically defined to not include Hawaiian religious practitioners. Exhibit B-20, Kauanui WDT at 2; Petitioners FOF/ COL at 978. The development on the summit of Mauna a Wākea is a commercial enterprise under the guise of science, educational, and economic opportunities. Exhibit G-1, E. Flores WDT at 3; Petitioners FOF/ COL at 1024. While scientific education is a laudable public trust purpose, it does not bring the TMT Projects’ substantial adverse impacts into compliance with either the public trust doctrine nor the eight CDUP criteria.

HO COL 185 further mischaracterizes Petitioners’ position by stating that Petitioners’ contend both that a “mandate of conservation” demands that nothing be built and they argue that the BLNR should not take into account any economic aspects of the proposed Project. Contrary to HO’s misstatement, Petitioners do not contend that nothing can be built in the conservation district, but rather that appropriate development in the conservation district must *preserve or improve upon* the open space and natural beauty, of the conservation district – as plainly stated in HAR § 13-5-30(c)(6). BLNR’s decision to deny Hawaiian Electric Company’s request to construct utility transmission poles along the Wa‘ahila Ridge in Mānoa provides important guidance in fulfilling the BLNR’s obligation to protect visual resources, especially culturally significant viewplanes. *See In the Matter*

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of *CDUA for Hawaiian Electric Company, Inc.*, DLNR File No. OA-2801 (2002). Because the proposed TMT structure would not preserve or improve upon the open space and natural beauty of the Mauna Kea conservation district, the sixth criterion is not satisfied and the TMT CDUA must be denied.

1. The University Improperly Allows Non-State Agencies to Piggy-Back

HO COL 235 correctly notes that BLNR may lease state land to governments and government agencies at such rent and on such other terms and conditions as it may decide under Haw. Rev. Stat § 171-95. However, at issue is *UHH's* “patterns of practice” of subleasing Mauna Kea public trust lands to telescope observatory operators for rental amounts grossly below fair market value, in direct violation of HRS §§ 171-17 and -18 and the public trust. Exhibit D-13 at 8; *id.* at 6 (“Dollar-a-year leases of land zoned for conservation are a sensitive issue in Hawaii, especially so for the Mauna Kea Science Reserve, which involves long-standing cultural conflicts.”).

UHH holds thirteen subleases with third parties. Exhibit Jt-1/A-301 at 6-1, Nagata, Tr. 8/16/11 at 208:18-22, Exhibits B-3, B-4, B-5, B-6, B-7, B-8, B-9, B-10, B-11; Petitioners’ FOF/COL 373 at 54. Parties to the subleases are the telescope operator, UHH, and DLNR. Exhibit B-7, Attachment A at 1, Exhibits B-3, B-4, B-5, B-6, B-8, B-9, B-10, B-11. UHH has established a practice of applying for land use permits in the Mauna Kea conservation district on behalf of third parties (i.e. non-state or government entities) and passing the permit benefits onto those third party beneficiaries. *See* Petitioners’ FOF/COL 373-376 at 54. For example, in 2009, Yale University paid the California Institute of Technology \$12 million for fifteen nights of observing time at the W. M. Keck Observatory. Exhibit E-03 at 1-2. UH subleased Mauna Kea lands to Keck Observatory

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for \$1 per year. Exhibit B-07. While UHH may reasonably claim beneficiary rights to use public lands for educational purposes (and allowed to pay only \$1.00 per year in lease rent for that use), this right is not transferrable. UHH may not extend its beneficiary rights to other entities. Unlike UHH, the TMT Observatory Corporation is not a state entity nor a public trust beneficiary. The TMT Observatory Corporation therefore does not fulfill a public trust purpose nor can it claim any protected rights under the Admissions Act or the state constitution. *See* Hawai‘i Admission Act of 1959, Pub. L. No. 86-3, 73 Stat. 4 (1959); Hawai‘i Const. article XII § 4.

2. Conservation District Rules Do Not Satisfy Requirements of the Public Trust Doctrine

HO erroneously concludes that Public trust principles have already been incorporated into the Conservation District statute. *See* HO Report COL 177, 178, & 181. Further, HO asserts that Petitioners have not identified any public trust obligation that is not already reflected in the 8 criteria and therefore the conclusion that those criteria are satisfied is a compelling indication that the public trust obligations of both UHH and the BLNR are satisfied as well.

The TMT CDUA must independently satisfy both the conservation district rules and the Public Trust Doctrine because it is a land use proposed for public trust lands designated for conservation. Conservation district rules regulate land uses on conservation land, regardless if it is private or public land. Haw. Rev. Stat. § 205. By contrast, the public trust doctrine governs the use of public lands, regardless of its land use designation, to ensure that the public’s interests are protected where private use of public land is proposed.

3. Public Trust Doctrine Prohibits Approval of the TMT CDUA

The Hawai‘i Supreme Court has repeatedly held that an agency’s discretionary authority is “circumscribed” by the Public Trust Doctrine. *Kelly v. 1250 Oceanside Ptnrs*, 111 Hawai‘I 205, 230, 140 P.3d 985, 1010 (2006). See also, *In re Water Permits*, 94 Hawai‘i 97, 133, 9 P.3d 409, 445 (2000), *In re Contested Case Hearing on the Water Use Permit Application Filed by Kukui*, 116 Hawai‘i 481, 508, 174 P.3d 320, 347 (2007). An entity seeking to use public trust resources for other than their intended use must demonstrate that the proposed use does not harm that public resource or the public’s interest in that resource, especially for Native Hawaiians. *In re Water Permits*, 94 Hawai‘i at 136-7, 9 P.3d at 448-49 (emphasis added). This means the BLNR has a duty to prevent the irrevocable transfer of public trust lands and resources to private entities. *Id.* at 139, 9 P. 3d 451.

In this case, the University is seeking a variance – a conservation district use permit – to allow a private, California-based corporation to engage in land uses that are otherwise not allowed in the conservation district. HAR 13-5-30(a), If granted, this variance would allow the University to destroy natural and cultural resources and undermine traditional and customary practices by authorizing the construction of an 18-story industrial structure that will persist on currently undeveloped land for nearly 50 years.

The University attempts to suggest that the TMT Project does not involve the irrevocable transfer of public trust land and resources to private parties, and the “protection” element of the public trust doctrine is satisfied.” App. COL 235, p. 114. The University cannot maintain this argument.

The record is clear, the TMT project will not only have a significant and adverse impact on the natural resources of Mauna Kea, it will involve an irrevocable transfer of the public trust

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lands and resources to private parties. The Applicant's witness, Dr. Smith, testified that it would be at least 100 years before any flora would regenerate to its natural state after the disturbance of the environment resulting from the TMT Project. Smith Tr. 8/16/11 at 185-186. The TMT Project is an extremely massive development and it would involve many years of construction disturbance and noise thus rendering the land area unusable for any other purposes for decades.

The fact that the TMT may be decommissioned does not make the transfer of public land any less irrevocable. The proposed TMT would be operational until 2050—many years beyond the end date of the University's own lease which ends in the year 2033. Ex. B-2, General Lease S-4191 at p. 1. The hoped-for, eventual decommissioning of the would-be TMT does not mean the project does not constitute an irrevocable transfer of public lands. As the Applicant's witnesses confirmed, "...depending on the type of substrate foundation material used in the construction of an observatory, removal may be impractical to merely impossible."

Decommissioning is not the same as restoring a former telescope site to its natural condition. Nagata Tr. 8/18/11 at 189-195. This is to say, once a site on Mauna Kea is "developed" for a telescope facility, it will never be the same again.

From a cumulative perspective, the impact of past and present actions on the traditional and customary practices of Native Hawaiians has been substantial, significant and adverse; **the impacts would continue to be substantial, significant, and adverse with the consideration of the Project.** (emphasis added) Project specific impacts would have a significant effect on the natural, cultural, archaeological, and historic resources. Pet. FOF 1060, 1061, p. 145.

In addition to these existing cumulative impacts, the proposed TMT is anticipated to result in additional impacts to cultural practices and beliefs. Cultural practices would be precluded in the 6.2 acres occupied by the TMT Observatory and Access Way. In addition, the

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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 as well as a decrease the suitability of the northern plateau area for spiritual observances and offerings. Project specific impacts would have a significant effect on the continued practice of traditional and customary Native Hawaiian practices. Pet. FOF 901-903, p. 124; Pet. COL 1062, p. 145.

The proposed TMT would degrade and destroy the natural geologic features in the proposed TMT Project area, which is considered by the NPS as significant, thus potentially causing the National Park Service to consider removing the Mauna Kea Conservation District from the U.S. National Natural Landmark or at least removing the entire UH designated “520 acre Astronomy Precinct.” Pet. FOF 558, p. 76.

For these many reasons, the “protection” element of the public trust doctrine is not satisfied.

4. Violation of the Public Trust Doctrine Gives Rise to Independent Cause of Action

The Court holds agencies responsible for implementing the Public Trust Doctrine. BLNR has a legal duty to preserve the public’s right to ensure the public trust is not degraded. *In re Water Permit Applications*, 94 Hawai‘i at 141, 9 P.3d at 453. Where an agency fails to uphold its obligation to protect the Public Trust Doctrine, citizens, as beneficiaries of that public trust, have an independent cause of action to uphold their rights. This case involves §5(f) of the Admissions Act, a federal law that addresses public trust lands. Under basic trust law principles, beneficiaries have the right to "maintain a suit (a) to compel the trustee to perform his duties as trustee; (b) to enjoin the trustee from committing a breach of trust; [and] (c) to compel the trustee to redress a breach of trust." *Price v. Akaka*, 3 F.3d 1220, 1224 (9th Cir. 1993), citing Restatement 2d of the Law of Trusts, §199. The Ninth Circuit later clarified that Native

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Hawaiians can bring suit as §5(f) beneficiaries under federal law. *Day v. Apoliona*, 496 F.3d 1027, 1032 (9th Cir. 2007) (“[W]e twice explicitly held that because it creates a trust, §5(f) also creates a right enforceable under 42 U.S.C.S. § 1983 (LEXIS Pub. L. 112-18 through 2011) by the trust's beneficiaries.”) The Supreme Court of Hawai‘i further clarified that “a private implied right of action . . . to enforce the terms of the §5(f) trust under Hawai‘i law” exists under State Constitutional Protections in Haw. Const. Art. XII, § 4.” *Pele Defense Fund v. Paty*, 73 Haw. 578; 837 P.2d 1247 (1992). In *Pele*, the Court reviewed a number of cases in which Hawai‘i citizen beneficiaries sued to enforce their rights as beneficiaries of public trust lands. *Id.* at 604-07; citing, *Kapiolani Park Preservation Society v. City & County of Honolulu*, 69 Haw. 569, 751 P.2d 1022 (1988) (public trust beneficiaries were held to be able to bring suit to prevent a government agency from disposing of trust lands) and *Natatorium Preservation Committee v. Edelstein*, 55 Haw. 55, 515 P.2d 621 (1973), (“citizens can bring suit for an injunction against the government agencies charged with the management of public lands when those agencies seek to dispose of the public lands in violation of the statutes governing their management and disposition.) As Hawai‘i citizens and Native Hawaiian beneficiaries of §5(f) public trust lands, Petitioners assert a private right of action to compel the BLNR to enforce compliance with statutory provisions that ensure the protection of the public trust lands on Mauna Kea.

E. TMT PROJECT VIOLATES CONSTITUTIONAL PROTECTIONS FOR NATIVE HAWAIIAN TRADITIONAL AND CUSTOMARY PRACTICES

The Petitioners object to HO COLs 191, 194, 196-203 in the Report on the ground they are inaccurate, incomplete, irrelevant, and/or misleading as it pertains to: (1) contemporary versus traditional and customary practice relating to Mauna Kea; and (2) Petitioners satisfying all three of the *Hanapi* factors.

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1. Contemporary versus Traditional and Customary Practices

Native Hawaiian Petitioners' offered sufficient evidence to establish that their cultural and religious practices connected to Mauna Kea are traditional and customary practices and are afforded constitutional protection. Attempts to classify these practices as contemporary in order to argue they are not Native Hawaiian traditional and customary practices and not protected by constitutional rights is disingenuous at best.

The Report misconstrues the standards and evidence of Native Hawaiian traditional and customary practices associated with Mauna Kea. As elaborated below, over the course of the CCH proceedings, the HO and the University agreed to recognize Hawaiian Petitioners as cultural experts, stipulated to their standing to bring the CCH, and introduced professional reports that rely on several of the Hawaiian Petitioners as expert consultants in the traditional and cultural practices of Mauna Kea. In addition, the Applicant failed to provide any evidence or witnesses to refute or challenge any of their Native Hawaiian traditional and customary practices as presented in the written direct testimonies that were submitted in the record as exhibits. Also, the Applicant elected to waive their right to cross-examine the Hawaiian Petitioners as it pertains to these practices. The most explicit evidence of Petitioners' cultural practices is contained in the CIA for the Mauna Kea Science Reserve (Exhibit A-21), which asserts that identified practices and beliefs, many of which Hawaiian Petitioners testify to practicing and believing, "would seem to qualify as traditional and customary cultural practices within the meaning of the Hawai'i State Constitution[.]" Exhibit A-21, Appx. N at 4.

The Petitioners have practices are entitled to constitutional protection. The University has been aware of the time, depth, continuity and history of the various cultural and religious practices exercised by Petitioners (including those practices listed in our petitions) for more than

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a decade and has acknowledge as much in many of its own documents (i.e. UHH Ex. A-21, "University of Hawai'i Mauna Kea Master Plan 2000," Appendixes N and I). What can be said of "contemporary cultural and religious practices" exercised by Petitioners on the lands of Mauna Kea are that they are contemporary insofar as Hawaiian culture is a living culture, and the Petitioners as descendants of that culture continue to exercise cultural practices in this modern time. The record demonstrates Petitioners' practices are entitled to constitutional protection. The Petitioners direct the Hearing Officer to the following FOF/COLs to support these arguments:

For the purposes of evaluating the significance of Native Hawaiian cultural practices, features and beliefs identified in association with the Science Reserve Master Plan Project Area, it would be useful to consider them in terms of the three types of informant claims that were defined earlier ... information obtained by Maly in his oral history and consultation study (1999) suggests that several of the identified practices and beliefs would appear to fall within the category of traditional and customary practices claims. Ex. A-21, App. N, p. 43; Pet. FOF/COL 363, p. 52

These would be claims that would lie within the purview of Article XII, Section 7, of the Hawai'i State Constitution ("Traditional and Customary Rights") particularly as reaffirmed in 1995 by the Hawai'i State Supreme Court in the decision commonly referred to as the "PASH decision", and further clarified in the 1998 decision in "State v. Hanapi." Which would include various cultural practices and beliefs associated with the general geographical area of the summit region rather than a clearly definable property or site. Ex. A-21, App. N, p. 43; Pet. FOF/COL 364, p. 52

While certain other practices, such as prayer and ritual services involving the new construction of new *kuahu* (altars), or the releasing of cremated human remains rather than internment on *pu'u*, might seem to be contemporary cultural practices they may as well be considered reasonable cultural development evolving from earlier traditional practices. *Id.*; Pet. FOF/COL 365, p. 52

Based on the evaluation of the findings of the present cultural impact assessment study made in reference to (a) the known content of the traditional Hawaiian culture and (b) the National Register Criteria as clarified by the National Register Bulletin No. 38, it is believed that with the exceptions noted above, most of the Native Hawaiian cultural practices, features and beliefs as identified as being currently associated with the Mauna

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Kea Science Reserve Master Plan Project area can be considered to be culturally and historically significant. **Most if not all of the identified practices and beliefs would seem to qualify as traditional and customary practices within the meaning of the Hawai'i State Constitution, while the principle *pu`u* and the shallow lake with adjacent *pu`u* would seem to satisfy the criteria for being regarded as a legitimate traditional and cultural property. Finally, none of the identified practice and beliefs would seem to represent strictly contemporary cultural practice or beliefs lacking some measure of traditional connection.** (Emphasis added) *Id.* p. 45; Pet. FOF/COL 366, p. 52

2. Petitioners Satisfying all Three of the *Hanapi* Factors

The Petitioners **have met all the Hanapi standards** by establishing an ample foundation through testimonies, exhibits, and through references to expert treatises as well as through the University's own consultants and documents submitted as evidence.

a. The First *Hanapi* Factor

The Petitioners concur with HO COL 192 that Petitioners Ching, Neves, Pisciotta, and members of the Flores-Case 'Ohana are Native Hawaiian as submitted in the record through their testimony. see Ex. E-01 at 3; Ching Tr. 9/30/11 at 81-82; Ex. C-01 at 1; Pisciotta Tr. 9/26/11 at 34; Ex. F-01 at 1; Neves Tr. 9/30/11 at 38, 40; Ex. G-1 at 1; Flores Tr. 9/26/11 at 5; Ex. G-2 at 1; Case Tr. 8/25/11 at 166; G-4 at 1; Rios Tr. 8/25/11 at 179-180. Petitioners are descendants of Native Hawaiians who inhabited the Hawaiian Islands prior to 1778. In addition, the Applicant did not challenge them on this issue or present any evidence indicating that they were not Native Hawaiian. Therefore, these Petitioners have satisfied the first factor of the *Hanapi* analysis.

b. The Second *Hanapi* Factor

The Petitioners object to HO COL 194 on the ground it is inaccurate. In contradiction to this COL, Petitioners have established a record through their own testimonies and documentation to establish that their Hawaiian traditional and customary practices and customary usage with

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respect to Mauna Kea are entitled to constitutional protection. Presented below are summaries of Petitioners' representations of their Hawaiian traditional and customary practices and the ways they meet the second *Hanapi* factor.

Petitioner Ching asserted that he conducts traditional and customary cultural, spiritual and religious rituals and ceremonies at many locations on Mauna Kea, including Kūkahau'ula (summit plateau), Lake Waiau, the various springs and Pohakuloa gulch areas; gathers woods, fiber, and stone material for kalaiwa'a (canoe building) and as part of the construction of the traditional voyaging canoe, Hawai'i Loa); and collects sacred waters from various sources, including the springs of Mauna Kea at Houpo o Kane and Lake Waiau, for traditional rituals and medicinal purposes. Exhibit A-320, Ching CCH Petition at 2. He gathers ice, snow, water, raw materials for Hawaiian adze making; deposits "piko" or umbilical cords in the Lake Waiau area; performs traditional astronomy, cosmology, navigation, and solstice and equinox ceremonies, worships "in, among, and around the entireties of Mauna Kea[;]" and continues to practice customary burials, adherence to the law of the splintered paddle (Kānāwai Māmalahoe, originating with Kamehameha I in 1797). Exhibit A-320, Ching CCH Petition at 3-4. He also traverses traditional trails on Mauna Kea, a traditional huaka'i practice. *Id.* at 1. The practices that he engages also gives rise to related interests in the protection of mauka-makai and makai-mauka view planes, of kinolau images, and of MKAH members' family shrines, which have been desecrated on at least seven occasions. Exhibit A-320, Ching CCH Petition at 4, 9. Ching further described several of his huaka'i routes, along modern and traditional trails on Mauna Kea, and their significance as modes of connecting to ancestral "footsteps." Ex. E-02 at 2. Petitioner Ching practices "*pule ho'oulu*" [traveling "on foot, on a system of trails that crossed

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the mountain," a practice that extended through the mid-1800s according to Maly] and has walked/hiked the trails and non-trails on Mauna Kea. Ex. E-01, Ching WDT at 1.

Kealoha Pisciotta is president of MKAH, an unincorporated association dedicated to protecting, preserving and perpetuating Native Hawaiian traditional and customary cultural, historic and religious practices, access and site (landscape) protection. Ms Pisciotta was qualified as an expert in Native Hawaiian cultural and traditional practices. MKAH members “exercise of traditional and customary practices related to the use of Lake Waiau and other water sources and cultural sites in and around the summit area for the gathering of ice, snow, water, raw materials for adz making, depositing of the “piko” or umbilical cord in Lake Waiau, performing traditional astronomy, cosmology, navigation, continuing burial practices, performing solstice and equinox ceremonies, and conducting temple worship, in, among, and around the Mauna Kea summit, Ice Age Natural Area Reserve, and Science Reserve.” Ex. A-320, MKAH Petition at 2. Members also exercise these rights for religious, cultural, and subsistence purposes. Ex. A-320, MKAH petition at 3. Pisciotta also maintains ahu and lele on the summit region of which “are rooted in traditional beliefs.” The practices of Ms. Pisciotta were taught to her by her elder family members. Ex. A-320, 6; Ex. C-01, 1; Ex. A-309 at 3-15.

Pisciotta described various ceremonies Royal Order of Kamehameha I (ROOK I) and MKAH engage on Mauna Kea, such as the solstice and equinox ceremonies. Mauna Kea “sets the ultimate relationship to all other sacred sites for such ceremonies,” and is “the highest point” from which you can see all else, obstructions of viewplanes will have adverse impacts on these traditional cultural practices. She further explained that leveling the main body of Kūkahau‘ula impacts MKAH and ROOK I solstice and equinox practices by forcing them to adjust their alignments. K. Pisciotta, Tr. Sept. 26, 2011, 40: 11-19. Exhibit C-01 at 6-7, C-05, C-06. The

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TMT project in particular would “interfere[e] with the open space and viewplanes of our viewplanes to Haleakala.” K. Pisciotta, Tr. Sept. 26, 2011, 41: 8-11. Solstice and equinox practices, amongst other things, “codified” these native knowledge’s and science, which are based on “thousands of years of observation.” K. Pisciotta, Tr. Sept. 26, 2011, 41: 13-18. In another example of codification Pisciotta explained that Hawaiian traditional chants contain names of the stars, the pole stars from 5,000 years ago. K. Pisciotta, Tr. Sept. 26, 2011, 98: 19-25. Pisciotta also explained TMT construction impacts on Hawaiian practices that center on the historical and spiritual significance of Lake Waiau. Ex. C-01, 8. Additionally, she explained the traditional significance of Mauna Kea aquifers (“[o]ur traditions tell us the waters we swim in at Hilo Bay are from Mauna Kea. The water of Mauna Kea even feed our fish ponds below” Ex. C-01, 9) and connects this belief to the lack of “conclusive evidence” that the TMT will not have adverse impacts on the hydrology of Mauna Kea. Ex. C-01, 8.

Paul K. Neves is a kumu hula and Native Hawaiian practitioner of hula. Ex. F-01, Neves, WDT at 1. He further described the importance of viewplanes to Hawaiian traditional and customary practices and explained the spiritual significance of obstructing alignments between Mauna Kea and Hale‘akalā. Ex. F-01, 3. Neves’ contested case petition asserted that he has “maintained temple ceremonies within the [Mauna Kea] land areas, including Pu‘u Wekiu [and] . . . erected a ceremonial platform (lele) on the Pu‘u Wekiu. . . which has been desecrated and destroyed on at least two separate occasions.” Exhibit A-320, Neves CCH petition at 2. Neves’ asserts traditional and customary practices: . . . related to the use of Lake Waiau and other water sources and cultural sites in and around the summit area for the gathering of ice, snow, water, raw materials for adze making, depositing of the “piko” or umbilical cord in Lake Waiau, performing traditional astronomy, cosmology, navigation, continuing burial practices,

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performing solstice and equinox ceremonies, and conducting temple worship, in, among, and around the Mauna Kea summit Ice Age Natural Area Reserve, and Science Reserve[.] Exhibit A-320, Neves CCH petition at 2.

Neves is also a member of the Royal Order of Kamehameha I, Moku o Mamalahoa (ROOK I). Founded in 1860s, ROOK I is an unincorporated association of Hawaiian individuals descended from inhabitants of the Hawaiian islands prior to 1778 and who “have been actively exercising traditional and customary Native Hawaiian cultural and religious practice and ceremony[.]” Neves CCH petition at 1. Neves also explains how the TMT project would affect traditional Hawaiian religious practices; “a disturbance is *Hehi ana*, which means to trample on a covenant--a covenant is a holy agreement--sacred agreement--a religious agreement between Akua and yourself . . . Every time --building on Mauna Kea--we feel the `Aina being trampled upon--and our covenant assaulted--Aloha `Aina is assaulted.” Ex. F-01, Neves WDT at 4. Building the TMT on Mauna Kea is “desecration --in Hawaiian the word for desecration is Hauna `eli--which means also to be in contempt of court. But on Mauna Kea is means to have contempt for Akua's court--Akua's law (the Kanawai) which is codified in the `Aina. Ex. F-01, Neves WDT at 4.

E. Kalani Flores and B. Pualani Case were qualified as experts in their Hawaiian cultural practices related to Mauna Kea during the contested case hearings. K. Flores, Tr. Sept. 26, 2011, 6: 13-25; T. Lui-Kwan, Tr. Aug. 25, 2011, p. 28:9-15. Additionally, Mr. Flores was admitted as an expert in Hawaiian culture traditions that he teaches. Flores, Tr. Sept. 26, 2011, 7: 9-25, 8: 1-25, 9: 1-25, and 10: 1-23.

The Flores-Case `Ohana assert a “direct connection to ancestral akua (gods, goddesses, deities) and spirits of Mauna a Wakea[.]” In relation to this connection, the Flores-Case `Ohana

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“continues to exercise their traditional and customary Kanaka Maoli (Native Hawaiian) cultural, spiritual, and religious practices on Mauna a Wakea.” Exhibit A-318, Flores-Case ‘Ohana CCH petition at 2-3. Case is a Kanaka Maoli (Native Hawaiian) practitioner of hula and has had her own *halau hula* for over 25 years. Case and her *halau hula* continues to engage in cultural practices, protocols, and ceremony gatherings connected to the Mauna. B. Case, Tr. 8/25/11, p. 63:25, 64:1-3. Their petition asserted their “substantial interest” with the TMT project and past development on the Mauna Kea summit based on their spiritual and religious interests in their ancestral akua (gods, goddesses, deities) and spirits of Mauna a Wakea. Flores-Case ‘Ohana CCH petition at 3. If built, the TMT would cause a substantially new visual obstruction on Mauna a Wakea and would cause a visual and spiritual interference for the Flores-Case ‘Ohana when directing chants and prayers towards the mountain during cultural practices, protocols, and ceremony gatherings. B. Case, Tr. 8/25/11, p. 66:14-23.

Flores explained the historical connections between the Flores-Case ‘Ohana’s linkages with Mauna Kea deities and Hawaiian customary practices. “In the times of our ancestors, . . . one would consult with individuals such as *kahuna kuhikuhi pu‘uone* who specialized in protocols associated with the selection of such [building] sites.” These consultations would be supplemented with “consultation and direct communication between intermediaries and those of the ancestral realm associated with those places was an essential and integral part of the process so as not to create a physical and/or spiritual disturbance, disconnection, or imbalance between man and his *akua*, and between man and his environment.” Ex. G-01, 2. Because UHH has never engaged these consultations, they have initiated these disturbances, disconnections, and imbalances that thereby infringe on Flores-Case ‘Ohana’s spiritual practices on Mauna Kea. Flores-Case ‘Ohana specifically cites summit-related construction disturbances that have

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adversely impacted Poli‘ahu, Mo‘oinanea (guardian of Lake Waiau), and other guardians on the Mauna. Ex. G-01, 4-5 and 8-9. Members of the Flores-Case ‘Ohana have conducted ceremonies on Mauna a Wakea in concert with ancestral traditions of having a reverential relationship with the living Earth. The cultural perspective of *aloha ‘āina*, to have sincere love and respect for the land and nature, is at the heart of Hawaiian traditions. Ex. G-01, E. Flores WDT at 5, 12.

Viewplane alignments, solstice and equinox ceremonies, huaka‘i, navigation, piko-deposition, burials, ahu and kūahu worship, and other traditional practices engaged by Hawaiian Petitioners are not listed in HRS § 7-1, but the “continuous” exercise of customary rights to gather items not delineated in HRS §7-1 “without actual harm done to anyone” is protected under HRS § 1-1. *Public Access Shoreline Hawaii v. Hawaii County Planning Commission* (hereinafter "PASH"), 79 Haw. 425, 440 (1995). Art. XII, § 7 protections have been found to apply to ahupua‘a tenants (see *Kalipi v. Hawaiian Trust Co., Ltd.*, 66 Haw. 1 (1982)), but, as here, constitutional protections “may extend beyond the ahupua'a in which a native Hawaiian resides where such rights have been customarily and traditionally exercised in this manner.” *Pele Defense Fund v. Paty*, 73 Haw. 578, 620 (1992). Traditional uses of Mauna Kea are more akin to those of the Puna district, where Pele Defense Fund members established traditional access and gathering patterns of native Hawaiians that did not reside in the Puna region. 73 Haw. at 620. [The Hawai‘i Supreme Court’s findings were based on the Hawai‘i Third Circuit court’s findings of fact. See Findings of Fact and Conclusions of Law; Order, *Pele Defense Fund v. Estate of James Campbell*, Civ. No. 89-089 (Haw. Dist. Ct. Aug. 2, 1994).]

1) Expert Testimony Establish Petitioners’ Native Hawaiian Traditional and Customary Practices

Under *Hanapi*, expert testimony may establish Hawaiian Petitioner’s practices are customs that began before 1892. “A defendant may lay an adequate foundation by putting forth

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specialized knowledge that the claimed right is a traditional or customary native Hawaiian practice. This specialized knowledge may come from expert testimony, pursuant to HRE [Haw. Rules of Evid.] 702 (1993).” State v. Hanapi, 89 Haw.177, 187 (1998). HRE 702 allows that “a witness qualified as an expert by knowledge, skill, experience, training, or education may testify thereto in the form of an opinion or otherwise.” HRE 702 (1993). Hawai‘i courts also accept kama'aina witness testimony as proof of ancient Hawaiian tradition, custom, and usage in regard to right of way, land boundaries, and land disputes. [see, Hanapi 89 Hawai‘i 177, 187 (1998) citing Palama v. Sheehan, 50 Haw. 298 (1968); Application of Ashford, 50 Haw. 314, 316 (1968), and In re Boundaries of Pulehunui, 4 Haw. 239 (1879)]. The Hawai‘i Supreme Court has found “[a] kama'aina witness is a person familiar from childhood with any locality . . . This would also include "persons who were specially taught and made repositories of this knowledge.” [see, State by Kobayashi v. Zimring, 58 Haw. 106, 145 (1977)] Thus, Native Hawaiian Petitioners would also be considered kama‘āina witnesses and are able to establish their practices as traditional and customary through their own testimonies. UHH Ex. A-21, Appx. N at 13 and 34-38; Ex. A- 21, Appendix.

In PASH, PASH members established that activities not enumerated in HRS § 7-1 were entitled to the protection of article XII, § 7 by showing that the right was "customarily and traditionally exercised [on the ahupua'a at issue] for . . . purposes and possessed by . . . descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778[.]”[5]

Likewise, the University has not offered evidence specifically refuting Hawaiian Petitioners’ testimonial assertions that their cultural, spiritual and religious rituals and ceremonies on and near Mauna Kea, genealogical connections to Mauna Kea, and gathering of water and other items for cultural practices are customarily and traditionally exercised.

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Furthermore, the University recognized the five Petitioner witnesses, Mr. Paul Neves, Mr. Clarence Ching, Ms. Pua Case, Mr. Kalani Flores and Ms. Kealoha Pisciotta as experts to their cultural practices related to Mauna Kea. J. Handlin, Tr. 8/25/11, 28:9-15.

2) Evidence of Native Hawaiian Traditional and Customary Rights Exercised on Mauna Kea

In addition to the University recognizing the Native Hawaiian Petitioners as experts in their cultural practices relating to Mauna Kea, these facts are acknowledged in reports and documents prepared by University consultants that concluded the religious and cultural practices of Native Hawaiian Petitioners are traditionally and customarily exercised on Mauna Kea.

Exhibit A-309b, Appx. E; Ex. A-21, Appx. N & I.

In the TMT FEIS, the University identified the following practices on Mauna Kea as Native Hawaiian “traditional and customary cultural practices”:

- Performance of prayer and ritual observances important for the reinforcement of an individual’s Hawaiian spirituality, including the erection of ahu or shrines.
- Collection of water from Lake Waiau for a variety of healing and other ritual uses.
- Deposition of piko (umbilical cords) at Lake Waiau and the summit peaks of Maunakea.
- Use of the summit region as a repository for human burial remains, by means of interment, particularly on various pu‘u, during early times, and more recently by means of releasing ashes from cremations.
- Burial blessings to honor ancestors
- Belief that the upper mountain region of Maunakea, from the Saddle area up to the summit, is a sacred landscape – as a personification of the spiritual and physical connection between one’s ancestors, history, and the heavens.
- Association of unspecified traditional navigation practices and customs with the summit area.
- Annual solstice and equinox observations that take place at the summit of Kūkahau‘ula

Exhibit A-309 at 3-21.

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A similar list of Native Hawaiian traditional and customary practices on Mauna Kea was also outlined in the Cultural Impact Assessment Study (1999) prepared by PHRI for the UH IfA Ex. A-21, Appx. N at 33-39; Ex. A-309b, Appx. E at 33-39.

The FEIS also recognizes pilgrimages to the upper regions of Mauna Kea (huaka'i) for purposes of prayer, offerings, and spiritual resonance, are Hawaiian customary ceremonial practices, established by Hawaiian royalty in the late pre-contact and early post-contact period. TMT-FEIS at 3-17.

Native Hawaiian Petitioners provided written direct testimony that substantiated they conducted these afore-mentioned traditional and customary practices on Mauna Kea.

3) TMT would Burden Petitioners' Traditional and Customary Cultural and Religious Practices on Mauna Kea

The Report claims that Petitioners failed to establish that they conduct any practices at all in the location of the TMT Project or that their practices will be affected by the Project. On the contrary, the record confirms that the largest concentration of historic properties and cultural resources are found on the northern slope of Mauna Kea below the summit cones (in the Project area), and that 54% of those sites were shrines of a religious nature and placed in prominent locations with commanding views of the landscape. Ex. A-21, App. N, at 21.

The evidence confirms that the TMT Project will adversely impact the Mauna Kea Summit Region Historic District and Petitioners cultural and religious practices (including those that utilized the open spaces and view planes) exercised from the hundreds of historic and cultural shrines situated on the northern plateau (in and around the proposed TMT Project site) as well as those from the various pu'u including the cluster of summit cinder cones will be adversely impacted. Likewise, the evidence confirms that the TMT Project will adversely

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impact Petitioners cultural and religious practices from other sacred sites around the island looking towards Mauna Kea from sea level. Pet. FOF # 765-795, p. 105-109.

Petitioners testified that their viewplanes towards Haleakalā during ceremonies, as confirmed during the site visit, would be adversely impacted by the TMT Observatory. They testified their views from other important sacred sites around the island will be adversely impacted (i.e. Pu`ukohola Heiau, Pu`u in Waimea). They affirmed their practices from Pu`u Poliahu, the north facing side of the summit ridge of Kukahau`ula, and from other cultural sites on the northern plateau, will be adversely impacted, because the TMT Observatory would cause direct interference with various star paths. Pet.FOF 244-255, p. 33-34; Pet. FOF 756-827, p.104-113.

c. The Third *Hanapi* Factor

The Petitioners concur with HO COL 195 that the evidence established that the constitutionally-protected Native Hawaiian right to traditional and customary practices for which Petitioners seek protection have occurred on undeveloped or less than fully developed lands on Mauna Kea. Therefore, Petitioners have satisfied the third factor of the *Hanapi* analysis.

F. BLNR IMPROPERLY DELEGATED AUTHORITY

BLNR may not abdicate nor delegate their duty to oversee and manage the public lands trust nor the conservation lands of Hawai`i. Yet, BLNR has and continues to improperly delegate its oversight and management responsibilities for the Mauna Kea conservation district to the University, its lessee and the primary advocate for telescope construction. *See* Exhibit A-311, TMT CDUA at 3-13 (“OMKM is delegated the task of “implement[ing] the CMP and subplans”); Exhibit A-313, Staff Recommendations at 63 (DLNR staff recommended that

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OMKM “conduct twice-annual inspections of the TMT Project just for evidence of CDUP and TMT Management Plan violations.”).

1. *Ka Pa`akai* Standard Protects Against Improper Delegation

State agencies cannot delegate their authority and responsibility to third parties. See, *Ka Pa'akai O Ka `Aina v. Land Use Commission*, 94 Haw. 31 (2000). In *Ka Pa'akai*, the court found that the Land Use Commission (LUC) had violated its statutory and constitutional obligations when it approved a request to reclassify land without completing its own independent assessment of the impact to traditional cultural and natural resources and feasible actions to reasonably protect those resources. *Id.* Rejecting the LUC's claim that it had delegated the authority to prepare a management to the developer, the Hawai‘i Supreme Court stated:

The power and responsibility to determine the effects on customary and traditional Native Hawaiian practices and the means to protect such practices may not validly be delegated by the LUC to a private petitioner who, unlike a public body, is not subject to public accountability... . [I]nsofar as the LUC allowed [the private developer] to direct the manner in which customary and traditional Native Hawaiian practices would be preserved and protected by the proposed development -- prior to any specific findings and conclusions by the LUC as the effect of the proposed reclassification on such practices -- the LUC failed to satisfy its statutory and constitutional obligations. In delegating its duty to protect Native Hawaiian rights, the LUC delegated a non-delegable duty and thereby acted in excess of its authority.

Ka Pa'akai, 94 Haw. at 22-23.

The Court overruled the LUC’s decision because the LUC had illegally granted KD broad authority to “preserve and protect any gathering and access rights of Native Hawaiians.” *Id.* at 39. “Allowing a petitioner to make such after-the-fact determinations may leave practitioners of customary and traditional uses unprotected from possible arbitrary and self- serving actions on the petitioners' part. After all, once a project begins, the pre-project cultural resources and practices become a thing of the past.” *Id.* at 52. BLNR would commit the LUC’s same fatal error by seeking

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to delegate broad authority over Hawaiian cultural resources to UHH, the primary developer of the Mauna Kea conservation district.

In transactions over Mauna Kea, UHH attempts to sit on both sides of the table. On one side, the University facilitates telescope construction on Mauna Kea, going so far as to take on the interests of telescope owners as their own. At the same time on the other side, UHH claims to serve as “land manager” of “UH’s Mauna Kea Lands,” enforcing laws and protecting the resources destroyed by telescope construction. Exhibit A-301, UH CM at, P-7 (UHH will “[d]evelop and implement protocol of oversight and compliance with CDUPs”) and Exhibit A-301, UH CMP P-8 (UHH will “enforce conditions contained in Special Use permits”); Exhibit A-01 at 2. The purpose and function of these two sides of the table are mutually exclusive and cannot be fulfilled by one entity -- no matter how many aliases the University establishes. The awkward relationship between the University and TMT in the CDUA is only the most recent example of this deeply seeded conflict of interest.

HO’s FOFs 357-358 assume that BLNR may delegate its authority to UHH to regulate the reasonable exercise of Native Hawaiian cultural practice. UHH and/or its agents are not qualified to determine what is culturally appropriate or not. *See* Petitioners’ Response to UH FOF/COL at 64-65. (“Given the University’s conflicting roles on Mauna Kea, it is an improper delegation of authority for the BLNR to empower the University to make “management” decisions about the mountain’s resources and the practices that rely on them. *Ka Pa’akai*, 94 Haw. 1, 21-23 (2000). BLNR’s relationship to the University in this situation is notably similar to the illegal “wholesale delegation” of authority from the Land Use Commission to Ka’upulehu Development in *Kapa`akai*. Like Ka’upulehu Development, the University is the primary developer of the land, promising to implement protections for constitutionally protected practices after the proposed project is approved.

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It is an abuse of BLNR's discretion to trust the Applicant will protect traditional and customary practices once the project is approved."

2. BLNR has Sole Legal Obligation to Manage Conservation Lands

There is no dispute that the Mauna Kea summit area is designated a conservation district. Per Haw. Const. Art. XI, §2, HRS. §§205-2(e), 183C-2, 183C-3, and 171-3 (2010), and HAR §13-5, the sole entity authorized to manage conservation districts is BLNR. HO COL 236 mischaracterizes UHH's authority over conservation district lands.

Act 132 (2009) does not remove BLNR's responsibilities to the conservation district and therefore Petitioners' concerns with BLNR's performance in ensuring that fair market values are received for subleases under HRS §§ 171-17 and -18 remain. Neither Article X, section 5 of the Hawai'i State Constitution (which created the University of Hawai'i) nor Act 132, SLH 2009, permitting UH to make rules and regulation that apply to the "UH Managed Lands," amended the prevailing public land trust or conservation laws of the State. Haw. Rev. Stat. § 205, establishing conservation districts, directs BLNR to maintain jurisdiction and oversight over all conservation districts and makes clear that "except as specifically provided by this chapter and the rules adopted thereto, neither the authority for the administration of chapter 183C nor the authority vested in the counties under section 46-4 shall be affected." HRS § 205-15 (reference omitted). Section 205, was not amended by Act 132, SLH 2009. Likewise, HRS § 183C, which identifies the purpose of conservation districts, and HRS §§171-17, -18, which require fair market lease rent to be charged for the use of public trust lands, were also not amended by Act 132, SLH 2009.

Contrary to HO COL 236, neither Act 32 (2009) nor HRS § 304A-2170 changes BLNR's statutory *and* constitutional obligations to the conservation district and public trust lands more generally. Article XII, section 4 of the Hawai'i state constitution installs lands granted to the state by

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section 5(b) of the Admission Act (1959) – including Mauna Kea public trust lands – “shall be held by the State as a public trust for native Hawaiians and the general public.” Mauna Kea lands are public lands and conservation lands and the laws assigns BLNR the sole obligation to oversee and management them on behalf of the general public and Native Hawaiians. If this were not the case, the University would not need to apply for a conservation district use permit. Nothing in the State constitution, Haw. Rev. Stat. §§205 or 183C identify natural resource conservation as one of the purposes of the University of Hawai‘i System. The University’s constitutional mandate is public education. *See* Haw. Const. Art. X, §5, HRS §304A. Even with the recent amendments to Haw. Rev. Stat. §304A(2009), the University is not empowered to manage conservation resources. See, Act 132, SLH 2009, Exhibit B-16. The University seeks to overcome this limitation by forming multiple intermediary entities between the BLNR and UH Board of Regents (e.g. Office of Mauna Kea Management, Mauna Kea Management Advisory Board, Kahu Kū Mauna), but this is nothing more than puppetry, for all of these entities ultimately answer to the UH Board of Regents. None of these entities have any authority greater than that bestowed by that board. Thus, the BLNR is the only entity with jurisdiction over the Mauna Kea conservation district. For the BLNR to delegate any authority to the University is improper.

Moreover, in this situation, as we outlined above, the University’s actual interests in the mountain are more aligned with the developer in the *Ka Pa’akai* case, than with any state agency fulfilling statutory and constitutional obligations to protect public trust lands and manage conservation areas. The University profits from the exploitation of the Mauna Kea conservation district. Its pursuit of excellence in astronomy is in direct conflict with the purpose of the conservation district. Thus, the BLNR should heed the Court’s concern that “self-serving” implementation of a developer-controlled management plan could destroy important natural and

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cultural resources because “once a project begins, the pre-project cultural resources and practices become a thing of the past.” *Kapa`akai*, 94 Haw. at 52, 7 P.3d at 1089. If BLNR does not act to protect the cultural and natural resources of the Mauna Kea conservation district, they will be lost.

3. BLNR Failed to Satisfy the Three-Part *Ka Pa`akai* Standard

The Supreme Court’s ruling in *Ka Pa`akai* specifically directs agencies confronted with a decision that might affect the traditional and customary practices of Native Hawaiians to assess:

- “(1) the identity and scope of "valued cultural, historical, or natural resources" in the petition area, including the extent to which traditional and customary native Hawaiian rights are exercised in the petition area;
- (2) the extent to which those resources --including traditional and customary native Hawaiian rights -- will be affected or impaired by the proposed action; and
- (3) the feasible action, if any, to be taken by the LUC to reasonably protect native Hawaiian rights if they are found to exist.”

Id. at 47, 1084.

The record in this case is replete with examples of how the BLNR has failed to conduct this type of detailed assessment, opting instead to rely on promises from the developer that the traditional and customary practices of Native Hawaiians will be protected through “after-the-fact” decisions by the developer through the developer-controlled management plan(s). The most obvious example is found in the minutes of the February 25, 2011 BLNR hearing where the TMT CDUA was considered. Chairperson `Ailā asked Ms. Nagata, Acting Director of UH’s OMKM, by what process would the concerns of 32 cultural practitioners, who submitted testimony in opposition to the TMT proposal, be addressed. Ms. Nagata replied that she did not yet know, but that a process was being developed with the University’s Native Hawaiian advisory body, Kahu Ku Mauna, in compliance with the CMP. Shortly following this exchange, the BLNR voted unanimously to approve the TMT CDUA, subject to the outcome of this contested case hearing. See, Exhibit B-36.

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This is exactly the same mistake made by the LUC in the *Ka Pa`akai* case. Without specifically identifying the valued resources and related rights, the extent to which they may be harmed, and feasible actions necessary to protect them, the LUC relied on promises from the developer that its management plan would protect all traditional and customary practices of Native Hawaiians will be protected.

G. TMT VIOLATES THE RELIGIOUS FREEDOMS OF PETITIONERS

HO COL 204 at 110 / Pet. COL 373 at 120 allege, “[b]elief in an area’s religious sacredness does not make development of that area an unconstitutional infringement of religion, and does not give the believer a legal right to stop the development. Constitutional rights protect against unreasonable interference with religious practices; those rights do not protect against offenses to religious beliefs.” (citations omitted). HO COL 205 at 110-11/ Pet. COL 273 at 120 further assert, “To determine if there is an unconstitutional infringement of religious rights, the inquiry focuses on practices rather than beliefs: ‘[I]t is necessary to examine whether or not the *activity* interfered with by the state was motivated by and rooted in a legitimate and sincerely held religious belief, whether or not the parties’ free *exercise* of religion had been burdened by the regulation, the extent or impact of the regulation on the parties’ religious *practices*, and whether or not the state had a compelling interest in the regulation which justified such a burden.’”

HO COLs 204-205 are irrelevant to this contested case. The basis for this proceeding is UHH’s inability to demonstrate that the proposed TMT Project meets the eight criteria required for a CDUP. Petitioners introduced evidence of the Projects’ substantial and adverse impacts on Native Hawaiian religious and cultural practices because such impacts are evidence that HAR § 13-5-30(c)(4), amongst other criteria, cannot be satisfied. Further, Petitioners’ have introduced

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evidence of such substantial and adverse impacts on Native Hawaiian religious and cultural practices. *See* Petitioners' FOF/COL 244-255; 363-366; 741-746; 764; 763-766; 781-789; 791-796; 802; 822; 827.

The court holdings cited by HO/ UHH support rather than defeat the Petitioner positions. It is not that the TMT interferes with Hawaiians religious *beliefs*, it is that permitting the TMT will infringe on the free exercise of the Petitioner's religious practice. The TMT Project if built will hinder, obstruct, and even prevent religious practices performed from the traditional cultural properties, such as cultural sites located on the northern plateau, as well as those performed from the surrounding Pu`u (including from the northern facing pu`u of Kukahau`ula).

the present proceedings are distinguished from *Dedman*. In *Dedman*, the Court ruled that the petitioners "failed to show sufficient burden on their religious practices[.]" *Dedman v. Bd. of Land & Natural Res.*, 69 Haw. 255, 266, 740 P.2d 28, 35 (1987). In the instant case, Petitioners have made the requisite showing. *See* Petitioners' FOF/ COL 468. UHH's CMP states that the following must be maintained in order to avoid burdening Native Hawaiian religious and cultural practices:

- Access for gathering of cultural resources
- Access for families to visit iwi kupuna
- Access to scatter ashes
- Access through trails for hunting and gathering
- Access to deposit piko
- Access for traditional . . . religious and spiritual observances
- Access for pilgrimage, offerings, and prayers
- Access to Lake Waiau to gather water for religious and spiritual purposes.

Exhibit A-313 at 11.

These recommendations show the kinds of substantial burdens on Native Hawaiian religious and cultural practices consequent to increased construction on the Mauna Kea summit

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area. However, these substantial burdens support Petitioners' argument that the proposed TMT does not comply with HAR § 13-5-30(c)'s prohibition against conservation district land uses that have substantial, adverse impacts on natural resources, which includes cultural resources. *See* HAR § 13-5-2 (definition of "natural resources" includes "cultural, historic, . . . and archeological sites"). Proper foundation has been laid through testimonies, exhibits, and through references to expert treatises as well as through the University's own consultant documents demonstrating that Hawaiian Petitioner's cultural and religious practices are (1) constitutionally protected and (2) that Native Hawaiian traditional and customary cultural and religious practices have been harmed (by over industrialization of the summit area, that has resulted in significant, adverse and substantial impacts) but they will be further harmed if the TMT project is allowed to be built. *See* Part II, Detailed Exceptions to HO COL 194.

HO COL 208 at 111/ UHH COL 276 at 120 also mischaracterizes Petitioners' religious practices: "Petitioners concede that, in essence, their beliefs should give them veto power over any proposed land use on Mauna Kea. *See* Tr. 8/25/11 at 77 ("And you can ask, but we can also say, no, and we have a right to have that upheld."). The law does not support that view. The constitutional right to free exercise of religion "must apply to all citizens alike, and it can give to none of them a veto over public programs that do not prohibit the free exercise of religion." *Id.* at 452. "[G]overnment simply could not operate if it were required to satisfy every citizen's religious needs and desires." *Id.* Giving any objector the power to stop a project based upon his or her personal beliefs would violate the establishment clauses of both the federal and state Constitutions. *See* U.S. Const. amend. 1; Haw. Const. art. I, sec. 4."

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COL 208 misrepresents Petitioners' statements in order to find that they fail to comply with constitutional law. In response to UHH's identical misrepresentation, Petitioners earlier clarified the statement upon which UHH's misrepresentation is based:

We're fighting for our temple. We're also here to say, Mauna Kea belongs to the akua and then to the people of Hawai'i first. And you can ask, but we can also say, no, and we have a right to have that upheld. And that's where BLNR failed us, they said, yes, when they should have said no. Mahalo.

K. Pisciotta Tr. 8/25/11 at 78: 1-7.

Plainly read in context, Petitioner Pisciotta asserts that Native Hawaiians and the general public have rights as citizens and beneficiaries of Hawai'i's public trust to expect agencies, such as BLNR to protect those rights and public trust resources from harm. In no way does this assertion convey the proposition that Petitioners have "veto" power over development in Mauna Kea conservation district. This is further apparent in Pisciotta's other testimony:

- "In the rules you cannot have projects that have an adverse impact. You must preserve open space, viewplanes for the public to have a right to see without interference, our rights that belong to the public." Tr. K. Pisciotta, 8/25/11 at 77: 21-25.
- "We're here because of these rules, but we're here also because of the constitution of this state which holds the protection of the right of Native Hawaiians to practice their religion and culture, and because the public has rights." Tr. K. Pisciotta, 8/25/11 at 76: 15-19.
- "Now, these rights do not belong to residents of Pasadena, California. They do not belong to residents or citizens of other countries such as Japan, France, China, the United Kingdom who I used to work for before for 12 years. These rights belong to the public." Tr. K. Pisciotta, 8/25/11 at 76: 20-25.

HO COL 210 at 111/ UHH Proposed COL 278 at 121 is unsubstantiated by the voluminous evidence in the record concerning Native Hawaiian religious and cultural practices on the Mauna Kea summit area, which includes the TMT Project area. UHH

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conceded that the proposed TMT Project would impose a substantial adverse impact on the spiritual and sacred quality of Mauna Kea by:

- (a) degrading the integrity of the cinder cone;
- (b) adding a man-made structure to the northern plateau that would create a substantial visual disturbance;
- (c) placing employees in the northern plateau;
- (d) increasing the potential for accidental release of wastewater into the environment;
- (e) increasing the potential for accidental release of hazardous substances into the environment; and
- (f) generating dust and noise. Any one of these anticipated results of the TMT project being built would undermine the spiritual setting and sacred quality of Mauna Kea.

Exhibit Jt-8/A-308 at 3-29; Petitioners' FOF/COL 842-43.

Further, COL 210 fails to recognize specific evidence that the TMT will adversely impact Native Hawaiian traditional and customary religious ceremonies that involve view planes. *See* Exceptions to COL 196. Hawaiian Petitioners asserted specific interference with their traditional and customary religious practices consequent to the TMT Project. “[W]hen we speak of alignments being blocked, it means we cannot do ceremony in the way that we need to be a part of those alignments, because we are -- they are being physically and spiritually blocked. That in turn interrupts our ability to perform those ceremonies and other cultural practices.” Tr. 9/30/11 at 141:11-17; Petitioners' FOF/COL 756. “Mauna Kea is an ‘ahu, heiau, or a temple of supreme order, and the reason for that is because it was created in the first time of our chant of our creation when akua gave birth to the ‘āina, and codified the laws of aloha in the land. Tr. K. Pisciotta, 9/26/11 at 35:13-21; Petitioners FOF/COL 299. The Report’s concern with whether Petitioners’ area of practice includes the TMT project area ignores Petitioners’ many assertions that the entirety of

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Mauna Kea is spiritually significant and that all construction thereon infringes on their area of practice.

Contrary to COL 210, the TMT would interfere with these practices and there is no basis for concluding that “the TMT Project will not threaten them [Native Hawaiian religious practitioners] with sanctions if they engage in religiously motivated conduct.” HO COL 210. Provisions for Native Hawaiian religious practices on four days during which observatory activity will be “minimized” suggest that religious conduct will not be provided for at other times or in ways that exceed the minimization of observatory activities. Exhibit A-308 TMT-FEIS at S-12. No conditions or plans have been introduced that state that Native Hawaiian religion-motivated conduct will not be sanctioned.

H. VIOLATIONS OF SURETY AND LEASE REQUIREMENTS

1. BLNR Must Enforce Lease Provisions

The Mauna Kea Science Reserve was established in 1968 by general lease S-4191, which was signed between the Department of Land and Natural Resources and the University. Exhibit B-01. This lease governs the scope of activities -- consistent with conservation district rules -- that UHH may engage in on this property. The terms of this lease have not been fully enforced.

An observatory. The 1968 lease authorizes the University to erect “an observatory.” The remainder of the land to serve as “a buffer zone.” This lease has never been modified. Currently, thirteen subleases for telescope facilities on the land leased to UHH in the Mauna Kea conservation district. *See* Exhibit. Jt-1/A-301 at 6-1; Nagata, Tr. 8/16/2011 at 208:18-22; Exhibits B-3, B-4, B-5, B-6, B-7, B-8, B-9, B-10, B-11. If the actual number of telescope structures is counted (optical and radio telescopes) there are actually 18 telescopes, in addition to the many support structures on the mountain. HO COLs 229-230 mischaracterize the General

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Lease to allow any amount of observatories and reject Petitioners' reasonable observation that by "an observatory . . . it is likely that the authors of the General Lease used the term 'an observatory' to mean a single observing building containing a single telescope device. This interpretation is more consistent with other terms of the lease that call for a 'buffer zone' between the observatory and other activities on the summit." Petitioners' Opening Brief at 39-40.

Lake Waiau. The lease terms provide that "no activity shall be permitted which will result in the pollution of the waters of Lake Waiau." We are concerned that the numerous cesspools and accidental spills of hydraulic fluid, aluminizing fluid, diesel fuel, and more, over time may have polluted Lake Waiau. BLNR should test the lake to ensure compliance with the laws protecting Hawaii's waters and the terms of this lease. *C.f.* HO FOFs 214-216, 453-457.

Good order and condition. The lease requires the University to return the Mauna Kea Science Reserve to BLNR in good order and condition. Our concern is that the extensive construction activity on the mountain will cause irreparable harm. Indeed, the summit is now 38 feet shorter due to telescope construction.

Abide by all laws. The lease requires the University to "observe and comply" with all laws, ordinances, rules and regulations governing the Mauna Kea Science Reserve. Yet, UH has facilitated the construction of telescopes without CDUA permits, destroyed historic sites, and interfered in traditional and customary practices of Native Hawaiians.

Objects of Antiquity. The lease states the University shall not "damage, remove, excavate, disfigure, deface or destroy any object of antiquity." Yet, the University has assisted telescope owners in destroying the traditional cultural property of Kukahau`ula.

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Lease ends in 2033. The lease ends in 21 years on December 31, 2033. All telescopes are to be decommissioned and removed by this date. Yet, the University is advocating for and BLNR is considering approval of a CDUA for a telescope with an anticipated operational lifespan of 50 years. The University/TMT Corporation has not committed to decommissioning the telescope before the close of the lease.

2. BLNR Fails to Collect Rent; Violates HRS §171-17

The BLNR goes further turning a blind eye to the needs of the taxpayers of Hawai'i by failing to charge the telescope owners fair-market rent for the use of public lands. While the University may use public lands for free as provided for under 5(f) of the Admissions Act, foreign entities do not enjoy such an entitlement. The majority of the telescopes on Mauna Kea are owned and operated by entities foreign to the State of Hawai'i. CMP, Exhibit A-301 at 6-2. Where the qualifications for 5(f) purposes have not been met, BLNR must assess the fair market value of the land and charge for its use. HRS §171-17 and -18. However, the BLNR has allowed these foreign entities to pay one dollar or less in rent each year. Exhibits B-3 through B-12.

At the same time, BLNR claims to lack the funds to pay for proper management of conservation districts. DLNR staff avers: "Environmental protection costs money. Protecting historic and cultural resources costs money. Education costs money. Maintaining public access and ensuring the public safety costs money." Staff Recommendations, Exhibit A-313 at 62. The Petitioners agree! Unfortunately, BLNR's failure to collect rent over the last 40 years has resulted in an agency unable to meet its most basic legal obligations. This self-inflicted poverty is being used to justify an unauthorized pay-to-degrade regime for conservation district use

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permits. Instead, the BLNR should independently assess the fair market value of telescopes at the preeminent location of astronomy and charge appropriate rent.

The University contends that the TMT will pay a substantial (as-yet-unknown) amount of rent to the OMKM, but this “rent” does not comport with the requirements under HRS §171-17, because it is not based on an independent assessment of the market value of the land. Rather, this “substantial amount” whatever it might be is solely what the TMT is willing to pay for use of our public land. Moreover, this rent is also not being deposited into the general fund as the law requires, but will instead be paid to the OMKM. TMT CDUA, Exhibit A-11 at 2-2; HRS §171-18. For this reason, HO COL 231 is false and unsubstantiated. Petitioners’ correctly contend that the fair market value of public lands must be assessed and charged whether UHH or BLNR is administering them. Exhibit A-202 at 41 (*citing* HRS §§ 171-17 and -18). Because UHH is proposing to sublease public lands to the TMT Corporation, UHH must establish that it will comply with statutes applicable to the leasing of public lands. The annual lease rent paid by existing telescope owners/operators is \$1 or less. *See* Exhibits B-2, B-3, B-4, B-5, B-6, and B-7. These sublease rental prices violate several statutory provisions for public lands.

Haw. Rev. Stat. § 171-17(b) provides that the lease rental of public lands “shall be no less than the value determined by: (1) An employee of the board qualified to appraise lands; or (2) A disinterested appraiser or appraisers whose services shall be contracted for by the board[.]” *Id.* Haw. Rev. Stat. § 171-17(d) further provides a similar procedure for

determining the “fair market rental” price where a lease of public lands is reopened. *Id.*

Haw. Rev. Stat. § 171-18 directs that income from the lease or other disposition of “ceded” (public trust) lands shall be held as a public trust. *Id.*

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The BLNR has a duty to the general public (and Native Hawaiians) to collect this rent on their behalf under section 5(f) of the Admissions Act and other related legal provisions. BLNR's failure to collect this rent means people of Hawai'i are subsidizing the astronomy programs of foreign entities on their own lands. Fair market lease rental amounts must be assessed, collected, and deposited into the Public Trust Lands Fund to be used for specified public trust purposes, regardless of provisions for UHH to also charge other rental amounts under HRS § 304. Contrary to HO COL 231, Petitioners' claim is not moot, premature, or unripe nor solely directed at BLNR. Petitioners' contention is appropriately directed at UHH's proposal to sublease public trust lands as an integral part of the TMT Project.

I. CLARIFICATIONS ON REPORT'S MISINTERPRETATIONS

1. TMT Economic and Educational Activities

HO FOFs 210-216, 468-473 are irrelevant and immaterial to criteria for approving the CDUP. Regulations governing CDUA approval do not provide for the consideration of the economic and educational benefits of a proposed land use. See, HAR §13-5-30(c). The proposed Community Benefits Package (CBP), The Hawai'i Island New Knowledge Fund (THINK), and the Workforce Pipeline Program (WPP) offer remedies for economic development that are irrelevant and immaterial to the decision approve the CDUP.

Each of HO FOFs 468-473 improperly weigh the potential economic benefits of granting UHH's CDUA against substantial adverse impacts on natural resources in the conservation district themselves. Economic benefits do not constitute public "welfare."

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DLNR's Conservation District Review Project Report, which discussed the development of applicable conservation district rules, directly undermines the interpretation of "welfare" to mean employment and community benefits packages. DLNR's Report states that "[t]he concept of *welfare* was added [to the conservation district purpose] to include the notion of aesthetics -- preserving Hawai'i's unique natural beauty." Exhibit B-34 at 16 (emphasis in the original). Contrary to UHH's assertions, an interpretation of "welfare" in HAR chapter 13-5 need not resort to complicated case law to ascertain its intended meaning because the drafters of the conservation district rules specifically explained what they meant by "welfare[.]" Criterion Eight thus intends that the public welfare will be served by conserving natural beauty in the conservation district, as opposed to using conservation lands for economic development.

DLNR's Report further clarifies that a Project's "public benefit" cannot establish its eligibility for a CDUP and notwithstanding its impacts on the conservation district. Such an argument was specifically contemplated in the drafting of conservation district rules in 1993. Prior to 1993, Title 13, Chapter 2, HAR included for all conservation district subzones a permitted use entitled "governmental use not enumerated herein where public benefit outweighs any impact on the conservation district." This provision was eliminated because it was "widely viewed by the private sector as a major loophole -- one which has resulted in some questionable land uses in sensitive resource areas." Exhibit B-34 at 30. The drafters of Hawai'i's conservation district rules thus intentionally determined not to allow for consideration of "public benefits" -- even where carried out by governmental actors -- that would outweigh conservation district purposes.

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2. TMT Scientific Value

Regulations governing the approval of CDUA for land uses are clear. The BLNR “shall apply” the eight elaborated criteria “[i]n evaluating the merits of a proposed land use[.]” HAR §13-5-30(c). Whether a proposed land use forwards astronomy science research is not considered by these criteria and is therefore irrelevant and immaterial to the decision to approve a CDUP. Therefore, HO FOFs 202-205 are irrelevant and immaterial to criteria for approving the CDUP.

III. CONCLUSION

As the Applicant and DLNR staff admit, the TMT Project would contribute to the substantial, significant, and adverse impact that astronomy development is inflicting on Mauna Kea. The TMT Project would increase and contribute to adverse cumulative impacts and cannot satisfy the permit requirements. Thus, approval of the TMT CDUA would be a violation of conservation district regulations, the Public Trust Doctrine, and an abuse of BLNR’s discretion. Moreover, because the CMP, relied upon by the Applicant to justify construction of the TMT Project, failed to meet the basic requirements for a comprehensive management plan under HAR §13-5-24, it cannot serve as a basis for any further development in the Mauna Kea conservation district. For the reasons and arguments presented, the Petitioners respectfully urge the Board of Land and Natural Resources to revoke the TMT CDUP HA-3568.

Mauna a Wākea remains sacred.

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Six Petitioners

Kealoha Pisciotto, Mauna Kea Anaina Hou
Deborah J. Ward
E. Kalani Flores & B. Pualani Case, Flores-Case ‘Ohana
Clarence Kūkauakahi Ching
Kumu Hula Paul Neves
Marti Townsend, KAHEA

BOARD OF LAND AND NATURAL RESOURCES
STATE OF HAWAII

In Re Conservation District Use Permit	)	DLNR File No. HA-11-05
Application HA-3568 for the Thirty Meter	)	(CDUA HA-3568)
Telescopes on the Northern Plateau in the)	
Mauna Kea Conservation District, Ka‘ohe,	)	PETITIONERS’ COMBINED NARRATIVE
Hamakua District, Hawai‘i TMK (3) 4-4-	)	EXCEPTIONS TO THE HEARING
015:009	)	OFFICER’S FINDINGS OF FACT,
	)	CONCLUSIONS OF LAW, AND DECISION
	)	& ORDER; DETAILED EXCEPTIONS TO
	)	HEARING OFFICER’S FINDINGS OF
	)	FACT, CONCLUSIONS OF LAW, AND
	)	DECISION & ORDER; CERTIFICATE OF
	)	SERVICE
)	

DETAILED RESPONSES TO THE HEARING OFFICER’S FINDINGS OF FACT,
CONCLUSIONS OF LAW, AND DECISION AND ORDERS

I. INTRODUCTION

Substantive portions of the record have not been adequately consulted in the Hearing Officer’s (HO’s) Report of November 30, 2012 (HO Report or Report). Petitioners have compiled the following specific, detailed grounds for exceptions taken to HO’s findings of fact (FOFs), conclusions of law (COLs), and Decision and Orders (DnO). Petitioners’ Detailed Exceptions incorporate the full record of the contested case proceedings and consequently present a more accurate view of the facts, conclusions, and decisions supported by the record.

The order of the Detailed Exceptions does not indicate the relative importance of each exception. Instead, the Detailed Exceptions to HO’s FOFs, COLs, and DnOs are numbered and arranged in the same order utilized in HO’s Report to facilitate reference between this document and Petitioners’ Narrative Exceptions.

Parties

1. Petitioners object and take exception to HO FOF 1 at 2.

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FOF 1 omitted critical information regarding the responsible parties to the Conservation District Use Application (CDUA). For example, the TMT Corporation is not included as a Party yet they are the developer. The omission in this case is objectionable because the Board of Land and Natural Resources (BLNR or Board) has no way of knowing who is legally and fiscally responsible for this project. Who is responsible if the Thirty Meter Telescope (TMT) is only half built or the University of California (UC) system cannot afford to complete the project? Petitioners reassert by reference Petitioners' FOF/COL at 5-7.

2. Petitioners object and take exception to HO FOF 2 at 2.

FOF 2 omits critical information relating to Ms. Townsend and KAHEA. Omissions are objectionable because there is substantial and relevant information that goes to the **nature and extent of petitioner's interest that may be affected by Board Action**. Petitioners therefore reassert by reference Petitioners' FOF 92-98 at 13-14.

3. Petitioners object and take exception to HO FOF 3 at 2.

FOF 3 omits critical information relating to MKAH/Ms. Pisciotta. Omissions are objectionable because there is substantial and relevant information that goes to the **nature and extent of petitioner's interest that may be affected by Board Action**. Petitioners therefore reassert by reference Petitioners' FOF 37-45 at 7-8.

4. Petitioners object and take exception to HO FOF 4 at 2.

FOF 4 omits critical information relating to Mr. Ching. Omissions are objectionable because there is substantial and relevant information that goes to the **nature and extent of petitioner's interest that may be affected by Board Action**. Petitioners therefore reassert by reference Petitioners' FOF 72-77 at 11-12.

5. Petitioners object and take exception to HO FOF 5 at 2.

FOF 5 omits critical information relating to Mr. Flores and 'Ohana. Omissions are objectionable because there is substantial and relevant information that goes to the **nature and extent of petitioner's interest that may be affected by Board Action**. Petitioners therefore reassert by reference Petitioners' FOF 78-91 at 12-13.

6. Petitioners object and take exception to HO FOF 6 at 4-5.

FOF 6 omits critical information relating to Ms. Ward. Omissions are objectionable because there is substantial and relevant information that goes to the **nature and extent of petitioner's interest that may be affected by Board Action**. Petitioners therefore reassert by reference FOF Petitioners FOF 51-71 at 9-11.

7. Petitioners object and take exception to HO FOF 7 at 2.

FOF 7 omits critical information relating to Mr. Neves. Omissions are objectionable because there is substantial and relevant information that goes to the **nature and extent of petitioner's interest that may be affected by Board Action**. Petitioners therefore reassert by reference Petitioners' FOF 46-50 at 8-9.

Procedural History

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9-17. Petitioners object and take exception to HO FOF 9-17 at 3.

FOFs 9-17 contain omissions relating to the procedural and due process history. HO omits, for example, Petitioners objections to BLNR voting to approve TMT CDUA permit prior to reviewing Petitioners standing and prior to having an opportunity to be heard without bias. Petitioners filed timely petitions for a contested case hearing (CCH), and while a CCH was held, the Petitioners were not given the opportunity to present evidence and to be heard *prior* to decision making by the BLNR. Approving a CDUA permit prior to hearing all of the evidence burdens the Petitioners by way of having to compel the decision makers to change their minds rather than having them open to hearing all information and seeing all evidence prior to making an informed decision. *See* Petitioners' FOF/COL 126-138.

12. Petitioners object and take exception to FOF 12 at 3.

FOF 12 is incomplete because it fails to acknowledge that BLNR infringed on Petitioners' due process rights by approving the TMT CDUA prior to conducting the CCH. Petitioners' earlier argued that BLNR's "approv[al] of the TMT CDU prior to conducting a contested case hearing . . . violated [Petitioners'] due process rights, potentially shifting the burden of proof, and thereby forcing us to have to change BLNR's mind, rather than BLNR listening with an open mind to hear all evidence." HO COL 225 *citing* K. Pisciotta Tr. 9/30/11 at 130: 18-24. FOF 12 fails to acknowledge the issue: Petitioners must now overcome the presumption, however preliminary, that BLNR will approve the CDUA. Petitioners' due process rights are violated because BLNR is a decisionmaker and gave the appearance of having "prejudged" the issue. *Cinderella Career & Finishing Sch., Inc. v. F.T.C.*, 425 F.2d 583, 590 (D.C. Cir. 1970).

The February 25, 2011 BLNR vote on the TMT Project was made *prior* to any decision on Petitioners' request for a contested case. The vote thus prejudiced the contested case. Further, to treat the vote as valid and proceed to address the standing of Petitioners is the equivalent of issuing a final judgment in a civil case before all the parties are admitted or the evidence presented. It is contrary to the very purpose of a hearing, for it turns the Petitioners' request into a motion for reconsideration by the decision-maker which has just made up its mind and issued its opinion.

13. Petitioners object and take exception to FOF 13 at 3.

FOF 13 is incomplete. Mo'oinanea, et al., was also amongst the list of written requests filed for a contested case hearing. Exhibit A-318.

18-19. Petitioners object and take exception to HO FOF 18-19 at 4-5.

FOF 18-19 omits critical information relating to Ms. Pisciotta. Omissions are objectionable because there is substantial and relevant information that goes to the **nature and extent of petitioner's interest that may be affected by Board Action**. Petitioners therefore reassert by reference Petitioners' FOF/COL 37-45 at 7-8.

20-21. Petitioners object and take exception to HO FOF 20-21 at 4.

FOF 20-21 omits critical information relating to Ms. Townsend and KAHEA. Omissions are objectionable because there is substantial and relevant information that goes to the **nature and extent of petitioner's interest that may be affected by Board Action**. Petitioners therefore reassert by reference Petitioners' FOF/COL 92-98 at 13-14.

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22. Petitioners object and take exception to HO FOF 22-23 at 4.

FOF 22-23 omits critical information relating to Mr. Ching. Omissions are objectionable because there is substantial and relevant information that goes to the **nature and extent of petitioner’s interest that may be affected by Board Action**. Petitioners therefore reassert by reference Petitioners’ FOF/COL 72-77 at 11-12.

23-24. Petitioners object and take exception to HO FOF 23-24 at 4.

FOF 23-24 omits critical information relating to Mr. Neves. Omissions are objectionable because there is substantial and relevant information that goes to the **nature and extent of petitioner’s interest that may be affected by Board Action**. Petitioners therefore reassert by reference Petitioners’ FOF/COL 46-50 at 8-9.

25. Petitioners object and take exception to HO FOF 25 at 4-5.

FOF 25 omits critical information relating to Ms. Ward. Omissions are objectionable because there is substantial and relevant information that goes to the **nature and extent of petitioner’s interest that may be affected by Board Action**. Petitioners therefore reassert by reference Petitioners’ FOF/COL 51-71 at 9-11.

26-30. Petitioners object and take exception to HO FOF 26-30 at 5.

FOF 26-30 omits critical information relating to Mr. Flores and ‘Ohana. Omissions are objectionable because there is substantial and relevant information that goes to the **nature and extent of petitioner’s interest that may be affected by Board Action**. Petitioners therefore reassert by reference Petitioners’ FOF/COL 78-91 at 12-13.

Motions

62. Petitioners object and take exception to HO FOF 62 at 10.

FOF 62 is inaccurate and unsubstantiated. Petitioners’ supplied sufficient evidence to disqualify Paul Aoki of the Ashford & Wriston law firm from serving as HO in this contested case.

In *Mauna Kea Anaina Hou v. BLNR*, Civ. No. 4-1-397, 7 (3rd Cir. Haw. Jan. 19, 2007), many of the same petitioners in the present contested case successfully appealed a previous contested case overseen by Michael Gibson of Ashford & Wriston. The contested case overseen by Michael Gibson concerned substantially the same subject matter (further development in the Mauna Kea Conservation District). Persons serving in a judicial capacity “shall” disqualify themselves under circumstances that include: “[w]here in private practice he served as lawyer in the matter in controversy, or a lawyer with whom he previously practiced law served during such association as a lawyer concerning the matter, or the judge or such lawyer has been a material witness concerning it.” 28 U.S.C. § 455(b)(2) (Disqualification of Justice, Judge, or Magistrate Judge). Because Gibson served as HO concerning the same matter and is a “lawyer with whom [Aoki] previously practiced law [who] served during such association as a lawyer concerning the matter[.]” Aoki was required to disqualify himself as a HO to the present contested case.

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Further, Aoki's impartiality might be reasonably questioned. 28 U.S.C. § 455(a) ("[a]ny justice, judge, or magistrate judge of the United States shall disqualify himself in any proceeding in which his impartiality might reasonably be questioned"). Aoki is a partner in the law firm Ashford & Wriston which specializes in representing large landowners and developers and particularly in defending those clients against claims based on constitutionally protected environmental and Native Hawaiian rights. Ashford & Wriston attorneys have participated in such seminal cases as: *In re Water Use Application*, 94 Hawai'i 97, 9 P. 3d 409 (Haw. 2000); *In re Water Use Application*, 96 Hawai'i 27, 25 P. 3d 802 (Haw. 2001); *Ka Pa'akai O Ka 'Aina v. Land Use Commission*, 94 Hawai'i 31, 7 P.3d 1068 (2001); *Pele Defense Fund v. Paty*, 73 Haw. 578, 837, P. 2d 1247 (1992). The present contested case concerns controversies between environmental and Native Hawaiian interests and land developers and thereby implicates the business interests of Aoki's law firm, creating a situation of objective bias and an appearance of impropriety. The appropriate remedy for any bias, conflict of interest, or appearance of impropriety is the recusal or disqualification of the tainted adjudicator. *See State v. Ross*, 89 Hawai'i 371, 376-77, 974 P.2d 11, 16-17 (1998).

Contrary to FOF 62, Petitioners MKAH, Pisciotto, Ward, Ching, Flores-Case 'Ohana, and Neves supplied sufficient evidence to support their motion to disqualify Aoki as a HO. *See* MKAH, Pisciotto, Ward, Ching, Flores-Case 'Ohana, and Neves' Motion for Reconsideration Regarding Request for Appointment of a New Hearing Officer (May 9, 2011) (requesting BLNR Chair to reconsider "the appointment of Mr. Aoki as Hearing Officer for this contested case based on the grounds of potential conflict, bias and/or the appearance of impropriety.").

69-72. Petitioners object and take exception HO FOF 69-72 at 11.

FOF 69-72 HO improperly relied on the Federal Register, which the Applicant University of Hawai'i at Hilo (Applicant, University, or UHH) withdrew from the record, and failed to admit the declaration of Deborah J. Ward that the Petitioners wanted admitted with the Federal Register. HO did not include Petitioners' objection to the admission of the proposed exhibit without the opportunity for a hearing. *See* Exhibit D-100.

The Site Visit

FOF 79-80. Petitioners object and take exception to HO FOF 79-80 at 12.

FOFs 79-80 are incomplete. These findings of fact omit relevant information and downplay the significant adverse impact the project would have on the view plane. First, FOFs 79-80 omit that currently, the Northern Plateau (Area E) is a wide open, intact natural area. *See* Exhibit A-320 at 3-100, figure 3-23. This view is one of the last remaining open view planes left on Mauna Kea. The HO omitted that the red helium balloon represented the height of the proposed TMT project (187 feet) and that the height of the proposed telescope exceeds the maximum height limit of a building according to the Hawai'i County building code. Haw. County Code, chap. 25, secs. 25-5-33 (a) & (b) (1999) (Height limit. (a) In areas in the County outside of the City of Hilo, the height limit in the RM district shall be forty-five feet. (b) In the City of Hilo, the height limit in the RM district shall be one hundred twenty feet).

The HO also omits the fact that viewing the red balloon from the north edge of Kūkahau'ula, went directly in front and right up the middle of Haleakalā on Maui, a culturally significant view

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plane for practitioners. Neves WDT at 3 (“I will not be able to from these places if the TMT is built because it will be in the way—it will be right in the middle of the views from Mauna Kea to Haleakalā”). The red balloon demonstrated that the proposed TMT project being a three dimensional building with a footprint of over five acres would be larger than any other structure on the mountain. These facts naturally lead to the conclusion that the proposed TMT project would have a significantly adverse impact on an area otherwise open and free of obstructions.

Conduct of CCH

84. Petitioners object and take exception to HO FOF 84 at 12.

FOF 84 is inaccurate. The transcripts do not that show that Exhibits A-201 or A-203 were entered into evidence. Also, HO overruled Petitioners’ objection to the admission of Exhibit A-204 into the record. *See* Tr. 9/30/11 at 6-8.

89. FOF Petitioners object and take exception to HO FOF 89 at 13.

FOF 89 is incomplete and misleading because it omits relevant information and objections. Petitioners objected to the after the fact voir dire process for this witness (Mr. Nance). The Applicant offered to have this witness qualified as an expert only after he had already testified, and after the Applicant attempted to the claim this witness as an expert and was challenged by all the Petitioners did the HO open this witness up for the voir dire process. *See* Tr. 8/18/11 at 10-17.

After the untimely voir dire process, which included specific questions regarding Mr. Nance’s expertise and knowledge about Mauna Kea hydrology including ground water flows etc., all Petitioners objected to Mr. Nance being qualified as an expert in hydrology, and the subareas of groundwater, surface water development, hydraulics and water system design, flood control and drainage. Because of his lack of knowledge, research or studies of ground water flows of Mauna Kea Petitioners object to qualifying him as an expert on the hydrology of Mauna Kea. *See* Tr. 8/18/11 at 10-17.

92. Petitioners object and take exception to HO FOF 92 at 13.

FOF 92 is inaccurate and misleading and should include the following corrections (revision underlined):

On the second ground, UHH objected because “it just doesn't sound like an area in which a separate qualification as an expert is warranted.” Mr. Flores’ response was that according to Hawai‘i Rules of Evidence, Rule 702, he was qualifying himself as expert witness through his knowledge, skills, and experience in this area as presented. After argument by Petitioners and UHH, HO denied Mr. Flores’s request to be qualified as an expert in the review and assessment process of Hawaiian cultural and historic resources on the opinion that it was “too specific a category”. This ruling was rendered by HO even though the Applicant’s witness, Sara Collins, *was qualified as an expert in the specific category of state historic preservation review that was beyond her expertise.* Tr. 9/26/11 at 7-13, 16-18.

Irrelevant Evidentiary Dispute

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97-106. Petitioners object and take exception to HO FOF 97-106 at 14-15.

HO FOF 97-106 are irrelevant and misleading. The HO highlights this evidentiary dispute, while ignoring the many other evidentiary issues raised throughout the course of the hearings.

The evidentiary dispute highlighted in the HO's report has no effect on the analysis of the issues or the outcome of the decision. A comparison of the images shows that there is no qualitative difference between the images entered into evidence by Petitioners and the images entered into evidence by Applicants. A-204 is cited only twice in the HO's report as part of the unsupported claim that the view of Haleakalā from the northern ridge of Kūkahau'ula is either a) not important to a significant number of viewers or b) already obstructed by modern astronomy facilities. See HO FOF 378, 380. The University's own EIS demonstrates that the viewplane to Haleakalā is important and worthy of protection, and that it is currently an intact, natural landscape -- indeed one of the last left in the summit region. This is further supported by other images found in Exhibit A-204, including pages 18, 27, 28, and 46. All of these images demonstrate that there are no telescope facilities on the northern plateau of Mauna Kea (i.e., Area E). Making clear that when people stand on the north-facing ridge of Kūkahau'ula, with the two Keck and Subaru telescopes to their back, they can have an unobstructed view of Haleakalā and everything to the north of Hawaii Island. See *infra*, exceptions regarding the substantial adverse impact to the culturally significant viewplanes from Mauna Kea.

This discussion of the dispute over A-204 has no effect on the outcome of this hearing. It appears to only serve the purpose of casting doubt on the Petitioners' good faith in introducing their evidence, which is not in dispute.

Telescope Construction on Mauna Kea

110. Petitioners object and take exception to HO FOF 110 at 16.

HO FOF 110 is incomplete. As land previously held by the overthrown Hawaiian Kingdom and government, Mauna Kea is held in trust by the state for Native Hawaiians and the people of Hawai'i. Haw. Const. art. XII, section 4.

111. Petitioners object and take exception to HO FOF 111 at 16.

HO FOF 111 is misleading. This statement is evidence of the effective subdivision of the Mauna Kea Conservation District by the University in order to intensify land use inside the 525-acre Astronomy Precinct. UH has drawn arbitrary maps to describe claims to lands leased from the BLNR. See Exhibit A- 311 CDUA p. 75-79 ref. MK MP2000. Areas such as the "Astronomy Precinct" and the "UH Management Area" are within the Mauna Kea Conservation District. Per HRS §205-2, the Land Use Commission (LUC) is the state agency tasked with not only establishing conservation districts but that holds the sole power to determine the boundaries of said districts. The Mauna Kea Conservation District was adopted in 1961, but the LUC never created either an "Astronomy Precinct" or a "UH Management Area."

112. Petitioners object and take exception to HO FOF 112 at 16.

FOF 112 is misleading. All references to decommissioning of the TMT or other telescopes should be removed from the findings of fact and conclusions of law because the

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decommissioning of telescopes is not the subject of this conservation district use application. *See* Exhibit A-311 at 1-1, “Detailed Description of Proposed Use.” The CDUA before the Board concerns solely the construction of the Thirty Meter Telescope; removal of this or any other structure on the mountain is the subject a separate application process. Promises that there will someday be fewer telescopes on the mountain are not enforceable under this application as written and therefore should not be a factor in the BLNR’s decision-making.

117-119. Petitioners acknowledge admissions in HO FOF 117-119 at 18.

FOF 117-119 concede that the cumulative impact of telescope construction on the resources of Mauna Kea is substantial, significant, and adverse. The resources adversely affected include: natural, cultural, visual, archaeological, historic, geological, soil, and slope stability. Exhibit A-309, TMT EIS, at 3-214 to 3-219. This is an important fact at the root of the issue before the BLNR.

HAR 13-5-30(c)4, *see infra*, mandates that land uses in the conservation district “will not cause substantial adverse impacts to existing natural resource within the surrounding area, community, or region.” The University’s and the TMT Corporation’s own analyses concede that the resources -- which are legally mandated not to be adversely impacted -- are, in fact, currently in peril due to the construction of telescopes in the district. UHH has presented no evidence that, even with the proposed mitigation measures, the TMT would not exacerbate the currently unlawful state of substantial adverse impact to resources on Mauna Kea. Exhibit A-309 FEIS Vol. 2 at 17. As such, the CDUA for the TMT cannot be legally approved.

123-30. Petitioners object and take exception to HO FOFs 123-30 at 19-20.

FOFs 123-130 are misleading. These findings obfuscate the inherently conflicted interests of the University in building a competitive astronomy program by encouraging telescope construction on Mauna Kea while also serving the role of protecting, preserving, and enhancing the cultural and natural resources of the MKSR. The University has demonstrated that it cannot do both, as evidenced by the fact that the telescopes on Mauna Kea are currently causing substantial adverse impacts to the resources of the conservation district; something that the law specifically prohibits.

An effective management plan has established timelines, benchmarks to evaluate effectiveness of outcomes, effective DLNR oversight and consultation, and enforcement for failure to act. The CMP does not have these. Ward TR 9.30.11 p 72 1-4; Petitioners FOF/COL 469. “OMKM’s responsibilities are complicated by the fact that the UH Management areas are governed by two overarching documents—the Master Plan 2000, which was not approved by the Board of Land and Natural Resources, thus requiring UH to continue to comply with the rights and responsibilities outlined in the 1995 Revised Management Plan.” Exhibit A-303 CRMP 3.2.1 OMKM Mission and Responsibilities at 3-3; Petitioners FOF/ COL 471.

131-33. Petitioners object and take exception to HO FOFs 131-33 at 23.

FOFs 131-133 are inaccurate and misleading. HO’s description mischaracterizes the University’s role, ignores that the University had already proposed construction of the Pan-STARRS telescope before the Third Circuit completed decision-making, and ignores the 13-telescope limit considered by the court in that case. *See* Exhibit B-15.

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University's Comprehensive Management Plan is Not Legally Adequate

134. Petitioners object and take exception to HO FOF 134 at 21.

HO FOF 134 is incomplete, inaccurate, and misleading. The University's many management plans do not satisfy the requirements of HAR 13-5-24 and therefore cannot "ensure the protection" of Mauna Kea's unique resources.

An approved management plan is required for proposals to use resource conservation lands for an astronomy facility. HAR §13-5-24; *see also Mauna Kea Anaina Hou v. BLNR*, Civ. No. 4-1-397, 7 (3rd Cir. Haw. Jan. 19, 2007), Exhibit B-15. In its CDUA, the Applicant relies heavily on UH's CMP and its four subplans, as well as UH's 2000 Master Plan, and the TMT Management Plan, to justify approving the project. This is a mistake.

In 2007, the Third Circuit Court overturned the BLNR's decision to approve the Keck Outrigger telescope CDUA because the management plan offered did meet the standards of HAR §13-5-24. In making this decision, the court concluded that a truly comprehensive management has the following attributes:

- it is concerned with conservation of the natural and cultural resources of the district
- it is "all-covering, all-embracing, all-inclusive..." of the conservation district
- it provides a numerical limit on construction in the conservation district
- it is approved by the BLNR.

Despite their combined girth, the many plans cited by the Applicant do not meet these standards and therefore cannot be used to justify approval of a CDUA. The TMT Management Plan is incomplete because it is specific only to the project area, thus not "all-inclusive." UH's 2000 Master Plan is irrelevant because it was not approved by the BLNR. The CMP, together with its subplans, is incomplete because

- 1) it fails to manage the entire Mauna Kea conservation district, it concerns only "UH Management Areas,"
- 2) it fails to provide any measurable limitation on the extent of construction in the Mauna Kea Science Reserve and indeed, specifically identified the TMT as outside its scope.

In addition, the CMP should also be discredited because it identifies the wrong land manager responsible for protecting conservation district resources. The document attempts to legitimize UH's long-standing effort to serve the conflicting roles of both land developer and land manager for part of the Mauna Kea conservation district. BLNR is the only agency authorized to manage conservation district resources; that responsibility cannot be delegated to the applicant and the primary advocate for development on Mauna Kea.

To be comprehensive, management plans for the conservation district must be "all encompassing" and manage for protection of the natural and cultural resources of the district. *Mauna Kea Anaina Hou*, Civ. No. 4-1-397 at 14, Exhibit B-18. The UH CMP, however, is not all-encompassing of the Mauna Kea conservation district for it only concerns the areas that the University deems important for astronomy (sometimes referred to as "UH Management Areas," which includes the Science Reserve, access roads, and mid-level facilities at Hale Pohaku). The

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conservation district encompasses the entire mountain from the Saddle Road (approximately the 6,000-foot elevation) up to the summit itself. The 2009 UH CMP does not encompass the basic scope of the Mauna Kea conservation district and thus cannot serve as a basis for approving construction of any astronomy facilities.

In its 2007 ruling, the Third Circuit Court considered the 1995 management plan for the mountain presented by the University for the Keck Outrigger telescopes project. The court found that unlike previous management plans, the 1995 plan did not provide adequate scope and coverage for the Outrigger telescope and that was in fact “virtually silent” on the question of future development. *Mauna Kea Anaina Hou*, Civ. No. 4-1-397 at 7, Exhibit B-18. The management plan offered by the University for the proposed Keck Outrigger telescopes was not comprehensive, in part, because it did not have a carrying capacity or numerical limit on telescope construction in the conservation district. *See id.* at 9. The court was concerned that the plan’s failure to impose a limit on observatory development would facilitate piecemeal construction in the district that would ultimately undermine the protections that the conservation district is supposed to provide for natural resources. *Id.* at 24-27.

Moreover, without any upward limit on the size and number of telescopes, it is possible under this CMP for telescopes to consume every area large and flat enough to bear a structure. Like the 1995 management plan, the current CMP does not place any meaningful limitation on the number and size of future telescopes that may be proposed for Mauna Kea. Instead of providing these limits, the CMP relies on a complicated and University-centric decision-making tree from the 2000 Master Plan. Exhibit A-21. This decision-making structure facilitates piecemeal development by deeming UH responsible for some decisions and BLNR responsible for others.

Finally, the CMP ignores the TMT. The TMT proposal, which is specifically identified as outside of the CMP’s scope, was well underway when the CMP was adopted. Exhibit A-301, UH CMP at 2-3.

In transactions over Mauna Kea, the University attempts to sit on both sides of the table. On one side, the University -- in one form or another -- facilitates telescope construction on Mauna Kea, going so far as to take on the interests of telescope owners as their own. While, at the same time on the other side, claiming to serve as “land manager” of “UH’s Mauna Kea Lands,” enforcing laws and protecting the resources destroyed by telescope construction. Exhibit A-301, UH CMP, P-7 (“[d]evelop and implement protocol of oversight and compliance with CDUPs”) and Exhibit A-301, UH CMP P-8 (“enforce conditions contained in Special Use permits”). Exhibit A-1 at 2. The purpose and function of these two sides of the table are mutually exclusive and cannot be fulfilled by one entity -- no matter how many aliases the University establishes. The awkward relationship between the University and TMT in this application is only the most recent example of this deeply seeded conflict of interest.

The fundamental problem with the University serving conflicted roles is demonstrated in the current dismal state of the Mauna Kea conservation district. The University concedes that telescope construction has substantially undermined the long-term sustainability of the natural resources on Mauna Kea, and yet the University is again proposing to build another telescope. Exhibit A-308, TMT FEIS at S-8. The destruction on Mauna Kea is directly facilitated by the

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University, in pursuit of academic prestige in the astronomy field, at the expense of the natural and cultural resources of the conservation district. The success of the University's Institute for Astronomy is based in large part on the fact that Mauna Kea is exploited as a premier location for telescopes. The University cannot achieve this academic goal while at the same time truly protecting the conservation resources that are destroyed in the pursuit of that goal. This is why, despite its own admissions, the University simply cannot bring itself to conclude what is readily apparent: Mauna Kea is overbuilt.

Given the University's conflicting roles on Mauna Kea, it is an improper delegation of authority for the BLNR to empower the University to make "management" decisions about the mountain's resources and the practices that rely on them. *Ka Pa 'akai O Ka 'Aina v. Land Use Commission*, 94 Haw. 1, 21-23 (2000). BLNR's relationship to UHH in this situation is notably similar to the illegal "wholesale delegation" of authority from the Land Use Commission to Kapulehu Development in *Kapa 'akai O Ka 'Aina v. LUC*. Like Kapulehu Development, the University is the primary developer of the land, promising to implement protections for constitutionally protected practices after the proposed project is approved. It is an abuse of BLNR's discretion and fiduciary duties to trust the Applicant will protect traditional and customary practices once the project is approved.

136. Petitioners object and take exception to HO FOF 136 at 21.

HO FOF 136 mischaracterizes the court rulings relevant to the Mauna Kea management plans. The Third Circuit Court ruled in 2009 that the CMP was not yet ripe for review because "the CMP did not determine the rights, duties, or privileges" of the Petitioners. The court clarified, however, "that a future implementation of the CMP might trigger a requirement for a contested case" to assess the quality of the CMP. BLNR's instant consideration of the TMT CDUA is the "future implementation" of the CMP the court contemplated. The University relies heavily on the CMP, in order to downplay the substantial adverse impact this proposal would have on the conservation district. The CMP, however, lacks the basic elements of a management plan to justify that reliance. *See* Third Circuit 2009 decision, Exhibit B-16.

On appeal, the Intermediate Court of Appeals concluded that because the CMP was nothing more than a plan to plan, a contested case hearing was not required on the University's CMP. This conclusion was based on the finding that the CMP is simply a recommendation for future planning. The ICA held that "the CMP notes that many of these suggested actions "cannot be implemented without [UH] rule-making authority." As such, except for uses already in place under the 1995 Management Plan, these "management actions" are nothing more than considerations for the future." *Mauna Kea Anaina Hou v. Bd. of Land & Natural Resources*, 126 Hawai'i 265, 272 (2012, unpublished). Breaking ground on the world's largest telescope with hopes for future planning to mitigate the destruction it would cause is a far cry from actually fulfilling the conservation mandate of the conservation district on Mauna Kea.

140-141. Petitioners object and take exception to HO FOF 140-141 at 22-3.

HO FOFs 140-141 are incomplete and therefore misleading. The Natural Resources Management Sub-Plan (NRMP) for the Mauna Kea Conservation District lacks crucial elements and thus is incomplete. One crucial missing component of this management sub-plan is an Invasive Species Rapid Response Plan. While UHH claimed in its April 2010 report to the

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DLNR that it would “limit damage caused by invasive species through creation of an invasive species prevention and control program” that would be initiated immediately, UHH’s witnesses stated that the plans have yet to be developed and implemented. Eiben Tr. 8/18/11 at 143: 7-14 ; Exhibit A-302 NRMP at 4.2-28-29; Petitioners’ FOF 615 at 84, Nagata Tr. 8/18/11 at 21: 16-25, Exhibit A-3 OMKM 2010 Annual Report, NR-2. UHH’s expert witness J. Eiben conceded that this critical, yet missing plan should be developed in conjunction with an Invasive Species Monitoring Plan for specific “highest risk” species as Contingency Plans. Contingency Plans should be in place to ensure critical responses to these species prior to their detection. The Invasive Species Monitoring Plan and Rapid Response Plan for the MKSR remain non-existent, nor have corresponding plans for the TMT been put in place. Eiben Tr. 8/18/11 at 143. Indeed, even high-level DLNR staff recognize the pervasive threat of invasive species on Mauna Kea; “[i]t is possible that the introduction of an alien invasive species may occur in any area impacted by the construction process, and such invasion would ultimately impact the entire alpine ecosystem.” Petitioners’ FOF/COL 612 at 83 (DLNR Division of Forestry and Wildlife Administrator Paul J. Conry, in his CDUA Comments for the Thirty Meter Telescope, November 29, 2010, in response to 4.1.2 Natural Resource Management at 4-13). For this reason, an effective management plan must incorporate prevention, robust on-going monitoring, and response actions. Early detection of invasive species, in hand with effective mitigation measures, can halt or limit spread the before control becomes impossible. It is most cost-effective to respond to invasive species while the populations are small or localized, and the probability of eradication is higher. Early detection and eradication is often the most neglected phase of the invasion process. Exhibit A-302 NRMP 4.2-21-36. The UH CMP identifies these necessary elements of effective management, but the management actions remain unimplemented, and are therefore, empty promises.

UHH’s natural resource plan acknowledges that since 2005, several new alien predatory species that could adversely impact the Wekiu bug have been found. The new species reported include several new alien predatory beetles that could adversely impact the Wekiu bug have been found, including dermestids, staphylinids, and carabids, which are predaceous both as larvae and adults. The recent discoveries underscore the need for regular monitoring of the Mauna Kea alpine environment for alien predatory insects. Because Wekiu bugs are much more restricted in their habitat choice (generally the bugs are found in the upper portion of non-glaciated cinder cones), it is expected that wekiu bugs would be even more vulnerable to ant invasions than moths and spiders. Exhibit A-302 NRMP 2.2, pp. 36-45.

Dr. Ron Englund, hired by OMKM, reported that alien ant species are the greatest potential threat in the summit area. Ants (family Hymenoptera) are already well-established at the summit regions of Haleakalā National Park, and this elevational range is well-within the lowest elevation that Wekiu bugs have been found. Because of the predatory and social nature of ants, and because ants have caused the extinction and decline of native arthropods throughout Hawaii, both the endemic wolf spider (*Lycosa* sp.) and the Wekiu bug would be expected to precipitously decline if ants ever become established. Exhibit A-302 NRMP 2.2-36. Regular monitoring and rapid response to any ant introduction in the summit area, or along roadways going to the summit, will be necessary to ensure the continued survival of the Wekiu bug. Exhibit A-309 TMT FEIS Vol III App. K Results of the 2009 Alien Species and Wekiu Bug (*Nysius wekiuicola*) Surveys on the Summit of Mauna Kea, Hawaii Island, Final Report, July 2010.

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High-level DLNR staff concur that “The introduction of non-native species, specifically predators such as ants, is the greatest threat to the persistence of populations of native arthropods on Mauna Kea. It is imperative that general arthropod monitoring be performed on all alpine desert habitat affected by TMT construction (access way, staging areas, and construction sites).” Exhibit A-309 FEIS Vol 2; DLNR Division of Forestry and Wildlife Administrator Paul J. Conry, in his CDUA Comments for the Thirty Meter Telescope, November 29, 2010, in response to Table 2.1 p. 2-16.

UHH’s expert witness, Jesse Eiben wrote “There must be an invasive species rapid response eradication plan available for comment (in the FEIS). Specifically, the response plan should detail the action that will take place in the event of new noxious weed detection, or any ant species detection. All permits required for the plan (especially if herbicides/pesticides are to be used) must be approved and waiting for potential implementation.” Exhibit A-309 TMT FEIS Volume 2.

DLNR Chair Laura Thielen wrote “An eradication protocol must be developed and in place (along with supporting supplies/trained personnel) if/when establishment of new invasive species is detected. The above tasks should not be completed by untrained personnel. Recommend that a biological technician or biologist be hired by the TMT project to complete surveys. And /or funding be provided to DLNR or an appropriate agency.” Exhibit A- 309 FEIS Volume 2. Despite requests from DLNR and the Applicant’s expert witness, the TMT Corporation consigned development of the requested plans to the CDUA process, and those who prepared the CDUA postponed the effort again, delegating it to the construction specifications. This is to say, no plans have been written at all. Exhibit A-311, CDUA at 174.

All respondents who addressed this issue urged that the plan be in place, and available *for review*. The developer promised that specific monitoring components would be part of a detailed management plan developed for the CDUP application, but DLNR failed to insure that the plans were in place. Exhibit D-01 p. 18, Exhibit A-309, FEIS Vol II, p. 18 of 531.

This relegates the hard decisions to a future date, with no detail, no review, and no oversight. The Applicant’s repeated promises, at every stage, to complete these species protection and control plans later demonstrate the continued old paradigm of neglected management for Mauna Kea’s natural resources. The Applicant’s promises do not address DLNR’s request for monitoring directed at finding incipient populations of alien species across the environment, as well as in all alpine desert habitat affected by TMT construction (access way, staging areas, and construction sites). The Applicant’s promises do not describe how eradication of a found species would be accomplished. The Applicant’s promises do not provide the kind of expert-led management the resources of Mauna Kea require; nor is the Applicant’s burden met.

142-44. Petitioners object and take exception to HO FOFs 142-44 at 23.

FOFs 142-44 are misleading, irrelevant, and beyond the jurisdiction of BLNR. All references to decommissioning of the TMT or other telescopes should be removed from the findings of fact and conclusions of law because the decommissioning of telescopes is not the subject of this CDUA. The application before the Board today is solely for the construction of the TMT; there is no decommissioning plan specific to the TMT or any other telescope on the mountain.

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Promises that there will someday be fewer telescopes in this conservation district are not enforceable under this application as written and therefore should not be a factor in the BLNR's decision-making. Also, the Decommissioning Plan ignores the requirement of the lease that the land be restored to its previous natural condition at the close of the lease in 2033. *See* Exhibit B-2.

145-150. Petitioners object and take exception to HO FOFs 145-150 at 23-4.

FOFs 145-150 are incomplete, mischaracterizations, and misleading. UHH's representations concerning its commitment to fund invasive species program, hire staff, and implement management actions at Mauna Kea are empty promises. TMT's consultant raised similar concerns in its 2007 "Assessment of the Risks for Siting the Thirty Meter Telescope on Mauna Kea":

A Sour History and Heavy Baggage. Unfailingly, almost every interviewee we spoke with, even those who are great proponents of placing observatories on Mauna Kea, acknowledge a complex and, for many, a bad history on the mountain. Hawaiians, both Native and non-Native, speak of poor planning, bureaucratic bumbling, broken promises, technocratic arrogance, and a persistent failure to engage the Native Hawaiian community in meaningful and appropriate ways. Some of this has been reported in two legislative audits. While there are many fine individual efforts underway to rectify long-running problems, the situation remains contentious and confusing. Should TMT decide to pursue a Mauna Kea site, it will inherit the anger, fear, and great mistrust generated through previous telescope planning and siting failures and an accumulated disbelief that any additional projects, especially a physically imposing one like the TMT, can be done properly. One interviewee said of future development, "It can be less objectionable, but it can't be alright."

Keystone Foundation Report, Exhibit D-13 at 3-4 (emphasis in original).

FOF 146 states that UHH is committed to implementing all management actions called for in the CMP, and that indeed has already begun implementation. Yet, UHH could not identify any source of funding for management actions, including those addressing invasive species (FOF 148-49) and natural resources (FOF 150) specified in FOF 148-150. This is because UHH does not have funding dedicated to conservation resource management. *See* Exceptions to HO FOF 237 (establishment of a "Mauna Kea Lands Management Special Fund" under Haw. Rev. Stat. § 304A-2170 does not address Petitioners' concern with the availability of "net rents from leases, licenses, and permits, and other fees for the use of Mauna Kea lands" for *conserving* Mauna Kea's public trust resources. The purpose of the Mauna Kea Lands Management Special Fund is *management*, not conservation).

UHH conceded that its CMP does not identify the cost of the over 100 management actions in UHH's CMP. Nagata Tr. 8/17/11 at 138: 3-10. UHH further conceded that its Office of Mauna Kea Management staff is limited. OMKM staff consists in an interim director, a secretary, and rangers that are hired "to keep people informed about how to properly act and behave while on the mountain[.]" Nagata Tr. 8/17/11 at 145: 10-22; Heen Tr. 8/17/11 at 96: 11-15. BLNR, too, recognizes that funding is crucial to ensure proper management of conservation district natural resources. In their Recommendations on DLNR staff stated; "[e]nvironmental protection costs

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money. Protecting historic and cultural resources costs money. Education costs money. Maintaining public access and ensuring the public safety costs money.” Staff Recommendations, Exhibit A-313 at 62.

Because UHH has not demonstrated its ability to fund these proposed management actions, FOFs 145-150 are incomplete, mischaracterizations, and misleading.

151-52. Petitioners object and take exception to HO FOFs 151-52 at 24-25.

FOFs 151-152 are misleading. The establishment of the Astronomy Precinct demonstrates the de facto subdivision the University has undertaken in order to intensify land use in the conservation district, an action that is specifically prohibited by the conservation rules.

154. Petitioners object and take exception to HO FOF 154 at 25.

FOF 154 is misleading and inaccurate. HO and Applicant employ the wrong standard for assessing telescope construction proposals: “does not contribute significantly to cumulative impact.” The proper standard is “will not cause substantial adverse impacts,” as found in HAR 13-5-30(c)4. The Applicant admits that contribute to the existing level of impact, which the TMT EIS found to be significant, substantial, and adverse. Exhibit A-320 at S-8.

157. Petitioners object and take exception to HO FOF 157 at 25.

FOF 157 is misleading, inaccurate. Due to its size, the TMT can only be located on the northern plateau of Mauna Kea. It could not be built on Kūkahau‘ula, Pu‘u Poliahu, or Pu‘u Lilinoe, so promising not to build there is not actually mitigation.

HO incorrectly contends that locating the TMT project on the northern plateau minimizes the substantial impact of the project on visual and scenic resources. The Applicant has not shown that locating the TMT on the ridge would have been desirable or even possible. Indeed, the Cultural Impact Assessment (CIA) specifically “recommended that the TMT Observatory project be built on a recycled site of an outdated telescope on the summit instead of Area E”. Exhibit A-309 at 204-5. Instead of considering this alternative location, the Applicant summarily dismissed this recommendation as “not deemed feasible.” Exhibit A-308 at 3-32. The TMT Project siting process only considered “Area E” on the northern plateau. Exhibit A-308 at 4-5. Because it is unlikely that the five-acre TMT project could have been located on the summit ridge, the fact that it is not proposed to be located there cannot be claimed as a mitigation measure for visual impacts.

Mismanagement of the Mauna Kea Conservation District

FOF 162-163 Petitioners object and take exception to HO FOF 162-163 at 26.

FOF 162-163 are incomplete and misleading. The HO ignores the fact that the CMP was challenged in court up to the Intermediate Court of Appeals. The ICA ruled that a contested case hearing was not required on the University’s CMP because it did not affect any substantial rights. This conclusion was based on the finding that the CMP is simply a recommendation for future planning. The ICA held that “the CMP notes that many of these suggested actions “cannot be implemented without [UH] rule-making authority.” As such, except for uses already in place under the 1995 Management Plan, these “management actions” are nothing more than

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considerations for the future.” *Mauna Kea Anaina Hou v. Bd. of Land & Natural Resources*, 126 Hawai‘i 265, 272 (2012, unpublished). Breaking ground on the world’s largest telescope with hopes for future planning to mitigate the destruction it would cause is a far cry from actually fulfilling the conservation mandate of the conservation district on Mauna Kea.

166. Petitioners object and take exception to the HO FOF 166 at 27.

HO FOF 166 is misleading. The TMT Corporation was initiated far earlier than 2008, and the Assessment of the Risks for Siting the Thirty Meter Telescope on Mauna Kea report was published in 2007, at least a year after it was initiated. Exhibit D-13.

Project Description

184. Petitioners object and take exception to the HO FOF 184 at 30.

FOF 184 is inaccurate. Contrary to FOF 184, the proposed aluminum-like coating would be *more* visible due to the reflective nature of the dome shape that would reflect the sunlight back, amplifying its visibility during the day. The TMT Observatory will be more visible, similar to the Gemini Observatory with its aluminum-like coating and dome shape that does not reflect the sky or ground during the day to reduce the visual impacts as suggested by FOF 184, G. Sanders, and the TMT CDUA. G. Sanders Tr. 8/15/11 at 97; TMT CDUA, Exhibit A-19 at 2-17. The comparison between the TMT Observatory and the Subaru Observatory is an inaccurate basis of analysis because their reflective characteristics differ. TMT’s Observatory would be a dome shape and the Subaru is a cylinder-like shape. TMT CDUA, Exhibit A-19 at 7-9. As a result, the photo simulations in the CDUA that depicted the aluminum-like coating were inaccurate, particularly in Figures 7.5 and 7.8. TMT CDUA, Exhibit A-19 at 7-10. UHH’s consultant, Jim Hayes, stated that his observations were done “primarily during the mid-day period.” Tr. Hayes 8/16/11 at 48; 108:16-22. Hayes’ findings were the basis for visual simulations described in the TMT-EIS and CDUA. All representations that rely on his findings are compromised because his analysis of visual effects was not conducted for any extended period of time.

Furthermore, the proposed mitigation of utilizing the aluminum-like coating on the TMT dome is contradictory to the Design Guidelines section of the UH’s Mauna Kea Science Reserve Master Plan 2000, which states; “As much as possible, surfaces should be *non-reflective in the visible spectrum to minimize glare and visibility from distant areas.*” Exhibit A-21 at XI-6 (emphasis added). FOF 184 is inaccurate and unsubstantiated.

188. Petitioners object and take exception to the HO FOF 188 at 31.

FOF 188 is a mischaracterization, misleading, and not supported by evidence. The HO contends here and elsewhere in this report that the proposed site for the TMT, Area E, has already been built upon and therefore the TMT is not a significantly new man-made structure. This is not true. While there is a small, short dirt road in Area E, it is not visible. Even if it were visible, a dirt road is not remotely comparable to an 18-story, 5-acre, shiny silver structure on the northern plateau of Mauna Kea. The distinctly undeveloped nature of the northern plateau of Mauna Kea is documented in Exhibit A-308, TMT EIS at 3-100, fig. 3-23.

189. Petitioners object and take exception to the HO FOF 189 at 31.

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FOF 189 is misleading and inaccurate. The Access Way that would cross the flank of Pu‘u Hau‘oki would further modify the Pu‘u, because a hybrid of Options 2 and 3 was selected, counter to the recommendations of then-DLNR Chair Laura Thielen and the Applicant’s consultants. *See* Exhibit A- 309 FEIS Vol II and Vol III App K; Exhibit D-01 at 10.

197. Petitioners object and take exception to the HO FOF 197 at 32.

FOF 197 is misleading. The Applicant need not request a subdivision of a conservation district parcel in order for an effective subdivision to occur. The subdivision of the Mauna Kea conservation district takes two forms. First, through its various management schemes, the University divides its leased land into two parcels: a) the Mauna Kea Science Reserve, and b) the Astronomy Precinct, where telescope construction would be concentrated. The Director of the Office of Mauna Kea Management, Stephanie Nagata, stated in her written direct testimony, “The MKSR is comprised of 11,288 acres which is subdivided into a 10,763-acre cultural and natural preserve, and a 525-acre Astronomy Precinct.” App. Exhibit A-1 at 5. She explains that “development in the MKSR is limited to the Astronomy Precinct... [where] development will be consolidated.” *Id.* In other words, the University subdivided their leased land in order to intensify land use in one part of it. This is exactly the consequence HAR sec. 13-5-3(c)7 seeks to prevent.

Second, the 13 subleases for telescopes and supporting structures on Mauna Kea serve as a subdivision because the subleases identify each the telescope owner as the authority over their respective telescopes and the immediate surrounding areas, such as parking lots. *See*, Exhibit B-3 to B-11. As seen on the site visit, the telescope owners have erected chain fencing to delineate their areas.

“Seeing Conditions” on Mauna Kea Irrelevant to BLNR decision

198. Petitioners object and take exception to the HO FOF 198 at 32.

FOF 198 is irrelevant and inaccurate. Instead of considering an alternative location, UHH summarily dismissed a recommendation to site the Project elsewhere as “not deemed feasible.” Exhibit A-308 at 3-32. The Applicant’s siting process only considered “Area E” on the northern plateau. Exhibit A-308 at 4-5.

200. Petitioners object and take exception to the HO FOF 200 at 110.

FOF 200 is irrelevant, misleading, and beyond jurisdiction. The HO incorrectly contends that the natural resources, taken together, make it an outstanding location for astronomical research. These are not the resources intended for protection by these rules. The conservation district rules specifically define “natural resource” to mean “resources such as plants, aquatic life and wildlife, cultural, historic, and archeological sites, and minerals.” HAR § 13-5-2. This list does not include the fraction of clear nights, the mean temperature, distance from light pollution, favorable latitude, or the stability of the atmosphere. Sanders WDT at 12-14. The list of natural resources to be protected by the conservation rules are those resources for which the BLNR is responsible as the conservation land manager for the State. BLNR exceeds its authority where it considers protecting resources other than those defined by HAR §13-5-2.

202-204. Petitioners object and take exception to the HO FOF 202-204 at 34.

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FOFs 202, 204 are irrelevant and beyond BLNR jurisdiction. FOFs 202 and 204 improperly weight the scientific agendas of TMT proponents over conservation district criteria. Haw. Rev. Stat. chap. 183C and Haw. Admin. R. § 13-5 define the scope of BLNR's authority over CDUPs. Neither statute permits BLNR to consider effects of a proposed conservation district land use other than those that bear on the quality of the conservation district in determining whether to approve a CDUA. Beyond lacking authority, BLNR also lacks legal standards and subject-matter expertise to use in determining which proposed land uses would be scientifically valuable enough to justify causing substantial, severe and adverse impact to a particular conservation district.

Community Benefits Package is Irrelevant

210-216. Petitioners object and take exception to HO FOFs 210-216 at 35-6.

FOFs 210-216 are irrelevant, misleading, and beyond BLNR jurisdiction. All references to workforce development, funding for public education or any other payments by the TMT Corporation or the University to others should be removed from the record. *See* HO FOF 210-239 at 35-40. Statutes and regulations enabling BLNR to enforce conservation district protections does not authorize BLNR to consider community benefits packages, workforce development, or other forms of payment as justification for granting a CDUA. *See* HAR § 13-5-30. Whatever promises of payment the Applicant makes for in exchange for community support of a proposed project remains relevant only to the business agreements of the Applicant and those community members. Such promises, however, are irrelevant to BLNR's consideration of a project's fitness for a CDUP or compliance with their own obligations as a state agency. "Public benefit" purposes do not render the TMT Project immune from BLNR's obligation to consider its non-compliance with conservation district use criteria. Such an argument was specifically contemplated in the drafting of conservation district rules in 1993. Prior to 1993, Title 13, Chapter 2, HAR included for all conservation district subzones a permitted use entitled "governmental use not enumerated herein where public benefit outweighs any impact on the conservation district." This provision was eliminated because it was "widely viewed by the private sector as a major loophole – one which has resulted in some questionable land uses in sensitive resource areas." Exhibit B-34 at 30, G. Atwater, Conservation District Review Project. The drafters of Hawai'i's conservation district rules intentionally determined not to allow for consideration of "public benefits" -- even where carried out by governmental actors -- that would outweigh conservation district purposes.

TMT Mitigation Measures are Indirect and Insufficient

217-235. Petitioners object and take exception to the HO FOFs 217-235 at 36-39.

FOF 224-228 "mitigation measures" do not address many of the potential contaminants identified in the CMP. "The main activities that have potential to result in a release of contaminants include vehicle travel (on and off road) and accidents; release of hazardous material and petroleum product use by observatories and support operations; sewage generation; and transport of hazardous materials and sewage off-site." Petitioners' FOF 534 at 72 *citing* Exhibit A-301, CMP at 6-14.

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This record indicates that groundwater resources are at risk from telescope activities on Mauna Kea. The Applicant failed to present evidence to the contrary and moreover failed demonstrate the increased telescope activities from the TMT would not further jeopardize underground water resources on Mauna Kea. Operation of the TMT would increase the use and storage of chemicals on Mauna Kea. The chemicals will be stored underground and transported by truck -- although the number of trucks and frequency of trips was not known by the Applicant's witness on the CDUA. White Tr. 8/15/11, p 47: 6-25, 48: 1-3.

FOFs 217-235 are inaccurate and unsubstantiated because HO erroneously relied on *Morimoto* to in assessing the actions UHH categorized as "mitigation measures". See Exceptions to COL 38.

218. Petitioners object and take exception to the HO FOF 218 at 37.

HO incorrectly contends that locating the TMT project on the northern plateau minimizes the substantial impact of the project on visual and scenic resources. The Applicant has not shown that locating the TMT on the ridge would have been desirable or even possible. Indeed, the Cultural Impact Assessment (CIA) specifically "recommended that the TMT Observatory project be built on a recycled site of an outdated telescope on the summit instead of Area E". Exhibit A-309 at 204-5. Instead of considering this alternative location, the Applicant summarily dismissed this recommendation as "not deemed feasible." Exhibit A-308 at 3-32. The TMT Project siting process only considered "Area E" on the northern plateau. Exhibit A-308 at 4-5. Because it is unlikely that the five-acre TMT project could have been located on the summit ridge, the fact that it is not proposed to be located there cannot be claimed as a mitigation measure for visual impacts.

219. Petitioners object and take exception to the HO FOF 219 at 37.

HO incorrectly contends that the TMT site was chosen in large part to avoid the most culturally sensitive areas of the summit region, thus finding that the location of the project is a significant mitigation measure. The Applicant's FEIS document demonstrates that this is not true. The proposed location of the TMT is a function of available space, not mitigation. See Exhibit A-308 FEIS at 2-8.

When it comes to siting new optical/infrared observatories on Mauna Kea, the 2000 Master Plan states "the height and diameter restrictions in Areas A and B are related to a number of factors, including visibility, potential impacts to existing observatories, and wind forces." "The second priority for siting new [optical/infrared observatories] will be at two new [areas] within the Astronomy Precinct, and only if a suitable summit ridge site cannot be utilized for redevelopment." The two new areas identified in the 2000 Master Plan are Areas E and F. Recycling an existing optical/infrared observatory is not an option for the TMT observatory because the TMT Observatory would exceed the diameter and height requirements. Exhibit A-308 FEIS, p. 2-8.

Exhibit A-311(CDUA) at 1-4, 7-13, Figure 1-3: Mauna Kea Summit Region: Existing Facilities, Features, & Future Development Areas in the CDUA shows that the location of TMT north of and below the summit is due to the size of the facility. The Applicant has never provided any alternative sites on the summit other than Area E in its documents or witness testimonies. Therefore, locating the TMT Observatory on the northern plateau is not a mitigation measure for

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eliminating the visual impact of the TMT observatory. This area was designated for the TMT Observatory because the University has presently utilized all available and suitable sites on the summit. App. FOF 410, p. 68-69; Petitioners' FOF/COL 1014, p. 139.

220. Petitioners object and take exception to HO FOF 220 at 37.

FOF 220 is inaccurate in that it discusses the mitigation of physical and visual impacts of the TMT Access Way without disclosing that reliable recommendations made to avoid impacts to natural resources known to be in the vicinity were ignored in favor of operational considerations for the SMA observatory.

In Exhibit A-311, in response to the TMT DEIS, DLNR Chair Laura Thielen wrote: "If a project is initiated, we strongly recommend Option 1. Option 1 imposes the least damage to Wekiu bug habitat. While the total length of the new road to be constructed (600 feet) is greater than Option 2 (275 feet), the proposed area is comprised of lower quality habitat types (4-6), which are less frequently used by Wekiu bugs, Option 2 is considerably less desirable, as the area proposed for construction contains Type 3 habitat, where Wekiu bugs have been found in abundance in recent years. Option 3 is the least desirable route, as it requires the greatest habitat disturbance (780 foot length widening, 8 foot retaining wall) in Type 3 Wekiu bug habitat." In spite of numerous recommendations to avoid the habitat, Option 1 (avoidance of Type 2 and 3 habitat) was rejected by the Applicant, and a hybrid of Option 2 and 3, impacting Pu`u Hau Oki cinder cone within the Kukahau`ula TCP, is imposed, despite the value of the sites selected for Wekiu bug habitat.

221. Petitioners object and take exception to the HO FOF 221 at 37.

FOF 221 is misleading, inaccurate, and a mischaracterization of the record. The transcript cited reflects that the option for placing the TMT Access Way was *not* "the one recommended by SHPD[.]" In the same passage, SHPD states, "it [the option selected] was not their recommendation". Tr. 8/17/11 at 133-34.

At no time in the discussion of the Access Way selection does the FEIS discuss SHPD recommendations. In fact, Exhibit A-308, FEIS 2.5.2, pp. 2-18-2-22, describes the process for determining the route of the Access Way. "The two Access Way options being considered would be paved in the vicinity of the SMA core to avoid generating dust that could accumulate on the SMA antennas.... To address the SMA's operational needs this Option has been refined since the Draft EIS... The refined design approaches within Option 2 would allow safe SMA operations. The refined design approaches include a realigned SMA road that would provide routes and grades suitable for the SMA antenna transporter..." Exhibit A-308, FEIS 2.5.2, pp. 2-18-2-22.

231-233. Petitioners object and take exception to the HO FOF 231-233 at 38-9.

FOFs 231-233 are irrelevant to the decision on the CDUA regarding the TMT before the BLNR. The restoration of the closed access road was the subject of Board action at another time and in a different proceeding (SPA HA-10-04).

235. Petitioners object and take exception to the HO FOF 235 at 39.

FOF 235 is irrelevant, misleading, and beyond BLNR's jurisdiction. BLNR is not authorized to consider the economic benefits of a proposed land use in deciding whether to approve a permit

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application. The statutes and regulations enabling the BLNR to enforce conservation district protections do not authorize the BLNR to consider community benefits packages, workforce development, or other forms of payment as justification for granting a CDUA. All references to workforce development, funding for public education or any other financial benefits or payments by the TMT Corporation or the University to others should be removed from the record. Whatever promises of payment the Applicant makes with community members in exchange for their support of a project is between the Applicant and those members of the community. These promises, however, cannot be used by the BLNR to rationalize failure to comply with all requirements for land uses in the conservation district.

Unenforceable Promise to Decommission the TMT

236. Petitioners object and take exception to HO FOF 236 at 39.

FOF 236 is misleading, irrelevant, and beyond BLNR's jurisdiction. All references to decommissioning of the TMT or other telescopes on Mauna Kea should be removed from the findings of fact and conclusions of law because the decommissioning of telescopes is not the subject of this CDUA. The application before the Board today is solely for the construction of the TMT; discussion of decommissioning the TMT or any other telescope is outside the scope of this application. The TMT Corporation does not have a decommissioning plan or site restoration plan specific to the TMT or any other telescope on the mountain. Promises that there will someday be fewer telescopes in this conservation district are not enforceable under this application as written and therefore should not be a factor in the BLNR's decision-making. Also, the decommissioning plan ignores the requirement of the lease that the land be restored to its previous natural condition at the close of the lease in 2033. *See* Exhibit B-02 at 1.

237. Petitioners object and take exception to the HO FOF 237 at 39.

FOF 237 is inaccurate and misleading. A decommissioned telescope is not the same as restoring a former telescope site to its natural condition. Decommissioning means either none or some of the former telescope structure is removed, but not all. Nagata Tr. 8/18/11 at 189-195. This is to say, once a site on Mauna Kea is "developed" for a telescope facility it can no longer be considered "undisturbed" afterwards.

Funding Insufficient

240-41. Petitioners object and take exception to the HO FOFs 240-41 at 40.

FOFs 240-41 are misleading and incomplete. Contrary to HO's conclusion that the TMT Project managers are "on track" to secure funds to complete their project, Petitioner Ching's cross-examination of Gary Sanders, TMT Project Manager, elicited the following facts that suggest the contrary:

- "Right now we do not have the finances to complete the [TMT] project." G. Sanders, Tr. 8/15/11 at 102.
- TMT does not have a legal structure in place. Tr. 8/15/11 at 102.
- TMT does not have a business plan in place. Tr. 8/15/11 at 102.
- TMT does not now have any bonds or sureties in place that would cover future possible liabilities. Tr. 8/15/11 at 103.

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Contrary to FOF 241, these facts substantiate Petitioners' concern that the TMT Corporation may default on its obligations under CDUP conditions. The availability of financial resources to comply with CDUP conditions such as paying into a Decommissioning Fund (DnO 9 at 121-22), providing \$1 million annually for a Community Benefits Package (DnO 10 at 122), and a "substantial" amount of sublease rent (DnO 10 at 123) are relevant to whether the TMT Project would be properly managed. *See* Exceptions to FOF 145-150 (BLNR, too, recognizes that funding is crucial to ensure proper management of conservation district natural resources. In their Recommendations on DLNR staff stated; "[e]nvironmental protection costs money. Protecting historic and cultural resources costs money. Education costs money. Maintaining public access and ensuring the public safety costs money." Staff Recommendations, Exhibit A-313 at 62.

IV. Section 13-5-30 Hawaii Administrative Rules

242. Petitioners object and take exception to HO FOF 242 at 40.

FOF 242 is not substantiated by the record. The TMT project proposal does not comply with all eight criteria of HAR sec. 13-5-30(c). *See infra* Exceptions to HO FOFs 243-473; Exceptions to HO COLs 47-161.

First Criterion: TMT not Consistent with the Purpose of the Conservation District

243-244. Petitioners object and take exception to the HO FOF 243-244 at 41.

FOF 243 is not substantiated by the evidence in the record, or is otherwise inaccurate and misleading. The HO misinterprets the purpose of the conservation district as "management" -- as opposed to actual conservation -- in order to rationalize finding the TMT project consistent with the purpose of the conservation district. This is incorrect.

245. Petitioners object and take exception to the HO FOF 245 at 41.

FOF 245 is inaccurate and misleading. Astronomy development on Mauna Kea has not been environmentally responsible. This statement should be stricken from the record because it is only an opinion of the witness and is inaccurate in several respects. In addition, it is contradicted by HO's FOFs 117-119 that state the past construction of these observatories on Mauna Kea has had cumulative impacts on cultural, archaeological, and historic resources that are substantial, significant, and adverse. Exhibit A-309 at 3-214, 3-217-219. If built, the TMT would be a major urban development, even for the most urban parts of Hawai'i Island, much less for the most sacred and protected conservation zone on the island. The TMT would be the largest building on the entire island of Hawai'i, built not in compliance with height restrictions or other zoning requirements. It will introduce new hazardous waste sources to the conservation district (TMT-EIS, Exhibit 309 at 3-121 ("release of fuel or chemicals, including mirror washing wastewater, from an accidental spill could degrade surface and groundwater resources"), undermine important habitat (TMT FEIS App. K, Exhibit A-309b/A-35 at 31 ("[d]ust can impact lichens, mosses, and ferns and is believed to degrade Wekiu bug habitat")), and interrupt an otherwise wide-open view of Haleakalā. Exhibit A-308 at 3-100; Neves WDT at 3.

246-252. Petitioners object and take exception to the HO FOF 246-252 at 41-2.

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The HO cites UH's CMP as one of the main reasons the significant impacts of the TMT will be mitigated to a level that is less than significant. The CMP, however, is incomplete. It identifies hundreds of "needs" without any enforceable timelines or benchmarks to ensure those identified needs are met. This includes a burial treatment plan, invasive species control plan, and hazardous spill protocols. *See*, Petitioners' FOF 466, 467. The CMP does not implement any actual actions to mitigate the substantial adverse impact of telescopes on Mauna Kea.

To be relevant, mitigation must be focused on the restoration of the adverse impact caused by the project. There must be a direct nexus between the harm caused by the proposed project and the mitigation effort promised. *See Morimoto*, 107 Haw. 296 (2005). In addition, there must be an assurance that compensation offered will result in minimizing the impacts caused by the project. *Id.* (finding U.S. government was capable of creating new, more preferable palila habitat, where the project proposed to destroy less preferable habitat; the requirement was legally enforceable).

The ICA ruled that a contested case hearing was not required on the University's CMP because it did not affect any substantial rights. This conclusion was based on the finding that the CMP is simply a recommendation for future planning. The ICA held that "the CMP notes that many of these suggested actions "cannot be implemented without [UH] rule-making authority." As such, except for uses already in place under the 1995 Management Plan, these "management actions" are nothing more than considerations for the future." *Mauna Kea Anaina Hou v. Bd. of Land & Natural Resources*, 126 Hawai'i 265, 272 (2012, unpublished). Breaking ground on the world's largest telescope with hopes for future planning to mitigate the destruction it would cause is a far cry from actually fulfilling the conservation mandate of the conservation district on Mauna Kea.

252. Petitioners object and take exception to HO FOF 252 at 42.

In addition to the exception stated above, FOF 252 should be rejected because it is beyond the jurisdiction of the Board. The Board is not authorized to accept payment in exchange for permission to destroy the very natural resources the Board is legally responsible for protecting. In following the proposed pay-to-degrade scheme, the BLNR would establish a bad precedent of allowing a project with impacts that are acknowledged to be substantially adverse to pay for the privilege of ruining public trust resources entrusted to BLNR for protection. This is not legally allowable.

253. Petitioners object and take exception to HO FOF 253 at 42.

As detailed throughout the Petitioners' Combined Exceptions, HO FOF 253 is not substantiated by the evidence on the record.

254. Petitioners object and take exception to the HO FOF 254 at 42.

FOF 254 is irrelevant and a mischaracterization. The viewing conditions for modern astronomy are not the natural resources for which the Mauna Kea conservation district was established. Even the HO acknowledges the real natural resources of the conservation district. Compare HO COL 99 which correctly cites the definition of "natural resources" in HAR § 13-5-2 as "resources such as plants, aquatic life and wildlife, cultural, historic, and archeological sites, and minerals." The BLNR would be acting in excess of its legal authority if it approved the TMT CDUA on the grounds that it made good use of the viewing conditions on the mountain because

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such a decision would also further adversely impact the natural resources the BLNR is legally obligated to protect.

255, 257. Petitioners object and take exception to HO FOF 255 and 257 at 42-43.

FOF 205 is misleading, irrelevant, and beyond jurisdiction. All references to decommissioning of the TMT or other telescopes should be removed from the findings of fact and conclusions of law because the decommissioning of telescopes is not the subject of this CDUA. The application before the Board today is solely for the construction of the TMT; there is no decommissioning plan specific to the TMT or any other telescope on the mountain. “The project will develop a Site Decommissioning Plan as the end of the TMT Observatory’s useful life nears.” Exhibit A-309, TMT FEIS pp. 3-190.

Promises that there will someday be fewer telescopes in this conservation district are not enforceable under this application as written and therefore should NOT be a factor in the BLNR’s decision-making.

Also, the Decommissioning Plan ignores requirements of the lease that the land be restored to its previous natural condition at the close of the lease in 2033. Decommissioning, as defined in this plan, does not ensure that an obsolete telescope or its appurtenances will be removed from the mountain. Exhibit B-02.

256-259. Petitioners object and take exception to HO FOF 256-259 at 42-3.

FOF 256 is unsupported by the record. The mitigation measures proposed by the Applicant and TMT Corporation will not “effectively mitigate the impacts of the project.” The Applicant failed to present evidence that these mitigation measures would actually reduce the substantial impact of the project to a level that is less than substantial. By contrast, the Petitioners presented evidence that demonstrates the mitigation measures do not minimize the substantial and adverse impacts of the project and in some instances actually worsen the injury (silver paint creating a lighthouse effect for mauka views) or add insult to the injury of the proposed project on Mauna Kea (art and furnishing in the project for a sense of the place just recently destroyed). Moreover, no mitigation measures are proposed to conserve, protect, or restore habitat that would be degraded by the project. In fact, the Applicant admits that even with proposed mitigation measures for the TMT, significant impacts on the Mauna Kea conservation district will persist. Applicant Opening Brief, at 17.

The HO cites the “Comprehensive Management Plan” as one of the main reasons the significant impacts of the TMT will be mitigated to a level that is less than significant. The CMP, however, is incomplete. It identifies hundreds of “needs” without any enforceable timelines or benchmarks to ensure those identified needs are met. This includes a burial treatment plan, invasive species control plan, and hazardous spill protocols. FOF 466, 467. The CMP does not implement any actual actions to mitigate the substantial adverse impact of telescopes on Mauna Kea.

To be relevant, mitigation must be focused on the restoration of the adverse impact caused by the project. There must be a direct nexus between the harm caused by the proposed project and the mitigation effort promised. *See, Morimoto v. Bd. of Land & Natural Res.*, 107 Haw. 296 (2005).

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In addition, there must be an assurance that compensation offered will result in minimizing the impacts caused by the project. *See, Morimoto v. Bd. of Land & Natural Res.*, 107 Haw. 296 (2005) (finding U.S. government was capable of creating new, more preferable palila habitat, where the project proposed to destroy less preferable habitat; the requirement was legally enforceable).

Hawai‘i’s Intermediate Court of Appeals found that the CMP was merely a plan to plan and did not implement any substantive actions, thus it alone cannot provide the type of mitigation the HO contends in this report. *See Mauna Kea Anaina Hou v. Bd. of Land & Natural Resources*, 126 Hawaii 265, 272 (2012, unpublished).

259. Petitioners object and take exception to HO FOF 259 at 43.

FOF 259 is irrelevant and beyond the Board’s jurisdiction because it directs the Board to approve the TMT CDUA because it “will be an enormous benefit to the public welfare by contributing significant funds to Hawaii Island and providing jobs, injecting large amounts of money into the local economy...”, which are not factors within the scope of the Board’s authority when considering whether to approve a permit application. All references to the number of jobs and the amount of money the TMT will generate should be removed from the record because such factors are outside the scope of the Board’s authority to consider in this process.

260. Petitioners object and take exception to HO FOF 260 at 43.

FOF 260 is not substantiated by the evidence in the record, or is otherwise inaccurate and misleading. The HO’s findings relies on the unsubstantiated claim that the TMT Project complies with the purpose and objectives of the Conservation District (i.e. the 8 criteria under 13-5-30 C, HAR). The TMT project is not consistent with the purpose of the Conservation District and should be rejected.

Second Criterion: TMT Not Consistent with Objective of Resource Subzone

261. Petitioners object and take exception to the HO FOF 261 at 43.

FOF 261 is misleading and a mischaracterization. The HO assumes in this finding that because astronomy facilities are identified as a possible land use in the regulations, that all astronomy facilities are automatically permitted in the resource subzone. This is not so. As demonstrated by Exhibit B-34 (G. Atwater, “Conservation District Review Project: The Discussion Draft” (1993)), when this language was adopted by BLNR, it was made clear that identified land uses would be permitted if and only if they complied with all criteria. Being an identified land use is not an exemption from the criteria or authorization to relax regulatory requirements.

262. Petitioners object and take exception to the HO FOF 262 at 43.

FOF 262 is inaccurate and misleading. HO improperly interprets standards relevant to HAR § 15-5-30(c)(5) because he ignores the definition of natural resources in regulations. HAR § 15-5-2 defines “natural resources” as “plants, aquatic life and wildlife, cultural, historic or archaeological sites and minerals.” This definition does not include astronomical resources, and therefore HO cannot assert that the Board is legally obligated to protect them. In 2011, Haw. Admin. R. Chapter 13-5 was amended during the same time period in which the present contested case proceedings were underway. The definition of “natural resources,” was not

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revised to include “astronomical resources.” *Compare* HAR § 13-5-2 (1994) *with* HAR § 13-5-2 (2011).

Further, FOF 262 cites Mr. White, which is not an authority on the interpretation of the conservation district rules.

263. Petitioners object and take exception to HO FOF 263 at 44.

HO FOF 263 is not substantiated by the record. While it is true that the University, and to a lesser extent the TMT Corporation, takes every opportunity to promise that it will protect the natural and cultural resources of Mauna Kea, the fact of the matter is the University has been the primary proponent of telescope construction on the mountain, which has had a significant, substantial and adverse impact on those very resources. Exhibit A-309, TMT FEIS Section 3.16 Cumulative Impacts at 3-207.

264-268. Petitioners object and take exception to HO FOF 264-268 at 44.

FOF 264-268 are incomplete, misleading, and mischaracterizations. The HO rests all of his rationale for this finding on UH’s various management schemes for Mauna Kea. The record does not justify his reliance. The “Comprehensive Management Plan” is neither comprehensive, nor true management. The record definitely does not support the conclusion that UH has taken “significant steps to implement the CMP and subplans.”

The CMP fails to implement actual management activities. It identifies hundreds of “needs” without any enforceable timelines or benchmarks to ensure those identified needs are met. This includes a burial treatment plan, invasive species control plan, and hazardous spill protocols. See, Petitioners’ FOFs 466-67. UHH could not identify any source of funding for management actions, including those addressing invasive species (FOF 148-49) and natural resources (FOF 150) specified in FOF 148-150. This is because UHH does not have funding dedicated to conservation resource management. See Exceptions to HO FOF 237 (establishment of a “Mauna Kea Lands Management Special Fund” under Haw. Rev. Stat. § 304A-2170 does not address Petitioners’ concern with the availability of “net rents from leases, licenses, and permits, and other fees for the use of Mauna Kea lands” for *conserving* Mauna Kea’s public trust resources. The purpose of the Mauna Kea Lands Management Special Fund is *management*, not conservation).

UHH conceded that its CMP does not identify the cost of the over 100 management actions in UHH’s CMP. Nagata Tr. 8/17/11 at 138: 3-10. UHH further conceded that its Office of Mauna Kea Management staff is limited. OMKM staff consists in an interim director, a secretary, and rangers that are hired “to keep people informed about how to properly act and behave while on the mountain[.]” Nagata Tr. 8/17/11 at 145: 10-22; Heen Tr. 8/17/11 at 96: 11-15. BLNR, too, recognizes that funding is crucial to ensure proper management of conservation district natural resources. In their Recommendations on DLNR staff stated; “[e]nvironmental protection costs money. Protecting historic and cultural resources costs money. Education costs money. Maintaining public access and ensuring the public safety costs money.” Staff Recommendations, Exhibit A-313 at 62.

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Moreover, Hawai‘i’s Intermediate Court of Appeals found that the CMP was merely a plan to plan and did not implement any substantive actions, thus it alone cannot provide the type of mitigation the HO contends in this report. *See, Mauna Kea Anaina Hou v. Bd. of Land & Natural Resources*, 126 Hawai‘i 265, 272 (2012, unpublished).

Because the University’s proposed management promises are nothing more than hopes for the future, the BLNR cannot rely on them to justify approval of the TMT CDUA.

269. Petitioners object and take exception to HO FOF 269 at 44.

FOF 269 is inaccurate and misleading. The HO improperly interprets the standard by ignoring the definition of natural resources in regulations. HAR sec. 15-5-2 defines “natural resources” as “plants, aquatic life and wildlife, cultural, historic or archaeological sites and minerals.” This definition does not include “such as” or any other invitation to add additional resources to the list of which resources the Board is legally obligated to protect.

270-272. Petitioners object and take exception to HO FOF 270-272 and 45.

FOF 270-272 are not supported by evidence in the record. The HO contends that the University’s promises for future management demonstrate that further industrialization of this conservation district is consistent with the objectives of the Resource Subzone. In actuality, the current state of “substantial adverse impact” suffered by the natural and cultural resources of Mauna Kea proves that telescope construction is not consistent with the objectives of the Resource Subzone. The TMT project does not comply with this criterion and should be rejected.

Third Criterion: TMT Not Compliant with Chapter 205A

273-274. Petitioners object and take exceptions to FOF 273-274 at 45.

Petitioners object and take exception to the HO FOF 274-275 finding that the TMT Project complies with Chapter 205A. The HO’s findings relies first on the unsubstantiated claim that the TMT Project complies with the purpose and objectives of the Conservation District (i.e. the 8 criteria under 13-5-30 C, HAR), and therefore by extension also complies with Chapter 205A. As outlined above, the TMT Project does not satisfy the purpose of the Conservation District, or the objectives of the Resource Subzone, and thus by extension **does not comply** with Chapter 205A. We reassert the following Petitioners’ FOF 1152-1162 at p. 155-159 in response to the HO claims regarding Chapter 205A.

275-276. Petitioners object and take exception to FOF 275-276 at 45.

FOF 275-276 are incomplete, mischaracterizations, and unsubstantiated. First, Chapter 250A is concerned with groundwater, as well as coastal waters. Yet, the HO limits his analysis to only coastal waters. Second, while the Applicant claims to have a zero-discharge wastewater system, the Applicant cannot claim to have a zero-accident spill system. App. FOF 290 at 45. As observatory operators have demonstrated, spills and run-off from telescopes, the Access Way, and a potential Mid-Level Facility have been allowed to “percolate into the ground[.]” Exhibit A-308, FEIS Vol.1 at 3-120. In May 2009, as much as twelve gallons of spilled hydraulic fluid at Caltech Submillimeter Observatory flowed down a drain pipe that opened directly into a cinder cone of the summit, where evidence of previous spills was unearthed as well. Exhibit B-15. In March 2008, as much as 1,000 gallons of sewage overflowed onto the ground and was

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“quickly absorbed” into highly porous ground, beneath which are flows to aquifers. Exhibit A-301, CMP at 6-10. The CMP further acknowledges the high probability of impact to natural resources from vehicle accidents, petroleum products, and human waste. Petitioners’ FOF/COL 533, 534 p. 72. Not only does the University lack a vehicle accident spill response plan to address the contamination that results from vehicle accidents, the University has no method of assessing the risk to water resources from transporting waste down the mountain. Petitioners’ FOF/COL 522, 523 at 72, citing Exhibit A-302, CMP NRMP.

This is relevant to compliance with Chapter 205A because the Mauna Kea Science Reserve is located above five State of Hawai‘i delineated aquifers. Exhibit A-301, UH CMP at 5-32. It is undisputed that beneath the summit is a “high level” aquifer comprised solely of fresh water. *See*, Petitioners’ FOF/COL 155, 157 p. 21, 166 at 22. Four components of the hydrology of the Mauna Kea summit region remain unknown: 1) watershed calculations of snow-water distribution, 2) outcomes of leachate and liquid waste from septic and cesspool systems, 3) distribution and impacts of permafrost, and 4) groundwater maps of water levels, flow paths, and recharge rates. *See*, Petitioners’ FOF 160. p.21. The Applicant’s evidence also indicates that surface runoff at the summit does not extend below an elevation of 6,000 feet, which means that “the majority of the water ultimately ends up percolating and **becoming groundwater recharge** with only a small amount lost to evaporation. *See*, Petitioners’ FOF 159. p.21. “The main activities that have potential to result in a release of contaminants include vehicle travel (on and off road) and accidents; release of hazardous material and petroleum product use by observatories and support operations; sewage generation; and transport of hazardous materials and sewage off-site.” *See* Petitioners’ FOF 534, p.72, citing Exhibit A-301 CMP at 6-14. The TMT project would increase telescope activities at the proposed project site Area E, as well as the Batch Plant, the roadway, Hale Pohaku, and the electrical substation, thus potentially affecting more than just the one aquifer near Area E.

279. Petitioners object and take exception to HO FOF 279 at 46.

FOF 279 is incomplete and misleading. While the northern plateau (Area E) is over one aquifer, the road leading to it crosses over the other aquifers. The risk to one aquifer alone is more than sufficient justification to deny this CDUA. *See* Exhibit A-3-11 at 2-29.

280. Petitioners object and take exception to HO FOF 280 at 46.

FOF 280 is not substantiated by the record. Given the preceding exceptions, it is unjustified to claim “there is no reasonable prospect of adverse impact on either drinking water or coastal waters.” There is a risk. The risk could be significant, but the issue is not well understood because the complex hydrology of the mountain has not been studied. *See* Exhibit A-204 at 12.

Fourth Criterion: TMT Causes Substantial Adverse Impacts

281. Petitioners object and take exception to HO FOF 281 at 46.

FOF 281 is unsubstantiated. FOF 281 alleges that the TMT will not cause substantial adverse impact to the existing natural resources within the surrounding area, community or region. This claim ignores the cumulative impact already deemed by the Applicant to be substantial, adverse and significant; an added incremental increase in cumulative impact to the natural and cultural resources is not consistent with the purpose and objectives of the Conservation District. The

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assumption is false. *See* Petitioners' FOF 993, Exhibits A-309 at 3-207; Petitioners' FOF 995, Exhibit A309 p. 221-22 of 531; Petitioners' FOF 516, Tr 9/30/11, p.136:25; Petitioners' FOF 517, Exhibit B-20 at 2-3; Petitioners' FOF 737; Tr. 9/30/11 at 135:25 at 136: 1-7; Petitioners' FOF 1057.

The preponderance of relevant evidence in the record affirms that the TMT would have adverse, substantial, and significant impact on the cultural and natural resources of the Mauna Kea Conservation District. FOF 281 relies solely on the testimony of UHH's witness, Perry White, and fails to address rebutting expert witness testimony. FOF 281 is unsubstantiated.

288. Petitioners object and take exception to the HO FOF 288 at 47.

FOF 288 is inaccurate and unsubstantiated. The botany inventory and assessment conducted by Dr. Smith for the TMT Project was incomplete and not comprehensive for Area E because the botanical survey and collection of specimens in this area was **only done in 2 days**. Identification to the species level for all specimens was not feasible in the time frame for this study. A walk-through survey method, confined to Area E, a 34-acre zone near the 13N Site located on the northern plateau of the Mauna Kea Science Reserve, was used to inventory the lichens and bryophytes in this area on September 29-30, 2008. Dr. Smith disclosed that "a concise determination of some species is not possible under the time constraints of this study even though fruiting bodies may be present. Species growing in such severe habitats, particularly those growing on rocks, produce spores only during favorable conditions. **The only sure way of finding good specimens would be to conduct monthly collections for at least one year.**" Furthermore, Dr. Smith stated that "Large specimens were collected of **species of whose identity were uncertain** so they could be sent to other lichen experts for confirmation of their identity." Dr. Smith also disclosed that **there are 4 species still not identified** within the proposed TMT site. As a result, the botanical inventory and assessment for this project is incomplete at this time. *See* Petitioners' FOF/COL 566-572, pp. 77-78 (emphasis in bold).

289. Petitioners object and take exception to the HO FOF 289 at 47.

FOF 289 is inaccurate and unsubstantiated. The HO alleges that the Applicant has considerable knowledge of the flora in the summit region above the 13,000 foot level. The Applicant provided documentation of a floral survey of Area E only, and the Applicant's FEIS refers only to the last documented floral survey of the summit, which occurred thirty years ago, in 1982, and review of the literature in 1999. Exhibit A- 308, 3.4.6.

290. Petitioners object and take exception to the HO FOF 290 at 48.

FOF 290 is unsubstantiated. The HO alleges that the TMT will not have a substantial adverse impact on the biological resources of Mauna Kea. The HO FOF 290 citation is a mischaracterization in that Exhibit A-309 at 3-72 is referring entirely to Wekiu bug habitat, not to alpine floral habitat.

The Applicant did not present evidence to demonstrate a botanical survey of the summit region had been conducted to ascertain the available habitat within the entire summit region; Dr. Smith documented only the Project area. The extreme contrasts in topography, substrate and meteorological conditions within the summit region would preclude any blanket assumption of known vegetation habitats. Exhibit A-308 FEIS S-8 states that "The magnitude or significance

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of cumulative impact to the alpine stone desert ecosystem from activities to date is not fully determined.” The cumulative impact to the alpine shrublands and grasslands and mamane subalpine woodlands has also been substantial, significant and adverse, due to grazing by hoofed animals and establishment of invasive plants. In general the Project will add a limited increment to the current level of cumulative impact.

Moreover, Mr. Hayes was not qualified as an expert in botany, or any other subject.

291. Petitioners object and take exception to the HO FOF 291 at 48.

FOF 291 is unsubstantiated. The HO alleges that the TMT will not have a significant impact on the flora of Mauna Kea. Cumulative impacts to the flora exist now, as a result of historic development of roads, telescope facilities and appurtenant structures. Any expansion of development in the fragile summit region will have additional cumulative impact. The TMT Project site is habitat to the Douglas Bladderfern, a Species of Concern, and has in the past been habitat for a species identified as Federal and State Endangered Species. No mitigation measures have been described to address vegetation in the project area. No mitigation measures are proposed to conserve, protect or restore habitat in the Project area.

298. Petitioners object and take exception to the HO FOF 298 at 50.

FOF 298 is inaccurate. The HO asserts that the disturbance of prime habitat for the TMT project would be limited to 0.2 acres. The Applicant has failed to document consistently its assertions regarding the extent of the habitat disturbance; for example, the Applicant’s Conservation District Application contains disparate estimates of the Wekiu bug habitat proposed to be paved for an access road to the project. “The proposed Access Way leading to the TMT Observatory has been designed to minimize its effect on the Kukahau`ula TCP. . .it will be necessary to widen and pave roughly *1,100 feet* of the existing 4-wheel drive road at the western side of Pu`u Hau`oki (i.e., the outermost edge of the TCP).” Exhibit A-311, CDUA, pp. 82-83. “Potential long-term impacts include displacement of existing species and habitat; dust generated by vehicle traffic along the unpaved Project areas; and paving approximately *1,600 feet* of the Access Way.” Exhibit A-311, CDUA p. 45.

Roughly 5.6 acres of Type 4 Wekiu habitat (95 % of the area) and 0.3 acre of Type 5 Wekiu bug habitat will be displaced. As listed in Table 3-5, the various Access Way options would displace from 0.01 to 0.5 acres of lavaflow habitat (Wekiu bug Type 4 and 5 habitat) and 0.06 to 0.23 acre of alpine cinder cone habitat (Wekiu bug type 3 habitat). Habitat types 2&3 are considered optimal. Exhibit A-309, FEIS Page 3-72 of Section 3.4 Biologic Resources.

The existing 4WD 8’ road would be expanded to 16’, and the “fill” covering the “existing ground surface” would cover a surface three times (24’ total) as wide as the current roadway. “Fill” is noted in the graphic of the cinder cone section, and the “existing ground surface” being covered is optimal Wekiu bug habitat. The impact is not only two dimensional; trenching and emplacement of TMT utilities four feet deep into the habitat will inevitably impact the cinder cone structure, drainage characteristics, movement within the habitat. The 4-wheel drive road portion in the cinder cone section will have to be graded to a greater extent because it is not straight and the slope changes dramatically. The conduits will be encased in concrete. Excavated material will be used to raise the Access way road surface where required. TMT

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CDUA Appendix B-Construction Plan Page 229. Three dimensional grading and use of a foreign material (concrete) in the Wekiu bug habitat, and trenching leads to greater fragmentation, hindering movement of the species, both above and below the surface. The amount of displaced material from the trench is not quantified, nor is the amount of “fill” used for grading. The effect of the grading, and the dust generated from crushing of cinder particles, on the adjoining habitat is not addressed, nor is it mitigated. *See* Exhibit D-01 at 12-13.

302. Petitioners object and take exception to the HO FOF 302 at 50

FOF 302 is unsubstantiated in the record. The HO fails to substantiate the assertion that the number of Wekiu bugs that are likely to be killed by the TMT project activities will be small. Modification, destruction and disturbance of habitat are cumulative. The Applicant has provided no documentation to demonstrate the opinion offered by Mr. Eiben.

303. Petitioners object and take exception to the HO FOF 303 at 50

FOF 303 misleading. The HO asserts that the impact to Wekiu bugs resulting from the construction of the access way will be less than significant, but in the context of cumulative impact, the destruction of habitat is additive. Telescope activities on Mauna Kea have resulted in substantial, significant and adverse impacts to geologic resources, primarily due to alteration of the cinder cone morphology. Exhibit A-308, FEIS Section 3.6 Geology, Soils, and Slope Stability, p. 3-111. DLNR in 1996 determined that the Gemini Northern 8-meter telescope, Japan National Large Telescope (Subaru), and the Smithsonian (SMA) had destroyed habitat beyond that disclosed in the FEIS or allowed in the approved management plan. Wekiu bug habitat on the crater and slope of Pu‘u Hau Oki was severely impacted by construction of the Keck I and II telescopes which resulted in removal of approximately 35 feet of the summit ridge of Pu‘u Hau Oki and side-casting the material on the crater slopes. *See* Ward WDT; Exhibit D-01, p. 7; Exhibits D-14, D-07, D-06, D-5, D-08, D-09. It has been estimated that since 1963, approximately 62 acres (25 hectares) of potential arthropod habitat have been lost to astronomy-related development on the summit. *See* Exhibit A-302, 2.2.2.3 Threats to Invertebrate Communities on Mauna Kea CMP NRMP, p. 2.2-43. Wekiu bug habitat was previously found at the summit of Pu‘u Hau Oki, and some of the other areas where development and telescope facilities and roads have been built, and therefore the habitat has been destroyed. *See* Eiben Tr. 8/18/11, p 133: 8-12 Petitioners’ FOF 219 Dust can impact lichens, mosses, and ferns and is believed to degrade Wekiu bug habitat. *See* Exhibit A-309b or A35, App. K at 31 FEIS Vol. 1 at 3-70. Risks to the Wekiu bug are nearly all human imposed. *See* Eiben Tr. 8/18/11, p. 132: 25.

304. Petitioners object and take exception to the HO FOF 304 at 50.

FOF 304 is unsupported in the record. The HO asserts that any potential impacts on the wekiu bug and its habitat will be mitigated. The Applicant admits “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.” *See* Exhibit A-308, FEIS p. S 7-8. None of the mitigation measures proposed for mitigation of adverse impacts on the Wekiu bug have been demonstrated as effective in habitat protection, repair, restoration, or replacement in the record. Any reference to mitigation of habitat loss is speculative. DLNR administration has stated that it is possible that the introduction of an alien invasive species may occur in any area impacted by the construction process, and such invasion would ultimately impact the entire alpine ecosystem. *See*, Exhibit A-309 FEIS Vol II. The Applicant’s document

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states that one of the most efficient ways of preserving a sensitive ecosystem is to limit future development in the area. An additional measure of protection for sensitive habitats can be achieved by prohibiting development of any currently undeveloped pu‘u (or portion thereof) at the summit. *See*, Exhibit A-302 CMP NRMP. The Applicant’s witness Eiben pointed out in his responses to the DEIS that the proposed mitigation measures were insufficient, and outlined the details of measures he recommended. *See*, Exhibit A-309 FEIS Vol II page 233 of 531. The recommendations were not incorporated into the FEIS.

309. Petitioners object and take exception to the HO FOF 309 at 51.

FOF 309 is a mischaracterization of the record. The HO asserts that there is no evidence that the Wekiu bug population has declined since 1982. The Applicant has provided no evidence that the wekiu bug population has *not* declined.

310. Petitioners object and take exception to the HO FOF 310 at 51.

FOF 310 is inaccurate. The HO makes an unfounded assertion that the TMT impacts on biological resources will be less than significant. The Applicant has provided no evidence that implementation of untested and unimplemented programs yet to be designed will have any impact, much less that they will reduce already cumulative significant impact to biological resources. Since 2005, several new alien predatory species that could adversely impact the Wekiu bug have been found, and Englund reported that alien ant species are the greatest potential threat in the summit area. ...Because of the predatory and social nature of ants, and because ants have caused the extinction and decline of native arthropods throughout Hawaii, both the endemic wolf spider (*Lycosa sp.*) and the Wekiu bug would be expected to precipitously decline if ants ever become established. *See*, Exhibit A- 309 FEIS Vol III, Englund , Wekiu-Rep 12-9, p. 29. During the past ten years of current management, several invasive species of both plants and animals have been introduced. The CMP calls for the development of an Invasive Species Rapid Response Plan in conjunction with an Invasive Species Monitoring Plan for specific species considered the highest risks, but these plans do not exist. Just as invasive species control and eradication permits for the Science Reserve are not yet in place; nor are they in place for the TMT. The Applicant’s witness testified that to avoid alien species introduction, vehicular access from the lowlands to the summit would be limited. Any increase in traffic to the summit would increase the risk of alien species being established on the summit. *See*, Eiben, Tr. 8/18/11 at 141: 2-14

312. Petitioners object and take exception to the HO FOF 312 at 52.

FOF 312 is misleading. As it pertains to Douglas’ bladderfern (*Cystopteris douglasii*), considered a *Species of Concern* by the USFWS, the potential impacts were not adequately addressed in the CDUA even though it was found throughout Area E. *Species of Concern* are those species about which regulatory agencies have some concerns regarding status and threats, but for which insufficient information is available to indicate a need to list the species under the Endangered Species Act. *See*, Petitioners’ FOF/COL 573-574 p. 78. The TMT Project site is habitat to Species of Concern and has in the past been habitat for a species identified as Federal and State Endangered Species. No mitigation measures have been described to address the vegetation or its habitat. No mitigation measures are proposed to conserve, protect or restore habitat in the project area.

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313-14. Petitioners object and take exception to the HO FOF 313-4 at 52.

FOFs 313-14 mischaracterize the record. The HO asserts that not only did Petitioner Ward lack expertise, but also relied on outdated information. Ms. Ward was invited by OMKM to be a member of the OMKM Environment Committee, based on her expertise, and has been providing guidance to OMKM on impacts to Mauna Kea arthropod species and issues regarding invasive species, since 2000. No entomologist has been a member of the OMKM Environment Committee during that ten year period. Mr. Eiben was invited in 2010 while he was a graduate student, when it was announced by Ms. Nagata that Mr. Eiben would be offered a three-year research position with OMKM after graduation. *See* Minutes of Mauna Kea Management Board, June 28, 2011. Ms. Ward cited documents offered by the Applicant to provide the context for her testimony, such as Exhibits A-301, A-302, A-308, A-309, A-11, A-313.

Archaeological/Historical Resources

316. Petitioners object and take exception to HO FOF 316 at 52.

FOF 316 is inaccurate. Not all of the opinions associated with Sara Collins have been substantiated due to the incompleteness of the information and evidence submitted into the CDUA and the record.

317. Petitioners object and take exception to HO FOF 317 at 52-53.

FOF 317 is misleading. The definition for “Historic Districts” is not found in Chapter 6E-2.

318. Petitioners object and take exception to HO FOF 318 at 53.

FOF 318 is inaccurate and misleading. According to Sara Collins, PCSI Senior Archaeologist, PCSI’s “**survey work was not conducted in support of the TMT.** We conducted the survey work as survey work, so any reassessments we made of that site was based on our work and **not based on TMT.**” Petitioners’ FOF/COL 636 at 88 (emphasis added).

320. Petitioners object and take exception to the HO FOF 320 at 53.

FOF 320 is inaccurate, misleading, and unsubstantiated. This FOF provides another example of an inaccuracy attributed to the Applicant’s legal counsel distorting the language of a witness’ testimony and then presenting it as an unsubstantiated fact. In particular, the reference to “find spots”. *See* Exceptions to HO FOF 328.

321. Petitioners object and take exception to the HO FOF 321 at 53.

FOF 321 is inaccurate, misleading, and unsubstantiated. This FOF provides another example of an inaccuracy attributed to the Applicant’s legal counsel distorting the language of a witness’ testimony and then presenting it as an unsubstantiated fact. Contrary to what was stated, SHPD recognized the entire Mauna Kea Summit Region Historic District (MKSRHD) above the 6,000 foot level to be eligible for nomination as a Traditional Cultural Property (TCP). The entire mountain region of Mauna Kea from approximately the 6,000 foot elevation to the summit, including the Mauna Kea Science Reserve, was identified in the Cultural Impact Assessment Study (1999) as a potential TCP. Also, Pu‘u Poli‘ahu was also identified in the Cultural Impact Assessment Study (1999) as a potential TCP. As such, it would be a contributing property to the MKSRHD. *See*, Exhibit A-303 at 2-40; Petitioners’ FOF/COL 828 at 113; 829-832 at 114.

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325. Petitioners object and take exception to the HO FOF 325 at 54-55.

FOF 325 is inaccurate, incomplete, and misleading. The Applicant limited the discussion in Section 4 - Cultural Resources of the CDUA to only a select few historic properties (4 in Area E & 2 near the Batch Plant) even though there are several other historic properties in the locality of the TMT Project.

326. Petitioners object and take exception to the HO FOF 326 at 55.

FOF 326 is inaccurate. Contrary to this statement, there has been much uncertainty in identifying the functions and ages of a significant number of “find spots” in the Historic District. PCSI stated in its report that the confidence level of archaeologists in assigning functions to many of the sites and component features varies. Likewise, archaeological classifications are not immutable and they may require revision. Petitioners’ FOF/COL 685-690 at 93. Ms. Collins’ testimony actually disclosed, “*We did re-evaluate at least one or two sites that we thought might be recent ones, and upon further study we determined they were historic in age. It’s not hard and fast.*” Petitioners’ FOF/COL 689 at 93.

327. Petitioners object and take exception to the HO FOF 327 at 55.

FOF 327 is inaccurate, incomplete, and misleading. UHH’s CDUA limited the discussion to only two “find spots” in Area E even though there are several other such sites in the locality of the TMT Project. CDUA omissions can be seen by comparing Figure 4.1: Historic Properties in the Vicinity of the TMT Project Areas in the CDUA (Exhibit A-311 at 4-2; Exhibit G-20) with Figure 5.1: Location of Historic Properties and Find Spots in the Astronomy Precinct and Surrounding Areas in the Final Report: Archaeological Inventory Survey of the Astronomy Precinct in the Mauna Kea Science Reserve (Exhibit A-28 at 5-5). UHH’s CDUA Figure 4.1 omits Statewide Inventory Historic Properties (SIHP) for adjacent historic properties and all “find spots.” Nor are historic properties (SIHP Nos. 16169 and 2144) addressed by the CDUA, even though these sites are identified in Figure 4.1 and are clearly located within UHH’s “Astronomy Precinct.” See Petitioners’ FOF/COL 1223 at 165.

328. Petitioners object and take exception to the HO FOF 328 at 55.

FOF 328 is inaccurate, misleading, and unsubstantiated. This FOF is an opinion rendered by the Applicant’s legal counsel that was erroneously presented as a fact. Applicant’s counsel asserted that “*find spots’ are modern, are not historic properties, and are not contributing properties to the Historic District.*” App. FOF 341 at 55. Yet, Applicant’s exhibits contradict this statement.

According to the Archaeological Inventory Survey (AIS) of the Astronomy Precinct in the Mauna Kea Science Reserve conducted by Pacific Consulting Services, Inc. (PCSI), “Find spots are cultural resources that are either obviously modern features **or features that cannot be classified with any level of confidence as historic sites because of their uncertain age and function.**” Exhibit A-28 at i & 5-20; Petitioners’ FOF/COL 663 at 91 (emphasis added). Based upon the PCSI’s AIS, out of the 339 “find spots” identified only about 25 (less than 14%) have been identified as potentially being modern features. The functions of the remaining sites have been listed as “*Unknown or Markers.*” The AIS further states, “[i]t is highly likely that some of these are actually historic properties, but to demonstrate this would require a more detailed analysis of their morphology and location.” Exhibit A-28 at i & 5-20; Petitioners’ FOF/COL 663 at 91. Because a more detailed archaeological analysis has not been completed for the vast

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majority of these potential historic properties within the Historic District, they remain in a limbo state as only “find spots”. Exhibit A-133 at ii & Appendix E; Petitioners’ FOF/COL 665-670 at 91.

SHPD has also concurred that, “[s]ome of the find spots could not be definitely dated and could possibly be over 50 years in age and would instead be classified as historic properties.” Exhibit A-37 at 1; Petitioners’ FOF/COL 669 at 91. Ms. Collins also conceded, “[s]ome of the ‘find spots’ may also be associated with ongoing religious practices, but their function is ambiguous or unclear in most cases.” S. Collins WDT, Exhibit A-08. Put otherwise, the connection between some “find spots” with ongoing Native Hawaiian customary and religious practices still need to be properly assessed. Exhibit A-8 at 7; Petitioners’ FOF/COL 672 at 91. Because some of these “find spots” are actually historic properties or potentially eligible to be distinguished as historic properties, they need to be considered as contributing historical properties in Mauna Kea’s Historic District.

In contradiction to HO FOF 328, Figures 4.1 (Exhibit A-311 at 4-2) and 5.1 (Exhibit A-28 at 5-5) are competent and credible evidence that specific cultural resources and historic properties were omitted from the CDUA document resulting in it being inaccurate and incomplete.

333. Petitioners object and take exception to the HO FOF 333 at 56.

FOF 333 is inaccurate, misleading, and unsubstantiated. This is another example of an inaccuracy attributed to the Applicant’s legal counsel distorting the language of a witness’ testimony and then presenting it as an unsubstantiated fact. Upon examination of the transcripts, there was a question posed regarding “*surrounding properties*”. Tr. 8/17/11 at 89. However, the Applicant’s FOF 346 changed this reference to “*historic properties*” and attributed this statement to Ms. Collins. In addition, SHPD never stated in any of their correspondence that the “*TMT Project would have no significant impact on the historic properties*”. The SHPD instead repeatedly informed the Applicant and their archaeological consultants that “*the TMT project will result in impacts to this district.*” Exhibit A-309 at 27. Likewise, PCSI never stated in any of their reports or archaeological inventory surveys that the “*TMT Project would have no significant impact on the historic properties*”. (Exhibit A-28) see Exhibit A-28, Final Report: Archaeological Inventory Survey of the Astronomy Precinct in the Mauna Kea Science Reserve; A-29, Final Report: Archaeological Inventory Survey of the Mauna Kea Access Road Management Corridor; A-133, Draft Report: Archaeological Inventory Survey of the Mauna Kea Science Reserve.

335. Petitioners object and take exception to the HO FOF 335 at 56.

FOF 335 is inaccurate. It would be practically impossible to restore the Batch Plant Staging Area to a “more natural condition upon completion of TMT Project construction” because the adjacent landscape consists of pahoehoe and other lava attributes that cannot be replicated. Likewise, it would be practically impossible to restore the access road on Pu‘u Poli‘ahu to its “natural state” because the landscape consists of various different colors of cinder that cannot be replicated and/or obtained from elsewhere.

339. Petitioners object and take exception to the HO FOF 339 at 57.

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FOF 339 is inaccurate and misleading. The TMT Observatory's visual impact upon the Historic District was not addressed adequately in any of the archaeological inventory surveys or other associated reports. Another example of the incompleteness of the CDUA was the failure to provide a visual analysis of the TMT Observatory's visual impacts upon the historic properties and cultural resources located on the northern slope within the Historic District. According to the Cultural Resources Management Plan done by PCSI, "*Effects on the historic district would consider the visual impact of a facility on the surrounding landscape (i.e., the various land forms creating the setting and context of the multiple historic properties encompassed by the district) and on those individual historic properties that contribute to the significance of the district.*" Exhibit A-303 at 4-38. However, it was confirmed by Ms. Collins and Mr. Hayes that a visual analysis was never done from those sites within the cultural landscape of the northern slope. A viewshed analysis on top of Mauna Kea was only limited to the summit region of Kūkahau'ūla. Petitioners' FOF/COL 637-639 at 88; 642 at 89. In addition, the Mauna Kea Science Reserve Master Plan (2000) recommended that the placement of new observatories and facilities should have "*Minimum visual impact from significant cultural areas. Views from the pu'u and archaeological sites will be respected in the siting of future facilities. The location of new facilities will avoid interference with the visual connections between the major pu'u and the shrine complexes.*" Exhibit A-21 at IX-22.

342. Petitioners object and take exception to the HO FOF 342 at 57.

FOF 342 is inaccurate and misleading. The TMT Project will contribute to the existing level of significant, substantial, and adverse impact on the historic properties within the Mauna Kea Summit Region Historic District which encompasses the MKSR. Exhibit A-308, TMT FEIS at S-8.

344. Petitioners object and take exception to HO FOF 344 at 57-59.

FOF 344 is incomplete. It does not include a comprehensive list of other relevant studies and reports including UHH's own consultation reports from Maly and Rosenthal (Exhibit A-21, Appxs. I & N), which more substantively document Native Hawaiian traditional and customary practices of Mauna Kea.

343, 345-359. Petitioners object and take exception to FOFs 343, 345-359 at 59-65.

FOF 343, 345-359 are inaccurate and unsubstantiated. Contrary to these FOFs, "natural resources" are necessitating protection include cultural resources. Under HRS Chapter 343-2, "significant effect" is defined as "the sum of effects on the quality of the human environment, including actions that irrevocably commit a natural resource, curtail the range of beneficial uses of the environment, are contrary to the State's environmental policies or long-term environmental goals as established by law, or adversely affect the economic welfare, social welfare, or *cultural practices* of the community and State." HRS § 343-2 (emphasis added).

HRS Chapter 343 imposes special obligations to evaluate cultural impacts. HRS Chapter 343 was amended in 2000 to add the term "cultural practices" to the definition of "significant effect." See Act 50 (2000). The Legislature found that "there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawai'i's culture, and traditional customary rights." *Id.* It recognized that "the native Hawaiian culture plays a vital role" in the preservation of Hawai'i's "aloha spirit" and that

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"Articles XI and XII of the state constitution, other state statutes, and the courts of the State impose on government agencies a duty to promote and protect cultural beliefs, practices, and resources of native Hawaiians. . . ." *Id.* It observed that the past failure to require native Hawaiian cultural impact assessments had resulted in the loss and destruction of many important cultural resources and interfered with the exercise of the native Hawaiian culture. *Id.* It found that due consideration of the effects of human activities on native Hawaiian culture was necessary to ensure the culture's continued existence, development and exercise. *Id.* See also Stand. Comm. Rep. No. 3298 (expressing the Committee's belief that the amendment would result in "a more thorough consideration of an action's potential adverse impact on Hawaiian culture and tradition, ensuring the culture's protection and preservation"). Thus, there is a specific requirement that agencies evaluate the impact of their actions on the native Hawaiian culture.

345. Petitioners object and take exception to HO FOF 345 at 59.

The HO has erroneously attempted to reduce the entire scope and breadth of Hawaiian culture into two singular categories based primarily on a division of time - long-standing traditional and customary cultural practices vs. contemporary cultural practices. The unfortunate thing about it is that there are too many instances in HO's FOF where the categories of Hawaiian cultural practice have been confused based on the time when a certain specific practice occurred or is occurring. *See* Exceptions to COLs 194 & 200.

For instance, in HO FOF 373, the HO attempts to classify Petitioner Pisciotta's present activities on Mauna Kea as the "stacking of rocks." However, because Hawaiian culture is primarily based on stone and wood - the use of stone (rock) in the culture was universal.

Therefore, the characterization of the term "stacking of rocks" in Petitioner Pisciotta's setting is excessively simplistic and elementary - and seems to categorize the practice as being a contemporary cultural activity - ignoring the fact that rock-stacking in the form of ancient heiau and fishpond construction were indicative of sophisticated traditional and customary practices. That such confusion can arise by such a legally proficient individual as the HO by a term he has adopted indicates that such an attempt at simplification in this (Pisciotta) example is, to a great degree, unworkable.

On the other hand, the numerous references of "intangibles" relative to Hawaiian cultural practice have been totally ignored.

However, Patricia L. Parker and Thomas F. King, in Bulletin 38 (U.S. DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE, NATIONAL REGISTER, HISTORY AND EDUCATION, NATIONAL REGISTER OF HISTORIC PLACES) - suggest the implementation of such terms as "tangible" and "intangible" (as they relate to the National Register of Historic Places).

"This Bulletin does not address cultural resources that are purely "intangible"— i.e. those that have no property referents—except by exclusion. The Service is committed to ensuring that such resources are fully considered in planning and decision making by Federal agencies and others. Historic properties represent only some aspects of culture, and many other aspects, not

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necessarily reflected in properties as such, may be of vital importance in maintaining the integrity of a social group. However, the National Register is not the appropriate vehicle for recognizing cultural values that are purely intangible, nor is there legal authority to address them under 106 unless they are somehow related to a historic property."

"The National Register lists, and 106 requires review of effects on, tangible cultural resources—that is, historic properties. However, the attributes that give such properties significance, such as their association with historical events, often are intangible in nature. Such attributes cannot be ignored in evaluating and managing historic properties; properties and their intangible attributes of significance must be considered together."

Therefore Petitioners object and take exception to HO FOF 345.

348. Petitioners object and take exception to HO FOF 348 at 59-60.

FOF 348 is unsubstantiated. HO does not take into account Petitioners testimony or exhibits and other documents not cited – for example, he does not include Appendix “N” and “T” of the Master Plan, on the record as Exhibit A-21. These exhibits present evidence contrary to the findings presented in FOF 348.

349-350. Petitioners object and take exception to HO FOFs 349-50 at 60.

FOFs 349-350 are misleading and not substantiated by the record, which documents: 1) cultural practices that will be substantially affected by siting the TMT Project on the northern plateau; and 2) evidence demonstrating the substantial impact that the presence of observatories has had on practices in the northern plateau. FOFs 349-350 are misleading because they attempt to bracket the northern plateau from the rest of the Mauna Kea summit region, which thereby mischaracterizes both the geographic location of the northern plateau (which is part of the summit region) *and*, more egregiously, the cultural practices that use the entire Mauna Kea summit region.

SHPD rejects the approach taken by FOF 349-50 -- bracketing the northern plateau’s cultural and historic significance from that of the entire Mauna Kea summit region. The proposed TMT project location is within the Mauna Kea Summit Region Historic District (MKSRLHD) (State Inventory of Historic Place #50-10-23-26869) which SHPD determined to be historically and culturally significant under all five criteria (A, B, C, D, & E) of the Hawai‘i Register of Historic Places and Hawai‘i Administrative Rules (§13-275) and under all four criteria (A, B, C, & D) of the National Register of Historic Places. Exhibit A-37, SHPD letter at 1. SHPD reports, “[w]ithin the historic district, the effect of a project on the historic district as a whole needs to be assessed as well as the project's effect on individual historic properties located within or immediately adjacent to the project area. The effect of a project on the historic district must be addressed even if no individual historic properties are found within or immediately adjacent to the project area.” Exhibit A-309b, TMT FEIS at G-59. SHPD’s Mauna Kea Historic Preservation Plan (2000) likewise asserts:

Within the [Mauna Kea Summit Region] historic district, the significance of properties is not evaluated individually because the summit region as a whole is considered eligible for inclusion in the National Register. Instead, the required assessments consider how

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each newly or previously recorded property potentially affected by a project contributes to the significance of the historic district as a whole.

Exhibit A-309b, TMT FEIS at G-55; Petitioners' FOF/COL 233.

Just as MKSRHD historic properties are not evaluated in isolation, neither do cultural practices use discrete areas of the Mauna Kea summit. The Mauna Kea summit region in its entirety is a 'cultural landscape' -- a geographically definable area that clearly reflects patterns of occupation and land use over a long time period, as well as the cultural values and attitudes which guide and regulate human interaction with the physical environment. Exhibit A-21, App. N at 45, Petitioners' FOF/COL 630. DLNR-SHPD archaeologists have also referred to the summit region as a 'ritual landscape' with all of the individual parts contributing to the integrity of the whole summit region." Exhibit A-21, App. I, at 3; Petitioners' FOF/COL 631 (emphasis added).

Based on the Native Hawaiian traditional cultural practices and beliefs associated with Mauna Kea, as documented in the Maly (1999) oral history and consultation study, UHH consultants have considered the MKSRHD to be a special type of cultural landscape referred to by the National Park Service as "ethnographic landscapes": "those landscapes imbued with such intangible meanings that they continue to be deemed significant or even sacred by contemporary people who have continuous ties to the site or area." Exhibit A-21, App. N at 45; Petitioners' FOF/COL 632. Likewise, Maly has employed a landscape-wide approach to assessing the connection of many Native Hawaiians to Mauna Kea." Exhibit A-21, App. N at 45; Petitioners' FOF/COL 633. Such connections are "cultural attachments":

"[cultural attachment] embodies the tangible and intangible values of a culture. It is how a people identify with and personify the environment (both natural and manmade) around them. Cultural attachment is demonstrated in the intimate relationship (developed over generations of experiences) that a people of a particular culture share with their landscape--for example, the geographic feature, the natural phenomena and resources, and traditional sites, etc., that make up their surroundings. This attachment to environment bears direct relationship to their beliefs, practices, cultural evolution, and identity of a people. In Hawai'i, cultural attachment is manifest in the very core of Hawaiian spirituality and attachment to landscape. The creative forces of nature which gave birth to the islands (e.g., Hawai'i), the mountains (e.g. Mauna Kea) and all forms of nature, also gave birth to *na kanaka* (the people), thus in Hawaiian tradition, island and human kind share the same genealogy..."

Exhibit A-21, App. I at 27; Petitioners' FOF/COL 634.

FOF 349 further fails to acknowledge that the largest concentration of historic properties and cultural resources is on the northern slope of Mauna Kea below the summit cones where TMT Observatory and facilities propose to be placed at the same elevation where no other observatory presently exists among the "ring of shrines". Exhibit A-28, FAIS-AP at 6-1; K, Pisciotta, Tr. 9/30/11 at 138:19-25, 139:1; Petitioners' FOF/ COL 748. The term 'shrine' is used by Archaeologist [McCoy] to describe all of the religious structures that exist in the summit region of Mauna Kea. Exhibit A-21, App. N at 21. Shrines were placed in prominent location with

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commanding views of the landscape. Exhibit A-21, App. N at 21. FOF 349 is also misleading because it focuses on “known” cultural practices “associated with a specific historic property” -- thus mischaracterizing the cultural value of the northern slope.

Numerous historic properties and cultural resources (find spots) on the northern plateau that have been identified in the Archaeological Inventory Survey of the Mauna Kea Science Reserve (AIS-MKSR). Exhibit A-28, AIS-MKSR at 3-12. The largest concentration of historic properties and cultural resources is on the northern slope of Mauna Kea below the summit cones. Exhibit A-28, FAIS-AP at 6-1. Many of these sites are located within a narrow 220-ft contour interval, between the 12,900-ft and 13-100-ft elevations on the northern slope. Exhibit A-28, FAIS-AP at 6-1. Findings by UHH consultants, and emphasized by Petitioners, demonstrate that the entire summit district, including Area E and the historic properties contained therein, are associated with traditional and customary practices. *See also* Petitioners’ FOF/COL 641 at 88; 643, 645-648 at 89; 665 at 90.

Contrary to FOF 350, the northern plateau is an undeveloped, wide-open space that is critical to Hawaiian cultural practices, as well as recreational uses of Mauna Kea. Petitioners have provided substantial evidence that their traditional and customary practices involve viewplane alignments that pass through the proposed TMT project areas and will thus be substantially adversely impacted by the TMT, as they have been by other observatories. *See, e.g.*, Exhibit C-01 (K. Pisciotta, WDT 6/28/11 at 7); Pisciotta, Tr. 9/26/11 at 101:21-25, 102:1-25, 103:1-25, 104:1-3, 141:11-17; Petitioners’ FOF/ COL 755-56. Images of the affected viewplanes analyzed in the TMT-EIS clearly demonstrate that there are no man-made structures currently visible when looking from the northern ridge of Kukahau`ula towards Haleakalā. Exhibit A-308, TMT EIS at 3-100, fig. 3-23.

FOF 350 is directly contradicted by comments on the proposed TMT Project from the previous DLNR chairperson, Laura Thielen:

“It is our view that the effect of astronomy development on cultural resources and on the landscape of Mauna Kea has been significant and adverse. While a project such as the TMT can bring new resources into play that may mitigate certain cultural impacts... we believe the project will increase the level of impact on cultural resources, which remains significant and adverse.”

Petitioners’ FOF/COL 996 at 136 *citing* L. Thielen, Exhibit A-309 TMT-FEIS Vol. II at 17 of 531.

The TMT would be the first observatory to be constructed at the elevation and the specific zone on the north plateau that includes several hundred shrines and other religious structures. Likewise, the proposed TMT observatory would drastically alter the surrounding environment and cause visual and alignment obstructions for these many cultural and religious sites, thus adversely impacting the constitutionally protected traditional and cultural and religious practices exercised by Hawaiian Petitioners. *See* Exhibit A-308 at S-8, Exhibit A-309, CIA.

351. Petitioners object and take exception to HO FOF 351 at 60-61.

FOF 351 is unsubstantiated because it omits relevant evidence contained in the record.

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FOF 351 takes the above witness statements out of context and this is improper. For example the claim regarding Mr. Babayan ignores that he testified that he uses Mauna Kea from the sea as a oceanic finding point, and does not use the mountain in preparation for such voyages (Tr. 8/18/11 at 166: 24-25, 167: 1-25) and further that he made no specific reference to any actual cultural practices he engages in on Mauna Kea. Tr. 8/18/11 at 176: 13-21; Tr. 8/18/11 at 166: 24-25, 167: 1-25. The same holds true for Mr. Ishibashi and Ms. Hoover. Although both shared beautiful sentiments about Mauna Kea, neither of these witnesses identified any specific cultural practices (concern for what is done to Poli‘ahu) or established any adverse impacts to their practices. Tr. Hoover, 8/18/11 at 108:1-20, and Tr. Ishibashi 8/17/11 at 101:9-20, 103:2-7. FOF 351 unreasonably finds that none of UHH’s witnesses’ practices will be adversely impacted because these witnesses never identified any of their own actual practices exercised on the mountain. *See* Petitioners’ Combined Responses to UHH FOF/COL at 105.

352-354. Petitioners object and take exception to HO FOFs 352-352 at 61.

FOF 352-354 is unsubstantiated because its claims about the Lake water quality and cites to facts not in the record. The complex hydrology of Mauna Kea is unknown. Petitioners reassert the following, Petitioners Response to UH FOF/COL at 54-55.

It is undisputed that beneath the summit is a “high level” aquifer comprised solely of fresh water. Petitioners’ FOF/COL 155, 157 at 21, 166 at 22. Four components of the hydrology of the Mauna Kea summit region remain unknown: 1) watershed calculations of snow-water distribution, 2) outcomes of leachate and liquid waste from septic and cesspool systems, 3) distribution and impacts of permafrost, and 4) groundwater maps of water levels, flow paths, and recharge rates. Petitioners’ FOF/COL 160 at 21. The Applicant’s evidence also indicates that surface runoff at the summit does not extend below an elevation of 6,000 feet, which means that “the majority of the water ultimately ends up percolating and becoming groundwater recharge with only a small amount lost to evaporation. Petitioners’ FOF 159 at 21. “The main activities that have potential to result in a release of contaminants include vehicle travel (on and off road) and accidents; release of hazardous material and petroleum product use by observatories and support operations; sewage generation; and transport of hazardous materials and sewage off-site.” Petitioners’ FOF 534. p.72 citing Exhibit A-301 CMP at 6-14.

This record indicates that groundwater resources are at risk from telescope activities on Mauna Kea. The Applicant failed to present evidence to the contrary and moreover failed demonstrate the increased telescope activities from the TMT would not further jeopardize underground water resources on Mauna Kea. Operation of the TMT would increase the use and storage of chemicals on Mauna Kea. The chemicals will be stored underground and transported by truck -- although the number of trucks and frequency of trips was not known by the Applicant’s witness on the CDUA. White Tr. 8/15/11, p 47: 6-25, 48: 1-3. No studies have been conducted of the groundwater system of Mauna Kea. Indeed, the Applicant’s expert on water, Mr. Nance, is not qualified to speak to groundwater issues and did not conduct any studies specific to the TMT. Nance Tr. 8/16/11, p. 169: 23-25, 170: 1-4 at 171: 3-5 at 172: 2-4.

355. Petitioners object and take exception to HOH FOF 355 at 61.

FOF 355 is objectionable because it omits relevant testimony from the record. HO omits relevant testimony of UHH witness Mr. Smith who states: “We spent two days walking through the

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whole site recording all lichens and bryophytes observes. We search all four principle habitat types and spend some extra time investigating small caves taking particular care not to disturb anything that look of archaeological significance. WDT A-10 at 2.

Smith affirmed that he witnessed bones in a small cave at the TMT site. Tr. 8/16/11 at 187-189. Smith's statement contradicts Ms. Collins testimony that burials are unlikely in the area of the TMT. TR 8.17.11 at 89-90. The TMT FEIS also cites evidence of Native Hawaiian burials at Pu'u Līlīnoe, Pu'u Mākanaka, and at other locations on Mauna Kea's slopes (Ahumoa, Kemole, Pāpalekōkī, Kihe, Kanakaleonui, Kaupō, and 'ō'ō), which were likely established before 1892. TMT-FEIS at 3-16; *see also* Petitioners Response to UH FOF/COL at 98-101.

356. Petitioners object and take exception to HO FOF 356 at 36.

FOF 356 is misleading because it does not support the proposition that the TMT will not affect the solstice or equinox ceremonies from Pu'u Wekiu. The UHH claims that because TMT cannot be seen from Pu'u Wekiu, it will not adversely impact solstice and equinox ceremonies. This assumption is false. While Pu'u Wekiu plays an important role in many ceremonies, including solstice and equinox, it is not the only location from which ceremonies are done.

357-358. Petitioners object and take exception to HO FOF 357-358 at 62.

FOF 357-358 is inaccurate and irrelevant because it assumes that BLNR may delegate its authority to UHH to regulate the reasonable exercise of Native Hawaiian cultural practice . The University and/or its agents are not qualified to determine what is culturally appropriate or not. *See* Petitioners Response to UH FOF/COL at 64-65 (Given the University's conflicting roles on Mauna Kea, it is an improper delegation of authority for the BLNR to empower the University to make "management" decisions about the mountain's resources and the practices that rely on them. *Ka Pa'akai O Ka `Aina v. Land Use Commission*, 94 Haw. 1, 21-23 (2000)). The BLNR's relationship to the University in this situation is notably similar to the illegal "wholesale delegation" of authority from the Land Use Commission to Kapulehu Development in *Kapa`akai O Ka Aina v. LUC*. Like Kapulehu Development, the University is the primary developer of the land, promising to implement protections for constitutionally protected practices after the proposed project is approved. It is an abuse of BLNR's discretion to trust the Applicant will protect traditional and customary practices once the project is approved.

360-361. Petitioners object and take exception to HO FOF 360-361 at 62.

FOF 360-361 is unsubstantiated. The TMT FEIS project states that "the cumulative impact of past, present, and reasonably foreseeable telescope activities is already significant, substantial, and adverse." Exhibit 309, FEIS Vol 1 at S-8, S-9. The TMT would contribute to this existing state of substantial adverse impact.

362-369. Petitioners object and take exception to HO FOF 362-369 at 62.

FOF 362 is inaccurate, because mitigation measure must actually "...serve to "protect and enhance the natural environmental, cultural, historical, and other resources" of the district..." and reduce significant impacts to less than significant. *See* Petitioner Response to UH FOF/COL at 33; Petitioners' Response to UH FOF/COL at 32-33.

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Mitigation measures proposed by UHH are too indirect and insufficient to reduce the substantial adverse impacts identified here. In *Morimoto v. Bd. of Land & Natural Res.*, 107 Haw. 296 (2005), the question posed to the Court was whether BLNR had the authority to consider mitigation measures when applying the 8 criteria of HAR 13-5-30(c). While concluding that BLNR has authority to consider mitigation measures when evaluating a CDUA, the court also gave direction as to characteristics of adequate mitigation. The court found that mitigation actions imposed on the Federal Highway Administration's (FHA) road realignment project actually served to "protect and enhance the natural environmental, cultural, historical, and other resources" of the district. *Id.* at 303, fn. 20. By contrast with the TMT-CDUA case, the harmful impact of the proposed project – paving over Palila habitat – was *directly* ameliorated by the legally binding requirement to restore habitat nearby – specifically, the re-vegetation of 10,000 acres of prime Palila habitat.

Further, in *Morimoto*, FHA had considered several alternative paths for the realignment of Saddle Road. The U.S. Fish and Wildlife Service reviewed the many alternatives and issued a Biological Opinion (BO) in which the agency agreed that redesigning the highway project to create more habitat and reintroduce endangered species would mitigate project-related disturbances to Palila and *Silene hawaiiensis*. The mitigation measures were memorialized and made enforceable through a Memorandum of Understanding between the FHA and the BLNR. See *Morimoto v. BLNR*, 107 Haw. 296, 299; 113 P.3d 172, 175 (2005). By contrast, UHH has not designed the TMT project mitigation actions in accord with guiding documents nor demonstrated that the proposed mitigation actions would directly reduce the admitted significant impacts of the project to a level that is less than significant. UHH has not shouldered the burden of proving that mitigation measures offered would actually reduce the significant impact of the TMT proposal to a level that is less than significant. See *infra* Exceptions to HO COL 37.

370. Petitioners object and take exception to HO FOF 370 at 65.

FOF 370 is unsubstantiated. The record contains no evidence that mitigation or management actions proposed in relation to the TMT Project will reduce adverse impacts to a less than substantial level. The previous DLNR chair commented that while mitigation may "reduce such impacts" on "this important cultural landscape" the "effect will remain significant[.]" DLNR Chairperson, L. Thielen, Exhibit A-309 FEIS Vol. 2 at 17.

Contrary to FOF 370, UHH has *not* shown that proposed TMT Project mitigation would "prevent substantial adverse impact to the various resources of Mauna Kea and the surrounding area, community, or region." To make such an assertion, HO cannot rely on guesswork or empty assertions. See *National Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 736-37 (9th Cir. 2001) (absence of data supporting the habitat restoration plan does not excuse agency from further study when there is a reasonable possibility that the data could be obtained; speculative and conclusory statements insufficient to demonstrate that mitigation measures will be effective), *cert. denied*, *Holland Am. Line-Westours, Inc. v. National Parks & Conservation Ass'n*, 534 U.S. 1104 (2002); *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1151 (9th Cir. 1998) (mitigation plan should be supported by analytical data); *Northwest Indian Cemetery Protective Ass'n v. Peterson*, 795 F.2d 688, 697 (9th Cir. 1985), *rev'd on other grounds*, *Lyng v. Northwest Indian Preservation Ass'n*, 485 U.S. 439 (1988) (agency must analyze mitigation measures in detail and explain how effective they would be); *Oregon Natural Desert Ass'n v. Singleton*, 47 F.

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Supp. 2d 1182, 1194 (D. Or. 1998) (EA did not reveal how mitigation measures would compensate for adverse environmental impacts); *Morgan v. Walter*, 728 F. Supp. 1483, 1488-92 (D. Idaho 1989) (Ezra, J.) (requiring additional study where there was uncertainty regarding efficacy of artificial habitat for candidate species); *National Wildlife Fed'n v. Babbitt*, 128 F. Supp. 2d 1274, 1302 (E.D. Cal. 2000) ("Where there is uncertainty regarding the success of mitigation measures, NEPA's approach to such uncertainty is to require an EIS."); *Coalition for Canyon Preservation v. Slater*, 33 F. Supp. 2d 1276, 1280 (D. Mont. 1999) (FONSI inappropriate absent scientific analysis that regeneration habitat for rare tree would work).

371. Petitioners object and take exception to HO FOF 371 at 65.

FOF 371 is inaccurate and unsubstantiated because it is contradicted by Petitioners' testimony of their individual and/or collective customary and traditional Native Hawaiian cultural practices and documentation of their cultural practices as traditional and customary to Mauna Kea predating November 1892. *See infra e.g.*, Exceptions to HO COL 194; Petitioner's Responses to UHH FOF/COL 363-366. UHH's documents, including those in their exhibits, demonstrate the time, depth, continuity and history of the various cultural and religious practices exercised by Petitioners (including those practices listed in our petitions) for more than a decade. *See, e.g.*, UHH Exhibit A-21, "University of Hawai'i Mauna Kea Master Plan 2000," Appendixes N and I.

As the following references from UHH's exhibits, the Applicant concedes that the traditional and customary Native Hawaiian practices exercised by Petitioners are, in fact, constitutionally protected.

- "For the purposes of evaluating the significance of Native Hawaiian cultural practices, features and beliefs identified in association with the Science Reserve Master Plan Project Area, it would be useful to consider them in terms of the three types of informant claims that were defined earlier ... **information obtained by Maly in his oral history and consultation study (1999) suggests that several of the identified practices and beliefs would appear to fall within the category of traditional and customary practices claims.**"

Exhibit A21, App. N at 43; Petitioners' FOF/COLs 363 at 52.

- "[Such] **claims that would lie within the purview of Article XII, Section 7, of the Hawai'i State Constitution ("Traditional and Customary Rights")** particularly as reaffirmed in 1995 by the Hawai'i State Supreme Court in the decision commonly referred to as the 'PASH decision', and further clarified in the 1998 decision in 'State v. Hanapi,' which would include various cultural practices and beliefs associated with the general geographical area of the summit region rather than a clearly definable property or site. Exhibit A-21, App. N at 43; Petitioners' FOF/COLs 364 at 52.

- "Most if not all of the identified practices and beliefs in [the Mauna Kea Science Reserve Master Plan] would seem to qualify as traditional and customary practices within the meaning of the Hawai'i State Constitution, while the principle *pu`u* and the shallow lake with adjacent *pu`u* would seem to satisfy the criteria for being regarded as a legitimate traditional and cultural property. Finally, none of the identified practice and

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beliefs would seem to represent strictly contemporary cultural practice or beliefs lacking some measure of traditional connection. Exhibit A-21, App. N at 45; and Petitioners' FOF/COLs 366 at 52.

Because constitutionally protected Native Hawaiian traditional and customary rights must be rooted in practices predating November 1892, these documents are referring to practices that predate November 1892.

372-373. Petitioners object and take exception to HO FOFs 372-73 at 65.

FOFs 372-373 are inaccurate and misleading. Petitioners did not claim to practice "stacking of rocks[.]" None of the Petitioners engage in the practice of "stacking rocks" as FOF 372 suggests, but rather construct kūahu. Petitioner Pisciotta testified to her practice of caring for a kūahu, which is composed of stones but cannot be described as "stacking of stones." Kūahu construction is a protected Native Hawaiian traditional and customary practice. The TMT FEIS reports Kealoha Pisciotta uses a contemporary kūahu on Mauna Kea and concludes that "contemporary functions [that] are rooted in traditional beliefs." TMT-FEIS at 3-15. This FEIS finding concurs with Paul Rosenthal's discussion of Mauna Kea contemporary cultural practices, "certain other practices, such as prayer and ritual services involving the new construction of new *kuahu* (altars), or the releasing of cremated humans rather than internment on *pu`u*[".] that he finds "might seem to be contemporary cultural practices they may as well be considered reasonable cultural development evolving from earlier traditional practices." Exhibit A-21, App. N at 43; Petitioners' FOF/COLs 365 at 52.

FOF 373 is misleading because it suggests that Petitioners (Pisciotta, who was admitted as an expert witness) lack expertise in identifying their cultural practices -- i.e., FOF 373 describes the practice of observing the "Precession" as "so-called Precession[.]" FOF 373 is further misleading because it gives the appearance of ridiculing Native Hawaiian cultural practices and therefore casts doubt on the HO's capacity to make an unbiased, objective decision. This is a concern previously raised by Petitioners. See Pisciotta WDT, Exhibit C-01 at 5-6.

374. Petitioners object and take exception to HO FOF 374 at 65.

FOF 374 is a mischaracterization of Petitioner Pisciotta's "*abstract*" need to track the Precession[.] (emphasis added). Petitioner Pisciotta's practice is not "abstract," but a measureable, repeatable and concrete method of traditional and customary navigational practice. UHH consultation documents describe "practices of the native practitioners of the *'oihana kilokilo* and the *kilo hoku* [that] occurred on Mauna Kea", thus supporting Pisciotta's representations of her traditional and customary practices. Exhibit C-12, Appx. I at 96.

375. Petitioners object and take exception to HO FOF 375 at 65.

FOF 375 is inaccurate and unsubstantiated. Contrary to FOF 375, Pisciotta did provide extensive testimony about Native Hawaiian customary and traditional cultural practices (that continues today) on Mauna Kea that she engages, which include Polohiwa (Precession) ceremonies (solstice and equinox ceremonies, tracking the pole stars). See Kealoha Pisciotta's WDT, C-01 at 5-6. Petitioner Pisciotta expressly testified that the TMT will negatively impact cultural view planes used by Native Hawaiian Practitioners. See Pisciotta WDT, Exhibit C-01 at 6-8.

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In Pisciotta's WDT, she explains Exhibit C-05, a map that describes traditional cultural view planes used by cultural practitioners. It was created by Community By Design (CDB), a planning group from University of California at Berkeley. CDB interviewed many different people in Hawai'i's community to learn about Mauna Kea. They created this map out of UHH documents and other testimony on Mauna Kea view sheds. This map incorporates Petitioners' testimony as well as others. It is not a complete map but it provides a visual representation of some of the view planes including some of the solstice and equinox view planes and those in relation to other the sites and also to the other islands. On Exhibit C-05's view plan map, you can see that the TMT will be in direct line of sight of Maui and the NW plane which is used for ke ala ao (solstice and equinox) ceremonies. There are also lines that represent the relationship between Mauna Kea and Poli'ahu Heiau on Kaua'i, Ahu a Umi Heiau situated between the three great mountains (Hualalai, Mauna Loa and Mauna Kea) on Hawai'i Island, the Pu'u Kohola Heiau in Kawaihae, Hawai'i Island, and Motu Manamana (Necker Island) of the North Western Hawaiian Island which marks the great turn around of the sun during the ke ala polohiwa time. The shrines on this tiny island are related to this relationship too. This map also describes some of the nighttime view planes used by cultural practitioners. For example, the map shows the views of the rising and setting of important stars and constellations. It records views of the Pleiades (related to Makahiki Ceremonies), the Southern Cross (Pe'a), and the North Star (Hoku Pa'a). She already has to move around the observatories to get unobstructed views of the sun setting (NE-NW) direction, the great shadow of Mauna Kea and other night time view planes. For example, the constellation known as the Southern Cross which is an important navigational constellation and used for time keeping on the sea, is obstructed from the summit region by the existing telescopes, so the TMT view plane impacts will add to the existing cumulative impacts to the traditional and cultural view planes. See Exhibit E-02.

376. Petitioners object and take exception to HO FOF 376 at 65-66.

FOF 376 is inaccurate and misleading. First, testimony from C. Babayan describes practices that are some of many others with long-standing and acknowledged beliefs. Babayan's claim that the Pole Star is not necessarily "seen" in traditional Polynesian navigation is separate from practices based on other historical accounts. In "Hawaiians as Navigators and Seamen" (1925), which is part of Exhibit C-12, authors state "To make the landfall desired the *hoopakele* first located the North Star, in Hawaiian, Hoku Pa'a, or fixed star, and kept it on the proper bearing; and selected from the heavens the steering star, the star from among many that would carry him safely to his port." Maly and Maly, *Mauna Kea: Pa i ka Lani* (Mauna Kea Touching the Heavens), Exhibit C-12 at 81.

FOF 376 mischaracterizes testimony by Mr. Babayan as contravening testimony to Ms. Pisciotta's testimony. The two witness's statements are not opposing. Mr. Babayan is a respected Hawaiian navigator, and while he did not testify to actually engage in Native Hawaiian solstice and equinox ceremonies on Mauna Kea he did admit that he understood the principles of precession (that is the year cycle of the movement of the north and south pole stars, over a period of 26,000 years).

FOF 376 takes witness statements out of context. Mr. Babayan testified that he uses Mauna Kea mountain from the sea as an oceanic finding point -- a landmark. This method of "using" Mauna Kea is distinct from a cultural practice *rooted in* Mauna Kea, such as a cultural practice of

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preparing for such voyages. Tr. 8/18/11 at 166: 24-25, 167:1-25 and further that he made no specific reference to any actual cultural practices he engages in on Mauna Kea. Tr. 8/18/11 at 176: 13-21; Tr. 8/18/11 P 166: 24-25, 167: 1-25. It is not reasonable to find that UHH's witness' practices will not be adversely impacted if the witnesses never actually even identified any actual practices exercised on the mountain.

Babayan explained only that "as a navigator, Polaris, the north star is important, but it fades away as you approach the equator sailing south" and he "...believed that the first Oceanic explorers... did not employ a pole star..." Exhibit A-107 at 1. His testimony is correct in that the southern hemisphere has fewer stars to utilize as pole stars than the northern hemisphere and in fact the constellation of the Southern Cross or what many call Hoku Kea, has been used for the last 2,000 years as a southerly directional pointer in lieu of a single star over or very near to the south pole. He is further correct that hoku pa'a was not used either, because the pole stars (both southern and northern star) move or over time. Polaris is the current pole star, but in 3,000 B.C. the star nearest the north pole was Thuban or Alpha Draconis in the constellation of Draco. See Petitioners Response to UHH's FOF/COLs at 105-106.

By contrast, Pisciotta's testimony concerning her Native Hawaiian traditional and customary practices of conducting astronomical observations *from* the actual place of Mauna Kea itself is substantiated by scholarly research contained in the record. Maly's 2005 study identified '*oihana kilokilo*, which "represented the customs of the ancient Hawaiian astronomers and finally came to mean any mysterious or magical customs. The words were applied to the ordinary superstitions of the Hawaiians and meant any sorceries and enchantments practiced by the people or the priests." Exhibit C-12 Appx. I at 75. Maly further elaborated on the genealogy of '*oihana kilokilo*:

The association of the gods and deity whose forms are seen in the heavens and whose names are commemorated on Mauna Kea is noteworthy, and may be viewed as cultural manifestations of the cultural attachment and values placed by Hawaiians on the *Mauna A Kea*, and the *kilo lani* (heavenly bodies). It is very likely that practices of the native practitioners of the '*oihana kilokilo* and the *kilo hoku* occurred on Mauna Kea, but, they were either unwritten, or await being brought to light once again. While today, Mauna Kea is valued as an astronomical center - and this may be rooted in earlier native practices - the ancient Hawaiian practitioners were mindful of their foundation - the *papa honua* (earth) upon which they stood. As noted in the traditions cited above, these islands, the children of the native gods and creative forces of nature, also gave birth to, and life to the *kanaka* (people). Naturally, one couldn't look heavenward, without first looking down, and being mindful of the responsibility (*kuleana*) that people have to care for the *papa honua*. This is a custom which is of value all who cherish and touch Mauna Kea.

Exhibit C-12, Appx. I at 95.

Further, none of the UHH witnesses cited by the HO (i.e., Baybayan, Ishibashi, or Hoover) above were offered as expert nor were they qualified as expert, whereas the Petitioners Neves, Pisciotta. Ching and Flores Ohana were qualified as experts in to the Cultural and Traditional practices of Mauna Kea.

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377. Petitioners object and take exception to HO FOF 377 at 66.

FOF 377 is unsubstantiated. “Contemporary” cultural and religious practices exercised by Petitioners on the lands of Mauna Kea are at once rooted in Native Hawaiian traditional and customary practices pre-dating 1892 and contemporarily practiced. Native Hawaiian culture is a living culture, and the Petitioners, as genealogical descendants of that culture, continue to exercise cultural practices in this modern time. *See* Petitioner’s Responses to UHH FOF/COL 363-366. UHH’s documents, including those in their exhibits, demonstrate the time, depth, continuity and history of the various cultural and religious practices exercised by Petitioners (including those practices listed in our petitions) for more than a decade. *See e.g.* UHH Exhibit A-21, “University of Hawai‘i Mauna Kea Master Plan 2000,” Appendixes N and I. *See infra* Petitioners’ Exceptions to COL 194.

379 - 380. Petitioners object and take exception to HO FOFs 379-380 at 66.

HO FOF 378 and 379 are mischaracterizations, inaccurate, and misleading because they take evidence out of context. UHH contends that the visual impact of the 18-story TMT would not be significant because viewplanes from Mauna Kea are already obstructed. By presenting as a “finding” that “...the TMT will not obstruct any viewplanes from Pu`u Wekiu and will not interfere with any practices involving viewplanes from Pu`u Wekiu[,]” FOF 379 misrepresents Native Hawaiian cultural practices and recreational uses of viewplanes from the Mauna Kea summit region. FOFs 379-380 improperly limit Native Hawaiian practice and valued recreational uses to one location: Pu`u Wekiu. Yet, the evidence on the record shows that protected traditional customary practices and recreational uses occur all over the summit area.

One depiction of viewplanes in Exhibit A-204 demonstrates how natural viewplanes from one specific location on the mountain has been ruined by the industrialization of telescopes. Exhibit A-204 at 20. This is the view from just one location: Pu`u Wekiu. The record, however, also clearly shows that people enjoy the view from locations all around the summit of Mauna Kea. “Cultural practitioners emphasize that Mauna Kea is not just sacred at its summit. The Mauna Kea landscape encompasses 12 levels from the sea to the summit delineating increasing levels of sacredness.” Exhibit A-204 at 20. For thousands of years up to the current day, people (Native Hawaiian cultural practitioners, hikers, conservationists, stargazers) visit Mauna Kea for a wide range of reasons and seek out unobstructed views from places all around the summit of the mountain. *See*, A-204 at 18, 20, 21, and 32. It may be because the current telescopes have invaded the natural viewplane and they must hunt for a location that offers those breathtaking all natural views. But it may also be because they are seeking a particular view for any number of important reasons: the sunset, the rising of a particular star, Hualalai, Haleakalā, the place where their ancestors’ ashes were spread. The viewplane relative to this case is the one of the northern plateau (Area E). As was done on the site visit for this contested case hearing, people walk to the northern edge of Kūkahau‘ula, put the Subaru and/or the two Keck telescopes to their back and gaze out at the most impressive view of Haleakalā and all that is to the north. A review of the images that provide an aerial view of the telescopes at the summit region confirm this experience. *See* A-204 at 27, 28, and 46; A-311 at 1-4, and 5-2.

There is no justification for the Applicant to limit the assessment of viewplane impacts of the TMT project to just Pu`u Wekiu -- the one location that coincidentally serves their argument

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best. The summit of Mauna Kea is open to the public. Petitioners can and do stand anywhere along those viewplane lines. The public takes in the view from the mountain wherever they can find it. Anyone looking towards Maui will have their views blocked by the TMT. It is the impact of this project to these views, that the BLNR is responsible for preventing.

In fact, both UHH and Petitioners agree that the TMT Observatory will be visible from locations within the summit region, particularly from the northern plateau and the northern ridge of Kūkahau‘ūla. In addition, the TMT Observatory will add a substantial new visual element in the open space that will be visible from viewpoints along the northern ridge of Kūkahau‘ūla, Pu‘u Poli‘ahu, and by people as they travel within the northern portion of the summit region. *See*, App. FOF 404, 407, p. 67; Petitioners’ FOF/COL 797-802, p. 109.

When Native Hawaiian cultural practitioners as well as visitors go to the summit region, there are very few areas where one can stand and peer into the horizon without having the existing man-made observatories, associated facilities, and infrastructure obstructing one’s view plane. There are no unobstructed 360-degree views on the summit region. Open view planes are limited to where and however one can get around the existing observatories to find an open space. Also, one is restricted to positioning oneself on the summit roadway looking east or at the northern edge of the observatories looking north in order to avoid the existing adverse visual impacts. Should the TMT Observatory be built on the northern plateau, the only unobstructed view plane from the summit region remaining would be on the eastern side of Kūkahau‘ūla. Therefore, eliminating one of last two unobstructed views from the summit region is a prime example of why the TMT Project’s visual impacts would be substantial, significant, and adverse. Petitioners’ FOF/COL 753, 755, p. 103.

Further, the record does not support the claim that the TMT will not obstruct and viewplanes or practices involving viewplanes from Pu‘u Wekiu. *See* Neves WDT, Exhibits F-01, F-03; Pisciotta WDT, Exhibit C-1 at 7. Paul K. Neves is a Native Hawaiian practitioner of hula and kumu hula. Exhibit F-01, Neves, WDT at 1. He described the importance of viewplanes to Hawaiian traditional and customary practices and explained the spiritual significance of obstructing alignments between Mauna Kea and Hale‘ākala. Exhibit F-01 at 3. Neves has “maintained temple ceremonies within the [Mauna Kea] land areas, including Pu‘u Wekiu[.]” Pisciotta’s WDT described Exhibit E-02, a map that depicts some of the nighttime view planes used by cultural practitioners, and asserted that Native Hawaiian cultural practitioners have had to move around the summit to avoid observatory interference with traditional viewplanes.

FOF 380 is inaccurate because it fails to acknowledge visual impacts upon the surrounding cultural landscape and on those several hundred historic properties and cultural resources located on the northern plateau which contribute to the significance of the Mauna Kea Summit Region Historic District. These include the visual impact upon Hawaiian cultural practitioners, ancestral *akua*, *aumakua*, and *kupua* connected to Mauna a Wakea. Important alignments, both physical and spiritual, would be blocked, interfering with the ability of cultural practitioners to perform those ceremonies and customary, cultural, and religious practices associated with those alignments. As noted by cultural practitioner Neves, “[w]hen we look out on the plateau where the TMT is proposing to site their project-- it is not just that it will now be blocking our eyes (depending on where we are looking from) but it will be the most dominant feature in our eyes

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and therefore the most dominant feature in our customary and traditional view plane. It is this view plane that we use to look and to honor the high maunas down the island chain.” Likewise, cultural practitioner Pisciotta stated, “[t]he TMT will impact us and many other people that seek to observe the sunset from Mauna Kea. The TMT will be in direct line of site of many traditional spiritual and religious view planes, including those towards Haleakalā, the sunset and other sacred sites.” Petitioners’ FOF/COL #738 p. 101, #741 p. 102, #756-757, #760 p. 104, #782-783 p. 107, #796 p. 109, #811-813 p. 110-111, #819-827 p. 112-113.

Petitioners explained that viewplanes do not emanate from a single point and that practices are conducted at different points near the summit, involving different viewplanes not from Pu’u Wekiu. In her closing argument Pisciotta states clearly:

When we go to practice on the Mauna Kea, we don’t only go to the summit, as University would have us all believe. Practices are dependent on the reason the ceremony is being conducted, and the hundreds of cultural and historical shrines placed around the summit region demonstrate practice is widespread. . . .The TMT being placed in the middle of the ring of shrines that contain hundreds if not thousands of sites on the northwestern flank of the summit plateau will be impacted because the views used in ceremonies will be blocked in very significant ways. From the ground level, south to north. If we are standing at ground level on the south side of the TMT on the plateau from any of the ahu’s or cultural, historical sites looking northward, we will not be able to see Haleakalā, as we saw during the site visit, nor any of the other islands in the chain which views are used in some ceremonies, nor will we be able to observe the motion of the northern stars or constellations without direct interference from the TMT, as the height alone is too high. If you’re standing at ground level on the east side, we will not be able to see or observe the motion of the western stars or constellations without direct interference from the high reaching TMT. And if you’re standing on the ground level on the west side at any of the sites, you will not be able to see or observe motions of the eastern stars or constellations without direct interference from the TMT. And if you’re standing on the ground level north of the TMT on the plateau from any of these sites, you will not be able to see or observe the motion of the sun and stars or constellations without direct interference from the TMTTherefore, when we speak of alignments being blocked, it means we cannot do ceremony in the way that we need to be a part of those alignments, because we are—they are being physically and spiritually blocked. That in turn interrupts our ability to perform those ceremonies and other cultural practices.

Tr. 9/30/11 at 139-141.

Moreover, the evidence presented by UHH fails to rebut Petitioners’ position:

- Petitioners’ FOF/COL 637. UH’s witness, Ms Collins, stated “a viewplanes analysis of the visual impacts upon the historic properties in the historic district was not done by PSCI for the TMT project.”
- Petitioners’ FOF/COL 638. The viewplanes and their significance of these sites within the area of the TMT Project was unknown to the senior archaeologist, S. Collins. S. Collins Tr. 8/17/11 at 37:22-25.

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- Petitioners' FOF/COL 639. Effects on the historic district would consider the visual impact of a facility on the surrounding landscape (i.e., the various land forms creating the setting and context of the multiple historic properties encompassed by the district) and on those individual historic properties that contribute to the significance of the district. Exhibit A-28, FAIS-AP at 8-2.
- Petitioners' FOF/COL 642. According to J. Hayes, a viewshed analysis was not done from these historic properties and cultural resources on the northern plateau. J. Hayes Tr. 8/16/11 at 67:8-20.
- Petitioners' Response to UHH's FOF/COL at 47-48. The northern plateau is not a built environment, it is a natural, open vista, notable for its breathtaking views. To characterize the northern plateau as anything but open space – as the University attempts to do – belies the facts in this record. App. FOF 405 at 68, 450 at 75. The site visit to Mauna Kea made clear that the view from the northern ridge of Kukahau`ula looking towards Haleakalā is still wide open and all-natural. Figure 7.7 in the CDUA with a view from the northern plateau clearly indicates there are no structures on the plateau. Whereas, Figure 7.8 depicts how the proposed TMT 18-story observatory, 5-acre industrial infrastructure, and support building would be the dominant and only man-made feature on the northern plateau.
- Petitioners' FOF/COL 41 at 8; 59 at 10; Exhibit A-311 at 7-12. Indeed, the Applicant concedes that “[t]he TMT Observatory will *add* a substantial new visual element in the landscape that will be visible from viewpoints along the northern ridge of Kukahau`ula.” App. FOF 404 at 68. (Emphasis added.)

HO FOF 380 is misleading because it takes evidence out of context. The Applicant contends that “[V]iews key to traditional and customary practices from the summit to sacred sites off the island and in the heavens are presently blocked by telescopes.” Exhibit A-204 at 49. Contrary to FOF 380 these important views are not in fact obstructed now, but they will be if the TMT is allowed to be built. The HO takes this information out of context and assumes Practitioners only view these celestial events or viewplanes from one spot on Mauna Kea, this is a false assumption. Petitioners can and do stand anywhere along those viewplane lines along the ridge of Kukau`ula looking towards Maui or the Northern Plateau will have their views blocked by the TMT. *See* Petitioners' FOF/COL 741-769 p. 102-105 and 775 at 106.

For these reasons, HO FOF 378-380 are mischaracterizations, misleading, and unsubstantiated. They should be rejected.

381. Petitioners object and take excepting to FOF 381 at 366.

HO cites statements attributed to Mr. Neves, however they are not to be found in this citation (TR 8.25.11 at 70).

382. Petitioners object and take exception to FOF 382 at 66.

FOF 382 is unsubstantiated and unreliable as the Petitioners Exceptions to HO FOF 343-381 (above) demonstrate. The HO ignores and omits testimony and evidence put forth by Petitioners who were admitted as experts in Native Hawaiian customary and traditional practices and other expert witnesses who testified that the TMT project would have an adverse and significant impact. The preponderance of evidence demonstrates the TMT Project will result in substantial,

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adverse and significant impact on the cultural practice of the community, or state or Native Hawaiian traditional and customary practices on Mauna Kea.

Visual and aesthetic resources

383. Petitioners object and take exception to FOF 383 at 66.

HO FOF 383 miscounts the actual number of telescopes. The KECK I and II are two telescopes, the SMA is an array of six (6) individual telescopes and the VLBA is to be counted as well. Counting the actual telescope structures (not including auxiliary structures) there are 11 telescopes plus KECK II, VLBA and SMA (6), this is nineteen (19) telescopes not 11.

384. Petitioners object and take exception to FOF 384 at 67.

FOFs 384-85 are unsubstantiated and inaccurate. FOFs 384-85 fail to take into account findings of the proposed TMT's substantial visual impacts in the record. *See* Petitioners Response to UHH's FOF/COLs at 41- 51; *see also* Exceptions to HO FOFs 218, 385-395.

For Native Hawaiian cultural practitioners and the general public who access the summit region, there are very few areas where one can stand and peer into the horizon without obstruction from existing man-made observatories, associated facilities, and other built infrastructure. No unobstructed 360-degree views exist in the summit region. To achieve an open view plane, one must position oneself on the summit roadway looking east or at the northern edge of the observatories looking north. Should the TMT Observatory be built on the northern plateau, the only unobstructed view plane from the summit region remaining would be on the eastern side of Kūkahau'ula. Eliminating one of last two unobstructed views from the summit region is a prime example of why the TMT Project's visual impacts would be substantial, significant, and adverse. Petitioners' FOF/COL 753, 755 at 103.

385. Petitioners object and take exception to FOF 385 at 67.

FOF 385 is irrelevant. According to J. Hayes, a viewshed analysis was not done from these historic properties and cultural resources on the northern plateau. J. Hayes Tr. 8/16/11 at 67:8-20; Petitioners' FOF/COL 642 at 87. The viewshed analysis is irrelevant to the visual impacts of the TMT, which will be sited on the northern plateau.

The viewshed analysis, Visual Impact Assessment Technical Report (VIATR) of the FEIS, that was previously conducted by the University included several deficiencies and inaccuracies. App. FOF 402 at 67, Exhibit A-27. Consequently, when such information was inserted into the CDUA, it still remained incomplete and inaccurate. For example, Pu'ukohola Heiau National Historic Site, one of the culturally significant viewpoints in the visual analysis, was inaccurately identified in the photos (Viewpoint 6) of the VIATR. In another example, the data was actually altered from the original VIATR when inserted into the CDUA to downplay the visual impacts. Upon comparison, Table 7.5 in the CDUA inaccurately stated "No" to the question if the TMT Observatory was "Visible in silhouette?" from viewpoint #18 – North ridge of Kūkahau'ula. Yet, this same exact question was answered as "Full" in Table 4-4 in the VIATR. Moreover, Figure 7.8 of the CDUA confirms that the TMT would cast a full silhouette view from the north ridge of the Pu'u Kūkahau'ula State Historic Property. Petitioners' FOF/COL #789-795 p. 108-109; Exhibit A-311 at 7-8 & 7-12, Exhibit A-27 at 42.

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In order to downplay the adverse visual impacts of the proposed TMT observatory, the CDUA also narrowed the viewshed analysis to only 18 select viewpoints sites and to a limited “primary view” discussion. Significant areas such as the large residential/resort communities of Waikoloa Village [with a population of 4,806 and 1,750 households according to 2000 Census], Puako, Mauna Kea Resort, Kuki‘o, and Kona Village as well as areas of South Kona and North Kohala have been excluded from this viewshed analysis resulting in this CDUA being incomplete. The CDUA did not provide a complete visual impact analysis that includes any data or statistics on the number of visitors and island residents that reside outside the viewshed who would be able to see the TMT Observatory when they travel through and visit locations within the viewshed. In addition, there are significant numbers of visitors that reside at the resort areas within the TMT viewsheds as well as residents who commute regularly from outside of the TMT viewsheds to work in these resort areas who have not been accounted for in the visual impact analysis. Also, the potential impact upon the Hawai‘i Island visitor industry that promotes the island’s natural resources and scenic vistas was not addressed in the CDUA. App. FOF #402 p. 67; Petitioners’ FOF/COL #784-787 p. 107-108.

386-87. Petitioners object and take exception to FOFs 386-87 at 67.

FOFs 386-87 are inaccurate and misleading. Contrary to FOF 386, both UHH and Petitioners have presented evidence that the TMT will be visible from locations within the summit region, particularly from the northern plateau and the northern ridge of Kūkahau‘ula. The TMT Observatory would add a substantial new visual element in the open space that will be visible from viewpoints along the northern ridge of Kūkahau‘ula, Pu‘u Poli‘ahu, and by people as they travel within the northern portion of the summit region. UHH FOFs 404, 407 at 67; Petitioners’ FOF/COL 797-802 at 109.

The TMT CDUA failed to disclose the visual impacts upon the surrounding cultural landscape and on those several hundred historic properties and cultural resources located on the northern plateau which contribute to the significance of the Mauna Kea Summit Region Historic District. In addition, the CDUA did not consider the visual impact upon Hawaiian cultural practitioners, ancestral *akua*, *aumakua*, and *kupua* connected to Mauna a Wakea. Important alignments, both physical and spiritual, would be blocked, interfering with the ability of cultural practitioners to perform those ceremonies and customary, cultural, and religious practices associated with those alignments. As noted by cultural practitioner Neves, “When we look out on the plateau where the TMT is proposing to site their project-- it is not just that it will now be blocking our eyes (depending on where we are looking from) but it will be the most dominant feature in our eyes and therefore the most dominant feature in our customary and traditional view plane. It is this view plane that we use to look and to honor the high maunas down the island chain.” Likewise, as stated by cultural practitioner Pisciotta, “The TMT will impact us and many other people that seek to observe the sunset from Mauna Kea. The TMT will be in direct line of site of many traditional spiritual and religious view planes, including those towards Haleakalā, the sunset and other sacred sites.” Also, the CDUA did not analyze the impact to cultural practitioners’ nighttime viewing. Petitioners’ FOF/COL 738 at 101, #741 p. 102, #756-757, #760 p. 104, #782-783 p. 107, #796 p. 109, #811-813 p. 110-111, #819-827 p. 112-113.

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The existing observatories occupy the summit region of Mauna a Wakea and create a substantial, significant, and adverse visual impact on this sacred landscape. This assessment of the visual impacts of the past and present astronomy-related activities in the Mauna Kea Science Reserve was affirmed by Mr. Hayes and the Outrigger Telescopes Project FEIS. Observatory construction on Pu‘u Kūkahau‘ula State Historic Property have caused substantial alteration to the landscape that have impacted the viewplanes from the summit. It is difficult to escape these man-made structures on the mountain where they are visible from approximately 43% of Hawai‘i Island. Accordingly, when the TMT Observatory is combined with the existing conditions, the cumulative visual impact of development on or near the summit of Mauna Kea will continue to be significant as noted in the TMT FEIS. However, if TMT Project is not built under the No Build Alternative, it would not create a new visual impact or contribute to the existing adverse impacts. App. FOF #400 p. 67; Petitioners’ FOF/COL #739-740 p. 101, #742-743 p. 102, #768 p. 105, #770-772 p. 106, #810 p. 110.

388. Petitioners object and take exception to FOF 388 at 68.

FOF 388 is inaccurate and unsubstantiated. No telescope structures exist on the northern plateau and SMA roads and facilities are *not* already on the northern plateau. The northern plateau area is undisturbed, except for a four-wheel drive road at an elevation of 13,150 feet on the Northern Plateau of Mauna Kea. Exhibit A- 308 FEIS, Vol. 1 at 2-10; Petitioners’ FOF/COL 495. Roughly 6.2 acres of previously undisturbed land will be disturbed by the TMT Observatory and Access Way. Exhibit A- 308 FEIS Section 3.2 Cultural Resources at 3-26; Petitioners’ FOF/COL 496. See also, Exhibit A-308 at 3-100, fig. 3-23; Exhibit A-311 at 7-12, at A-1.

390. Petitioners object and take exception to FOF 390 at 68.

FOF 390 is inaccurate. Contrary to FOF 390, the site visit to Mauna Kea made clear that the view from the northern ridge of Kukahau‘ula looking towards Haleakalā is still wide open and all-natural. Figure 7.7 in the CDUA with a view from the northern plateau clearly indicates there are no structures on the plateau. Whereas, Figure 7.8 depicts how the proposed TMT 18-story observatory, 5-acre industrial infrastructure, and support building would be the dominant and only man-made feature on the northern plateau. Petitioners’ FOF/COL 41 at 8; 59 at 10. Exhibit A-311 at 7-12. Indeed, UHH has conceded that “[t]he TMT Observatory will add a substantial new visual element in the landscape that will be visible from viewpoints along the northern ridge of Kukahau‘ula.” App. FOF 404 at 68.

392. Petitioners object and take exception to FOF 392 at 68.

FOF 392 is misleading and inaccurate. TMT-CDUA indicates three project-level mitigation measures for the known visual impacts of the proposed TMT observatory, none of which have been demonstrated to have any mitigating effect. *See* Exceptions to HO COL 37 (to qualify as ‘mitigation’ a measure must have a proven mitigating effect).

First, the proposed location of the TMT is a function of available space, not mitigation. Figure 1-3: Mauna Kea Summit Region: Existing Facilities, Features, & Future Development Areas in the CDUA shows that the location of TMT north of and below the summit is due to the fact there is no available room on the summit for a project of an enormous size within the Astronomy Precinct due to the existing observatories. Exhibit A-311(CDUA) at 1-4, 7-13. Accordingly, UHH has never proposed any alternative sites on the summit other than Area E in any of its

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documents or witness testimonies. Locating the TMT Observatory on the northern plateau is not a “mitigation” measure for eliminating the visual impact of the TMT observatory. This area was designated for the TMT Observatory because UHH has presently utilized all available and suitable sites on the summit. App. FOF 410 at 68-69; Petitioners’ FOF/COL 1014 at 139.

Second, UHH contends that because dome has been designed to fit very tightly around the telescope, and the telescope has been designed to be much shorter than usual, the immense size of the structure has been mitigated. The design of the TMT observatory would utilize a Calotte type dome because of its (a) overall smaller dome size, (b) improved air flow/lower air turbulence around the dome, (c) simplified mechanical components, and (d) better shedding of snow. App. FOF 410 at 68-69. This measure will not ‘mitigate’ the visual impact of the TMT dome to any appreciable degree because - at 184 feet above the finished grade and with an exterior radius of 108 feet – the TMT will remain a dominant feature in the existing open space. Petitioners’ FOF/COL 814 at 111; 1009 at 138. At over 180 feet, the TMT would be the TALLEST building on Hawai‘i Island, surpassing the maximum height limits of 90 feet (120 feet for Hilo) for any commercial or resort buildings on this island based upon Hawai‘i County zoning codes. Petitioners’ FOF/COL 775 at 106; Exhibit G-01, E. Flores WDT at 9.

Third, UHH does not show that an aluminum-like coating will reduce the visibility of the proposed TMT. App. FOF 410 at 68-69. In actuality, the proposed aluminum-like coating would be more visible due to the reflective nature of the dome shape that would instead reflect the sunlight back into one’s eyes when viewing it. The TMT Observatory will be more visible, similar to the existing visual impacts of the Gemini Observatory with its aluminum-like coating and dome shape that does not reflect the sky or ground during the day to reduce the visual impacts as suggested. The comparison of the TMT Observatory with the Subaru Observatory was an inaccurate analysis because their reflective characteristics differ due to the TMT being a dome shape and the Subaru being a cylinder-like shape. The TMT dome shape would more appropriately be compared to the existing Gemini Observatory dome. As a result, the photo simulations in the CDUA that depicted the aluminum-like coating were inaccurate, particularly in Figures 7.5 and 7.8. Exhibit A-311(CDUA).

Mr. Hayes has not actually observed in any extended period of time the visual effects of the sunlight upon the existing observatories. He stated that his observations were done “primarily during the mid-day period.” Applicant’s FOF 461 at 77. The visual simulations included in the EIS and CDUA are thus based on a limited sampling of visual impacts. Tr. Hayes 8/16/11 at 108: 16-22. Furthermore, the proposed mitigation of utilizing the aluminum-like coating on the TMT dome is contradictory to the Design Guidelines section of the UH’s Mauna Kea Science Reserve Master Plan 2000, which states; “As much as possible, surfaces should be **non-reflective in the visible spectrum to minimize glare and visibility from distant areas.**” (Emphasis added) Petitioners’ FOF/COL #777-781 at 106-107.

391, 393-395. Petitioners object and take exception to FOFs 391 & 393-395 at 68-69. FOFs 391, 393-395 are inaccurate and unsubstantiated. For Native Hawaiian cultural practitioners and the general public who access the summit region, there are very few areas where one can stand and peer into the horizon without obstruction from existing man-made observatories, associated facilities, and other built infrastructure. No unobstructed 360-degree

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views exist in the summit region. To achieve an open view plane, one must position oneself on the summit roadway looking east or at the northern edge of the observatories looking north. Should the TMT Observatory be built on the northern plateau, the only unobstructed view plane from the summit region remaining would be on the eastern side of Kūkahau‘ula. Eliminating one of last two unobstructed views from the summit region is a prime example of why the TMT Project’s visual impacts would be substantial, significant, and adverse. Petitioners’ FOF/COL 753, 755 at 103.

Visitors from the world over, and average of 302 commercial tours per month, or as many as 240 visitors per day, and 11,900 visitor trips per year, ascend the mountain for sightseeing, hiking, amateur astronomy, hunting, sled, ski, snowboard, and enjoy the unique conditions. Recreational users visit Mauna Kea for trail hiking, snow play, amateur astronomy, hunting, nature study and wilderness experience, including unfettered vistas, silence, spiritual peace, natural beauty, and cultural significance. Mauna Kea’s unique natural landscape is a popular site commercial film activities. The TMT would add a substantial new element to an undeveloped portion of the summit region. Exhibit A-309 Vol 1P. 3-99, 3-309, 3-153, 3-165. The natural beauty of Mauna Kea embraces the vast pristine landscape, the geologic terrain, the circle of shrines, the silent interaction of light and shadow, the interplay of mist and snow on the plateau -- a conservation resource treasured by the world. The loss of this resource would be irrevocable, is unacceptable, and is counter to the laws that protect the conservation district. Petitioners’ FOF/COL 971 at 132.

Hydrology and water resources and Hazardous waste

396-409. Petitioners object and take exception to FOF 396-409 at 69-71.

FOF 396 is unsubstantiated. Petitioners object to the after-the-fact voir dire process for this witness. The Applicant offered to have this witness qualified as an expert only after he had already testified, and after the Applicant attempted to the claim this witness as an expert and was challenged by all the Petitioners did the HO open this witness up for the voir dire process. *See* Tr. 8/18/11 at 10-17.

After the untimely voir dire process, which included specific questions regarding Mr. Nance’s expertise and knowledge about Mauna Kea hydrology including ground water flows etc. all Petitioners object to Mr. Nance being qualified as an expert in hydrology, and the subareas of groundwater, surface water development, hydraulics and water system design, flood control and drainage. Because of Mr. Nance lack of knowledge, research or studies of ground water flows of Mauna Kea Petitioners object to qualifying him as an expert on the Hydrology of Mauna Kea. *See* TR. 8/18/11 at 10-17.

FOF 409 is a statement based on speculation, not on a study based on scientific evidence. The statement assumes facts not in evidence. Further, Petitioners wish the record to reflect that it is not the Petitioner’s burden to prove that damage to the complex hydrology and groundwater of Mauna will in fact occur, it is the Applicants’ burden to prove that no damage will occur.

The Applicant admits that during the construction and decommissioning, there will be temporary adverse impacts due to noise, traffic, dust, visual intrusion, and the increase in human presence on the mountain; possible adverse impacts during construction and decommissioning also

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include potential disturbance beyond project limits. As with other activities, there is a potential for accidents, including fire, and accidental release of hazardous materials or solid waste, including trash and construction materials. In general the Project will add a limited increment to the current level of cumulative impact. Exhibit A-308 FEIS p. S-7 -8.

Petitioners resubmit the following information that was not considered by the HO. Petitioners Response to UH FOF/COL at53-56

A. Water

The Mauna Kea Science Reserve is located above five State of Hawai'i delineated aquifers. Exhibit A-301, UH CMP at 5-32. The TMT project would increase telescope activities at the proposed project site Area E, as well as the Batch Plant, the roadway, Hale Pohaku, and the electrical substation, thus potentially affecting more than just the one aquifer near Area E. While the Applicant claims to have a zero-discharge wastewater system, the Applicant cannot claim to have a zero-accident spill system. App. FOF #290 at 45. As observatory operators have demonstrated, spills and run-off from telescopes, the Access Way, and a potential Mid-Level Facility have been allowed to "percolate into the ground[.]" Exhibit A-308, FEIS Vol.1 at 3-120. In May 2009, as much as twelve gallons of spilled hydraulic fluid at Caltech Submillimeter Observatory flowed down a drain pipe that opened directly into a cinder cone of the summit, where evidence of a previous spills was unearthed as well. Exhibit B-15. In March 2008, as much as 1,000 gallons of sewage overflowed onto the ground and was "quickly absorbed" into highly porous ground, beneath which are flows to aquifers. Exhibit A-301, CMP at 6-10. The CMP further acknowledges the high probability of impact to natural resources from vehicle accidents, petroleum products, and human waste. Petitioners' FOF/COL 533, 534 p. 72. Not only does the University lack a vehicle accident spill response plan to address the contamination that results from vehicle accidents, the University has no method of assessing the risk to water resources from transporting waste down the mountain. Petitioners' FOF/Col #522, 523 at 72, citing Exhibit A-302, CMP NRMP.

It is undisputed that beneath the summit is a "high level" aquifer comprised solely of fresh water. Petitioners' FOF/COL # 155, 157 p. 21, 166 at 22. Four components of the hydrology of the Mauna Kea summit region remain unknown: 1) watershed calculations of snow-water distribution, 2) outcomes of leachate and liquid waste from septic and cesspool systems, 3) distribution and impacts of permafrost, and 4) groundwater maps of water levels, flow paths, and recharge rates. Petitioners' FOF 160. p.21. The Applicant's evidence also indicates that surface runoff at the summit does not extend below an elevation of 6,000 feet, which means that "the majority of the water ultimately ends up percolating and **becoming groundwater recharge** with only a small amount lost to evaporation. Petitioners' FOF 159. p.21. "The main activities that have potential to result in a release of contaminants include vehicle travel (on and off road) and accidents; release of hazardous material and petroleum product use by observatories and support operations; sewage generation; and transport of hazardous materials and sewage off-site." Petitioners' FOF 534. p.72 citing Exhibit A-301 CMP at 6-14.

This record indicates that groundwater resources are at risk from telescope activities on Mauna Kea. The Applicant failed to present evidence to the contrary and moreover failed demonstrate the increased telescope activities from the TMT would not further jeopardize underground water resources on Mauna Kea. Operation of the TMT would increase the use and storage of chemicals

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on Mauna Kea. The chemicals will be stored underground and transported by truck -- although the number of trucks and frequency of trips was not known by the Applicant's witness on the CDUA. White Tr. 8/15/11, p 47: 6-25, 48: 1-3. No studies have been conducted of the groundwater system of Mauna Kea. Indeed, the Applicant's expert on water, Mr. Nance, is not qualified to speak to groundwater issues and did not conduct any studies specific to the TMT. Nance Tr. 8/16/11 at 169: 23-25, 170: 1-4 at 171: 3-5 at 172: 2-4. Without evidence proving otherwise, the Applicant cannot demonstrate compliance with criterion eight and the CDUA must be denied.

Hazardous Waste, Solid Waste, and Wastewater

FOF 411. Petitioners object and take exception to HO FOF 411 at 71

FOF 411 is unsubstantiated. Mr. Hayes was not offered as a witness in Hazardous waste disposal, handling, or storage. Statements by Mr. Hayes are really nothing more than promises and his statements cannot be verified. These statements certainly cannot be used to claim (FOF 420) "...the TMT project will not substantial impact to existing natural resources within the surrounding area, community or region."

FOF 412-414. Petitioners object and take exception to the HO FOF 412-414 at 71-72

FOF 412-414 are unsubstantiated because Hayes was not offered as a witness in hazardous waste disposal, handling, or storage. Statements by Hayes cannot support such conclusory claims as FOF 420 ("...the TMT project will not substantial impact to existing natural resources within the surrounding area, community or region."). *See* Petitioners' Combined Responses to UH FOF/COL at 55.

The record indicates that groundwater resources are at risk from telescope activities on Mauna Kea. UHH failed to present evidence to the contrary and moreover failed demonstrate the increased telescope activities from the TMT would not further jeopardize underground water resources on Mauna Kea. Operation of the TMT would increase the use and storage of chemicals on Mauna Kea. The chemicals will be stored underground and transported by truck -- although the number of trucks and frequency of trips was not known by the Applicant's witnesses. White Tr. 8/15/11, p 47: 6-25, 48: 1-3. No studies have been conducted of the groundwater system of Mauna Kea. Indeed, the Applicant's expert on water, Nance, is not qualified to speak to groundwater issues and did not conduct any studies specific to the TMT. Nance Tr. 8/16/11 at 169: 23-25, 170: 1-4, 171: 3-5, 172: 2-4.

Hayes does not substantiate his claim that mirror washing waste water will not be hazardous waste nor provide evidence of compliance with EPA regulations and requirements for the proposed TMT project. Nor does he identify what company will be handling the Hazardous Waste for the TMT. Hayes WDT at 19-21. The absence of mercury in mirror-washing liquids does not mean that such waste chemicals are not hazardous. Petitioners have previously pointed out these concerns. *See* Petitioners FOF/COL 543-545 at 74-75.

- Liquid chemicals used for the TMT include: methyl alcohol, isopropyl alcohol, methyl ethyl ketone, hydrochloric acid, nitric acid, ceric ammonium nitrate, hydrofluoric acid, chromic acid, acetone, lubricating oil, ethylene glycol, first contact spray solution, epoxy adhesives (3M 2216

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Gray B/A, 3M DP – 490 B/A, HYSOL EA9360, and EPOTEK 301), cyanoacrylate adhesive, adhesive silicone GE RTV-100, spray adhesive 3M blue 72, primer (Dow-Corning – Silane Z-6020), Cytec BR127 primer, vacuum grease braycote 601, vacuum grease krylox-LVP, Irylox GPL216(w/NoS2), antiseize lubricant permatex 80078, loctite 277, loctite 262, loctite 222, and electrically conductive silver paint (Ag). Exhibit B-37, “Mirror Lab Chemicals”.

- Waste from mirror washing will be collected, removed, and transported off site for treatment and disposal. Exhibit A-308 FEIS Vol. 1 at 3-129.

FOF 413 and FOF 414 are contradictory because FOF 413 states that the waste from mirror washing holding “tank will be sized to accommodate at least one week’s worth of normal use” while FOF 414 states that waste from the mirror washing process will be collected, removed and transported off-site for treatment and disposal “approximately once a month”. FOF 414 suggests that three-week’s worth of waste will habitually be stored at the TMT site without a Spill Response Plan in place. See White Tr. 8/15/11 at 44: 7-21 (while the TMT FEIS (Exhibit A-308) states that a Spill Protection and Response Plan will be developed, White could not confirm that such a plan was in place).

415. Petitioners object and take exception to HO FOF 415 at 72.

FOF 415 omissions are objectionable because the Mauna Kea Science Reserve is located above five State of Hawai‘i delineated aquifers. Mauna Kea Comprehensive Management Plan for UH Management Areas, Jan. 2009 (CMP) at 5-32. Ground water and aquifer contamination is a “potential side effect of a variety of human activities on the mountain,” and groundwater rates and flows at the summit are “unknown.” CMP 6-14.

Moreover, as observatory operators have demonstrated, spills and run-off from telescopes, the Access Way, and a potential Mid-Level Facility have been allowed to “percolate into the ground[.]” FEIS Vol.1 at 3-120. In May 2009, as much as twelve gallons of spilled hydraulic fluid at Caltech Submillimeter Observatory flowed down a drain pipe that opened directly into a cinder cone of the summit, where evidence of a previous spill was unearthed as well. Exhibit B-15. In March 2008, as much as 1,000 gallons of sewage overflowed onto the ground and was “quickly absorbed” into highly porous ground, beneath which are flows to aquifers. CMP at 6-10. Further, while the TMT FEIS (Exhibit A-308) states that a Spill Protection and Response Plan will be developed, White could not confirm that such a plan was in place. White Tr. 8/15/11 at 44: 7-21.

416. Petitioners object and take exception to HO FOF 416 at 72.

FOF 416 is unsubstantiated because Mr. Hayes is not an expert in hazardous waste handling, disposal and/or management and provided no evidence or testimony to support his conclusion that no adverse impact will occur on Mauna Kea. The Final EIS states that a spill protection and response plan will be developed for accidental spills of hazardous materials, petroleum products, and sewage waste. UHH confirmed that the TMT CDUA does not contain this document and the spill prevention and response plan is not available for review. Petitioners’ FOF 523. White Tr. 8/15/11 p. 44: 7-21, Hayes Tr 8/16/11 p 135 1-7.

418. Petitioners object and take exception to HO FOF 418 at 73.

FOF 418 is incomplete. Risk assessment and spill response planning provides a measure of safety for human health and for the protection of the cultural and natural resources of Mauna

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Kea. Although the observatories have individual spill response plans, such plans are lacking for other transporters or users, such as those that might result from vehicle accidents. Petitioners' FOF 556. Exhibit A-302 CMP NRMP 4.2-14

419-420 Petitioners object and take exception to HO FOF 419 at 73.

HO FOF 419-420 is unsubstantiated. Again, Mr. Hayes is not an expert in hazardous waste handling, disposal and/or management and provided no evidence or testimony to support his conclusion that no adverse impact will occur on Mauna Kea. The Final EIS states that a spill protection and response plan will be developed for accidental spills of hazardous materials, petroleum products, and sewage waste. The Applicant confirmed that the TMT CDUA does not contain this document and the spill prevention and response plan is not available for review. Petitioners' FOF 523. White Tr. 8/15/11 p. 44: 7-21, Hayes Tr 8.16.11 p 135 1-7.

Fifth Criterion: TMT Not Compatible with Locality

421. Petitioners object and take exception to HO FOF 421 at 73.

FOF 421 is inaccurate, misleading, mischaracterization, and beyond the BLNR's jurisdiction. First, the HO misstates the requirement under the law. HAR 13-5-30(c)5 requires that "the proposed land use, including buildings, structures, and facilities, shall be compatible with the locality and surrounding areas, appropriate to the physical conditions and capabilities of the specific parcel or parcels." The HO incorrectly focuses on whether the TMT is compatible with "existing land uses," which is not the correct standard. The proper focus is on the environment immediately surrounding Area E. As figure 3-23 in TMT EIS demonstrates, Area E is wide open raw land with a clear and uninterrupted view of Haleakalā. Exhibit A-320 at 3-100.

The fact that the cumulative impact of telescope construction on the resources of Mauna Kea has been repeatedly deemed "significant, substantial, and adverse" is proof enough that telescopes are not compatible with the locality and surrounding areas. Exhibit A-308, TMT FEIS, at S-8.

The immense size and height of the TMT observatory is a significant reason why this project is inappropriate and incompatible for this conservation district. Due to the TMT observatory's enormous size of 216 feet in diameter and its extreme height of over 180 feet, it would be the LARGEST observatory on Mauna Kea as well as the TALLEST building on Hawai'i Island surpassing the maximum height limits of 90 feet (120 feet for Hilo) for any commercial or resort buildings on this island based upon Hawai'i County zoning codes. Hawai'i County restricts the height of buildings to protect the cherished island landscape from obtrusive development. Yet, the Applicant proposes a man-made structure in the conservation district that would be at least twice as high as most existing commercial and resort buildings on the island and over 60 feet high of a select few buildings in Hilo. Hence, the TMT Project is not only inappropriate and incompatible for Mauna Kea, but it is also inappropriate and incompatible for the entire Hawai'i County. Petitioners' FOF/COL 775 p. 106; 817 p. 111, 1009 p. 138.

422. Petitioners object and take exception to HO FOF 422 at 73.

HO FOF 422 is inaccurate and misleading. Contrary to this FOF, locating the TMT Project in Area E does not result in its impacts being "*less than significant*" upon historic properties, cultural resources, and customary and traditional cultural practices, as well as on viewplanes,

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species habitat, and existing facilities. The TMT FEIS states, “From a cumulative perspective, the impact of past and present actions on cultural, archaeological, and historic resources is substantial, significant, and adverse; the impacts would continue to be substantial, significant and adverse with the consideration of the Project and other reasonably foreseeable future actions.” Petitioners’ FOF/COL 1059 p. 145. As such, the TMT Project would not reduce or diminish these impacts. Instead, it would contribute further to these cumulative impacts that will be substantial, significant, and adverse. If the existing observatory development on Mauna Kea (many of which were retroactively permitted after construction) resulted in such cumulative impacts, then these projects were never in fact appropriate and compatible for this conservation district.

Building the TMT in Area E would introduce a new, gigantic, metallic dome into a viewplane that is currently natural and intact. The view from the northern ridge of Kūkahau‘ula towards Haleakalā is one of the last intact natural viewplanes from the summit region. There are **currently no telescope structures visible on the northern plateau**. Exhibit A-308 at 3-100. The northern plateau of Mauna Kea is relatively untouched by modern astronomy. Therefore, building the TMT on the northern plateau would not be compatible with the surrounding locality of that area.

Indeed, the Cultural Impact Assessment (CIA) to the TMT EIS recommended that the TMT be built on a recycled telescope site, instead of breaking new ground and allowing the industrialization of the mountain to spread to a wider area, and obstructing an otherwise intact viewplane. Exhibit A-309, TMT EIS Vol. 2, CIA. This recommendation was similar to the proposal by the U.S Air Force in 2006 to build the Pan-STARRS telescope in place of an existing telescope site. *See* Group 70 Int’l, EIS Preparation Notice for the Panoramic Survey Telescope & Rapid Response System, TMK 4-4-15:09 Summit of Mauna Kea, Island of Hawai‘i, 47 (Dec. 2006) (“preferred option. . . require[d] that [project conceptual] designs must stay within the two dimensional footprint of the existing UH 88” telescope”). The TMT Corporation, however, refused to accept that recommendation; opting instead to build in area where there are no telescopes.

423. Petitioners object and take exception to HO FOF 423 at 73.

HO FOF 423 is misleading and inaccurate. Mauna Kea is not well suited for an astronomy industry that requires a five-acre construction footprint because such construction means, in the case of the TMT Project, a failure to meet the 8 criteria for a CDUA permit. The HO mischaracterizes the natural resources for which the BLNR is responsible for protecting. The “seeing conditions” on Mauna Kea (stability of the atmosphere, temperature, light pollution) are NOT the “resources” that the conservation district was established to protect. The real natural resources BLNR is mandated to protect and ensure are used sustainably are defined in HAR 13-5-2 as “plants, aquatic life and wildlife, cultural, historic or archaeological sites, and minerals.” Compare HO COL 99, where he acknowledges the real natural resources to be protected by the conservation district are those defined in HAR 13-5-2. *See also* Petitioners Response to UHH’s FOF/COL at 35-39.

424. Petitioners object and take exception to the HO FOF 424 at 74.

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FOL 424 is misleading. The already existing four-wheel drive road entirely blends into the viewplanes of the northern plateau, whereas a TMT Access Way of the breadth and quality needed for the many trucks and other industrial equipment necessary for the construction, maintenance, and operation of the TMT Project will introduce a substantially more intrusive element into the northern plateau.

425. Petitioners object and take exception to the HO FOF 425 at 74.

HO FOF 425 is inaccurate and misleading. The HO contorts of the facts of the Astronomy Precinct and Area E in an attempt to justify breaking new ground in an already distressed conservation area. Area E is at least a mile away from the nearest industrialized area, it is wide open and relevantly untouched. The proposed TMT project would 5 acres, larger than most of the currently telescopes on Mauna Kea combined. See, Exhibit A-301 at 6-2 for comparative sizes of existing telescopes.

No matter what math is used, the fact remains: Area E is undeveloped. As Figures 3-23 and 3-24 in the TMT EIS demonstrate, there are **currently no telescope structures visible on the northern plateau**. Exhibit A-308 at 3-100. The northern plateau of Mauna Kea is a natural area, relatively untouched by modern astronomy. Therefore, building the TMT on the northern plateau would not be compatible with the surrounding locality of the area.

The locality and surrounding areas being considered for this new observatory development are within the **conservation district** of the Mauna Kea Science Reserve that is also encompassed by the Mauna Kea Summit Region Historic District.

This project is ***incompatible with the surrounding area***, which is the 11,288 acre MKSR within the conservation district, which extends from 6,000 feet to the summit. The proposed location of the TMT – the northern plateau – is undeveloped land, wide open space important to cultural practice and recreational uses on Mauna Kea. The immense size and height of the TMT observatory is a significant reason why this project is inappropriate and incompatible for this conservation district. Due to the TMT observatory's enormous size of 216 feet in diameter and its extreme height of over 180 feet, it would be the **LARGEST** observatory on Mauna Kea as well as the **TALLEST** building on Hawai'i Island surpassing the maximum height limits of 90 feet (120 feet for Hilo) for any commercial or resort buildings on this island based upon Hawai'i County zoning codes. Hawai'i County restricts the height of buildings to protect the cherished island landscape from obtrusive development. Yet, the Applicant proposes a man-made structure in the conservation district that would be at least twice as high as most existing commercial and resort buildings on the island and over 60 feet higher than a select few buildings in Hilo. Hence, the TMT Project is not only inappropriate and incompatible for Mauna Kea, but it is also inappropriate and incompatible for the entire Hawai'i County. Petitioners' FOF/COL #775 p. 106; #817 p. 111, #1009 p. 138.

The TMT Project on the northern plateau is incompatible with the natural resources (inclusive of plants, wildlife, cultural, historic or archaeological sites and minerals as defined in HAR §13-5-2) of this locality and surrounding areas. In addition to disturbing over 8.7 acres and excavating over 100,000 cubic yards of this sacred landscape during construction, the TMT observatory would be situated amongst the 'ring of shrines' consisting of several hundred historic properties

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and cultural resources that contribute to the significance of the Mauna Kea Summit Region Historic. In addition, the northern plateau is not a built environment, it is still in a natural state with an open vista, notable for its breathtaking views, and one of the last open space areas with unhindered views from the summit region down to the sea, along the coasts, and across the island chain. Petitioners' FOF/COL #805-806 p.110; #995 p. 136; App. #443 p. 74. These aspects are covered in further detail in Criteria 4 and 6 of this document.

426-427. Petitioners object and take exception to HO FOF 426-427 at 74-5.

HO FOF 426 and 427 are simply offensive and misleading. There is no comparison between ancient, hand-made tools from adze found on Mauna Kea and the construction of the world's largest telescope, with major earth-moving equipment. There would be a parking lot, basement, metallic dome, and hazardous waste. See Exhibit A-309, TMT EIS, at S-1, 1-2, 3-109, 3-124.

UHH goes further to justify their continued actions of desecration and destruction upon the sacred landscape of Mauna Kea by comparing the proposed construction of the TMT Project with the gathering activities by Native Hawaiians of stone resources at the adze quarry. The University quoted the following from their witness, Mr. Baybayan, in an effort to substantiate their position, "*The Maunakea adze quarry, the largest in the world, offers conclusive evidence that the ancients recognized the importance of Maunakea's rich resources and its ability to serve its community by producing the tools to sustain daily life. They ventured to Maunakea, reshaped the environment by quarrying rock, left behind evidence of their work, and took materials off the mountain to serve their communities, with the full consent and in the presence of their gods.*" App. FOF 444 at 72. When viewed in both a cultural and historical perspective in the discussion of compatible activities on Mauna Kea, there is a distinct difference between the construction of an observatory and the gathering of *pohaku* (basalt stones) for tool making.

First of all, whenever Native Hawaiians made a pilgrimage up to the summit, they entered with deep respect and reverence for this realm. They built small shrines from stones gathered from the landscape to acknowledge their intentions, ask permission, and give gratitude for resources. These small shrines were created with consecrated protocols and demonstrate that Native Hawaiians recognized the importance of Mauna Kea as they ventured up this sacred landscape. Petitioners' FOF/COL 251-253 at 34; 327 at 45.

Secondly, Native Hawaiians understood the sacredness of Mauna Kea and therefore never built large temples or structures on the mountain, much unlike the proposed TMT Project. It was understood that such an action would severely disrupt life forces and energies that flowed through the *piko* on the summit. Petitioners' FOF/COL 235 at 31, 311 at 43.

Prior to conducting activities in this realm of Wakea, permission was asked in the presence of the ancestral *akua*, *aumakua*, *kupua*, and others connected to the mountain in order to receive their full consent for their proposed activities. However, none of the proponents of the proposed TMT Project have ever asked permission to build upon Mauna Kea. This has been confirmed in the testimonies of Ms. Nagata, Mr. Heen, and others. According to Mo'oinanea, permission was never asked and full consent was never granted to those who proposed to construct the TMT Project. Likewise, permission was never asked and full consent was never granted to past

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developments that have occurred on the mountain. Tr. Nagata 8/17/11 p. 177:3, Tr. Heen 8/17/11 p. 98:1-20; Exhibit G-1 at 2.

When the summit region is obstructed with the physical excavation of the landscape, asphalt and cement pavement, metal posts implanted in ground, buildings, and construction, it curtails or prevents the flow of energy and life forces into these islands through this *piko*. Therefore, the TMT Project construction would contribute to additional obstructions to this *piko*. Petitioners' FOF/COL #855 p. 117; #858 p. 118.

Finally, making tools from Mauna Kea stone did not render other scientific pursuits on the summit impossible, in direct contrast to telescope construction and operation have largely prevented Native Hawaiians from pursuing the very astronomical sciences UHH now tries to identify itself with. *Id.*

428. Petitioners object and take exception to HO FOF 428 at 75.

HO FOF 428 is unsubstantiated. In addition to the abovementioned incompatibility with the locality and surrounding area, construction of the TMT would not be compatible with recreational uses of the Mauna Kea conservation district, and specifically the northern plateau. Visitors and island residents that reside outside the viewshed will be able to see the TMT Observatory when they travel through and visit locations within the viewshed., along roads and stops at view points. Exhibit A-309 at 3-86, 3-99. Visitors from the world over, and average of 302 commercial tours per month, or as many as 240 visitors per day, and 11,900 visitor trips per year, ascend the mountain for sightseeing, hiking, amateur astronomy, hunting, sled, ski, snowboard, and enjoy the unique conditions. Exhibit A-309 Vol. 1, p. p-3, 3-153, 3-165. Recreational users visit Mauna Kea for trail hiking, snow play, amateur astronomy, hunting, nature study and wilderness experience, including unfettered vistas, silence, spiritual peace, natural beauty, and cultural significance. Ward WDT at 2. Mauna Kea's unique natural landscape is a popular site commercial film activities. 3-153. Consequently, the proposed land use with the construction of the TMT observatory, structures, paved access way, and associated development are incompatible and inappropriate for this cultural and recreational landscape of the northern plateau and the surrounding sacred areas within the conservation district that encompasses the Mauna Kea summit area.

FOF 428 must also be rejected because the source cited, Mr. White, is not recognized as an authority in interpreting Hawaii's conservation district rules, or as an expert in any other subject matter. Based on the foregoing exceptions, FOF 422-428 cannot be supported.

Sixth Criterion: TMT Fails to Improve Upon Natural Beauty and Open Space

430-431. Petitioners object and take exception to HO FOF 430-431 at 75.

HO FOF 430 and 431 are irrelevant and mischaracterizations. Astronomy facilities are one of many identified uses in the resource subzone; they are not "expressly permitted." The fact that astronomy facilities are an identified land use in the resource subzone bears no relevance to the analysis of whether a proposed astronomy facility preserves or improves upon the natural beauty and open space characteristics of the district.

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432. Petitioners object and take exception to HO FOF 432 at 75.

HO FOF 432 is inaccurate, mischaracterization, and misleading. It is improper and incorrect to claim “the TMT project is not proposed to be built on a bare mountaintop.” While it is true that there are telescopes on the very summit of Mauna Kea (indeed the summit of Mauna Kea is 36 feet shorter because of telescope construction), the TMT project is proposed for a lower elevation at Area E where there are absolutely no telescope facilities. The proposed construction site is approximately a mile from any existing telescopes. *See*, Exhibit A-308 at 3-100, fig. 3-23; Exhibit A-311 at 1-4, 5-2, 7-12, and A-1.

Building the TMT here would introduce a new, gigantic, metallic dome into a viewplane that is currently natural and intact. The view from the northern ridge of Kūkahau‘ula towards Haleakalā is one of the last intact natural viewplanes from the summit region. The Cultural Impact Assessment (CIA) to the TMT EIS actually recommended that the TMT be built on a recycled telescope site, instead of breaking new ground and allowing the industrialization of the mountain to spread to a wider area. As Figures 3-23 and 3-24 in the TMT EIS demonstrate, there are **currently no telescope structures visible on the northern plateau**. Exhibit A-308 at 3-100. The northern plateau of Mauna Kea is relatively untouched by modern astronomy. Thus, constructing a new 18-story structure would preserve or improve upon the open space characteristics of the northern plateau.

433, 434. Petitioners object and take exception to HO FOF 433 and 434 at 75.

HO FOF 433 and 434 are irrelevant, misleading, and beyond BLNR’s jurisdiction. All references to decommissioning of the TMT or other telescopes should be removed from the findings of fact and conclusions of law because the decommissioning of telescopes is not the subject of this CDUA. The application before the Board today is solely for the construction of the TMT; there is no decommissioning plan specific to the TMT or any other telescope on the mountain. “The project will develop a Site Decommissioning Plan as the end of the TMT Observatory’s useful life nears.” Exhibit A-309, TMT FEIS p. 3-190.

Promises that there will someday be fewer telescopes in this conservation district are not enforceable under this application as written and therefore should NOT be a factor in the BLNR’s decision-making.

Also, the Decommissioning Plan ignores requirements of the lease that the land be restored to its previous natural condition at the close of the lease in 2033. Decommissioning, as defined in this plan, does not ensure that an obsolete telescope will be removed from the mountain. Exhibit B-02.

435. Petitioners object and take exception to HO FOF 435 at 76.

HO FOF 435 is irrelevant and beyond BLNR’s jurisdiction. The “seeing conditions” on Mauna Kea are enumerated in HAR sec. 13-5-30(c) as one of the considerations in deliberating on a CDUA.

436, 437. Petitioners object and take exception to HO FOF 436 and 437 at 76.

HO FOF 436 and 437 unsubstantiated. HO incorrectly contends that locating the TMT project on the northern plateau minimizes the substantial impact of the project on visual and scenic

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resources. The Applicant has not shown that locating the TMT on the ridge would have been desirable or even possible. Indeed, the Cultural Impact Assessment (CIA) specifically “recommended that the TMT Observatory project be built on a recycled site of an outdated telescope on the summit instead of Area E”. Exhibit A-309 at 204-5. Instead of considering this alternative location, the Applicant summarily dismissed this recommendation as “not deemed feasible.” Exhibit A-308 at 3-32. The TMT Project siting process only considered “Area E” on the northern plateau. Exhibit A-308 at 4-5. Because it is unlikely that the five-acre TMT project could have been located on the summit ridge, the fact that it is not proposed to be located there cannot be claimed as a mitigation measure for visual impacts.

438. Petitioners object and take exception to HO FOF 438 at 76.

HO FOF 438 is inaccurate and misleading. The TMT Observatory will add a substantial new visual element in the open space that will be visible from viewpoints along the northern ridge of Kūkahau‘ula, Pu‘u Poli‘ahu, and by people as they travel within the northern portion of the summit region. Currently, there is absolutely no telescope visible on the northern plateau. *See*, Exceptions to HO FOF 378-380, Exhibit A-308 at 3-100.

440-441. Petitioners object and take exception to HO FOF 438 at 76.

HO FOF 440 and 441 are misleading. The Applicant’s proposed mitigation measures will not ensure the TMT project preserves or improves upon the natural beauty and open space characteristics of the Mauna Kea conservation district.

Locating the TMT Observatory on the northern plateau is not a “mitigation” measure for eliminating the visual impact of the TMT observatory. This area was designated for the TMT Observatory because UHH has presently utilized all available and suitable sites on the summit. App. FOF 410 at 68-69; Petitioners’ FOF/COL 1014 at 139. Figure 1-3: Mauna Kea Summit Region: Existing Facilities, Features, & Future Development Areas in the CDUA shows that the location of TMT north of and below the summit is due to the fact there is no available room on the summit for a project of an enormous size within the Astronomy Precinct due to the existing observatories. Exhibit A-311(CDUA) at 1-4, 7-13.

At 187 feet, the TMT is not remotely “low to the ground.” Despite the “calotte” type dome, the TMT will remain a dominant feature in the existing open space of the northern plateau. At over 180 feet, the TMT would be the TALLEST building on Hawai‘i Island, surpassing the maximum height limits of 90 feet (120 feet for Hilo) for any commercial or resort buildings on this island based upon Hawai‘i County zoning codes. Petitioners’ FOF/COL 775 at 106; Exhibit G-01, E. Flores WDT at 9.

With a metallic, aluminum-like coating, the TMT will be more visible due to its reflective nature. Furthermore, the proposed mitigation of utilizing the aluminum-like coating on the TMT dome is contradictory to the Design Guidelines section of the UH’s Mauna Kea Science Reserve Master Plan 2000, which states; “As much as possible, surfaces should be **non-reflective in the visible spectrum to minimize glare and visibility from distant areas.**” (Emphasis added) Petitioners’ FOF/COL #777-781 at 106-107.

442-443. Petitioners object and take exception to HO FOF 442-43 at 77.

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FOFs 442-443 are unsubstantiated because they rely on erroneous TMT-CDUA assessments of the TMT Project's visual impacts. The CDUA was incomplete because it failed to disclose the visual impacts upon the surrounding cultural landscape and on those several hundred historic properties and cultural resources located on the northern plateau which contribute to the significance of the Mauna Kea Summit Region Historic District.

In addition, the CDUA did not consider the visual impact upon Hawaiian cultural practitioners, ancestral *akua*, *aumakua*, and *kupua* connected to Mauna a Wakea. Important alignments, both physical and spiritual, would be blocked, interfering with the ability of cultural practitioners to perform those ceremonies and customary, cultural, and religious practices associated with those alignments. As noted by cultural practitioner Neves, "When we look out on the plateau where the TMT is proposing to site their project-- it is not just that it will now be blocking our eyes (depending on where we are looking from) but it will be the most dominant feature in our eyes and therefore the most dominant feature in our customary and traditional view plane. It is this view plane that we use to look and to honor the high maunas down the island chain." Likewise, as stated by cultural practitioner Pisciotta, "The TMT will impact us and many other people that seek to observe the sunset from Mauna Kea. The TMT will be in direct line of site of many traditional spiritual and religious view planes, including those towards Haleakalā, the sunset and other sacred sites." Also, the CDUA did not analyze the impact to cultural practitioners' nighttime viewing. Petitioners' FOF/COL #738 p. 101, #741 p. 102, #756-757, #760 p. 104, #782-783 p. 107, #796 p. 109, #811-813 p. 110-111, #819-827 p. 112-113.

Lastly, the visual impact analysis failed to assess the impact of the metallic dome during the sunrise and sunset, when the sun is most intense. Mr. Hayes has not actually observed in any extended period of time the visual effects of the sunlight upon the existing observatories. He stated that his observations were done "primarily during the mid-day period." Applicant's FOF 461 at 77. The visual simulations included in the EIS and CDUA are thus based on a limited sampling of visual impacts. Tr. Hayes 8/16/11 at 108: 16-22.

444-445. Petitioners object and take exception to HO FOF 444-445 at 77.

HO FOF 444 and 445 are unsubstantiated and inaccurate. The TMT Observatory is a massive industrial structure that unequivocally impacts the public and Native Hawaiian viewscape and cultural practices. As such, it can neither preserve nor improve upon the natural beauty and open space characteristics of Mauna a Wakea, as required in the sixth criterion of the CDUA. The proposed TMT project would introduce a new industrial land use into the northern plateau area, expanding the industrial impact of current telescopes out into an otherwise intact natural area. The TMT Project would intrude upon the currently unobstructed view of Haleakalā Mountain from the northern ridge of Kukahau`ula, as well as the primary view of the setting sun from the mountain. It will also obstruct viewplanes used for traditional, customary, spiritual, and religious Native Hawaiian practices. Likewise, this project will impede upon the viewplanes and degrade the natural beauty cherished by visitors, residents, and recreational users. Moreover, the TMT is proposed to be located on the northern plateau amongst the 'ring of shrines' consisting of several hundred historic properties and cultural resources, which, significantly, is one of the last open space areas with unhindered views from the summit region down to the sea, along the coasts, and across the island chain. Petitioners' FOF/COL #49-50 p. 9, #58-59 p. 10, #775 p. 106, #805-806 p.110, #817 p. 111, #1009 p. 138.

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When Native Hawaiian cultural practitioners as well as visitors go to the summit region, there are very few areas where one can stand and peer into the horizon without having the existing man-made observatories, associated facilities, and infrastructure obstructing one's view plane. There are no unobstructed 360-degree views on the summit region. See, Exhibit A-204 at 20. Open view planes are limited to where and however one can get around the existing observatories to find an open space. If the TMT Observatory were built on the northern plateau, then the only unobstructed view plane from the summit region remaining would be on the eastern side of Kūkahau'ula. Therefore, eliminating one of last two unobstructed views from the summit region is a prime example of why the TMT Project's visual impacts would be substantial, significant, and adverse. Petitioners' FOF/COL #753, #755 p. 103.

446. Petitioners object and take exception to HO FOF 446 at 77.

HO FOF is unsubstantiated. The facts on the record make clear that the construction of an industrial structure 187 feet high, 18 stories tall, and causing 8.7 acres of disturbance *cannot* be construed as preserving and/or improving upon the natural beauty and open space characteristics of the imperiled Mauna Kea Conservation District. The Northern Plateau is a pristine landscape and open space area, one of the few left remaining near the summit. Criterion six of the conservation district regulations mandate that the BLNR preserve or improve upon the open space characteristics of this area.

The HO and the Applicant contend that enforcing this criterion as written would result in an absurd outcome because it would mean an identified land use could never be built in the subzone for which it is identified. This is not true. The University could decommission multiple existing telescopes, recycling one of the locations for a newly proposed telescope. This is one way in which the University could propose a new telescope while improving upon the natural beauty and open space characteristics of the summit. That is not what is being proposed for the TMT project.

Seventh Criterion: TMT Subdivides Land to Increase Intensity of Land Use

447-449. Petitioners object and take exception to HO FOF 447-449 at 78.

HO FOF 447-449 are incomplete. While it is true that the TMT CDUA is not formally requesting subdivision approval, the TMT project would further the effective subdivision of the Mauna Kea Conservation District for the purpose of increasing the intensity of land uses there. This is not allowed under HAR sec. 15-5-30(c)7 which states "the subdivision of land will not be utilized to increase the intensity of land uses in the conservation district."

"Subdivision" is defined in the conservation district rules as "the division of a parcel of land into more than one parcel." HAR §15-3-2. This definition is consistent with *BLACK'S LAW DICTIONARY*, where "subdivision" is defined as "1) The division of a thing into smaller parts, 2) A parcel of land in a larger development." Such a division, in and of itself, is not prohibited by the rules. However, where such a division of land is undertaken in order to "intensify land uses" on the parcel, it is forbidden under HAR 13-5-30(c)(7). In the definition of "subdivision," *BLACK'S LAW DICTIONARY* offers a very useful example of an "illegal subdivision." The division of a tract of land into smaller parcels in violation of local subdivision regulations, as when a

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developer begins laying out streets, installing sewer and utility lines, and constructing houses without the authorization of the local planning commission. *BLACK'S LAW DICTIONARY*, 7th ed, (2000) at 1155.

BLACK'S makes clear that a subdivision of land can occur regardless if the applicant properly applies for permission or not. Land use in the summit region of the Mauna Kea conservation district has the hallmarks of a *de facto* subdivision: facilities and improvements cost sharing, planned development, and defined, independent property interests. As the site visit and the record indicate, the telescope subleases intensified land use by increasing the burden of vehicles, visitors, and long-term personnel that use access roads, sewage, electricity, utilities, and base-level and mid-level facilities. HAR §13-5-30(c)(7) specifically guards against the intensification of land use like that found on Mauna Kea, that is usually associated with the subdivision of land.

The Applicant is subdividing the Mauna Kea Conservation District in two ways. First, through its various “management” schemes, the University has drawn arbitrary maps and boundaries within the lands it leased from the BLNR. See, Exhibit A- 311 CDUA p. 75-79 ref. MKMP 2000. Areas such as the “Astronomy Precinct” and the “UH Management Area” are University-made delineations within the Mauna Kea Conservation District. Per HRS §205-2, the Land Use Commission (LUC) is the state agency tasked with not only establishing conservation districts but that holds the sole power to determine the boundaries of said districts. The Mauna Kea Conservation District was adopted in 1961, but the LUC never created either an “Astronomy Precinct” or a “UH Management Area.”

The Astronomy Precinct is where the University intends to concentrate telescope construction. The Director of the Office of Mauna Kea Management, Stephanie Nagata, stated in her written direct testimony in this case that, “[t]he MKSR is comprised of 11,288 acres which is subdivided into a 10,763-acre cultural and natural preserve, and a 525-acre Astronomy Precinct.” App. Exhibit A-1 at 5. She explains that “development in the MKSR is limited to the Astronomy Precinct... [where] development will be consolidated.” Id.

The second form of subdivision comes with the 13 subleases for telescopes and supporting structures on Mauna Kea. Each of these subleases serve as a subdivision because the subleases identify each telescope owner as the authority over their respective telescopes and the immediate surrounding areas, such as parking lots. See, Petitioners’ Exhibit B-3 to B-11. As seen on the site visit, the telescope owners have erected chain fencing and signage to delineate their areas. If built, the TMT would also receive a sublease from the University and BLNR, further carving up the Mauna Kea Conservation District into industrializable pieces.

In other words, the University subdivided their leased land into two parcels in order to intensify land use in one part of the conservation district. This is exactly the consequence HAR sec. 13-5-3(c)7 seeks to prevent.

Because the proposed TMT project is premised on and would further the subdivision of land in the Mauna Kea conservation district, the CDUA is not consistent with criterion seven and cannot be approved. Denying the permit application before the Board today is a step towards gaining compliance with this regulation.

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450. Petitioners object and take exception to HO FOF 450 at 78.

HO FOF is incomplete. Regardless of the technical definition of “metes and bounds,” the fact remains that from the general lease down to the subleases, telescope construction has effected a subdivision of the Mauna Kea Conservation District. A review of Exhibit B-2 to B-11 reveals that the leases to Mauna Kea lands generally include descriptions of the telescope and surrounding areas as “demised premises” to which the telescope owners are given the right to exclusive and peaceful enjoyment, and maps of the subleased areas with degrees of longitude and latitude describing the demised premises.

451. Petitioners object and take exception to HO FOF 451 at 78.

HO FOF is inaccurate and misleading. While it is true a formal subdivision has not been requested or granted, the consequences of the University’s action on Mauna Kea has effected an ongoing subdivision of the Mauna Kea Conservation District. In addition, while the TMT has not yet been granted a sublease, the University and the TMT Corporation concede that the current management scheme would require the TMT to secure a sublease before construction could begin. Compare HO FOF 113 at 16.

452. Petitioners object and take exception to HO FOF 452 at 78.

HO FOF 452 is unsubstantiated given the evidence on the record and the argument as summarized above.

Eighth Criterion: TMT Harms Public Health, Safety, and Welfare

453. Petitioners object and take exception to HO FOF 453 at 78.

FOF 453 is unsubstantiated and misleading. First, representations made by TMT staff members Hayes and White that the TMT Observatory will have a “zero-discharge” sanitary system are accompanied by a suspicious silence concerning the feasibility of such a system. *See* Petitioners’ FOF/COL 552-56. Because cited authorities, Hayes, White, and Nance, are not expert witnesses in sanitary waste management, they may not have considered the feasibility of a zero-discharge system. Currently, approximately 53,990 gallons of wastewater are generated each month by existing telescopes on the summit. (Calculations based on Exhibit A-302 CMP NRMP at 3-9). UHH estimates 2,080 gallons per day will be used by the (480 gpd) TMT Observatory and the Headquarters (1,600 gpd). Exhibit A-302 FEIS Vol. 1 at 3-120. Standard “large-sized” tanker trucks have carrying capacities ranging from 5,500 to 9,000 gallons. Exhibit A-309 FEIS Vol. 1 at 3-120. Carrying away 10,400 gallons of liquid waste generated by a 5-day work week of the TMT Observatory would require at least two trips by a large-sized tanker truck on the Access Way each week. Exhibit A-309, FEIS Vol. 1 at 3-120. In addition to liquid waste, TMT project managers anticipate the generation of approximately 120 cubic feet of trash per week. Exhibit A-308 FEIS Vol.1 at 3-129. Operation of the TMT would increase the use and storage of chemicals on Mauna Kea. The chemicals will be stored underground and transported by truck -- although the number of trucks and frequency of trips was not known by the UHH’s witnesses. White Tr. 8.15.11, p 47: 6-25, 48: 1-3.

The storage and transport of so much sanitary waste will increase risks of spills. While UHH claims to have a zero-discharge wastewater system, it cannot claim to have a zero-accident spill

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system. As observatory operators have demonstrated, spills and run-off from telescopes, the Access Way, and a potential Mid-Level Facility have been allowed to “percolate into the ground[.]” Exhibit A-308, FEIS Vol.1 at 3-120; Exhibit A-301 CMP at 6-10. In May 2009, as much as twelve gallons of spilled hydraulic fluid at Caltech Submillimeter Observatory flowed down a drain pipe that opened directly into a cinder cone of the summit, where evidence of a previous spill was unearthed as well. Exhibit B-15. In March 2008, as much as 1,000 gallons of sewage overflowed onto the ground and was “quickly absorbed” into highly porous ground, beneath which are flows to aquifers. Exhibit A-301 CMP at 6-10. The CMP acknowledges the high probability of impact to natural resources from vehicle accidents, petroleum products, and human waste. Petitioners’ FOF/COL 533, 534 at 72. UHH has no method of assessing the risk to water resources from transporting waste down the mountain. Petitioners’ FOF/COL 22, 523 at 72 *citing* Exhibit A-301 at 6-14 (“The highest probability of impact [on surface water, groundwater, and flora or fauna] is from petroleum products (e.g., fuel for vehicles and backup generators, lubricants, and cleaning fluids) and human waste.”). FOF 414, described *supra*, suggests that three-week’s worth of waste will habitually be stored at the TMT site without a Spill Response Plan in place. *See* White Tr. 8/15/11 at 44: 7-21 (while the TMT FEIS (Exhibit A-308) states that a Spill Protection and Response Plan will be developed, White could not confirm that such a plan was in place).

455-456. Petitioners object and take exception to HO FOF 455-456 at 79.

FOF 455-456 are unsubstantiated because neither White nor Hayes were offered as an expert witness in hazardous waste disposal, handling, or storage. *See* Petitioners’ Combined Responses to UH FOF/COL at 55.

Further, the record indicates that hazardous materials storage present a risk on Mauna Kea. UHH failed to present evidence to the contrary and moreover failed demonstrate the increased telescope activities from the TMT would not further jeopardize underground water resources on Mauna Kea. Operation of the TMT would increase the use and storage of chemicals on Mauna Kea. The chemicals will be stored underground and transported by truck -- although the number of trucks and frequency of trips was not known by the UHH’s witnesses. White Tr. 8/15/11, p 47: 6-25, 48: 1-3.

FOF 456 is unsubstantiated because Hayes provides no evidence to support his claim that mirror washing waste water will not be hazardous waste nor provide evidence of compliance with EPA regulations and requirements for the proposed TMT project. Nor does he identify what company will be handling the Hazardous Waste for the TMT. *See* Hayes WDT at 19-21. The absence of mercury in mirror-washing liquids does not mean that such waste chemicals are not hazardous. Petitioners have previously pointed out these concerns. *See* Petitioners FOF/COL 543-545 at 74-75.

- Liquid chemicals used for the TMT include: methyl alcohol, isopropyl alcohol, methyl ethyl ketone, hydrochloric acid, nitric acid, ceric ammonium nitrate, hydrofluoric acid, chromic acid, acetone, lubricating oil, ethylene glycol, first contact spray solution, epoxy adhesives (3M 2216 Gray B/A, 3M DP – 490 B/A, HYSOL EA9360, and EPOTEK 301), cyanoacrylate adhesive, adhesive silicone GE RTV-100, spray adhesive 3M blue 72, primer (Dow-Corning – Silane Z-6020), Cytec BR127 primer, vacuum grease braycote 601, vacuum grease krylox-LVP, Irylox

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GPL216(w/NoS2), antiseize lubricant permatex 80078, loctite 277, loctite 262, loctite 222, and electrically conductive silver paint (Ag). Exhibit B-37, “Mirror Lab Chemicals”.

FOF 414, described *supra*, suggests that three-week’s worth of waste will habitually be stored at the TMT site without a Spill Response Plan in place. See White Tr. 8/15/11 at 44: 7-21 (while the TMT FEIS (Exhibit A-308) states that a Spill Protection and Response Plan will be developed, White could not confirm that such a plan was in place).

457. Petitioners object and take exception to HO FOF 457 at 79.

FOF 457 is misleading. The HO makes a claim that the TMT, while operating, will not expose someone standing more than 270 feet from the facility with noise exceeding the Class A daytime standard. In both FOF 457 and 458, the distance from the facility has been manipulated by the Applicant to reach the “Class A allowable limits (55 dba)” standard. When measuring the noise near other observatories, the measurements were taken 15-50 feet from the source.

Noise level in the vicinities of the existing observatories varied from 38 dBA to 77dBA Leq, and 40-78 dBA L10, with noise levels at or below 60 dBA Leq beyond a distance of 50 feet from HVAC exhausts. The loudest noise levels of 68 and 77 dBA Leq and 69 and 78 dBA L10, were measured at locations within 15 feet of HVAC exhaust outputs. Exhibit A-308 FEIS Section 3.13 Noise p 3-175, 176; Petitioners’ FOF 986 at 134.

In addition, The FOF 457 fails to acknowledge that construction, which could continue for eight years prior to operation, would exceed the standard at 50 feet. The Applicant concedes that significant noise would result from construction activities such as excavation, trenching, grading, pouring of foundations, and erection of structures. (Exhibit A-308, FEIS, p 3-202) Petitioners’ FOF 990 at 134. Construction of the proposed project would violate noise regulations, such that a noise variance would be required under HAR 11-46-8 for construction of the TMT Observatory. (Exhibit A-308 FEIS, p 3-202) Petitioners’ FOF 991 at 135. The Applicant acknowledges the proposed project would generate construction-related noise in the 80-100 dBA range at 50 feet for front-end loaders, backhoes, tractors, scrapers, graders, pavers, trucks, concrete mixers, concrete pumps, cranes, compressors, pneumatic wrenches, jack hammers, and rock drills. Short periods of blasting may also be necessary to dig foundations for the TMT Observatory. (Exhibit A-308 FEIS, p 3-202) Petitioners’ FOF 992 at 135. Construction activities, such as excavation, trenching, grading, pouring of foundations, and erection of structures, would generate significant noise levels in excess of 80-100 dBA, which violates noise restrictions. Exhibit A-308, FEIS, p 3-202 Petitioners’ FOF 990-992 at 135.

458. Petitioners object and take exception to HO FOF 458 at 79.

FOF 458 is misleading. The HO asserts that noise generated by the TMT will be below the nighttime Class A standard (45 dba) when standing 850 feet away, but that would require a person to be standing **over three times farther away** from the project than the claim to meet Class A daytime standards at 270 feet made in FOF 457.

459. Petitioners object and take exception to HO FOF 459 at 79.

FOF 459 makes a claim not in evidence. Without describing the selection process for determining “noise-sensitive areas”, the Applicant selected “noise-sensitive areas” that are

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considerable distance from the Area E TMT site to make the claim that “noise -sensitive areas in the summit region” are more than 850 feet away from the proposed TMT HVAC system. The HO FOF 459 claim ignores testimony by cultural practitioners that they participate in cultural practices on and near the Area E TMT site. For these practitioners, the significance of noise generated by both construction and the operation of the TMT would be disturbing to cultural practice.

See Exhibit A-308, TMT FEIS Vol I p. 3-38: “The presence of the project in the currently undeveloped northern plateau would introduce new elements in that area (including the observatory and road, vehicle traffic, an increased number of human visitors, and intermittent noise and dust). For some individuals, those new elements would adversely affect the setting in which some cultural practices can occur.” The Applicant claims that “Such an incremental adverse effect on the sacred quality of Mauna Kea is not anticipated to result in substantial or significant adverse effect on the cultural practices of the community or state. “ However, the Applicant acknowledges that “The noise and dust generated by Project activities will adversely affect the spiritual and sacred quality of Maunakea and the Historic District.” Exhibit A-309b, TMT FEIS at G-61); Petitioners’ FOF 840 p. 115. The Applicant does not analyze the cultural impacts of noise levels and offers no analysis of noise from culturally significant places like Pu`u Poliahu. Exhibit A-308 FEIS Section 3.13 Noise p 3-179; Petitioners’ FOF 988 at 134.

460. Petitioners object and take exception to HO FOF 460 at 79.

FOF 460 makes the misleading assumption that select areas recognized as sensitive to noise are more than 850 feet from the Area E TMT site where the HVAC system is proposed. The Applicant does not provide a definition for “noise sensitive areas.” Exhibit A-308 FEIS Section 3.13 Noise 3-179; Petitioners’ FOF 987 at 134. The Applicant does identify the sites chosen, however: conveniently, noise sensitive sites described were limited to areas where outdoor use is “common” in the Mauna Kea summit region and Hale Pohaku areas. FEIS Vol I, p. 3-173 “All identified noise sensitive areas in the summit region, including the trailhead and summit of Pu`u Wekiu, Lake Waiau, and Pu`u Lilinoe will be more than 850 feet from the TMT HVAC system.” FEIS Vol I, p. 3-179.

As a recreational user, Ward has experienced the noise of observatory air conditioning, blowers, generators, associated vehicles and industrial activity and has found it disturbing to other recreational users. *See* Petitioners’ FOF 972, p. 132.

462. Petitioners object and take exception to HO FOF 462 at 79-80.

FOF 462 is inaccurate. The TMT project would detrimentally affect ambient noise levels in areas utilized by practitioners and recreational users on or near the Northern Plateau wilderness.

The Applicant concedes that air quality and noise levels are directly related to human activity on the mountain – the more human activity the greater the air pollution and louder the ambient noise. Exhibit A-302 CMP NRMP, p. 2.1-46; Petitioners’ FOF/COL 985 at 134.

Construction of the TMT would not only increase the basic level of human activity on Mauna Kea, but would specifically generate “vehicle exhaust, chemical fumes from construction and maintenance activities, and fugitive dust”. Petitioners’ FOF/COL 982 at 134.

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FOF 463-466. Petitioners object and take exception to HO FOF 463-466 at 80.

FOF 463-66 ignores and mischaracterizes Petitioners' expert witness testimony and in particular the testimony of Dr. Liu (MD, JD) and Dr. Kauanui (Ph.D) who were both qualified as experts. Dr. Liu was qualified as an expert in Public Health related to Native Hawaiians. Dr. Kauanui was qualified as an expert in Native Hawaiian Studies and Colonialism. Neither of the doctors' testimony was included by the HO. The UHH provided no contravening testimony or evidence. Therefore Petitioners reassert the Petitioners' Responses to UH FOF/COL p. 53-60.

UHH dismisses the long-term health implications of desecration on Mauna Kea because "neither Dr. Liu nor anyone else has done research..." on the intergenerational trauma of telescopes on Mauna Kea. App. FOF 482 at 79. Yet, it is no one else's burden to prove compliance with criterion eight, but the Applicant's. That is to say, the Applicant holds the burden of proof. The Applicant must prove by a preponderance of the evidence that the proposed land use will not be materially detrimental to public health.

The connection between the welfare of the people and the fate of the land of Hawai'i is well documented. The 1993 Apology Resolution recognizes that "the health and well-being of the Native Hawaiian people is intrinsically tied to their deep feelings and attachment to the land[.]" Joint Resolution, U.S. Public Law 203-150; Petitioners' FOF 976 at 133. Hawai'i Revised Statutes section 711-1107 on Desecration specifically prohibits desecration of "a place of worship or burial," and the statute defines "desecrate" as "defacing, damaging, polluting, or otherwise physically mistreating in a way that the defendant knows will outrage the sensibilities of persons likely to observe or discover the defendant's action." Petitioners' FOF 863 at 119. Even UHH's own documents demonstrate that it knew or should have known of the connection between the people of this land and this place of such immense significance. Exhibit A309, Vol. I at P-1.

Construction of industrial structures on the summit of sacred Mauna Kea is a known source of pain for some Native Hawaiians. Petitioners' FOF/COL 864 at 119. The analysis of Dr. Liu confirms that the evidence of pain and distress can translate into anxiety, depression, or other ailments that affect the quality of one's health. Petitioners' FOF/COL #981 at 104. impacts to continued cultural practices on Mauna Kea. Petitioners' FOF/Col # 901, 902, 903 p. 124.

In terms of intergenerational trauma, the preponderance of the evidence on the record demonstrates that culturally affiliated Native Hawaiians suffer pain and distress because of the massive industrial structures on the summit of Mauna Kea. *See*, Petitioners' FOF/COL # 55, 758, 822, 851, 859, 879; Neves Tr. 8/25/11 at 111:12-112:3; P. Case, Tr. 8/25/11 at 67:1-15. The record indicates that the construction of the TMT would exacerbate the existing harm suffered by culturally affiliated Native Hawaiians. Petitioners' FOF/COL 865 at 119. Yet, instead of researching the health claims of Native Hawaiians well-documented in their own records and what contribution the TMT would add to that, the University chose to ignore these facts and instead focus solely on economic stimulation. The University did not investigate many potential impacts of the TMT proposal on culturally affiliated Native Hawaiians, from noise to night-time sky views. Petitioners' FOF/COL 988 (page 135), J. Hayes, Tr. Aug. 16, 2011 at 86:5-14; Exhibit C-1, Pisciotta WDT at 5; Neves Tr. 8/30/11 at 43:3-7. Indeed, expert witness,

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Dr. Kauanui found no evidence in the record to demonstrate the health or wellbeing of the Native Hawaiian people was considered in the UH/TMT analysis of the TMT projects impacts on the health and wellbeing of the people of Hawai'i. Petitioners' FOF 979 at 133.

UHH offered no evidence of any kind to counter the expert witness testimony of Dr. Kawika Liu and Dr. Kehaulani Kauanui that the pain and distress suffered by some Native Hawaiians related to telescopes on Mauna Kea fits the elements of intergenerational trauma suffered by other groups exposed to long-term, unequal and detrimental harm. It is not the Petitioners' burden to prove that the proposed TMT will harm public health. Rather, it is the University's burden to prove that it will not. The University's refusal to consider and analyze the harm suffered by culturally affiliated Native Hawaiians is deeply offensive, unauthorized, and should not be rewarded with a construction permit. For as Dr. Kauanui's analysis makes clear:

Telescope development, and the economic benefits it entails, comes at a cost to the cultural and religious heritage and practices of the Hawaiian people. By claiming that the economic benefits of a project that is anathema to Hawaiian religion, culture, and well-being outweigh its adverse impacts, the Applicant discriminates in favor of a "public" that is specifically defined to not include Hawaiian religious practitioners.

Petitioners' FOF 978 at 133; Exhibit B-20, Kauanui WDT at 2.

The Applicant quickly dismisses the insight provided through cultural consultation with those *akua* and *kupua* of Mauna a Wākea connected to Native Hawaiian cultural practitioners through genealogical ties as well as through customary cultural and traditional practices, even though Ms. Nagata, Interim Director for the Office of Mauna Kea Management, stated in her testimony that she would welcome such information. App. FOF 485, p. 80; Tr. Nagata 8/17/11, p.177:5-9.

It was disclosed by ancestral *akua* and *kupua* connected to the mountain that the proposed new TMT project would exceed the mountain's carrying capacity and cause further disharmony that would tip the scales of balance between human's interactions with Papahānaumoku (Earth Mother) resulting in further desecration of this natural and sacred landscape. The outcome could result in a natural response by the mountain with a great shaking (earthquake) or other natural incident to restore harmony and balance back to the mountain. Such a natural event, would be detrimental to the health, safety, and welfare of all those residing in these islands of Hawai'i because it will not only be isolated to mountain. Such an event will impact most residents in these islands. We have all witnessed the increases of such natural disasters around the world as well as experienced how earthquakes and tsunamis have previously impacted our islands. In addition, such a project has the potential to affect changes in the weather patterns on the mountain as well as on the lands below. Consequently, the TMT Project would be materially detrimental to the health, safety, and welfare of the general public of Hawai'i as well as to the health of these islands. App. FOF #485 p. 80. Exhibit G-1 at 5, 9.

Even though the source of information is reliable and credible, it is not the intent to try to prove these cultural insights, but to instead broaden the understanding and awareness for those who are responsible and accountable for the appropriate management of Mauna a Wākea.

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For these many reasons, the TMT CDUA does not satisfy any of the eight criteria required by HAR 13-5-30(c) and thus must be denied.

467. Petitioners object and take exception to HO FOF 467 at 80.

FOF 467 is unsubstantiated and misleading. The wilderness of the Mauna Kea conservation district is important to the health and welfare of the public. UHH rather focuses solely on economic growth – a consideration that is outside the scope of Haw. Admin. R. §13-5 and BLNR’s jurisdiction. The focus neglects the ways TMT will further undermine the quality of the wilderness on Mauna Kea and thus the public health and welfare that relies on it.

Construction of the TMT on Mauna Kea would pollute the conservation district with dust, fumes, and noise – all of which are categorically inapposite to the tranquility and purity that one can still find on the northern plateau of Mauna Kea. The Applicant concedes that air quality and noise levels are directly related to human activity on the mountain – the more human activity the greater the air pollution and louder the ambient noise. Petitioners’ FOF/COL # 985 at 134. Construction of the TMT would not only increase the basic level of human activity on Mauna Kea, but would specifically generate “vehicle exhaust, chemical fumes from construction and maintenance activities, and fugitive dust”. Petitioners’ FOF/COL #982 at 134, citing Exhibit A-308, TMT FEIS at 3-182. Construction activities, such as excavation, trenching, grading, pouring of foundations, and erection of structures, would generate significant noise levels in excess of 80-100 dBA, which violates noise restrictions. Petitioners’ FOF/COL # 990-992 at 135.

Creating an urban environment at the top of Mauna Kea undermines the character of the conservation district for which people rely on it for rest, rejuvenation, and spiritual connection. The Petitioners are just a few examples of the kinds of people who walk out to the northern plateau to escape the sight and sounds of buildings and roads that have intruded on the natural vista of the summit. Petitioners’ FOF/COL #63 at 10, Exhibit D-1 at 2. Building the TMT on the northern plateau would expand the degradation and destruction found on the summit area to the northern plateau and irrevocably harm the ability of people to find a quiet, natural environment on the northern plateau of the mountain. Petitioners’ FOF/COL 64 at 10.

The Mauna Kea Science Reserve is located above five State of Hawai‘i delineated aquifers. Exhibit A-301, UH CMP at 5-32. The TMT project would increase telescope activities at the proposed project site Area E, as well as the Batch Plant, the roadway, Hale Pohaku, and the electrical substation, thus potentially affecting more than just the one aquifer near Area E.

It is undisputed that beneath the summit is a “high level” aquifer comprised solely of fresh water. Petitioners’ FOF/COL # 155, 157 p. 21, 166, at 22. Four components of the hydrology of the Mauna Kea summit region remain unknown: 1) watershed calculations of snow-water distribution, 2) outcomes of leachate and liquid waste from septic and cesspool systems, 3) distribution and impacts of permafrost, and 4) groundwater maps of water levels, flow paths, and recharge rates. Petitioners’ FOF/COL 160 at 21. The Applicant’s evidence also indicates that surface runoff at the summit does not extend below an elevation of 6,000 feet, which means that “the majority of the water ultimately ends up percolating and becoming groundwater recharge with only a small amount lost to evaporation. Petitioners’ FOF 159, p.21. “The main activities

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that have potential to result in a release of contaminants include vehicle travel (on and off road) and accidents; release of hazardous material and petroleum product use by observatories and support operations; sewage generation; and transport of hazardous materials and sewage off-site.” Petitioners’ FOF 534, p.72 citing Exhibit A-301 CMP at 6-14.

This record indicates that groundwater resources are at risk from telescope activities on Mauna Kea. The Applicant failed to present evidence to the contrary and moreover failed demonstrate the increased telescope activities from the TMT would not further jeopardize underground water resources on Mauna Kea. Operation of the TMT would increase the use and storage of chemicals on Mauna Kea. The chemicals will be stored underground and transported by truck -- although the number of trucks and frequency of trips was not known by the Applicant’s witness on the CDUA. White TR. 8/15/11, p 47: 6-25, 48: 1-3. No studies have been conducted of the groundwater system of Mauna Kea. Indeed, the Applicant’s expert on water, Mr. Nance, is not qualified to speak to groundwater issues and did not conduct any studies specific to the TMT. Mr Nance conducted no studies that related to hydrology or water on Mauna Kea, and relied on a review of literature that does not support his claims, and the UH CMP NRMP provides admissions that counter his statements. Nance Tr. 8/16/11, p. 169: 23-25, 170: 1-4 at 171: 3-5 at 172: 2-4. Without evidence proving otherwise, the Applicant cannot demonstrate compliance with criterion eight and the CDUA must be denied.

468-473. Petitioners object and take exception to FOFs 468-473 at 80-81.

FOFs 468-473 are irrelevant and unsubstantiated. The eighth CDUP requirement is that “[t]he proposed land use will not be materially detrimental to the public health, safety, and welfare.” HAR § 13-5-30(c)(8). Each of FOFs 468-473 improperly weigh the potential *economic* benefits of granting UHH’s CDUA against substantial adverse impacts on natural resources in the conservation district themselves. *See also* Exceptions to HO FOF 210-216. Economic benefits do not constitute public “welfare.”

DLNR’s Conservation District Review Project Report, which discussed the development of applicable conservation district rules, directly undermines the interpretation of “welfare” to mean employment and community benefits packages. DLNR’s Report states that “[t]he concept of *welfare* was added [to the conservation district purpose] to include the notion of aesthetics -- preserving Hawai‘i’s unique natural beauty.” Exhibit B-34 at 16 (emphasis in the original). Contrary to UHH’s assertions, an interpretation of “welfare” in HAR chapter 13-5 need not resort to complicated case law to ascertain its intended meaning because the drafters of the conservation district rules specifically explained what they meant by “welfare[.]” *See* UHH Reply Brief at 25. Criterion Eight thus intends that the public welfare will be served by conserving natural beauty in the conservation district, as opposed to using conservation lands for economic development.

DLNR’s Report further clarifies that a Project’s “public benefit” cannot establish its eligibility for a CDUP and notwithstanding its impacts on the conservation district. Such an argument was specifically contemplated in the drafting of conservation district rules in 1993. Prior to 1993, Title 13, Chapter 2, HAR included for all conservation district subzones a permitted use entitled “governmental use not enumerated herein where public benefit outweighs any impact on the conservation district.” This provision was eliminated because it was “widely viewed by the

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private sector as a major loophole – one which has resulted in some questionable land uses in sensitive resource areas.” Exhibit B-34 at 30. The drafters of Hawai‘i’s conservation district rules thus intentionally determined not to allow for consideration of “public benefits” -- even where carried out by governmental actors -- that would outweigh conservation district purposes.

FOFs 468-473 are thus irrelevant as economic gain or public benefits are not part of the consideration in meeting the eighth criterion. Even if construction of the TMT might provide economic stimulation, this showing does not satisfy *conservation* district requirements to protect public health, safety, and welfare. BLNR’s rules do not authorize it to allow substantial, adverse impacts on conservation district resources, even if doing so stimulates the economy. What is relevant to the BLNR’s consideration of this CDUA is how the impact of the TMT on the natural and cultural resources of Mauna Kea will affect the health, safety, and welfare of the public. As demonstrated in Exceptions to HO FOFs 453-467 *supra*, the TMT will exacerbate risks to water quality, contribute to the intergenerational trauma of desecration on Mauna Kea, and ruin a wilderness important for reprieve and rejuvenation. UHH has not met criterion eight and its CDUA should be denied.

CONCLUSIONS OF LAW

I. Jurisdiction and Standing

9. Petitioners object and take exception to HO COL 9 at 83.

COL 9 is inaccurate. Mo‘oinanea, guardian of Lake Waiau who resides on the summit of Mauna a Wakea, is a *mo‘o wahine*, which does not have a plain English description to her. She is an individual and is indeed part human with a genealogy to substantiate this and would qualify as a ‘person’ under the Hawai‘i Administrative Rules.

II. Legal Framework

16. Petitioners object and take exception to the HO COL 16 at 84.

HO erroneously applies the *Hanapi* test to constitutional protections for Petitioners’ Native Hawaiian traditional and customary practices. In fact, the *Hanapi* test is not applicable in civil proceedings. The Hawai‘i Supreme Court clarified that the tests for criminal and civil claims involving Native Hawaiian constitutional protections are distinct. *See State v. Pratt*, 127 Haw. 206, 207, 277 P.3d 300, 301 *opinion amended on reconsideration*, 127 Haw. 233, 277 P.3d 327 (2012) (specifying standards developed in the civil context through *Kalipi v. Hawaiian Trust Co., Ltd.*, 66 Haw. 1, 656 P.2d 745 (1982) (considering the right to enter private land to gather traditional plants); *Pele Defense Fund v. Paty* (“PDF”), 73 Haw. 578, 837 P.2d 1247 (1992) (concerning the right to contest the State’s sale of public trust lands); *Public Access Shoreline Hawaii v. Hawai‘i County Planning Comm’n* (“PASH”), 79 Hawai‘i 425, 903 P.2d 1246 (1995) (concerning the right to participate in county-level Planning Commission hearings regarding land use)).

30. Petitioners object and take exception to the HO COL 30 at 87.

The Report erroneously attributes to *Kalipi* a quotation from *PASH*: “[d]epending on the circumstances of each case, once land has reached the point of ‘full development’ it may be

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inconsistent to allow or enforce the practice of traditional Hawaiian gathering rights on such property.” *PASH*, 79 Haw. 425, 451, 903 P.2d 1246, 1272 (1995) (emphasis in original; supra note removed). Further, the HO left out a significant portion of the quoted text. The HO should have included the remainder of the text as follows: “However, legitimate customary and traditional practices must be protected to the extent feasible in accordance with article XII, section 7. Although access is only *guaranteed* in connection with undeveloped lands, and article XII, section 7 does not *require* the preservation of such lands, the State does not have the unfettered discretion to regulate the rights of ahupua‘a tenants out of existence.” *Id.* (citations omitted, emphasis in the original).

31. Petitioners object and take exception to the HO COL 30 at 87.

The Report omits a critical portion from its citation to *PASH*. *PASH*, 79 Haw. 425, 450 n. 43, 903 P.2d 1246, 1271 n. 43 (1995). The ellipsis in COL 31 omits an example of the standard that the State must meet in order to permit development that interferes with Native Hawaiian rights: “—for example, where the preservation and protection of such rights would result in ‘actual harm’ to the ‘recognized interests of others.’” *Id.*

35. Petitioners object and take exception to the HO COL 35 at 88.

HO erroneously asserts that to prove a right entitled to protection under *PASH*, the claiming party must demonstrate the three factors from *Hanapi*. Report misconstrues the relationship between *PASH* rights and the *Hanapi* standard. To assert *PASH* rights, a criminal defendant must meet the *Hanapi* test – but this does not extend *Hanapi* to a civil context. See Petitioners’ Exceptions to COL 16.

First, the BLNR’s consideration of limited alternatives should be limited to the alternatives that UHH proposed for the TMT Project site. UHH has not proposed any alternatives. Therefore, *Wa‘ahila Ridge* is inapplicable. Second, HO’s proposed extension of the *Wa‘ahila Ridge* footnote 17 would render moot CDUP criteria, particularly (1) and (6) concerning substantial adverse impacts and preserving natural beauty and open space, by allowing land uses that have “obvious” impacts.

38. Petitioners object and take exception to the HO COL 38 at 89.

COL 38 incompletely describes *Morimoto* case law on mitigation and is therefore misleading. *Morimoto* does not stand for the proposition that *any* measures identified by a CDUP applicant as “mitigation” are properly considered in determining whether criteria for the CDUP are satisfied. To clarify, the mitigation measures at issue in *Morimoto* were supported by findings that directed the *Morimoto* applicant on ways to appropriately address harms that would be caused by the proposed project. See *Morimoto v. Bd. of Land & Natural Res.*, 107 Haw. 296, 113 P.3d 172 (2005). *Morimoto* mitigation actions overcame the HAR 15-3-30(c)(4) prohibition against “substantial, adverse impact” by *directly* ameliorating harmful impacts of road construction on endangered *palila* habitat and those actions were specifically implemented by the appropriate agency. In that case, the U.S. Fish and Wildlife Services had issued a Biological Opinion (BO) in which the agency agreed that redesigning the highway project to provide for more habitat and reintroduction of endangered species would mitigate project-related disturbances to Palila birds and *Silene hawaiiensis*.

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Appropriate *Morimoto* mitigation actions were:

- 1) “the acquisition and management of approximately 10,000 acres for Palila habitat restoration and an attempt to reintroduce the Palila to areas within their historic range where they had not resided”
- 2) “With respect to the *Silene hawaiiensis*, the proposed alignment path was moved south to avoid a population of seventy plants,” and;
- 3) “lighting restrictions to avoid potential downing of the Dark-rumped Petrels; ... a plan for minimizing fire hazards; and ... with respect to the Hawaiian Hawk, "nest searches" by a qualified ornithologist prior to the onset of construction and, in the event an "active nest" is detected, the halting of the project within one kilometer of the nest and the initiation of consultation with FWS.” *Morimoto*, 107 Haw. at 306.

By contrast, the TMT project has not designed mitigation actions in accord with guiding documents. For example, the Cultural Impact Assessment (CIA) specifically “recommended that the TMT Observatory project be built on a recycled site of an outdated telescope on the summit instead of Area E” and to “develop a paradigmatic shift in how they [“Project proponents”] engage with the community in a way that truly recognizes cumulative impacts[.]” Exhibit A-308, Appendix D at 204-5. The range of mitigation measures offered by UHH (furnishing items with a ‘sense of place,’ ride-sharing, repaving roads, funding education programs, monitoring Wēkiu bugs, painting facilities, complying with laws, etc.) do not directly address the harm caused by the proposed TMT or telescope activities in general.

Put otherwise, COL 38 incompletely represents *Morimoto* and thus *misrepresents* its application in this case. For *Morimoto* to apply, UHH must have shouldered the burden of showing that proposed TMT Project mitigation would work. It cannot rely on guesswork or empty assertions. *See National Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 736-37 (9th Cir. 2001) (absence of data supporting the habitat restoration plan does not excuse agency from further study when there is a reasonable possibility that the data could be obtained; speculative and conclusory statements insufficient to demonstrate that mitigation measures will be effective), *cert. denied, Holland Am. Line-Westours, Inc. v. National Parks & Conservation Ass'n*, 534 U.S. 1104 (2002); *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1151 (9th Cir. 1998) (mitigation plan should be supported by analytical data); *Northwest Indian Cemetery Protective Ass'n v. Peterson*, 795 F.2d 688, 697 (9th Cir. 1985), *rev'd on other grounds, Lyng v. Northwest Indian Preservation Ass'n*, 485 U.S. 439 (1988) (agency must analyze mitigation measures in detail and explain how effective they would be); *Oregon Natural Desert Ass'n v. Singleton*, 47 F. Supp. 2d 1182, 1194 (D. Or. 1998) (EA did not reveal how mitigation measures would compensate for adverse environmental impacts); *Morgan v. Walter*, 728 F. Supp. 1483, 1488-92 (D. Idaho 1989) (Ezra, J.) (requiring additional study where there was uncertainty regarding efficacy of artificial habitat for candidate species); *National Wildlife Fed'n v. Babbitt*, 128 F. Supp. 2d 1274, 1302 (E.D. Cal. 2000) (“Where there is uncertainty regarding the success of mitigation measures, NEPA's approach to such uncertainty is to require an EIS.”); *Coalition for Canyon Preservation v. Slater*, 33 F. Supp. 2d 1276, 1280 (D. Mont. 1999) (FONSI inappropriate absent scientific analysis that regeneration habitat for rare tree would work). COL 38 incompletely describes *Morimoto* case law on mitigation and is therefore misleading.

40. Petitioners object and take exception to the HO COL 40 at 89.

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COL 40 is misleading and incomplete. BLNR must assess whether the proposed TMT Project will have substantial, adverse impacts, including visual ones, under HAR §13-5-30(c)(4) in determining whether to grant the CDUP. To do so, it must not ignore preexisting conditions on Mauna Kea. However, in determining whether the proposed TMT will have substantial adverse impacts, BLNR must consider the *cumulative impact* – “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 or person undertakes such other actions.” HAR § 11-200-2. In other words, “preexisting conditions” must be considered in order to assess the cumulative impact of past actions in determining whether a proposed action will have significant environmental effects. *See* HAR 11-200-12 (“In determining whether an action may have a significant effect on the environment, the agency shall consider every phase of a proposed action, the expected consequences, both primary and secondary, and the cumulative as well as the short term and long term effects of an action.”).

41. Petitioners object and take exception to the HO COL 41 at 89-90.

The HO erroneously extends the scope of BLNR’s discretion in considering a CDUA by extending a footnote in DLNR File. No, OA-2801 (Jun. 28, 2002) (“*Wa’ahila Ridge*”). The Report asserts; “[t]he BLNR also takes into consideration whether limited alternatives may outweigh the obvious visual or other impacts. Even if such impacts are ‘obvious.’” *Id.* at 66 n. 17.

First, the BLNR’s consideration of limited alternatives should be confined to the alternatives the applicant proposed and analyzed for TMT Project. UHH has not proposed any alternatives to building the TMT in the middle of the one of the last intact viewplanes from the summit of Mauna Kea. Therefore, *Wa’ahila Ridge* is inapplicable in this case. Second, HO’s proposed extension of the *Wa’ahila Ridge* footnote 17 would render moot CDUP criteria, particularly (1) and (6) concerning substantial adverse impacts and preserving natural beauty and open space, by allowing land uses that have “obvious” impacts.

43-46. Petitioners object and take exception to HO COLs 43-46 at 90.

COLs 43-46 are misleading and irrelevant. Petitioners’ reference and reliance on the TMT-FEIS to demonstrate that a CDUP for the TMT is inappropriate does not entail challenging the FEIS. That Petitioners are not challenging the FEIS does not mean we forfeit our right to challenge the CDUA that relies on the FEIS. The Hawai’i Supreme Court held in *Mauna Kea Power v. DLNR* that “the EIS is merely an informational document whose acceptance neither implies nor presumes approval of the conservation district use application.” *Mauna Kea Power Co. v. BLNR*, 76 Haw 259, 265 (1994) (citations omitted, emphasis added). Acceptance of the TMT FEIS does not entitle UHH to a CDUP.

III. Decisions and Conclusions

First Criterion Not Satisfied

53, 56, 58-61. Petitioners object and take exception to HO COL 53, 56, 58-61 at 91-2.

HO COL 53, 56, 58-61 are not substantiated by the record. The HO deems management to be the purpose of the conservation district. A plain reading of the law reveals the true purpose of

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the conservation district is, as its name suggests, conservation. Of the four land designations authorized by Haw. Rev. Stat. § 205-2(e), conservation districts are designated to provide for public uses and purposes (i.e., protecting watershed zones, conservation, public parks, open spaces, protection of endangered indigenous and endemic species, and protection of historic resources etc.). Haw. Rev. Stat. § 205-2(e),(f). No land use is allowed in the Conservation District without a permit. Indeed, the conservation district rules specifically state that “**land uses shall not be undertaken** in the conservation district.” HAR 13-5-30(b). The rules allow only those land uses that comply with all eight criteria – that is to say, land uses that do not have a “substantial adverse impact” -- to be undertaken in the conservation district. HAR 13-5-30(c)(4)(emphasis added).

A plain reading of the relevant statutory and regulatory provisions makes clear that conservation districts are established specifically “for the **purpose of conserving, protecting and preserving** the important natural resources of the State.” HRS §183C-1, HAR §13-5-1 (emphasis added). Statute and regulation both provide that this purpose shall be met “through appropriate management to promote [the natural resources’] long-term sustainability and the public health, safety, and welfare.” HAR §13-5-1, *see also*, HRS §205-2(e)[2]. This is to say, conservation -- *not management* -- is the purpose of the conservation district.

Moreover, the HO’s report relies heavily on the University’s multiple management plans to justify compliance with this first criterion, while ignoring the inadequacy of these plans. The University’s management plans do not comply with HAR sec. 13-5-24 nor provide for the actual protection of natural and cultural resources in the Mauna Kea conservation district. This finding is supported by the recent Intermediate Court of Appeals ruling on the “Comprehensive Management Plan.” The ICA held in January 2012 that the University’s Comprehensive Management Plan is essentially a plan to plan that does not in and of itself accomplish anything of consequence. *See, Mauna Kea Anaina Hou v. Bd. of Land & Natural Resources*, 126 Hawaii 265, 272 (2012, unpublished). For these reasons, HO COLs 58-61 must be rejected.

Second Criterion Not Satisfied

63, 66, and 76-77. Petitioners object and take exception to COL 63, 66, 76-77 at 92-3.

These conclusions of law are not supported by the plain language of the regulations or the facts of the case. As outlined in these exceptions to the proposed findings of fact, *supra*, the HO improperly assumes that because astronomy facilities are identified as a possible land use in the resource subzone, that all astronomy facilities are automatically permitted in the resource subzone. This is not so. As demonstrated by Exhibit B-34 at 26 (G. Atwater, “Conservation District Review Project: The Discussion Draft” (1993)), when this language was adopted by BLNR, it was made clear that identified land uses would be permitted *if and only if* they complied with all criteria. Under the “hierarchy of [conservation district use] permitting, being an identified land use subject to a BLNR Permit is not meant to be an exemption from the criteria or authorization to relax regulatory requirements. Rather, such uses are on the bottom of the permitting hierarchy. *Id.* at 19.

These conclusions of law are not supported by record or the relevant laws and regulations and therefore should be rejected.

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69 and 71. Petitioners object and take exception to COL 69 and 71 at 92-3.

COL 69 and 71 are not supported by the record. The HO rests all of his rationale for concluding that the TMT project is consistent with the objectives of the Resource Subzone on UH's various management schemes for Mauna Kea. The record does not justify his reliance. The University's "Comprehensive Management Plan" is neither comprehensive, nor true management.

The CMP fails to implement actual management activities. It identifies hundreds of "needs" without any enforceable timelines or benchmarks to ensure those identified needs are met. This includes a burial treatment plan, invasive species control plan, and hazardous spill protocols. *See*, Petitioners' FOF # 466, 467. UHH could not identify any source of funding for management actions, including those addressing invasive species (FOF 148-49) and natural resources (FOF 150) specified in FOF 148-150. This is because UHH does not have funding dedicated to conservation resource management. *See* Exceptions to HO FOF 237 (establishment of a "Mauna Kea Lands Management Special Fund" under Haw. Rev. Stat. § 304A-2170 does not address Petitioners' concern with the availability of "net rents from leases, licenses, and permits, and other fees for the use of Mauna Kea lands" for *conserving* Mauna Kea's public trust resources. The purpose of the Mauna Kea Lands Management Special Fund is *management*, not conservation. As outlined in this statute, management in this context includes a wide range of activities not related to protect plants, wildlife and historic sites from harm).

UHH conceded that its CMP does not identify the cost of the over 100 management actions in UHH's CMP. Nagata Tr. 8/17/11 at 138: 3-10. UHH further conceded that its Office of Mauna Kea Management staff is limited. OMKM staff consists in an interim director, a secretary, and rangers that are hired "to keep people informed about how to properly act and behave while on the mountain[.]" Nagata Tr. 8/17/11 at 145: 10-22; Heen Tr. 8/17/11 at 96: 11-15. BLNR, too, recognizes that funding is crucial to ensure proper management of conservation district natural resources. In their Recommendations, DLNR staff stated; "[e]nvironmental protection costs money. Protecting historic and cultural resources costs money. Education costs money. Maintaining public access and ensuring the public safety costs money." DLNR Staff Recommendations, Exhibit A-313 at 62.

Moreover, Hawai'i's Intermediate Court of Appeals found that the CMP was merely a plan to plan and did not implement any substantive actions, thus it alone cannot provide the type of mitigation the HO contends in this report. *See, Mauna Kea Anaina Hou v. Bd. of Land & Natural Resources*, 126 Hawaii 265, 272 (2012, unpublished).

Because the University's proposed management promises are nothing more than hopes for the future, the BLNR cannot rely on them to justify approval of the TMT CDUA.

78. Petitioners object and take exception to HO COL 78 at 93.

HO COL 78 mischaracterizes the position of the petitioners. Some petitioners argued that because telescope construction on Mauna Kea has already resulted in significant, substantial, and adverse impacts to the natural and cultural resources of Mauna Kea -- which is not allowed under HAR 13-5-30(c)4 -- that any new telescope built in the district would contribute to that state of illegal adverse impact and therefore cannot be allowed. This is not the same as arguing, as the

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HO suggests, that “the only permissible use of natural resources within the Resource subzone would be no use at all.” Because it is not based in fact, this conclusion of law must be removed.

Third Criterion Not Satisfied

80 and 84-87. Petitioners object and take exception to HO COL 80 and 84-87 at 93-4.

HO COL 80 and 84-87 are supported by the record. As outlined in the detailed exceptions and argument in this document, the Applicant has not met its burden to prove that it will comply with the Coastal Zone Management Act. The TMT would undermine important scenic viewplanes, destroy areas of historic importance, and increase the risk of water pollution. The issues of important viewplanes, scenic and open space resources, historic sites and risks to water quality are addressed in the analysis of criterion four, six, and eight respectively. The fact that the Applicant’s proposal would have a substantial adverse impact on these important resources under those criteria, is grounds for also denying the request under this criterion. It is for this reason that the Petitioners object to HO FOFs 273-280 and COLs 79-87 on the grounds they are inaccurate, irrelevant, and/or misleading.

Fourth Criterion Not Satisfied

89 and 90. Petitioners object and take exception to HO COL 89 and 90 at 94.

The record does not support this conclusion. The TMT would be the first observatory to be constructed at the elevation and the specific zone on the north plateau that includes several hundred shrines and other religious structures. Likewise, the proposed TMT observatory would drastically alter the surrounding environment and cause visual and alignment obstructions for many of these cultural and religious sites, thus adversely impacting the constitutionally protected traditional and cultural and religious practices exercised by Hawaiian practitioners.

The Applicant must accept the “existing natural resources” as they find them, which in this case is significantly, substantially, and adversely impacted by telescope construction. A-308, TMT EIS, at S-8. Cumulative Impact admission in FEIS. This does not mean, as the HO suggests, that the BLNR should consider the astronomy facilities that have been built there, but rather the current, imperiled state of the resources.

91 and 92. Petitioners object and take exception to HO COL 91 and 92 at 94.

The HO asserts the wrong standard for assessing the incremental cumulative impact of telescope construction on Mauna Kea. The cumulative impact of telescope construction on the natural and cultural resources of Mauna Kea is currently significant, substantial and adverse. This is to say, the glass is full. There can be no addition of any new detrimental impact to the resources of the district -- not a single drop of harm. If the existing natural resources are already suffering substantial adverse impact, then under HAR sec. 15-30-5(c)4 no new land uses can contribute to that existing level harm.

94 and 95 Petitioners object and take exception to HO COL 94 and 95 at 95.

The legal basis for Petitioners’ position that no new harm can be added to the substantial adverse harm already existing on Mauna Kea is HAR sec. 15-30-5(c)4, HAR 11-200-2 (the definition of “incremental” and “cumulative” impact), as well as common sense.

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The University's claim that constructing a new telescope significantly larger than any existing telescope on Mauna Kea, in a place where there are no existing telescopes, will not contribute the existing substantial adverse impact of all the telescopes currently on the mountain simply does not make sense. The analysis of the Hawaii Supreme Court in *Kalipi*, 66 Haw. at 8-9, only further justifies greater protection for undeveloped land in the conservation district, especially on Mauna Kea.

96. Petitioners object and take exception to the HO COL 96 at 95.

The HO's reliance on *Geer v. Fed. Highway Admin.*, 975 F. Supp. 47, 73-4 (D. Mass. 1997) in his analysis of the fourth criterion is misleading and improper. *See*, HO's COL 96, 126. *Geer* concerns the application of a federal highway transportation rule that seeks to prevent the deleterious effects of roadway construction on nearby park lands. *See*, 23 CFR 774.15. Under this rule, a district court in Massachusetts found that a bridge over the Charles River did not "substantially diminish" the recreational boating areas because there was already a bridge over the river in the same sight-line as the newly proposed bridge. That court held that "For a constructive use to occur, there must be substantial impairment of the property over its existing use and significance." *Geer, Id.* This is so far removed from the relevant requirement before the Board, as to be misleading and counterproductive.

The standard of law before the Board today is not whether there was "constructive use" of Mauna Kea under the Federal Highway Administration's regulations, but whether there is a substantial adverse impact to existing natural resources in the conservation district. The EIS clearly states that the proposed TMT will contribute to the substantial adverse impact of telescope activity on Mauna Kea. Images of the affected viewplanes analyzed in the TMT EIS clearly demonstrate that there are no man-made structures currently visible when looking from the northern ridge of Kukahau'ula towards Haleakalā. Exhibit A-308, TMT EIS at 3-100, fig. 3-23. This is wholly unlike the situation found in the *Geer* case. All references to the *Geer* case should be removed from the HO's report. *See also*, Petitioners' Exceptions to HO COL 127.

93, 97, 100-101. Petitioners object and take exception to HO COL 93, 97, 100-101 at 95-6.

The HO's conclusion is unsupported. Petitioners are not attempting an untimely challenge to the TMT EIS. Rather, Petitioners seek to enlighten the Board's analysis and application of HAR sec. 15-5-30(c)4 by drawing a lesson from analyzing the Office of Environmental Quality's HAR sec. 11-200-12 regarding environmental impact statements.

There are many similarities between the two regulations. Like HAR §15-5-30(c)4, HAR§ 11-200-12 concerns assessing the environmental impact of a proposed action. Both regulations call for an analysis of the "substantial impact" of a proposed action. Two sections of HAR sec. 11-200-12 that are particularly relevant to this case:

- 1) "In considering the significance of potential environmental effects, agencies shall consider the sum of effects on the quality of the environment, and shall evaluate the overall and cumulative effects of an action," (HAR sec. 11-200-12(1), and

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2) “In most instances, an action shall be determined to have a significant effect on the environment if it is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions” (HAR sec. 11-200-12(2)(h));

This is to say that under the state’s regulations for environmental impact statements, the TMT project was found to be significant. It would not be granted a “Finding of No Significant Impact” under HAR sec. 11-200. The fact that the TMT had to complete a full environmental impact statement is proof that the TMT project by itself has a significant and/or substantial effect on the conservation district of Mauna Kea.

98. Petitioners object and take exception to HO COL 98 at 95.

The relief petitioners seek is well within the Board’s authority to give: deny the TMT CDUA.

110 and 111 Petitioners object and take exception to HO COL 110 and 111 at 97.

COL 110 and 111 misapplies the *Morimoto* case law on mitigation and is therefore misleading. *Morimoto* does not stand for the proposition that *any* measures identified by a CDUP applicant as “mitigation” are properly considered in determining whether criteria for the CDUP are satisfied. Please see the analysis in Petitioners’ exceptions to COL 38.

114. Petitioners object and take exception to HO COL 114 at 98.

COL 114 is nonsensical. Is the HO suggesting that Native Hawaiian cultural practitioners “stacking rocks” are required to get a CDUP from the BLNR? This nonsensical, conclusory statement should be removed.

Fifth Criterion Not Satisfied

117-123. Petitioners object and take exception to HO COL 117-123 at 98-9.

The HO uses the fact that there already many telescopes on Mauna Kea to justify building the world’s largest telescope on a plateau currently unencumbered with telescope facilities.

It cannot be overstated: the northern plateau of Mauna Kea is not developed land. While there is a small dirt road leading to the proposed site for the TMT, this road is minor and not visible from most vantage points. As figure 3-23 in TMT EIS demonstrates, Area E is wide open raw land with a clear and uninterrupted view of Haleakalā. Exhibit A-320 at 3-100. There are no other structures in the vicinity of the northern plateau (Area E) that can justify the conclusion that an 18-story, 5-acre, metallic structure is compatible with the locality.

Sixth Criterion Not Satisfied COL 124-141

126. Petitioners object and take exception to the HO COL 126 at 99.

The HO grossly misconstrued the finding in *Bowman v. City Berkeley*, 122 Cal. App. 4th 572, 589, 18 Cal. Rptr. 3d 814, 828 (2004), in order to support the contention that construction of the TMT is justified because other smaller telescopes have been built in other places on Mauna Kea. It is not justified. The California District Appeals Court in this case specifically stated that context matters in determining the significance of an action. Where a rural area or particularly sensitive environment is concerned, the significance of a proposed action could be far greater

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than if proposed in an urban area. In the sentences immediately preceding the HO's quote, the court wrote:

The significance of an environmental impact is in any event measured in light of the context where it occurs. The Guidelines confirm that **“the significance of an activity may vary with the setting. For example, an activity which may not be significant in an urban area may be significant in a rural area.”** (Guidelines, § 15064, subd. (b); see also, e.g., *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1107, 11 Cal.Rptr.3d 104[“[t]here is no ‘gold standard’ for determining whether a given impact may be significant”]; *Mira Mar Mobile Community v. City of Oceanside, supra*, 119 Cal.App.4th at 493, 14 Cal.Rptr.3d 308; Guidelines, § 15300.2 [“**a project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant**”].)

Bowman, id. (emphasis added).

The *Bowman* case is so far off-point from the issues before the Board today as to be misleading. The Board should completely disregard the *Bowman* case in its deliberations because the case involves:

- whether to require an EIS, not whether to issue a construction permit;
- concern over constructing a three-story versus a two-story mixed commercial/residential structure in a district zoned for mixed commercial/residential use, not the construction of an 18-story dome on one of the last intact viewplanes in a highly protected conservation district;
- harm to private viewplanes of neighbors to the proposed structure, not the harm to well-recognized and highly valued cultural and religious viewplanes protected as public trust resources;

The HO cited the *Bowman* case out of context presumably because there is no case to cite on-point to justify the further destruction of what is supposed to be a highly protected natural environment. HO COL 126 should be rejected. *See also*, Petitioners' Exceptions HO COL 96.

127. Petitioners object and take exception to HO COL 127 at 99.

This conclusion is a mischaracterization and misleading. The northern plateau of Mauna Kea is not remotely developed. Please look at page 3-100 of the TMT EIS and see the pictures demonstrating the existing view of Haleakalā, as compared to the view after construction of the TMT. The view of Haleakalā from Mauna Kea is extremely important. The fact that existing telescope construction has made it difficult to find uninterrupted viewplanes means the few remaining intact viewplanes warrant higher protection, not lower, as suggested by the HO.

The University's own EIS demonstrates that the viewplane to Haleakalā is important and worthy of protection, and that it is currently an intact, natural landscape -- indeed one of the last left in the summit region. This fact is further supported by other images found in Exhibit A-204, including page 18, 27, 28, and 46. All of these images demonstrate that there are no telescope facilities on the northern side of Mauna Kea (i.e., Area E). To be clear, from the new summit of

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Mauna Kea (Pu‘u Wekiu) looking north, telescope facilities are visible. For this reason people seeking a view of Haleakalā or even the Northwestern Hawaiian Islands go to the northern ridge of Kūkahau‘ula for an unencumbered view. When people stand on the north-facing ridge of Kūkahau‘ula, with the two Keck and Subaru telescopes to their backs, they have an unobstructed view of Haleakalā and everything to the north of Hawai‘i Island. Demonstrating this view is one reason petitioners requested to visit the northern ridge of Kūkahau‘ula on the site visit.

The fact that intact, all-natural, uninterrupted viewplanes are now hard to find due to telescope construction on Mauna Kea is reason alone to more fiercely protect the remaining viewplanes. Indeed, Native Hawaiian cultural practitioners have been forced to alter their practices in order to find views that do not include telescope facilities.

128, 129. Petitioners object and take exception to HO COL 128, 129 at 100.

COL 128 and 129 are irrelevant and misleading. There is no legal basis for ignoring criteria in HAR sec. 15-5-30(c) because there is no alternative location.

130, 131. Petitioners object and take exception to HO COL 130, 131 at 100.

COL 130 and 131 are misleading and inaccurate. To be relevant, mitigation must be focused on the restoration of the adverse impact caused by the project. There must be a direct nexus between the harm caused by the proposed project and the mitigation effort promised. *See Morimoto*, 107 Haw. 296 (2005). The University’s attempt to minimize the visual impacts of the TMT is insufficient to reduce the visual impact to a level that is less than significant. Some proposed mitigation measures make the visual impact worse because the structure is now proposed to be a reflective, metallic structure instead of a lava stone structure.

132. Petitioners object and take exception to the HO COL 132 at 100.

The HO improperly relies on *Las Virgenes Homeowners Fed’n, Inc. v. County of Los Angeles*, 177 Cal. App. 3d 300, 308-09, 223 Cal. Rptr. 18, 25 (1986) to defend the wholly insufficient mitigation measures proposed by the University and the TMT Corporation. The *Las Virgenes* case is irrelevant to the issues before the BLNR today because it concerns implementation of California’s EIS requirements, which are a far less stringent than the protections mandated by the fourth and sixth criteria of HAR 13-5-30(c).

California’s EIS law establishes two levels of mitigation for significant impacts: 1) those that are completely avoidable, and 2) those that are not avoidable. For the first level of mitigation, the expectation is all avoidable impacts are mitigated to a level that is insignificant. For the second level of mitigation, the expectation is simply that unavoidable impacts be mitigated to “some degree.” The court in the *Las Virgenes* case was asked to determine whether the developer was required to minimize the significant impacts of the proposed development project to a level that is less than significant, to which the court replied only for those significant impacts deemed avoidable. This ruling provides absolutely no guidance to the BLNR in this case because California’s two level approach to mitigation is not remotely analogous to the requirements of a conservation district.

The conservation district rules at issue in this case require that any land use authorized in the conservation district 1) “will not cause substantial, adverse impacts to existing natural resources”

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HAR 13-530(c)4, and 2) will ensure the “natural beauty and open space characteristics will be preserved or improved upon” HAR 13-5-30(c)6. These requirements are far more stringent than what is required under California law. The BLNR should not include the *Las Virgenes* case in its deliberation on this permit application.

133. Petitioners object and take exception to the HO COL 133 at 100.

The HO’s conclusion that the impacts of TMT need not be mitigated is warranted based on his misapplication of the ruling in *McCallister v. Calif. Coastal Comm’n*, 169 Cal. App. 4th 912, 955, 887 Cal. Rptr. 3d 365, 398 (2009). *See*, COL 133. In this case, California law authorizes decision-makers to “relax” environmental protections when it may result in an uncompensated taking of private property rights. *McCallister*, 169 Cal. App. 4th at 938, 887 Cal. Rptr. 3d at 385. There is no such authorized weakening of the conservation district rules in Hawai‘i.

More on-point to the issues at hand, the court in *McCallister* found that “to avoid a taking, the Commission relaxed the restriction and approved the Project with conditions that mitigate impacts on the habitat areas to a level of insignificance.” *Id.* at 938, 386. This is to say, even under the weakened form of the California requirements, the California Coastal Commission required the developer to mitigate the impact to resources to the point that the impacts were deemed insignificant. The TMT does not meet this standard. Covering over a dirt road and hosting cultural sensitive classes does not reduce the existing substantial, adverse impact of telescope construction on Mauna Kea to a level below significant.

136-141. Petitioners object and take exception to HO COL 136-141 at 101.

COL 136 misstates the position of some petitioners. HAR sec. 15-5-30(c)6 states that “the environmental aspects of the land, such as the natural beauty and open space characteristics, will be preserved and improved upon.” This does not mean that nothing can ever be built in a conservation district. Rather it means that actions must be taken to improve the natural beauty and open space of the conservation district in relation to the proposed land use. Applied to the case of telescopes on Mauna Kea, one possibility could be for a newly proposed telescope to recycle a currently used telescope facility for the new project and restoring an additional telescope site to its natural condition. In this way, a new telescope project could be built while improving upon the natural beauty and open space characteristics of the mountain.

It is the HO’s proposed interpretation that would create an absurd result. By the HO’s logic, once anything is built in the conservation district there is no justify or grounds for limiting future construction in order to protect the natural resources for which the BLNR is legally obligated to protect.

Seventh Criterion Not Satisfied

143-151. Petitioners object and take exception to HO COL 143-151 at 102-3.

This conclusion is not supported by the record. As outlined in the exceptions to HO FOF 447-452, *supra*, there is an ongoing subdivision of the Mauna Kea conservation district that serves to increase the intensity of land use in the district. There need not be an official subdivision application to effect a subdivision under the regulations. The University “subdivided” the Astronomy Precinct from the Mauna Kea Science Reserve for the express purpose of

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“consolidating” telescope construction in the precinct. Moreover, each sublease issued to a telescope operator effects another subdivision of the conservation district. A new sublease for the TMT is one of the University’s pre-requisites for construction of the telescope.

The rule seeks to prevent the incremental division of conservation land done for the purpose of intensifying land uses on those subdivided parcels. This does not mean that there can be no increase in the intensity of land uses in the conservation district. Rather, this means increasingly intense land use proposals cannot be connected by dividing the land into smaller and smaller parcels. This is, however, exactly the action undertaken by the University in their attempt to “manage” the Mauna Kea conservation district.

Eighth Criterion Not Satisfied

153-161. Petitioners object and take exception to HO COL 153-161 at 104.

COL 153-161 are misleading, incomplete, inaccurate and outside the BLNR’s jurisdiction. The HO ignores the probative evidence some Petitioners presented regarding the mental and emotional harm caused by the presence of telescopes on the sacred summit of Mauna Kea. Liu Tr. 8/18/11, p. 217; Kauanui Tr. 8/25/11, p. 83. The HO encourages the BLNR to consider factors in the TMT permitting process that are not authorized by BLNR’s enabling statutes, HRS chap. 183C, or regulations, HAR sec. 13-5. If the BLNR were authorized to consider payment of rent as an off-set for non-compliance with a permitting requirement, then there would be language in HAR sec. 13-5 explaining the process for evaluating a non-compliant land use proposal and a schedule for assessing appropriate fees. Economic stimulation is not mentioned anywhere in all BLNR’s statutes and regulations, least of all the conservation district rules. So while the plain meaning of “welfare” may include prosperity, in the context of HAR sec. 13-5 the only relevant factors the BLNR may consider must be tied to protection and improvement of the conservation district.

166. Petitioners object and take exception to the HO COL 166 at 105.

HO misreads *Waiāhole* and thus erroneously asserts *Waiāhole* court stated that the public trust doctrine requires the State to apply a rule of reasonableness in balancing environmental costs against economic, social, and other factors. To clarify, the *Waiāhole* court did not pit environmental costs and benefits against economic and other uses of the resources, but stated that resource protection is itself a “use.” *Waiāhole*, 94 Haw. 97, 139-40, 9 P.3d 409, 451-52 (2000).

167. Petitioners object and take exception to the HO COL 167 at 105.

HO wrongly construes the public trust doctrine in order to find that the use of the summit area of Mauna Kea for the TMT Observatory is consistent with the public trust. BLNR must deny UHH’s CDUA to independently uphold the constitutional mandate that the BLNR “shall conserve and protect Hawaii’s natural beauty and all natural resources...in a manner consistent with their conservation.” Haw. Const., Art. XI, sec. 1. Mauna Kea is a public trust resource that has already sustained substantial adverse impact. Exhibit Jt-8/A-308, at 3-29.

168. Petitioners object and take exception to the HO COL 168 at 105.

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HO erroneously concludes that use of the summit area of Mauna Kea for the TMT Observatory promotes the ‘maximum reasonable and beneficial use’ of the combination of natural resources that is unique to that location. Use of Mauna Kea for the TMT Project is inconsistent with the public trust doctrine, whose “object is not maximum consumptive use, but rather the most equitable, reasonable, and beneficial allocation of state water resources, with full recognition that resource protection also constitutes ‘use.’” *Waiahole*, 94 Haw. 97, 139-40, 9 P.3d 409, 451-52 (2000). Because it will consume open-space resources, the proposed TMT Project does not accord with doctrinal imperatives towards sustainable use.

169. Petitioners object and take exception to the HO COL 169 at 105.

HO’s assertion that use of Mauna Kea for the TMT Project and scientific study is consistent with the public trust doctrine is unsubstantiated. A private scientific research corporation such as the TMT does not have as its purpose the support of: 1) public schools; 2) other public education; 3) bettering native Hawaiians under the Hawaiian Homes Commission Act, 1920; 4) the development of farm and home ownership; or 5) provide for public use of public lands. *See Office of Hawaiian Affairs v. Hous. & Cmty. Dev. Corp. of Hawaii (HCDCH)*, 117 Haw. 174, 181-82, 177 P.3d 884, 891-92 *rev'd and remanded sub nom. Hawaii v. Office of Hawaiian Affairs*, 556 U.S. 163, 129 S. Ct. 1436, 173 L. Ed. 2d 333 (2009).

170. Petitioners object and take exception to the HO COL 170 at 105.

COL 170 offers the unsubstantiated conclusion that the ‘protection’ element of the public trust doctrine is satisfied because the TMT Project does not involve the irrevocable transfer of public trust land and resources to private parties. The public trust mandate of “protection” is not satisfied by retaining lands just short of a fee simple transfer. Public trust lands and cultural and natural resources must be protected for sustainable use. OMKM Interim Director could not say what protections would be in place if the project were partially completed, and if there were no money for completion of the project. Petitioners FOF 413; Nagata Tr. 8/17/11, p 198: 12 -25.

172. Petitioners object and take exception to the HO COL 172 at 105.

HO’s conclusion that the TMT Project’s educational purposes are consistent with the public trust doctrine misstates the relevant object of inquiry. It is not the purpose of the TMT Project that conflicts with the public trust doctrine, but its location and lack of viable mitigation that make the TMT inconsistent with the public trust doctrine. *See supra* Exceptions to HO COL 38. Further, UHH’s educational purposes do not render it immune from compliance with conservation district use criteria. Such an argument was specifically contemplated in writing the conservation district rules in 1993. Prior to 1993, Title 13, Chapter 2, HAR included for all conservation district subzones a permitted use entitled “governmental use not enumerated herein where public benefit outweighs any impact on the conservation district.” This provision was eliminated because it was “widely viewed by the private sector as a major loophole – one which has resulted in some questionable land uses in sensitive resource areas.” G. Atwater, Conservation District Review Project, Exhibit B-34 at 30.

174. Petitioners object and take exception to the HO COL 174 at 105.

HO’s conclusion that the TMT’s proposed educational purposes must be balanced against Native Hawaiian use, and further, that the present coexistence between Native Hawaiians and other observatories, is a misleading representation of the relevant issue. Native Hawaiian cultural

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practices on Mauna Kea have suffered from the expansion of astronomy development there. Petitioners' OB at 42-43. Astronomy development on Mauna Kea has had and will foreseeably continue to have substantial adverse impacts on Native Hawaiian cultural practices. Petitioners' FOF 843; Exhibit Jt-8/A-308 at 3-29.

176. Petitioners object and take exception to the HO COL 176 at 105.

HO erroneously concludes that in proposing the TMT project, UHH has balanced the public trust obligations and protected native Hawaiian interests to the extent feasible. UHH's TMT project proposal violates the public trust because project specific impacts would have a significant effect on the natural, cultural, archaeological, and historic resources. Petitioners FOF 1061. The TMT project would decrease the suitability of the northern plateau area for spiritual observances and offerings. Petitioners' FOF 901; Exhibit A-308 at 3-27.

177, 178, 181, & 182. Petitioners object and take exception to the HO COLs 177, 178, 181, & 182 at 106-07.

HO erroneously concludes that public trust principles have already been incorporated into the Conservation District statute. *See* Report COL 177, 178, & 181. Further, HO asserts that Petitioners have not identified any public trust obligation that is not already reflected in the 8 criteria and therefore the conclusion that those criteria are satisfied is a compelling indication that the public trust obligations of both UHH and the BLNR are satisfied as well.

The TMT CDUA must independently satisfy both the conservation district rules and the Public Trust Doctrine because it is a land use proposed for public trust lands designated for conservation. Conservation district rules regulate land uses on conservation land, regardless if it is private or public land. Haw. Rev. Stat. § 205. By contrast, the public trust doctrine governs the use of public lands, regardless of its land use designation, to ensure that the public's interests are protected where private use of public land is proposed.

183. Petitioners object and take exception to the HO COL 183 at 107.

HO erroneously concludes that CDUP approval is consistent with the public trust obligations of UHH and the BLNR, regardless of whether those obligations are encompassed within the eight criteria of HAR § 13-5-30(c).

Public trust obligations of both BLNR and UHH include compliance with conservation district use regulations – an obligation to comply with those rules that protect public trust resources. Therefore, for this reason and for reason elaborated above, the proposed TMT Project does not comply with the public trust doctrine.

184. Petitioners object and take exception to the HO COL 184 at 107.

HO erroneously concludes that the TMT Project satisfies all legal obligations as it is the most equitable, reasonable, and beneficial allocation of state [trust] resources" in light of the public trust and HAR 13-5-30(c). *Waiāhole*, at 140. *Waiāhole* does not support this conclusion. "[W]ith full recognition that resource protection also constitutes 'use[,]'" the TMT Project would inequitably allocate state trust resources towards economic development to the detriment of the natural resources of Mauna Kea. *Waiāhole*, 94 Haw. 97, 140, 9 P.3d 409, 452.

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185. Petitioners object and take exception to the HO COL 185 at 107.

The Report mischaracterizes Petitioners' position by stating that Petitioners' contend both that a "mandate of conservation" demands that nothing be built and they argue that the BLNR should not take into account any economic aspects of the proposed Project.

Contrary to HO's misstatement, Petitioners do not contend that nothing can be built in the conservation district, but rather that appropriate development in the conservation district must *preserve or improve upon* the open space and natural beauty, of the conservation district – as plainly stated in HAR § 13-5-30(c)(6). BLNR's decision to deny Hawaiian Electric Company's request to construct utility transmission poles along the Wa'ahila Ridge in Mānoa provides important guidance in fulfilling the BLNR's obligation to protect visual resources, especially culturally significant viewplanes. *See In the Matter of CDUA for Hawaiian Electric Company, Inc.*, DLNR File No. OA-2801 (2002). Because the proposed TMT structure would not preserve or improve upon the open space and natural beauty of the Mauna Kea conservation district, the sixth criterion is not satisfied and the TMT CDUA must be denied.

186. Petitioners object and take exception to the HO COL 186 at 107-08.

HO cites *Waiāhole* in support of his mischaracterization of Petitioners' position that "nothing can be built." Petitioners' do not argue that economic and social benefits of public trust resources are irrelevant to article XI, section 1's mandate of conservation. *Waiāhole*, 94 Haw. at 40, 9 P.3d at 452. COL 186 exacerbates the initial mischaracterization of Petitioners' argument by asserting that Petitioners' position is further contrary to *Waiāhole*.

187. Petitioners object and take exception to the HO COL 187 at 108.

HO erroneously concludes that the proposed TMT project satisfies the state's obligations of protection and maximizing reasonable and beneficial use, and it is consistent w/ the constitutional, statutory, and regulatory mandates of "conservation." This conclusion is not substantiated by either the *Waiāhole* case cited nor the constitutional public trust doctrine.

Telescope development, and the economic benefits it entails, comes at a cost to the cultural and religious heritage and practices of the Hawaiian people. By claiming that the economic benefits of a project that is anathema to Hawaiian religion, culture, and well-being outweigh its adverse impacts, the Applicant discriminates in favor of a "public" that is specifically defined to not include Hawaiian religious practitioners. Exhibit B-20, Kauanui WDT at 2; Petitioners FOF/ COL at 978. The development on the summit of Mauna a Wākea is a commercial enterprise under the guise of science, educational, and economic opportunities. Exhibit G-1, E. Flores WDT at 3; Petitioners FOF/ COL at 1024.

While scientific education is a laudable public trust purpose, it does not bring the TMT Projects' substantial adverse impacts into compliance with neither the public trust doctrine nor the eight CDUP criteria.

189. Petitioners object and take exception to the HO COL 189 at 108.

HO states that "practices which are protected by Article XII, section 7 are those 'associated with the ancient way of life' that have been continued, without harm to anyone." *Citing Kalipi*, 66 Haw. at 10, 656 P.2d at 751. This is an inaccurate statement of law. *Pele Defense Fund*, 73

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Haw. 578, 837 P.2d 1247 (1992) did not have the last word on the issue of whether traditional and customary practices must have been *continuously exercised* to merit Article XII, section 7 protections. *PASH* clarified that “the *Kalipi* court also indicated that the traditional practices enumerated under HRS § 7–1 remain ‘available to those who *wish to continue* those ways.’” *PASH*, 79 Haw. 425, 449, 903 P.2d 1246, 1270 (1995) (emphasis in earlier citation). Citing Blackstone’s Commentaries, the *PASH* court stated that a customary practice continued without interruption means “the *right* versus *exercise* thereof—i.e., continuous exercise is not required” to be considered a protected custom. 79 Haw. at 441 n.26, 903 P.2d at 1262 n.26 (citing 1 W. Blackstone, Commentaries 76–78 (Sharwood ed. 1874)).

191. Petitioners object and take exception to the HO COL 191 at 109.

COL 191 is unsubstantiated. HO erroneously concludes that Hawaiian petitioners are obligated to demonstrate their rights are constitutionally protected, and further, that they have “offered no testimony or evidence” establishing that they engage in constitutionally protected Native Hawaiian traditional and customary practices at Mauna Kea. This conclusion is unsubstantiated for three reasons.

First, HO misapplies a standard developed in the criminal context of *Hanapi* to the present civil proceeding. “As a practical matter,” the *Hanapi* court stated, “it would be unduly burdensome to require the prosecution to negative any and all native Hawaiian rights claims regardless of how implausible the claimed right may be. ‘[T]o hold otherwise would be to create a rule that all conduct is presumptively [protected under the Constitution].’” *Hanapi*, 89 Haw. 177, 184, 970 P.2d 485, 492 (1998). In a civil context, the opposing party is not required to “negative” every element of a claim as must occur for the prosecution to succeed in a criminal proceeding. Because different standards of proof are imposed on state agencies involved in permitting decisions, the *Hanapi* court’s concern with undue burden is not present and therefore the burden-shifting towards the Petitioners is inapplicable as well.

Second, this civil proceeding is concerned with whether *state agencies* have fulfilled their constitutional obligations to ensure protections for Native Hawaiian traditional and customary practices in determining whether to grant UHH a CDUP. Put otherwise, the *burden is on BLNR* to show that granting the CDUP will not unduly interfere with Native Hawaiian traditional and customary rights. *Ka Pa ‘akai*, 94 Haw. 31, 45 (2000).

Third, the Report’s statement that Hawaiian Petitioners have adduced “no testimony or evidence” is clearly erroneous. Hawaiian Petitioners’ have repeatedly testified and introduced evidence demonstrating their constitutionally protected traditional and customary practices on Mauna Kea. *See e.g.* Exhibit G-02; Standing Petitions for the Flores-Case ‘Ohana, Mauna Kea Ānaina Hou, Neves, Ching; Exhibit E-01; Tr. 9/30/11 at 81: 19-20; Exhibit F-01; Tr. 9/30/11 at 38:13-40:11; Exhibit C-01 and C-05; Exhibit A-320; Tr. 9/26/11 at 40-41, 98; Tr. 8/25/11, at 63-64.

192. Petitioners object and take exceptions to the HO COL 192 at 109.

HO relied upon an improper and partial basis in concluding that "UHH does not question that Petitioners Ching, Neves, Pisciotta, and Flores-Case 'Ohana are native Hawaiians but argue that

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they offered no testimony or other evidence to establish that they are descendants of native Hawaiians who inhabited the Hawaiian islands prior to 1778."

Instead, HO should have relied upon evidence demonstrating that Hawaiian Petitioners are Native Hawaiian. For instance, Petitioner Ching testified that his ancestors inhabited the Hawaiian Islands prior to 1778. Petitioner Ching testified: "Among other things, I'm a descendant of a number of historic and noted ancestors, which I don't usually mention in public. As Fornander writes: Some of my cousins, grandsons of LonoikaHa'upu, Kamanawa and Kame'eiamoku, with their half-brother Ke'eaumoku, were the eminent chiefs who were primary in establishing Kamehameha I as King of Hawaii. Lono's bones are interred in the mount (sic) at 'Iolani Palace. I'm also a descendent of 'Umi a Liloa and Liloa - a couple of the greatest chiefs that have ever lived on this island." Petitioner Ching's testimony at pages 81 and 82. While Petitioner Ching did not mention the year 1778, other evidence in the record establishes that his ancestors inhabited the Hawaiian islands prior to 1778. "Ulumaheihei Hoapili was the son of Kame'eiamoku, one of the "four Kona uncles" and confidants of Kamehameha I. Kame'eiamoku and his twin brother Kamanawa were of a line of priests of the "class of Ka-uahi and Nahulu (Kamakau 1961: 188, 190, 231); these lines of priests were noted for knowledge of the stars and heavens. When Ke'eiamoku dies in 1804, his son Hoapili inherited his position, which he retained until his death in 1840. It was also Hoapili, who in 1809, cared for and hid the bones of Kamehameha I (Kamakau 1961:211, 212, 215)." Exhibit A-309 at 58. It is common knowledge that Kamehameha was present when Captain James Cook landed at Kealakeakua. At that time, Kame'eiamoku and Kamanawa were Cook's confidants and their grandfather, Lonoika Ha'upu is Petitioner Ching's ancestor. Further, Liloa and 'Umi a Liloa, who are also ancestors of Petitioner Ching, were 15th century chiefs.

Therefore the Petitioners reassert the following FOF 192 in as follows: With respect to the first *Hanapi* factor for establishing that conduct is constitutionally protected as a native Hawaiian right, UHH does not question that Petitioners Ching, Neves, Pisciotta, and Flores-Case 'Ohana are native Hawaiians but argue, despite, among other things, that Petitioner Ching presented evidence of his Hawaiian ancestry prior to 1778, and that Petitioners Ching, Neves, Pisciotta, and Flores-Case 'Ohana testified that they are native Hawaiian. Applicants did not challenge them on this issue or present any evidence indicating that they were not native Hawaiian. Therefore, Petitioners have satisfied the first factor of the *Hanapi* analysis.

193. Petitioners object and take exception to the HO COL 193 at 109.

HO erroneously applies the *Hanapi* test for Native Hawaiian customary and traditional rights asserted as a defense in a criminal trial to civil proceedings concerning the state's obligations to ensure Native Hawaiian customary and traditional rights are protected. Because the *Hanapi* test is irrelevant to the present proceedings, Hawaiian Petitioners were not required to demonstrate that their practices conform to the second prong of *Hanapi*.

194. Petitioners object and take exception to the HO COL 194 at 109.

COL 194 is inaccurate and unsubstantiated. Hawaiian Petitioners (Neves, Ching, Pisciotta, and Flores-Case 'Ohana) have met the second prong of the test developed by *Hanapi*, and further, that they also met the test for constitutional protections for traditional and customary practices developed by *PASH*, *Kalipi*, and *Paty*, because Hawaiian Petitioners have demonstrated that their

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practices are rooted in Native Hawaiian traditional and customary usage and values predating November 25, 1892. *Pele Defense Fund v. Estate of James Campbell*, 2002 WL 34205861 at 47, 50 (Hawai‘i 3d Cir. Aug. 26, 2002) (“A practice is ‘customarily and traditionally exercised’ when a specific set of values are passed down to the next generation in the conduct of their subsistence and *cultural* activities”) (emphasis added).

COL 194 is unsubstantiated. Over the course of the CCH proceedings, UHH stipulated to Hawaiian Petitioners’ status as experts in practices related to Mauna Kea, their standing to bring the CCH, and introduced professional reports that rely on several of the Hawaiian Petitioners themselves as expert consultants in the traditional and cultural practices of Mauna Kea. The Hawaiian Petitioners are:

Clarence Kukaukahi Ching is a Native Hawaiian and traditional subsistence practitioner. Exhibit E-01 Ching WDT at 3; Ching Tr. 9/30/11, p. 81: 19-20. On September 30, 2011, Ching testified to his genealogy as a Native Hawaiian with ancestors in Hawai‘i prior to 1778 and to genealogical connections to ali‘i who resided on Hawai‘i island prior to 1778. *See* Ching, Tr. 9/30/11, 81: 23-25 and 82: 1-7.

Pisciotta described her lineal descendancy from the Kamahukilani line of Native Hawaiians. Exhibit C-01, 1. Pisciotta is president of Mauna Kea Anaina Hou (MKAH), an organization of Native Hawaiian cultural practitioners, who have genealogical ties and/or who engage in traditional and customary practices related to Mauna Kea. Exhibit A-320, 6; Exhibit C-01, 1. She is also a descendant of Native Hawaiians buried in the summit regions of Mauna Kea, including modern burials as well, such as her Auntie Kamahukilani. Exhibit C-01, 1. Paul K. Neves is a Native Hawaiian practitioner of hula and kumu hula. (Exhibit F-01, Neves, WDT at 1). Paul Neves’ explained that he is *kanaka maoli*, a “native person.” Neves, Tr. 9/30/11, 38:13 and 40:11. On September 30, 2011, Kalani Flores’ testified that he is a “*kanaka maoli* cultural practitioner” with ancestral ties to Hawai‘i. Flores, Tr. 9/30/11, 104: 15-16; Flores, Tr. 9/26/11, 25:4.

Members of the Flores-Case ‘Ohana also asserted that they are *Kanaka Maoli* (Native Hawaiian). Exhibit A-318 at 3. Through their own testimony, Petitioners have sufficiently established that they are descendants of the native inhabitants of Hawai‘i prior to 1778.

Petitioner Paul Neves also asserted his identity as a Native Hawaiian and a *kumu hula* Native Hawaiian cultural practitioner. Neves WDT, Exhibit A-320.

The following emphasizes some of Hawaiian Petitioners’ representations of their Native Hawaiian tradition and customary practices in tandem with UHH documents: Kepā Maly’s scholarly research on the cultural and archaeological histories of Mauna Kea and Paul H. Rosenthal’s Cultural Impact Assessment (CIA) which was conducted as part of the University of Hawai‘i Mauna Kea Science Reserve Master Plan (2000). Maly’s research is included in the record as Petitioners’ exhibits C-11 and C-12 and in Appendix I of the University of Hawai‘i Mauna Kea Science Reserve Master Plan (2000), which is UHH’s exhibit A-21. Exhibit C-11 and A-21, Appendix I are the same document, Kepā and Onaona Maly of Kumu Pono Associates, Mauna Kea Science Reserve and Hale Pōhaku Complex Development Plan Update:

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Oral History and Consultation Study, and Archival Literature Research; Ahupua‘a of – Ka‘ohe (Hāmākua District) and Humu‘ula (Hilo District), Island of Hawai‘i (February 1999). Exhibit C-12 is: Kepā and Onaona Maly of Kumu Pono Associates, Mauna Kea- Ka Piko Kaulana o ka ‘āina (Mauna Kea – The Famous Summit of the Land): A collection of Native Traditions, Historical Accounts, and Oral History Interviews for: Mauna Kea, the Lands of Ka‘ohe, Humu‘ula, and the ‘āina Mauna on the Island of Hawai‘i (March 30, 2005). Exhibit C-11 and A-21, Appendix I are the same document. The record contains Maly’s research, which documents through “a wide range of traditional knowledge and practices, including, but not limited to the following, [that] are described for Mauna Kea and the adjoining ‘āina mauna.” Exhibit C-12 at vi.

Rosenthal’s CIA relies in part on the Maly studies. Exhibit A-21, Appendix N. Appendix N is Paul H. Rosenthal, Cultural Impact Assessment Study: Native Hawaiian Cultural Practices, Features, and Beliefs Associated with the University of Hawai‘i Mauna Kea Science Reserve Master Plan Project Area, University of Hawai‘i, Hilo, Hawai‘i, Report 1876-040199 (Aug. 1999).

Petitioner Clarence Kūkauakahi Ching

Petitioner Clarence Kūkauakahi Ching is a Native Hawaiian and traditional subsistence practitioner. Exhibit E-01 Ching WDT at 3; Ching Tr. 9/30/11, 81: 19-20. Ching asserted that he conducts traditional and customary cultural, spiritual and religious rituals and ceremonies at many locations on Mauna Kea, including Kūkahau‘ula (summit plateau), Lake Waiau, the various springs and Pohakuloa gulch areas; gathers woods, fiber, and stone material for kalaiwa‘a (canoe building) and as part of the construction of the traditional voyaging canoe, Hawai‘i Loa); and collects sacred waters from various sources, including the springs of Mauna Kea at Houpo o Kane and Lake Waiau, for traditional rituals and medicinal purposes. Ching CCH Petition, Exhibit A-320 at 2.

He gathers ice, snow, water, raw materials for Hawaiian adze making; deposits “piko” or umbilical cords in the Lake Waiau area; performs traditional astronomy, cosmology, navigation, and solstice and equinox ceremonies, worships “in, among, and around the entireties of Mauna Kea[;]” and continues to practice customary burials, adherence to the law of the splintered paddle (Kānāwai Māmalahoe, originating with Kamehameha I in 1797). Ching CCH Petition, Exhibit A-320 at 3-4. He also traverses traditional trails on Mauna Kea, a traditional huaka‘i practice. *Id.* at 1. The practices that he engages also gives rise to related interests in the protection of mauka-makai and makai-mauka view planes, of kinolau images, and of MKAH members’ family shrines, which have been desecrated on at least seven occasions. *Id.* at 4, 9.

On September 30, 2011, Ching testified to his genealogy as a Native Hawaiian with ancestors in Hawai‘i prior to 1778 and to genealogical connections to ali‘i of Hawai‘i island at the CCH:

I am a cultural practitioner on Mauna Kea and it has been stipulated that I am an expert in such practice . . . Some of my cousins, grandsons of Lonoika Ha'upu, Kamanawa and Kame'eiamoku, with their half-brother Ke'eaumoku, were the eminent chiefs who were primary in establishing Kamehameha I as King of Hawaii. Lono's bones are interred in

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the mount at 'Iolani Palace. I'm also a descendent of 'Umi a Liloa and Liloa – a couple of the greatest chiefs that have ever lived on this island.

Ching, Tr. 9/30/11, 81: 23-25 and 82: 1-7.

Ching further described several of his huaka'i routes, along modern and traditional trails on Mauna Kea, and their significance as modes of connecting to ancestral "footsteps." Exhibit E-02, 2. Petitioner Ching practices "*pule ho'oulu*" - traveling "on foot, on a system of trails that crossed the mountain," and has walked/hiked the trails and non-trails on Mauna Kea. Exhibit E-01, Ching WDT at 1. On Mauna Kea, "Native trails - portions of which, on the ascent to the summit, and around the base of Mauna Kea, are overlaid by modern routes of access." Exhibit C-12 at vi; *compare Ka Pa'akai*, 94 Haw. 31, 49, 7 P.3d 1068, 1086 (Native Hawaiian plaintiffs' testimony that utilizing ancient mauka/makai trails "are important to us to substantiate the continuity with the ancestors [and that she and her family] have a sincere appreciation for having the opportunity to literally walk the trails of the ancestors" established a traditional and customary practice for which the Land Use Commission must ensure protection to the extent feasible).

Petitioner: Paul Neves

Paul K. Neves is a Native Hawaiian practitioner of hula and kumu hula. Exhibit F-01, Neves, WDT at 1. Neves' explained that he is kanaka maoli, a "native person." Neves, Tr. 9/30/11, 38:13 and 40:11. He further described the importance of viewplanes to Hawaiian traditional and customary practices and explained the spiritual significance of obstructing alignments between Mauna Kea and Hale'ākala. Exhibit F-01, 3. Neves' contested case petition asserted that he has "maintained temple ceremonies within the [Mauna Kea] land areas, including Pu'u Wekiu [and] . . . erected a ceremonial platform (lele) on the Pu'u Wekiu. . . which has been desecrated and destroyed on at least two separate occasions." Neves CCH petition, Exhibit A-320 at 2. Neves' asserts traditional and customary practices: ". . .related to the use of Lake Waiau and other water sources and cultural sites in and around the summit area for the gathering of ice, snow, water, raw materials for adze making, depositing of the "piko" or umbilical cord in Lake Waiau, performing traditional astronomy, cosmology, navigation, continuing burial practices, performing solstice and equinox ceremonies, and conducting temple worship, in, among, and around the Mauna Kea summit Ice Age Natural Area Reserve, and Science Reserve[.]" Neves CCH petition, Exhibit A-320 at 2.

Neves is also a member of the Royal Order of Kamehameha I, Moku o Mamalahoa (ROOK I). Founded in 1860s, ROOK I is an unincorporated association of Hawaiian individuals descended from inhabitants of the Hawaiian islands prior to 1778 and who "have been actively exercising traditional and customary Native Hawaiian cultural and religious practice and ceremony[.]" Neves CCH petition, Exhibit A-320 at 1. Neves also explains how the TMT project would affect traditional Hawaiian religious practices; "a disturbance is *hehi ana*, which means to trample on a covenant. . . a religious agreement between Akua and yourself . . . Every time [a building is placed on Mauna Kea] we feel the 'āina being trampled upon and our covenant assaulted." Exhibit F-01, Neves WDT at 4. Neves has further explained that building the TMT on Mauna Kea is "desecration, in Hawaiian the word for desecration is *hauna 'eli*, which means also to be

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in contempt of court. But on Mauna Kea it means to have contempt for Akua's court -Akua's law (the Kanewai) which is codified in the 'āina. Exhibit F-01, Neves WDT at 4.

Petitioner: Kealoha Pisciotta of Mauna Kea Anaina Hou (MKAH)

Kealoha Pisciotta is president of MKAH, an unincorporated association dedicated to protecting, preserving and perpetuating Native Hawaiian traditional and customary cultural, historic and religious practices, access and site (landscape) protection. MKAH members “exercise of traditional and customary practices related to the use of Lake Waiau and other water sources and cultural sites in and around the summit area for the gathering of ice, snow, water, raw materials for adz making, depositing of the “piko” or umbilical cord in Lake Waiau, performing traditional astronomy, cosmology, navigation, continuing burial practices, performing solstice and equinox ceremonies, and conducting temple worship, in, among, and around the Mauna Kea summit, Ice Age Natural Area Reserve, and Science Reserve.” MKAH CCH petition, Exhibit A-320 at 2. Members also exercise these rights for religious, cultural, and subsistence purposes. *Id.* at 3. Pisciotta also maintains ahu and lele on the summit region, the “contemporary functions” of which “are rooted in traditional beliefs.” TMT-FEIS, Exhibit A-208 at 3-15.

Pisciotta described her lineal descendancy from the Kamahukilani line of Native Hawaiians. Exhibit C-01 at 1. She is also a descendant of Native Hawaiians buried in the summit regions of Mauna Kea, including modern burials as well, such as her Aunt Kamahukilani. Exhibit C-01, 1. Ms. Pisciotta learned her practices from her elder family members. Exhibit A-320, 6, Exhibit C-01, 1. She described various ceremonies ROOK I and MKAH engage on Mauna Kea, such as the solstice and equinox ceremonies during which they “trac[k] the motion of the sun across the sky throughout the year.” Exhibit C-01, 6. Tracking is important for growing, harvesting, and measuring a “wobble” that impacts traditional ocean navigation practices.” Exhibit C-01 at 6; Petitioners’ FOF/ COL 353, 356. Pisciotta further detailed the seasons and astronomical significance of solstices and equinox ceremonies (“Ke Ala Polohiwa a Kanaloa” -- The black glistening path of Kanaloa--is when the sun hits its farthest point south in the sky, occurring in December; “Ke Ala Polohiwa a Kane” (the black glistening path of Kane) when the sun reaches its most northern point in the sky, occurring in June; Ke Ala‘ula a Kane” (The Spring Equinox--the dawning of the path of Kane”) occurring in March; and, “Ke Ala Ma'awe`ula a Kanaloa” (The Autumnal equinox--"the red track or tentacle") of Kanaloa) occurring in September). Exhibit C-01, 7. Mauna Kea “sets the ultimate relationship to all other sacred sites for such ceremonies,” and is “the highest point” from which you can see all else, obstructions of viewplanes will have adverse impacts on these traditional cultural practices. Exhibit C-01, 6. Hawaiian Petitioners entered a map of viewplanes relative to Mauna Kea that are used by cultural practitioners. Exhibit C-05. During the contested case proceedings, Pisciotta discussed Exhibit C-06, which is a photograph of the Southern Cross constellation and its obstruction by an existing telescope on Mauna Kea (Gemini). She further explained that leveling the main body of Kūkahau‘ula impacts MKAH and ROOK I solstice and equinox practices by forcing them to adjust their alignments. K. Pisciotta, Tr. 9/26/11, 40: 11-19. The TMT project in particular would “interfere[e] with the open space and viewplanes of our viewplanes to Haleakalā.” K. Pisciotta, Tr. 9/26/11, 41: 8-11. Solstice and equinox practices, amongst other things, “codified” these native knowledges and science, which are based on “thousands of years of observation.” K. Pisciotta, Tr. 9/26/11, 41: 13-18. In another example of codification Pisciotta explained that

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Hawaiian traditional chants contain names of the stars, the pole stars from 5,000 years ago. K. Pisciotta, Tr. 9/26/11, 98: 19-25.

Pisciotta also explained TMT construction impacts on Hawaiian practices that center on the historical and spiritual significance of Lake Waiau. Exhibit C-01, 8.

· “The snow, ice, and water elements are divine manifestations of the different deities. We believe it is very important that the deities not be negatively impacted.” Exhibit C-01, Pisciotta WDT at 8; Petitioners’ FOF/ COL 317.

· “Lake Waiau is believed to contain pure water associated with the god Kane and was used in healing and worship practices.” Exhibit A-21, App. N at 20; Petitioners’ FOF/ COL 318.

· “Lake Waiau is also home to our akua (deities), such as Mo‘oinanea, who is recorded in our genealogies and who is assigned to care for the *kupua* children.” Exhibit C-01, Pisciotta WDT at 8; Petitioners’ FOF/ COL 319.

· “Lake Waiau is like a navigational gourd to view the heavens in, as the stars are reflected on its surface.” Exhibit C-01, Pisciotta WDT at 8; Petitioners’ FOF/ COL 322.

Additionally, she explained the traditional significance of Mauna Kea aquifers (“[o]ur traditions tell us the waters we swim in at Hilo Bay are from Mauna Kea. The water of Mauna Kea even feed our fish ponds below” Exhibit C-01 at 9) and connects this belief to the lack of “conclusive evidence” that the TMT will not have adverse impacts on the hydrology of Mauna Kea. Exhibit C-01, 8.

Petitioners: Flores-Case ‘Ohana

On September 30, 2011, E. Kalani Flores’ testified that the Flores-Case ‘ohana are “kanaka maoli cultural practitioners” with ancestral ties to Hawai‘i. Flores, Tr. 9/30/11, 104: 15-16; Flores, Tr. 9/26/11, 25:4. E. Kalani Flores and B. Pua Case were qualified as an expert in Hawaiian cultural traditions during the contested case hearings. K. Flores, Tr. 9/26/11, 6: 13-25; T. Lui-Kwan, Tr. 8/25/11 at 28:9-15. Additionally, Flores recited his extensive familiarity with processes of reviewing and assessing Native Hawaiian traditional and customary rights and the concomitant knowledge of standards used to establish those traditional and customary claims at the contested case proceedings. Flores, Tr. 9/26/11, 7: 9-25, 8: 1-25, 9: 1-25; 10: 1-23. Flores’ extensive experience with reviewing and assessing Native Hawaiian rights should offer greater weight to his assertion that his practices constitute Hawaiian cultural practices. The Flores-Case ‘Ohana assert a “direct connection to ancestral akua (gods, goddesses, deities) and spirits of Mauna a Wakea[.]” Flores-Case ‘Ohana CCH petition, Exhibit A-320 at 3. In relation to this connection, the Flores-Case ‘Ohana “continues to exercise their traditional and customary Kanaka Maoli (Native Hawaiian) cultural, spiritual, and religious practices on Mauna a Wakea.” *Id.* at 2. Case is a Kanaka Maoli (Native Hawaiian) practitioner of hula and has had her own *halau hula* for over 25 years. B. Case, Tr. 8/25/11 at 63:25, 64:1-3. Case and her *halau hula* continues to engage in cultural practices, protocols, and ceremony gatherings connected to the Mauna. B. Case, Tr. 8/25/11 at 63:25, 64:1-3. Their petition asserted their “substantial interest” with the TMT project and past development on the Mauna Kea summit based on their spiritual and religious interests in their ancestral akua (gods, goddesses, deities) and spirits of Mauna a Wakea. Flores-Case ‘Ohana CCH petition, Exhibit A-320 at 3. If built, the TMT would cause a substantially new visual obstruction on Mauna a Wakea and would cause a visual and spiritual interference for the Flores-Case ‘Ohana when directing chants and prayers towards the mountain during cultural practices, protocols, and ceremony gatherings. B. Case, Tr. 8/25/11 at 66:14-23.

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Flores explained the historical connections between the Flores-Case ‘Ohana’s linkages with Mauna Kea deities and Hawaiian customary practices. Exhibit G-01, 2. “In the times of our ancestors, . . . one would consult with individuals such as *kahuna kuhikuhi pu‘uone* who specialized in protocols associated with the selection of such [building] sites.” Exhibit G-01, 2. These consultations would be supplemented with “consultation and direct communication between intermediaries and those of the ancestral realm associated with those places was an essential and integral part of the process so as not to create a physical and/or spiritual disturbance, disconnection, or imbalance between man and his *akua*, and between man and his environment.” Exhibit G-01, 2. Because UHH has never engaged these consultations, they have initiated these disturbances, disconnections, and imbalances that thereby infringe on Flores-Case ‘Ohana’s spiritual practices on Mauna Kea. Flores-Case ‘Ohana specifically cites summit-related construction disturbances registered by an undisclosed Guardian “force of nature from the depths of Mauna a Wākea[,]” the goddess Poliahu, Mo‘oinanea (guardian of Lake Waiau), and by the energies fields of Mauna Kea itself. Exhibit G-01, 4-5 and 8-9. Kalani Flores again explained that the UHH’s failure to “consul[t] with those recognized as the ancestral *akua* and *kupua* of Mauna a Wakea” is “what those of the mountain have shared with us. No one has ever asked us permission.” E. Flores, Tr. at 23: 13-14 and 23: 19-20. Members of the Flores-Case ‘Ohana have conducted ceremonies on Mauna a Wakea in concert with ancestral traditions of having a reverential relationship with the living Earth. The cultural perspective of *aloha ‘āina*, to have sincere love and respect for the land and nature, is at the heart of Hawaiian traditions. Exhibit G-01, E. Flores WDT at 5, 12.

Finally, Lloyd Case, a consultant for UHH’s CIA (Exhibit A-21, Appx. N at 13 and 34-38) is the uncle of Pualani Case of the Flores-Case ‘Ohana. Pualani has testified that her knowledge and practice of Native Hawaiian traditions and customs proceed from “family stories” and her “descend[ance] as a family from the clan of ‘Awini in the time of the birth of Kamehameha.” Case CCH petition, Exhibit G-02 at 1. According to the expert testimony of Davianna Macgregor, practices based on knowledge of traditional and customary practices that have been passed from generations and are related to familial subsistence, religious, or cultural needs demonstrate two elements of constitutionally protected traditional and customary practices. *State v. Pratt*, 124 Haw. at 337. Put otherwise, the Flores Case ‘Ohana shares a familial basis with the expert cultural knowledge of Lloyd Case, and this basis commonly informs their traditional and customary practices and thus demonstrates the “rooting” of their practices in Native Hawaiian traditions and customs.

Evidence that Hawaiian Petitioners’ Practices Predate 1892

Hawaiian Petitioners’ practices include those enumerated in the TMT-FEIS:

- Performance of prayer and ritual observances important for the reinforcement of an individual’s Hawaiian spirituality.
- Collection of water from Lake Waiau for a variety of healing and other ritual uses.
- Deposition of piko (umbilical cords) at Lake Waiau and the summit peaks of Maunakea.
- Use of the summit region as a repository for human remains by means of releasing ashes from cremations.

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- Practices associated with the belief in that the upper mountain region of Maunakea, from the Saddle area up to the summit, is a sacred landscape, personifying the spiritual and physical connection between one's ancestors, history, and the heavens.
- Practices associated with the unspecified traditional navigation practices and customs." TMT-FEIS, Exhibit A-308 at S-4.

The TMT FEIS recognizes the following additional practices and beliefs cited by Hawaiian Petitioners as "considered traditional and customary in previous studies." Exhibit A-308 at 3-21.

- Performance of prayer and ritual observances . . . *including the erection of ahu or shrines . . .*
- Burial blessings to honor ancestors . . .
- Association of unspecified *traditional navigation practices and customs with the summit area.*
- *Annual solstice and equinox observations that take place at the summit of Kūkahau'ula.*" Exhibit A-308 at 3-21 (*emphasis added*).

UHH's consultants on traditional and customary practices on Mauna Kea, Kepā and Onaona Maly and Paul Rosenthal establish Hawaiian Petitioner's practices as traditional and customary to Mauna Kea. Exhibit A-21, Appxs. N and I. These sources identify a substantially similar list of Native Hawaiian customary practices on Mauna Kea. Rosenthal's document (Exhibit A-21, Appx. N) reproduces "Table 2. Summary of Identified Native Hawaiian Cultural Practices [*sic*], Features, and Beliefs Associated with the Mauna Kea Science Reserve Master Plan Project Area" from Maly's 1999 study (Exhibit A-21, Appx. I). Subpart a, "Traditional and Customary Practices," lists the following:

- Prayer and ritual observances,
- Collection of water from Waiau for ritual purposes
- Deposition of *piko* (umbilical cords) at Waiau and the summit peaks of Mauna Kea
- Burial Practices: Interment of remains –
- Burial Practices: Releasing of ashes at the summit and other locations on Mauna Kea

Exhibit A-21, Appx. N at 34.

Based on data collated in Maly's 1999 report (Exhibit C-11 and Exhibit A-21, Appx. I), Rosenthal concludes "several of the identified practices and beliefs would appear to fall within the category of traditional and customary practices claims." Exhibit A21, Appx. N at 43.

Rosenthal concludes:

These would be claims which would lie within the purview of Article XII, Section 7, of the Hawai'i State Constitution ("Traditional and Customary Rights"), particularly as reaffirmed in 1995 by the Hawai'i State Supreme Court in the decision commonly referred to as the "PASH decision," and further clarified in the 1998 decision in "State v. Hanapi," and which would include various cultural practices and beliefs associated with the general geographical area of the summit region, rather than a clearly definable property or site.

Exhibit A-21, Appx. N at 45.

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Here, UHH's documents concede that identified practices and beliefs, which Hawaiian Petitioners testify to practicing and believing, "would seem to qualify as traditional and customary cultural practices within the meaning of the Hawai'i State Constitution[.]" Cultural Impact Assessment for the Mauna Kea Science Reserve, Exhibit A-21, Appx. N at 45. For instance, the Flores-Case 'Ohana testify that they have "connected with some of those akua and kupua of Mauna a Wākea through genealogical ties as well as through customary cultural and traditional practices." Exhibit G-1 at 5. They identify their ancestral akua connected to Mauna a Wākea with those accounts referenced by Kepā and Onaona Maly of Kumu Pono Associates, consultants and scholarly researchers of Native Hawaiian traditional and customary practices associated with Mauna Kea, amongst other places. Maly's archaeological study cites Boundary Commission Testimonies collected as early as 1873, field surveys by W.D. Alexander in 1892, and a 1930 archaeological survey as documented evidence of pre-1892 worship and sites of worship on Mauna Kea, including heiau in the summit region. Exhibit C-11 at 14; Exhibit A-21, Appx. I at 14. Pisciotta and Neves both attest to erecting altars in the Mauna Kea summit regions. MKAH CCH Petition, Exhibit A-320 at 3 and Exhibit F-01, Neves, WDT at 1. Hawaiian Petitioners' practices of worship at Mauna Kea were thus established before 1892.

Further, comparing Rosenthal's final compilation of Native Hawaiian traditional and customary practices on Mauna Kea with the TMT-FEIS findings of such practices (described above) demonstrates that the FEIS likely adopted Rosenthal's findings. Rosenthal's list follows:

1. Performance of prayer and ritual observances important for the reinforcement of an individual's Hawaiian spirituality.
2. Collection of water from Waiau for a variety of healing and other ritual uses;
3. Deposition of *piko* (umbilical cords) at Waiau and the summit peaks of Mauna Kea;
4. Use of the summit region as a repository for human burial remains, by means of interment, particularly on various *pu'u*, during earlier times, and more recently by means of releasing ashes from cremations;
5. Belief in the upper mountain region of Mauna Kea, from the Saddle area up to the summit, as a sacred landscape – as the personification of the spiritual and physical connection between one's ancestors, history, and the heavens; and
6. Association of unspecified traditional navigation practices and customs with the summit area."

Exhibit A-21, Appx. N at 39.

The identity between Rosenthal's and TMT FEIS findings on traditional and customary practices of Mauna Kea supports the application of Rosenthal's further opinion that these practices are protected Native Hawaiian practices to the Hawaiian Petitioners' case concerning the TMT. Put simply, Hawaiian Petitioners have testified to Native Hawaiian practices that UHH has recognized as traditional and customary to Mauna Kea in the TMT-FEIS, and are further specifically found to meet *Hanapi* standards for constitutionally protected traditional and customary practices.

Not only do Hawaiian Petitioners' testimonies show the practices and beliefs identified in UHH's CIA apply to their own practices and beliefs, two of the petitioners – Kealoha Pisciotta and Lloyd Case - were consultants for the research project on which that CIA was based. UHH

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Exhibit A-21, Appx. N at 13 and 34-38. UHH's cultural impact assessments further link Hawaiian Petitioners 'contemporary' practices to traditional practices established before 1892. The FEIS reports Pisciotta uses a contemporary kūahu on Mauna Kea and concludes, "contemporary functions [that] are rooted in traditional beliefs." TMT-FEIS at 3-15. The FEIS finding concurs with Rosenthal's discussion of Mauna Kea contemporary cultural practices, "certain other practices, such as prayer and ritual services involving the new construction of new *kuahu* (altars), or the releasing of cremated humans rather than internment on *pu'u*[" that he finds "might seem to be contemporary cultural practices they may as well be considered reasonable cultural development evolving from earlier traditional practices." Exhibit A21, Appx. N at 43. *See infra* Exceptions to HO COL 200 (category of "contemporary cultural practices" is nonsensical because protected Native Hawaiian traditional and customary cultural practices are contemporary).

Hawaiian Petitioners who were not also cultural informants for UHH's Cultural Impact Assessment and other scholarly documents have testified to practices that are recognized as Native Hawaiian traditional and customary in those documents. For instance, Petitioner Ching testifies that he practices *pule ho'oulu* upon ascension of Mauna Kea. Maly has documented the practice of traveling to Mauna Kea "on foot, along a system of trails that crossed the mountains" in the period leading up to the mid-1800s, and further refers to records of visitation and site use from pre-contact through the historic periods to sites across the mountain. Exhibit C-11 at 16; Exhibit A-21, Appx. I at 16. Maly finds family traditions and knowledge of Mauna Kea specifically pertaining to journeys on the mountain trails are important family histories. Exhibit C-11 at 16; Exhibit A-21 at V-8.

Hawaiian Petitioners' Claims are Substantiated Through Testimony and Establishing Standing

Hawaiian Petitioners' status as *kama'āina* witnesses means that they can establish their practices as traditional and customary through their own testimonies. Hawai'i courts accept *kama'āina* witness testimony as proof of ancient Hawaiian tradition, custom, and usage in regard to right of way, land boundaries, and land disputes. *Hanapi*, 89 Hawai'i 177, 187 (1998) *citing Palama v. Sheehan*, 50 Haw. 298 (1968); *Application of Ashford*, 50 Haw. 314, 316 (1968); *In re Boundaries of Pulehunui*, 4 Haw. 239 (1879). The Hawai'i Supreme Court has found "[a] *kama'āina* witness is a person familiar from childhood with any locality . . . This would also include "persons who were specially taught and made repositories of this knowledge." *Kobayashi v. Zimring*, 58 Haw. 106, 145 (1977) (citations omitted). Hawaiian Petitioners' testimonies show they are *kama'āina* witnesses because they have been specially instructed about their Mauna Kea practices and were made familiar with Mauna Kea from early ages.

In *PASH*, *PASH* members established that activities not enumerated in HRS § 7-1 were entitled to the protection of article XII, § 7 by showing that the right was "customarily and traditionally exercised [on the *ahupua'a* at issue] for . . . purposes and possessed by . . . descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778[.]" *PASH*, 79 Haw. 246, 253 (Haw. Ct. App. 1993). The *PASH* court found:

the record contains sufficient evidence to establish those requisites. Rothstein, Marcel Keanaina and Pai [*PASH* members] were all under oath when they

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testified, and their testimony is unrefuted. Their testimony was sufficient to show that the gathering of opae from the anchialine ponds on the ahupua'a of Kohanaiki has been customarily and traditionally exercised by native Hawaiians and by PASH's native Hawaiian members.

Id.

In fact, the *PASH* court specifically noted that the administrative record held evidence only that the claimed 'opae-gathering practices only dated back to the 1920s. But, the absence of support for the existence of the practice went towards *PASH* petitioners' *standing*, and their standing had already been established by their own unrefuted testimony. *PASH*, 79 Haw. 425, 452, 903 P.2d 1246, 1273. Likewise, Hawaiian petitioners in the present proceedings have established their standing.

On March 7, 2011, Hawaiian Petitioners submitted their petitions for a CCH. Pursuant to HAR §13-1-29(b) ("Request for hearing"), these written petitions contained statements of the: 1) nature and extent of their interests in the BLNR's approval of the TMT CDUA, 2) reasons for their disagreement with the TMT CDUA, 3) relief sought, 4) relation between their request and the public interest; and 5) other information pertinent to criteria for "parties" pursuant to section 13-1-31. *Id.* Under DLNR administrative rule HAR § 13-1-31(b), government agencies, persons with property interest, persons with interests "clearly distinguishable" from the general public, and other persons who can show a substantial interest. *Id.* Hawaiian Petitioners are neither government agency representatives nor property owners, but each asserted their "clearly distinguishable interest" (Flores-Case 'Ohana CCH petition, Exhibit A-320 at 3) or a comparable "interest in the Mauna Kea lands relating to the issuance of the TMT CDUP separate from those interests held by the general public" (MKAH CCH petition, Exhibit A-320 at 3, Ching CCH Petition, Exhibit A-320 at 3, and Neves CCH Petition, Exhibit A-320 at 3). Their "clearly distinguishable" and/ or "substantial" interests therefore proceed from Native Hawaiian rights that they asserted in their written petitions of March 7, 2011. *See* Flores CCH Petition, Exhibit A-320 at 3; Neves CCH Petition, MKAH CCH Petition; and Ching CCH Petition. In any case, UHH has not offered evidence specifically refuting Hawaiian Petitioners' testimonial assertions that their cultural, spiritual and religious rituals and ceremonies on and near Mauna Kea, genealogical connections to Mauna Kea, and gathering of water and other items for cultural practices are customarily and traditionally exercised.

Omitted Evidence Pertinent to Hawaiian Petitioners' Evidence

COL 194 is further incomplete because it fails to recognize UHH and HO's role in introducing confusing stipulations that foreclosed Hawaiian Petitioners' opportunity to testify to the full extent of their traditional and customary Native Hawaiian practices. *See* T. Lui-Kwan, Tr. 8/25/11, 28:9-15 ("Applicant is prepared to stipulate to the five Petitioner witnesses, that's Mr. Paul Neves, Clarence Ching, Ms. Pua Case, Mr. Kalani Flores and Ms. Kealoha Pisciotto may be recognized as experts to their cultural practices related to Mauna Kea. That's an offer we have").

UHH counsel further represented that they made the offer "to expedite the process here in terms of moving this hearing along and just to avoid unduly delaying the proceedings." T. Lui-Kwan, Tr. 8/25/11, 28: 16-18. Petitioners accepted UHH's "offer" in good faith and refrained from making unduly duplicative representations of their cultural practices. UHH cannot now argue

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that Petitioners' have not adequately offered evidence concerning their cultural practices. Petitioner Ching specifically stated, "I appreciate your offer, and I accept. . . And I was getting myself prepared to sit here all day to keep on talking about all my involvements in Hawaiian culture, until that time when the Hearings Officer feels satisfied that I was indeed an expert." C. Ching, Tr. 8/25/11, 28:22-25, 29: 1-5. HO's FOF FOFs 3, 4, 5, 7 exacerbate this confusion by identifying Petitioners Pisciotta, Ching, Flores-Case 'Ohana, and Neves as "native Hawaiian cultural practitioners," while COL 194 alleges that these same Petitioners do not have the rights of Native Hawaiian cultural practitioners.

COL 194 uncritically adopts UHH's unsubstantiated claim that Hawaiian Petitioners did not establish that their claimed traditional and customary practices are "deeply rooted in the culture" by showing that their practices are related to usages in existence in November 25, 1892. Lui-Kwan, Tr. 9/30/11 at 152: 1-10. UHH and HO are incorrect. As state agencies, UHH and BLNR have the burden of showing that the TMT would not unreasonably interfere with constitutionally protected Native Hawaiian traditional and cultural practices. See HRS § 91-10(5); HAR § 13-1-35(k); *Ka Pa'akai*. For this reason amongst the many detailed *supra* in Exceptions to COL 194, HO's conclusion must be rejected.

196. Petitioners object and take exception to the HO COL 196 at 109.

Substantial evidence in the record of these proceedings contradicts HO's conclusion that Petitioners did not show that any Native Hawaiian traditional and customary practices involving viewplanes from Mauna Kea are entitled to constitutional protection.

Petitioners' testimonies and filings have repeatedly demonstrated the substantial and adverse impacts that the proposed TMT would have on traditional and customary practices that require viewplanes, particularly between Mauna Kea and Haleakalā. For example, see Petitioners' FOF/ COL 358-361; 749:

- Exhibit C-05; (Map of selected view planes, some of which are solstice and equinox view planes);

- Exhibit C-01 (K. Pisciotta, WDT 6/28/11 at 7; "[The proposed] TMT will be in direct line of sight of Maui and the NW plane which is used for ke ala ao (solstice and equinox) ceremonies. There are also lines that represent the relationship between Mauna Kea and Poli'ahu Heiau on Kaua'i, Ahu a Umi Heiau situated between the three great mountains (Hualalai, Mauna Loa and Mauna Kea) on Hawai'i Island, the Pu'u Kohola Heiau in Kawaihae, Hawai'i Island, and Motu Manamana (Necker Island) of the North Western Hawaiian Island which marks the great turn around of the sun during the ke ala polohiwa time. The shrines on this tiny island are related to this relationship too.");

- Tr. Kealoha Pisciotta, 9/30/11 at 139: 2-11 ("If we are standing at ground level on the south side of the TMT on the plateau from any of the ahu or cultural, historic sites looking northward, we will not be able to see Haleakalā, as we saw during the site visit, nor any of the other islands in the chain which views are used in some ceremonies, nor will we be able to observe the motion of the northern stars or constellation without direct interference from the TMT, as the height alone is too high").

197. Petitioners object and take exception to the HO COL 197 at 109.

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The Report includes the irrelevant and inaccurate statement that Hawaiian Petitioners “offered no evidence of any cultural or religious practices by native Hawaiians . . . at the five-acre [TMT] site[,] the TMT Access Way, or the Batch Plant Staging Area. UHH’s witnesses confirmed that no such practices have been documented for those locations.” *Citing* Exhibit A-311 at 4-5, 4-9; WDT Collins at 7-8.

First, HO cites no authority for restricting the area Native Hawaiian traditional and customary practices to these specific areas. To this end, HO adopts UHH’s erroneous method of downplaying the impact of the proposed TMT Project upon historic properties and cultural resources by limiting the discussion to Area E of the Astronomy Precinct instead of the MKSR as a whole. *See* Exhibit A-311, CDUA at 4-1.

Second, Native Hawaiian practitioners, including Hawaiian Petitioners, have repeatedly affirmed that the entirety of Mauna Kea is a sacred and that the proposed TMT will interfere with viewplanes that are critical to those traditional and customary practices.

- “The entire mountain region of Mauna Kea from approximately the 6,000 foot elevation to the summit, including the Mauna Kea Science Reserve, was identified in the Cultural Impact Assessment Study (1999) as a potential TCP.” Exhibit A-303 at 2-40; Petitioners’ FOF/COL 828 at 113; 829-832 at 114.

- Construction of the TMT would introduce a new, large built structure into the natural, open space of the northern plateau on Mauna Kea, thus obscuring important star alignments and interrupting other viewplanes to and from the summit area. Pisciotta, Tr. 9/26/11 at 90: 14-17; Petitioners’ FOF/COL 41.

- “It is Mauna Kea, the most sacred mountain in all of Polynesia...The entire mountain is a temple, a heiau and the mountain itself is kapu—sacred...” Exhibit G-02 (B. Pualani Case WDT) at 1; Petitioners’ FOF/ COL 288.

Third, COL 197 is unreliable because it relies upon Collins’ testimony, which has been contradicted by other documents on record. *See* UHH FOF 334 at 54. Contrary to the statement attributed to Ms. Collins and relied upon by HO, SHPD *never* stated in any of their correspondence that the “TMT Project would have no significant impact on the historic properties”. SHPD instead repeatedly informed UHH and their archaeological consultants, “the TMT project will result in impacts to this district.” Exhibit A-309 at 27. Likewise, none of the PCSI reports or archaeological inventory surveys in evidence state that the “TMT Project would have no significant impact on the historic properties[.]” Exhibit A-28; Exhibit A-29; Exhibit A-133. The TMT CDUA itself referenced 4 historic properties in the vicinity of the TMT Observatory, 2 historic properties in the vicinity of the Batch Plant, and 6 historic properties in the Hale Pōhaku area. Exhibit A-311, CDUA at 4-1, 4-3, 4-5. The preponderance of the evidence demonstrates the unreliability of Collins’ assessment and that the area of the proposed TMT Project is a site of historical traditional and customary practice.

198. Petitioners object and take exception to the HO COL 198 at 110.

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HO ignores substantive and probative evidence in coming to the conclusion that Petitioners offered no evidence that they conducted cultural practices at the TMT Project site or associated Project areas. This COL is both irrelevant and unsubstantiated. It is irrelevant because even if Petitioners' did not practice in proposed TMT Project areas, the record demonstrates that Native Hawaiian cultural practices occur there and the state must therefore fulfill its obligations under *Ka Pa'akai* to ensure that those practices are protected. *See* Exhibit A-311, CDUA at 4-1, 4-3, 4-5. HO's COL 198 is unsubstantiated because Petitioners have provided substantial evidence that their traditional and customary practices involve viewplane alignments that pass through the proposed TMT project areas. *See e.g.* Exhibit C-01 (K. Pisciotta, WDT 6/28/11 at 7); Pisciotta, Tr. 9/26/11 at 101:21-25, 102:1-25, 103:1-25, 104:1-3, 141:11-17; Petitioners' FOF/ COL 755-56.

199. Petitioners object and take exception to the HO COL 199 at 110.

For reasons elaborated in Exceptions to HO COL 188-98 above, HO's conclusion that approval of the CDUP for the TMT Project is consistent with and satisfies the BLNR's and UHH's obligations under Article XII, section 7 to recognize and protect customary and traditional native Hawaiian rights is erroneous.

200. Petitioners object and take exception to the HO COL 200 at 110.

COL 200 is irrelevant and misleading. The Report creates a category - "contemporary cultural practices" - and then proceeds to the conclusion that these practices are not traditional and customary practices protected under Article XII, section 7 of the Hawai'i Constitution, *PASH*, and *Ka Pa'akai*. To clarify, these laws evolved in response to a specific concern with ensuring that contemporary practitioners of Native Hawaiian traditional and customary practices would be protected. *See Ka Pa'akai*, 94 Haw. 31, 45, 7 P.3d 1068, 1082 (2000) ("Article XII, section 7's mandate grew out of a desire to 'preserve the small remaining vestiges of a quickly disappearing culture [by providing] a legal means by constitutional amendment to recognize and reaffirm native Hawaiian rights.'"). Insofar as "contemporary cultural practices" are those that did not evolve from traditional and customary usages in 1892, this phrase does not describe the Native Hawaiian cultural practices of Mauna Kea identified in documents developed by UHH. *See e.g.*, Exhibit A-21, "University of Hawai'i Mauna Kea Master Plan 2000," Appendixes N and I. "Contemporary cultural and religious practices" exercised by Native Hawaiians on the lands of Mauna Kea are "contemporary" insofar as Hawaiian culture is a living culture, and Native Hawaiian descendants of that culture continue to exercise cultural practices in modern times. These practices have a basis in traditional and customary usages from November 1892. Exhibit A-21, Appx. N at 45.

201. Petitioners object and take exception to the HO COL 201 at 110.

COL 201 misrepresents *Ka Pa'akai* case law. *Ka Pa'akai* recognizes that the state's power to regulate Native Hawaiian traditional and customary rights under Article XII, section 7 "allows the State to permit development that interferes with such rights in certain circumstances.... Nevertheless, *the State is obligated to protect the reasonable exercise of customarily and traditionally exercised rights of Hawaiians to the extent feasible.*" *Ka Pa'akai*, 94 Haw. 31, 45-46, 7 P.3d 1068, 1082-83 (2000) (*citing PASH*; emphasis in original citation). The Report, however, misrepresents the *Ka Pa'akai* by making the case stand for the proposition that State regulation is the outer limit of Native Hawaiian traditional and customary rights because *Ka*

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Pa'akai rather states that it is the state's obligations to *protect* those rights that forms the outer limit of the State's powers of regulation.

203. Petitioners object and take exception to the HO COL 203 at 110.

HO erroneously concludes that the TMT project preserves and protects the reasonable exercise of Petitioners' practices to the extent feasible. COL 203 is both irrelevant and unsubstantiated. It is irrelevant because the legal index of state agencies' compliance with their obligations "to preserve and protect customary and traditional native Hawaiian rights to the extent feasible" is not the *Petitioner's* practices but *any* customary and traditional Native Hawaiian practices. *Ka Pa'akai*, 94 Haw. 31, 47, 7 P.3d 1068, 1084 (2000). Put otherwise, HO deploys the wrong standard for determining the legal significance of protecting Native Hawaiian traditional and customary practices.

Second, COL 203 is unsupported by the record, which rather indicates substantial, adverse impacts on Native Hawaiian traditional and cultural practices, including on those of the Petitioners. UHH has conceded that the proposed TMT Project would impose a substantial adverse impact on the spiritual and sacred quality of Mauna Kea by:

- (a) degrading the integrity of the cinder cone;
 - (b) adding a man-made structure to the northern plateau that would create a substantial visual disturbance;
 - (c) placing employees in the northern plateau;
 - (d) increasing the potential for accidental release of wastewater into the environment;
 - (e) increasing the potential for accidental release of hazardous substances into the environment;
 - and
 - (f) generating dust and noise. Any one of these anticipated results of the TMT project being built would undermine the spiritual setting and sacred quality of Mauna Kea.
- ExhibitJt-8/A-308 at 3-29; Petitioners' FOF/COL 842-43.

Moreover, the record contains no evidence showing whether or how proposed mitigation measures will protect Native Hawaiian traditional and customary practices. This is specifically the situation that *Ka Pa'akai* addressed. UHH made findings and conclusions about traditional and customary native Hawaiian rights in the area, but the Report does not properly assess whether UHH has taken the third-step of finding feasible actions to protect native Hawaiian rights. In February 2011, the BLNR Chairperson asked UHH what methods would be implemented to protect cultural practices harmed by the approval of the TMT CDUA. Exhibit B-33 at 34-35. In response, UHH, represented by Ms. Nagata, admitted it did not have a process to ensure the protection of traditional and customary Native Hawaiian practices. *Id.* Neither the BLNR's April 9, 2009 approval of the CMP nor the March 25, 2010 approval of the four subplans document specific findings by the BLNR regarding the 3-part analysis required by the Court's decision in *Kapa'akai*. Exhibit B-41; B-42. Because COL 203 is irrelevant and unsubstantiated, BLNR should not rely on it in making a final decision.

204. Petitioners object and take exception to the HO COL 204 at 110.

COL 204 is irrelevant to this contested case. The basis for this proceeding is UHH's inability to demonstrate that the proposed TMT Project meets the eight criteria required for a CDUP. Petitioners introduced evidence of the Projects' substantial and adverse impacts on Native

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Hawaiian religious and cultural practices because such impacts are evidence that HAR § 13-5-30(c)(4), amongst other criteria, cannot be satisfied. Petitioners' have introduced evidence of such substantial and adverse impacts on Native Hawaiian religious and cultural practices. *See* Petitioners' FOF/COL 244-255; 363-366; 741-746; 764; 763-766; 781-789; 791-796; 802; 822; 827.

205. Petitioners object and take exception to the HO COL 204 at 110-11.

COL 205 is irrelevant because the difference between religious freedoms in individual belief as opposed to conduct speaks to no issue in these proceedings. The conduct at issue is not the Petitioners' conduct, but rather the state agency's conduct in complying with obligations to ensure protections for Native Hawaiian traditional and customary practices. *See Ka Pa'akai*.

206 & 207. Petitioners object and take exception to the HO COLs 206 & 207 at 111.

COLs 206 and 207 are irrelevant to the present proceedings, which concern the *Applicant's* claim that the TMT Project complies with HAR § 13-5-30(c) criteria. Whether a claimant's religious practices are violated by governmental coercive actions, as stated in COL 207, would be relevant if Petitioners' were contested the proposed TMT Project based on violations of their First Amendment rights. But, this is not the case and therefore COL 207 is irrelevant.

In specific response to COL 206, the present proceedings are distinguished from *Dedman*. In *Dedman*, the Court ruled that the petitioners "failed to show sufficient burden on their religious practices[.]" *Dedman v. Bd. of Land & Natural Res.*, 69 Haw. 255, 266, 740 P.2d 28, 35 (1987). In the instant case, Petitioners have made the requisite showing. *See* Petitioners' FOF 468. UHH's CMP states that the following must be maintained in order to avoid burdening Native Hawaiian religious and cultural practices:

- Access for gathering of cultural resources
- Access for families to visit iwi kupuna
- Access to scatter ashes
- Access through trails for hunting and gathering
- Access to deposit piko
- Access for traditional . . . religious and spiritual observances
- Access for pilgrimage, offerings, and prayers
- Access to Lake Waiau to gather water for religious and spiritual purposes.

Exhibit A-313 at 11 (Staff Report Feb 25, 2011).

These recommendations show the kinds of substantial burdens on Native Hawaiian religious and cultural practices consequent to increased construction on the Mauna Kea summit area. However, these substantial burdens support Petitioners' argument that the proposed TMT does not comply with HAR § 13-5-30(c)'s prohibition against conservation district land uses that have substantial, adverse impacts on natural resources, which includes cultural resources. *See* HAR § 13-5-2 (definition of "natural resources" includes "cultural, historic, . . . and archeological sites").

208. Petitioners object and take exception to the HO COL 208 at 111.

COL 208 mischaracterizes Petitioners' statements as assertions that their beliefs give them "veto power" over any proposed land use on Mauna Kea. Further, COL 208 applies the constitutional

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right to free exercise of religion, which “must apply to all citizens alike, and it can give to none of them a veto over public programs that do not prohibit the free exercise of religion.” COL 208 misrepresents Petitioners’ statements in order to find that they fail to comply with constitutional law. In response to UHH’s identical misrepresentation (“Petitioners concede that, in essence, their beliefs should give them veto power over any proposed land use on Mauna Kea.” UHH FOF #276), Petitioners earlier clarified the statement upon which UHH’s misrepresentation is based:

We’re fighting for our temple. We’re also here to say, Mauna Kea belongs to the akua and then to the people of Hawai‘i first. And you can ask, but we can also say, no, and we have a right to have that upheld. And that’s where BLNR failed us, they said, yes, when they should have said no. Mahalo.

K. Pisciotta Tr. 8/25/11 at 78: 1-7.

Plainly read in context, Petitioner Pisciotta asserts that Native Hawaiians and the general public have rights as citizens and beneficiaries of Hawai‘i’s public trust to expect agencies, such as BLNR to protect those rights and public trust resources from harm. In no way does this assertion convey the proposition that Petitioners have “veto” power over development in Mauna Kea conservation district. This is further apparent in Pisciotta’s other testimony:

· “In the rules you cannot have projects that have an adverse impact. You must preserve open space, viewplanes for the public to have a right to see without interference, our rights that belong to the public.” Tr. K. Pisciotta, 8/25/11 at 77: 21-25.

· “We’re here because of these rules, but we’re here also because of the constitution of this state which holds the protection of the right of Native Hawaiians to practice their religion and culture, and because the public has rights.” Tr. K. Pisciotta, 8/25/11 at 76: 15-19.

· “Now, these rights do not belong to residents of Pasadena, California. They do not belong to residents or citizens of other countries such as Japan, France, China, the United Kingdom who I used to work for before for 12 years. These rights belong to the public.” Tr. K. Pisciotta, 8/25/11 at 76: 20-25.

209. Petitioners object and take exception to HO COL 209 at 111.

COL 209 is irrelevant because it fails to distinguish Hawai‘i’s public trust lands from those at issue in *Lyng*. *Lyng* was concerned that Native religious practitioners’ *beliefs* (as opposed to practices) “could easily require *de facto* beneficial ownership of some rather spacious tracts of public property’ . . . [but native practitioners cannot] divest the Government of its right to use what is, after all, *its* land.” *Lyng*, 485 U.S. at 453 (emphasis in original). By contrast with the jurisdiction in *Lyng*, the State of Hawai‘i does not *own* Mauna Kea public trust lands, but rather holds them in trust. Native Hawaiians and the general public are two named beneficiaries of the public trust established in the Hawai‘i Admission Act. *See* Petitioners’ FOF/COL 1274. As members of both the general public and Native Hawaiian beneficiaries of the public land trust, Petitioners *are* entitled to benefit from Hawai‘i’s public trust. Petitioners’ benefit from public trust lands does not “divest” the State’s right to use these lands – it is the *legal condition* of the State of Hawai‘i’s ‘ownership’ for those lands.

210. Petitioners object and take exception to HO COL 210 at 111-12.

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COL 210 is unsubstantiated by the voluminous evidence in the record concerning Native Hawaiian religious and cultural practices on the Mauna Kea summit area, which includes the TMT Project area. *See also* UHH Proposed COL 278 at 121. UHH conceded that the proposed TMT Project would impose a substantial adverse impact on the spiritual and sacred quality of Mauna Kea by:

- (a) degrading the integrity of the cinder cone;
- (b) adding a man-made structure to the northern plateau that would create a substantial visual disturbance;
- (c) placing employees in the northern plateau;
- (d) increasing the potential for accidental release of wastewater into the environment;
- (e) increasing the potential for accidental release of hazardous substances into the environment;
- and
- (f) generating dust and noise. Any one of these anticipated results of the TMT project being built would undermine the spiritual setting and sacred quality of Mauna Kea. Exhibit Jt-8/A-308 at 3-29; Petitioners' FOF/COL 842-43.

Further, COL 210 fails to recognize specific evidence that the TMT will adversely impact Native Hawaiian traditional and customary religious ceremonies that involve view planes. *See* Exceptions to COL 196. Hawaiian Petitioners asserted specific interference with their traditional and customary religious practices consequent to the TMT Project. “[W]hen we speak of alignments being blocked, it means we cannot do ceremony in the way that we need to be a part of those alignments, because we are -- they are being physically and spiritually blocked. That in turn interrupts our ability to perform those ceremonies and other cultural practices.” Tr. 9/30/11 at 141:11-17; Petitioners' FOF/COL 756. “Mauna Kea is an ‘ahu, heiau, or a temple of supreme order, and the reason for that is because it was created in the first time of our chant of our creation when akua gave birth to the ‘āina, and codified the laws of aloha in the land. Tr. K. Pisciotta, 9/26/11 at 35:13-21; Petitioners FOF/COL 299. The Report's concern with whether Petitioners' area of practice includes the TMT project area ignores Petitioners' many assertions that the entirety of Mauna Kea is spiritually significant and that all construction thereon infringes on their area of practice.

Contrary to COL 210, the TMT would interfere with these practices and there is no basis for concluding that “the TMT Project will not threaten them [Native Hawaiian religious practitioners] with sanctions if they engage in religiously motivated conduct.” HO COL 210. Provisions for Native Hawaiian religious practices on four days during which observatory activity will be “minimized” suggest that religious conduct will not be provided for at other times or in ways that exceed the minimization of observatory activities. Exhibit A-308 TMT-FEIS at S-12. No conditions or plans have been introduced that state that Native Hawaiian religion-motivated conduct will not be sanctioned.

211. Petitioners object and take exception to HO COL 211 at 112.

COL 211 – that “[w]ithhold[ing] approval of the TMT Project ‘based on the mere assertion of harm to religious practices would contravene the fundamental purpose of preventing the state from fostering support of one religion over another’” – is irrelevant and unsubstantiated. COL 211 wrongly reframes Native Hawaiian traditional and customary religious rights based in Hawai‘i’s unique common law as federal first amendment claims. It unnecessarily raises the

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issue of whether the special place that Hawaiian cultural practices have in Hawai‘i and Hawaiian law is in tension with the federal Constitution’s guarantee of equal protection. No evidence or argument has been introduced to raise this issue, much less to merit such a conclusion. Petitioners instead argue that BLNR must withhold approval of the TMT Project because it meets none of the eight criteria required for a CDUP. HAR § 13-5-30(c).

212. Petitioners object and take exception to HO COL 212 at 112.

COL 212 is unsubstantiated and irrelevant. Whether BLNR’s approval of the TMT Project interferes with Petitioners’ religious freedoms is not the issue to be decided during the contested case proceedings. Insufficient evidence exists to substantiate COL 212 because the constitutionality of UHH’s proposed interference with Petitioners’ religious practices is not the issue to be decided. Far from a conclusion that the TMT Project’s interference with Petitioners’ religious practices is not “unreasonable,” the record would support the conclusion of *unreasonable* interference with Petitioners’ and other Native Hawaiian religious practices centering on Mauna Kea. *See* Exceptions to HO COL 210.

213. Petitioners object and take exception to HO COL 213 at 112.

COL 213 incompletely and erroneously describes UHH’s inventories of the extent of the TMT Project’s impacts on valued cultural, historical, and natural resources, including Native Hawaiian traditional and customary rights. This is because UHH’s CDUA – the most pertinent of the documents enumerated in FOF 348 (as a result of what is likely a clerical error, COL 213 refers to FOF 342 instead of FOF 344) – has an insufficient and misleading level of “detail.” COL 213 thus mischaracterizes the record in concluding that UHH “has quantified in great detail” impacts of the proposed TMT when in fact the CDUA includes a limited and partial discussion of such impacts.

COL 213 is unreliable because it is based on UHH’s CDUA, which limits its discussion of potential and actual adverse impacts of the TMT Project upon the Mauna Kea Summit Region Historic District to only four historic properties in Area E, two historic properties near the Batch Plant, and six properties near Hale Pōhaku. Exhibit A-311 at 4-1 – 4-5. CDUA omissions can be seen by comparing Figure 4.1: Historic Properties in the Vicinity of the TMT Project Areas in the CDUA (Exhibit A-311 at 4-2; Exhibit G-20) with Figure 5.1: Location of Historic Properties and Find Spots in the Astronomy Precinct and Surrounding Areas in the Final Report: Archaeological Inventory Survey of the Astronomy Precinct in the Mauna Kea Science Reserve (Exhibit A-28 at 5-5). UHH’s CDUA Figure 4.1 omits Statewide Inventory Historic Properties (SIHP) for adjacent historic properties and all “find spots.” Nor are historic properties (SIHP Nos. 16169 and 2144) addressed by the CDUA, even though these sites are identified in Figure 4.1 and are clearly located within UHH’s “Astronomy Precinct.” *See* Petitioners’ FOF/COL 1223 at 165.

214. Petitioners object and take exception to HO COL 214 at 112.

COL 214 incompletely and erroneously describes UHH’s representations of the extent of the TMT Project’s impacts on valued cultural, historical, and natural resources, including Native Hawaiian traditional and customary rights. This is because UHH’s CDUA – the most pertinent of the documents enumerated in FOF 348 (as a result of what is likely a clerical error, COL 214 refers to FOF 346 instead of FOF 348) – has an insufficient and misleading level of “detail.”

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COL 214 thus mischaracterizes the record in concluding that UHH “has quantified in great detail” impacts of the proposed TMT when in fact the CDUA specifically fails to include pertinent findings of impacts on, amongst other things, Native Hawaiian traditional and customary practices that were included in earlier documents. *Compare* Exhibit A-319 (UHH CDUA) at 4-6 *and* Exhibit A-21 (Mauna Kea Science Reserve Master Plan), Appendices N and I. Appendix N, prepared by Paul Rosenthal, lists Native Hawaiian traditional and customary practices on Mauna Kea that is more detailed than that of UHH’s CDUA. Rosenthal’s list follows:

1. Performance of prayer and ritual observances important for the reinforcement of an individual’s Hawaiian spirituality.
2. Collection of water from Waiau for a variety of healing and other ritual uses;
3. Deposition of *piko* (umbilical cords) at Waiau and the summit peaks of Mauna Kea;
4. Use of the summit region as a repository for human burial remains, by means of interment, particularly on various *pu ‘u*, during earlier times, and more recently by means of relasing ashes from cremations;
5. Belief in the upper mountain region of Mauna Kea, from the Saddle area up to the summit, as a sacred landscape – as the personification of the spiritual and physical connection between one’s ancestors, history, and the heavens; and
6. Association of unspecified traditional navigation practices and customs with the summit area.

Exhibit A-21, Appx. N at 39.

215. Petitioners object and take exception to HO COL 215 at 112.

COL 215 is inaccurate and irrelevant under *Ka Pa ‘akai*. First, UHH’s CDUA and other documents reflected in FOF 360 ((as a result of what is likely a clerical error, COL 214 refers to FOF 348 instead of FOF 350) fails to show that proposed “feasible actions” will protect Native Hawaiian traditional and customary practices adversely impacted by the TMT Project. DLNR has earlier adopted this view.

The summit of Mauna Kea has been characterized in literature as a sacred landscape in native Hawaiian culture. It appears likely that the construction of this very large observatory will have a significant and adverse impact on this important cultural landscape. Mitigation measures, including, education, training, ride sharing, and community benefits, may reduce such impacts, but the effect will remain significant, albeit difficult to measure (since the impact is already significant and adverse). It is our view that the effect of astronomy development on cultural resources and on the landscape of Mauna Kea has been significant and adverse. While a project such as the TMT can bring new resources into play that may mitigate certain cultural impacts and even benefit native Hawaiians, we believe that the project will increase the level of impact on cultural resources, which remains to be significant and adverse.

DLNR Chairperson, L. Thielen, Exhibit A-309 FEIS Vol. 2 at 17.

COL 215 is irrelevant because the *Ka Pa ‘akai* analysis requires that BLNR and not only UHH insofar as it acts as a state agency and not a land developer, must make the specific findings that

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would ensure the BLNR will meet its obligations to protect Native Hawaiian traditional and customary practices.

216-218. Petitioners object and take exception to HO COLs 216-218 at 112-13.

COLs 216-218 are inaccurate and unsubstantiated. If BLNR grants UHH's CDUA, BLNR will have effectively delegated its authority to UHH in violation of *Ka Pa'akai*. *Ka Pa'akai's* prohibition against delegation would be meaningless if BLNR were able to comply by merely retaining "ultimate control" by enforcing permit conditions. BLNR must complete the three-part *Ka Pa'akai* analysis.

BLNR staff submittals on UHH's CDUA do not establish compliance with *Ka Pa'akai*. The record of the BLNR's decision to approve the UH CMP and CDUA-HA-3568 did not include specific findings of fact as to three elements of the *Ka Pa'akai* due process analysis. Exhibits B-41; B-42. Indeed, UHH's admitted lack of process for addressing claims of traditional and customary Native Hawaiian practitioners harmed by decisions made ostensibly in compliance with the UH CMP indicates that the appropriate due process analysis required by *Ka Pa'akai* has not been met in this case. At the February 25, 2011 public hearing, BLNR Chairperson Ailā asked UHH what methods would be implemented to ensure that OMKM's council to "interact with [Native Hawaiian traditional and customary] practitioners" with regard to the TMT CDUA. Exhibit B-33 at 34. In response, UHH, represented by Ms. Nagata, admitted they "haven't worked that out yet[.]" Exhibit B-33 at 34.

Neither BLNR's April 9, 2009 approval of the CMP nor the March 25, 2010 approval of the four subplans document specific findings by the BLNR regarding the 3-part analysis required by the Court's decision in *Ka Pa'akai*. Exhibit B-41; B-42. Thus, final approval of CDUA-HA-3568 would further the inappropriate "wholesale delegation" BLNR's legal obligations, in violation of the constitutional due process rights of Native Hawaiian practitioners. *See also* Petitioners' FOF/COL 1258.

While COL 218 correctly states that UHH is a state entity, UHH is not the appropriate state agency to make findings necessary to satisfy the *Ka Pa'akai* analysis. The *Ka Pa'akai* court focused not only on the LUC's status as a public body, but its statutory duties. *Ka Pa'akai*, 94 Haw. 31, 45, 7 P.3d 1068, 1081 (2000). UHH and BLNR have distinct statutory authorities. In this case, there is no dispute that the Mauna Kea summit area is designated a conservation district. Per Haw. Const. Art. XI, §2, HRS. §§205-2(e), 183C-2, 183C-3, and 171-3 (2010), and HAR §13-5, the sole entity authorized to manage conservation districts is *BLNR*. These articles, statutes, and regulations do not grant BLNR the authority to delegate its responsibilities to an entity outside of the Department. Without specific authorization to delegate its legal mandates, the BLNR remains the sole entity responsible for the management of multiple land uses for the protection of the natural and cultural resources in a conservation district." Petitioners' Opening Brief at 36.

219. Petitioners object and take exception to HO COL 219 at 113.

COL 219 is irrelevant and mischaracterizes Petitioner Ching's statement as a concession that "the rationale underlying *Ka Pa'akai* does not apply here." First, COL 219 takes Petitioner Ching's statement out of context. Petitioner Ching was addressing UHH's fiduciary

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responsibility, specifically with reference to UHH's improper practice of assigning subleases as less than fair market value to observatory operator sublessors. *See infra* Exceptions to HO COL 232-238. Second, *Ka Pa'akai* concerns state agencies' obligations to ensure that Native Hawaiian traditional and customary rights are protected, and not specifically their fiduciary responsibilities under applicable statutory authorities concerning lands held in trust by DLNR (*see e.g.* HRS §§171-17 – 171-18).

220. Petitioners object and take exception to HO COL 220 at 113-14.

COL 220 is misleading and unsubstantiated. Insofar as *Ka Pa'akai* does not express concern for “contemporary cultural practices,” this is because the category is nonsensical. Contemporary cultural practices are rooted in traditional and customary usages and values in existence prior to 1892 and are therefore also protected by Article XII, section 7 and other applicable laws. *See supra* Exceptions to COL 200. UHH's employment of this category in its assessment of impacts on, and feasible protections for, Native Hawaiian traditional and customary practices is likewise misleading. For instance, UHH's CDUA states that “scattering of cremation ashes in the summit area of Mauna Kea is considered an ongoing contemporary cultural practices that has its roots in traditional and customary Native Hawaiian practices.” Exhibit A 319 at 4-8. Simply put, contemporary Native Hawaiian traditional and customary cultural practices *are* Native Hawaiian traditional and customary cultural practices.

Further, contrary to COL 220, by its own admissions, UHH has not made specific findings of “feasible actions that can be taken to reasonably protect that native Hawaiian rights that exist[.]” *Id.* At the February 25, 2011 public hearing, BLNR Chairperson Ailā asked UHH what methods would be implemented to ensure that OMKM's council to “interact with [Native Hawaiian traditional and customary] practitioners” with regard to the TMT CDUA. Exhibit B-33 at 34. In response, UHH, represented by Ms. Nagata, admitted they “haven't worked that out yet[.]” Exhibit B-33 at 34. Neither the BLNR's April 9, 2009 approval of the CMP nor the March 25, 2010 approval of the four subplans document specific findings by the BLNR regarding the 3-part analysis required by the Court's decision in *Ka Pa'akai*. Exhibit B-41; B-42. *See supra* Exceptions to HO COL 203.

222. Petitioners object and take exception to HO COL 222 at 114.

COL 222 is incomplete. While objections to the BLNR's vote on whether to grant UHH's CDUA was indeed overruled at the February 25, 2011 hearing, the “variety of reasons” for BLNR's ruling consist in the representation that amended Chapter 13-1, Rules of Practice and Procedure, “now allow for the Board to make a decision even with a pending request for a contested case hearing before you. Should a contested hearing be required or be held after that you then go through that process and it would come back to you (the Board) again and you would rule on that.” Exhibit B-33 at 31. Chapter 13-1 make no such provisions for such a process. *See* HAR §§ 13-1-28 through 13-1-39.

225. Petitioners object and take exception to HO COL 225 at 114.

COL 225 is unsubstantiated and mischaracterizes Petitioners' due process concerns. It relies upon HAR § 13-1-28(b), which allows contested case hearings to be held after a public hearing on the same subject matter, to undermine Petitioners' argument that BLNR's “approv[al] of the TMT CDU prior to conducting a contested case hearing . . . violated [Petitioners'] due process

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rights, potentially shifting the burden of proof, and thereby forcing us to have to change BLNR's mind, rather than BLNR listening with an open mind to hear all evidence." HO COL 225 *citing* K. Pisciotta Tr. 9/30/11 at 130: 18-24.

HAR § 13-1-28(b) is inapposite. It does not address procedural rights nor does it provide for the instant situation in which Petitioners must overcome the presumption, however preliminary, that BLNR will approve the CDUA. Petitioners' due process rights are violated because BLNR is a decisionmaker and gave the appearance of having "prejudged" the issue. *Cinderella Career & Finishing Sch., Inc. v. F.T.C.*, 425 F.2d 583, 590 (D.C. Cir. 1970). While contested case proceedings may not violate HAR §13-1-28(b), this regulation provides no remedy for due process violation and therefore does not support COL 225.

226. Petitioners object and take exception to HO COL 226 at 114-15.

COL 226 is unsubstantiated. Because BLNR has "prejudged" the issue of whether the TMT CDUP should be granted, Petitioners are *not* "exactly where they would have been if the process had not followed the BLNR's Rules of Practice and Procedure, but instead had occurred in the manner they desired." HO COL 226.

227-228. Petitioners object and take exception to HO COLs 227-228 at 115.

COL 227-228 are unsubstantiated and incomplete. UHH's shouldering of the burden of proof does not exhaust the field of Petitioners' due process issues. BLNR's prejudgment of the issue by voting in favor of granting the CDUP prior to the contested case and the Report's omissions concerning untimely challenges to Petitioners' Native Hawaiian traditional and customary rights are also due process violations. *See supra* Exceptions to HO COLs 225-226.

COLs 227-228, and the Report more generally, fails to register due process flaws consequent to UHH's untimely challenges to Petitioners' *Hanapi* factors in their closing arguments to the contested case proceedings - *after* the standing hearing and further stipulated to Hawaiian Petitioners' status as experts in their cultural practices related to Mauna Kea during proceedings. T. Lui-Kwan, Tr. Aug. 25, 2011, 28: 9-15. UHH did not question that Petitioners Ching, Neves, Pisciotta, and Flores-Case 'Ohana are native Hawaiian and HO determined that Hawaiian Petitioners satisfied the first *Hanapi* prong. HO COL 193.

Minute Order (MO) No. 1 (Notice of a Standing and Prehearing Conference filed April 15, 2011) required that "[e]ach person petitioning to be a party shall file a pre-hearing conference statement...including (1) a statement of the issues to be decided at any contested case hearings, (2) a statement of the position of the party or the person on such issues, (3) a list of expected witnesses (including any experts) and (4) a statement as to who has the burden of proof on each such issue and why." HAR §13-1-31 (e); HRS §91-9. If UHH wished to challenge Hawaiian Petitioners' status as Native Hawaiian traditional and customary practitioners of Mauna Kea, these claims should have been timely filed in compliance with Minute Order No. 1. Their failure to do so, and HO's failure to disallow UHH from later raising these challenges, violates Hawaiian Petitioners' right to notice concerning the issues to be decided in the present civil proceedings. As asserted *supra* in Exceptions to HO COL 188-212, HO and UHH have overstepped the scope of the contested case proceedings by presuming to establish FOF and COL concerning legal protections for Hawaiian Petitioners' traditional and customary practices. For

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these reasons, COL 227-228 incompletely addresses issues concerning Petitioners' due process rights.

229. Petitioners object and take exception to HO COL 229 at 115.

COL 229 mischaracterizes the language of Section 4 of the General Lease (the lands leased “shall be used by the Lessee as a scientific complex, including without limitation thereof an observatory”) and Petitioners' alleged conclusion that only one observatory may be built on Mauna Kea. Currently, thirteen subleases for telescope facilities on the land leased to UHH in the Mauna Kea conservation district. *See* Exhibit. Jt-1/A-301 at 6-1; Nagata, Tr. 8/16/2011 at 208:18-22; Exhibits B-3, B-4, B-5, B-6, B-7, B-8, B-9, B-10, B-11. Petitioners' have argued; “it is likely that the authors of the General Lease used the term ‘an observatory’ to mean a single observing building containing a single telescope device. This interpretation is more consistent with other terms of the lease that call for a ‘buffer zone’ between the observatory and other activities on the summit.” Petitioners' Opening Brief at 39-40.

To clarify, Petitioners have not claimed in these proceedings that “only one observatory” may be built on Mauna Kea, but that this meaning is more consistent with the language of the General Lease than the view that the *thirteen observatories* that currently exist on the Mauna Kea summit regions better comply with the General Lease terms. These terms further provide that Lessee “shall not damage, remove excavate, disfigure, deface, or destroy and object of antiquity, prehistoric ruin, or monument of historic value.” Exhibit B-2 at 5. Contextualized by this concern for conservation of the Mauna Kea summit historical values, a single observatory would be more appropriate under the General Lease than the thirteen-plus structures urged to be proper under COL 229.

230. Petitioners object and take exception to HO COL 230 at 115.

COL 230 is irrelevant. Even if more than one observatory is permitted under the General Lease clause, “including without limitation[,]” the contested case proceedings address the addition of a *thirteenth* telescope and not a second or third one. “Where language of a lease is ambiguous, courts consider parties' intent at the time of forming the contract.” Joy A. McElroy, M.D., Inc. v. Maryl Group, Inc., 107 Haw. 423, 430, 114 P.3d 929, 936 (2005). Even the “including without limitation” language does not establish that the parties' anticipated thirteen telescopes to stand in for “an observatory” as specified in the General Lease. Exhibit B-2 at 3.

232. Petitioners object and take exception to HO COL 232 at 116.

COL 231 is false and unsubstantiated. Petitioners' correctly contend that the fair market value of public lands must be assessed and charged whether UHH or BLNR is administering them. Exhibit A-202 at 41 (*citing* HRS §§ 171-17 and -18). Because UHH is proposing to sublease public lands to the TMT Corporation, UHH must establish that it will comply with statutes applicable to the leasing of public lands. The annual lease rent paid by existing telescope owners/operators is \$1 or less. *See* Exhibits B-2, B-3, B-4, B-5, B-6, and B-7. These sublease rental prices violate several statutory provisions for public lands.

Haw. Rev. Stat. § 171-17(b) provides that the lease rental of public lands “shall be no less than the value determined by: (1) An employee of the board qualified to appraise lands; or (2) A disinterested appraiser or appraisers whose services shall be contracted for by the board[.]” *Id.*

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Haw. Rev. Stat. § 171-17(d) further provides a similar procedure for determining the “fair market rental” price where a lease of public lands is reopened. *Id.* Haw. Rev. Stat. § 171-18 directs that income from the lease or other disposition of “ceded” (public trust) lands shall be held as a public trust. *Id.* Fair market lease rental amounts must be assessed, collected, and deposited into the Public Trust Lands Fund to be used for specified public trust purposes, regardless of provisions for UHH to also charge other rental amounts under HRS § 304.

Petitioners’ contention is appropriately directed at UHH’s proposal to sublease public trust lands as an integral part of the TMT Project. Contrary to HO COL 231, Petitioners’ claim is not moot, premature, or unripe nor solely directed at BLNR.

233. Petitioners object and take exception to HO COL 233 at 116.

COL 233 is irrelevant and mischaracterizes Petitioners’ arguments, which concern the sublease rent for other telescopes in the context of assessing UHH’s CDUA. UHH holds thirteen subleases with third parties. Exhibit Jt-1/A-301 at 6-1, Nagata, Tr. 8/16/11 at 208:18-22, Exhibits B-3, B-4, B-5, B-6, B-7, B-8, B-9, B-10, B-11; Petitioners’ FOF/COL 373 at 54. Parties to the subleases are the telescope operator, UHH, and DLNR. Exhibit B-7, Attachment A at 1, Exhibits B-3, B-4, B-5, B-6, B-8, B-9, B-10, B-11. Whether UHH will comply with applicable statutes lies within the scope of this contested case proceeding.

COL 233 mischaracterizes Petitioners’ assertions that fair market value must be appraised and charged for the disposition and leasing of public lands were made in the context of establishing UHH’s common practice of failing to collect fair market value for subleases to observatory operators on Mauna Kea. Petitioners’ concern that UHH will continue to violate HRS §§ 171-17 and -18 are well grounded in the issues in the specific circumstances of UHH’s CDUA. The regularity of UHH’s failure must be considered in the present proceedings, particularly because UHH has not disclosed the amount of rent TMT would be paying for its use of public trust lands. *See* BLNR Minutes 2/25/11 at 32-33. The vague assertion that the sublease will assess a “substantial” rent against the TMT Corporation has carried into HO’s Decision and Order, which likewise fails to mandate that UHH must charge a *specified* rental amount for subleasing public trust lands. HO DnO at 123.

234. Petitioners object and take exception to HO COL 234 at 116.

COL 234 is inaccurate, false, and unsubstantiated for reasons described in Exceptions to HO 231-233 *supra*. HRS §§ 171-17 and -18 apply because they govern all leases and other dispositions of public lands.

235. Petitioners object and take exception to HO COL 235 at 116.

COL 235 is incomplete and misleading. BLNR’s “past practices” of leasing public lands to UHH are not at issue. COL 235 correctly notes that BLNR may lease state land to governments and government agencies at such rent and on such other terms and conditions as it may decide under Haw. Rev. Stat § 171-95. At issue is *UHH’s* “patterns of practice” of subleasing Mauna Kea public trust lands to telescope observatory operators for rental amounts grossly below fair market value, in direct violation of HRS §§ 171-17 and -18 and the public trust. Exhibit D-13 at 8; *id.* at 6 (“Dollar-a-year leases of land zoned for conservation are a sensitive issue in Hawaii,

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especially so for the Mauna Kea Science Reserve, which involves long-standing cultural conflicts.”).

UHH holds thirteen subleases with third parties. Exhibit Jt-1/A-301 at 6-1, Nagata, Tr. 8/16/11 at 208:18-22, Exhibits B-3, B-4, B-5, B-6, B-7, B-8, B-9, B-10, B-11; Petitioners’ FOF/COL 373 at 54. Parties to the subleases are the telescope operator, UHH, and DLNR. Exhibit B-7, Attachment A at 1, Exhibits B-3, B-4, B-5, B-6, B-8, B-9, B-10, B-11. UHH has established a practice of applying for land use permits in the Mauna Kea conservation district on behalf of third parties (i.e. non-state or government entities) and passing the permit benefits onto those third party beneficiaries. *See* Petitioners’ FOF/COL 373-376 at 54.

For example, in 2009, Yale University paid the California Institute of Technology \$12 million for fifteen nights of observing time at the W. M. Keck Observatory. Exhibit E-03 at 1-2. UH subleased Mauna Kea lands to Keck Observatory for \$1 per year. Exhibit B-07. While UHH may reasonably claim beneficiary rights to use public lands for educational purposes (and allowed to pay only \$1.00 per year in lease rent for that use), this right is not transferrable. UHH may not extend its beneficiary rights to other entities. Unlike UHH, the TMT Observatory Corporation is not a state entity nor a public trust beneficiary. The TMT Observatory Corporation therefore does not fulfill a public trust purpose nor can it claim any protected rights under the Admissions Act or the state constitution. *See* Hawai‘i Admission Act of 1959, Pub. L. No. 86-3, 73 Stat. 4 (1959); Hawai‘i Const. article XII § 4.

236. Petitioners object and take exception to HO COL 236 at 116-17.

COL 236 is unsubstantiated. First, Act 132 (2009) does not remove BLNR’s responsibilities to the conservation district and therefore Petitioners’ concerns with BLNR’s performance in ensuring that fair market values are received for subleases under HRS §§ 171-17 and -18 remain. Neither Article X, section 5 of the Hawai‘i State Constitution (which created the University of Hawai‘i) nor Act 132, SLH 2009, permitting UH to make rules and regulation that apply to the “UH Managed Lands,” amended the prevailing public land trust or conservation laws of the State. Haw. Rev. Stat. § 205, establishing conservation districts, directs BLNR to maintain jurisdiction and oversight over all conservation districts and makes clear that “except as specifically provided by this chapter and the rules adopted thereto, neither the authority for the administration of chapter 183C nor the authority vested in the counties under section 46-4 shall be affected.” HRS § 205-15 (reference omitted). Section 205, was not amended by Act 132, SLH 2009. Likewise, HRS § 183C, which identifies the purpose of conservation districts, and HRS §§171-17, -18, which require fair market lease rent to be charged for the use of public trust lands, were also not amended by Act 132, SLH 2009.

Second, the establishment of a “Mauna Kea Lands Management Special Fund” under Haw. Rev. Stat. § 304A-2170 does not address Petitioners’ concern with the availability of “net rents from leases, licenses, and permits, and other fees for the use of Mauna Kea lands” for conserving Mauna Kea’s public trust resources. The purpose of the Mauna Kea Lands Management Special Fund is *management*, and its proceeds go towards *management actions* particularly described under HRS § 304A-2170(b): “[m]anaging the Mauna Kea lands, including maintenance, administrative expenses, salaries and benefits of employees, contractor services, supplies, security, equipment, janitorial services, insurance, utilities, and other operational expenses.” *Id.*

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COL 236’s statement that Act 32 (2009) or HRS § 304A-2170 remedies Petitioners’ “rent issues” is unsubstantiated because neither law changes BLNR’s statutory *and* constitutional obligations to the conservation district and public trust lands more generally. Article XII, section 4 of the Hawai‘i state constitution installs lands granted to the state by section 5(b) of the Admission Act (1959) – including Mauna Kea public trust lands – “shall be held by the State as a public trust for native Hawaiians and the general public.” State agencies administering these public trust lands have fiduciary trust obligations to ensure that fair market value rent is received from subleases to parties such as the TMT Corporation.

Further, the establishment of the Mauna Kea Lands Management Special Fund does not demonstrate that rent proceeds will be allocated to conservation because the purpose of the fund does not include conservation, natural and cultural resources management or environmental protection. *See* HRS §304A-2170; Petitioners’ FOF/COLs 1028-1030 at 141.

238. Petitioners object and take exception to HO COL 238 at 117.

COL 238 is unsubstantiated and misleading. Petitioners’ arguments concerning TMT sublease rent do not fail because of the existence of HRS §304A-2170 for the same reasons that these same Petitioners’ arguments are not “unfounded.” *C.f. supra* Exceptions to COL 236. Far from asserting that BLNR should *ignore* a statute, Petitioners’ argue that Haw. Rev. Stat. § 205, establishing conservation districts, directs BLNR to maintain jurisdiction and oversight over all conservation districts and makes clear that “except as specifically provided by this chapter and the rules adopted thereto, neither the authority for the administration of chapter 183C nor the authority vested in the counties under section 46-4 shall be affected.” HRS § 205-15 (reference omitted); *cited in* Petitioners’ Combined Response to Applicant’s Proposed Findings of Fact, Conclusions of Law, Decision and Order at 64.

239. Petitioners object and take exception to HO COL 239 at 117.

COL 239 is misleading and unsubstantiated. First, Petitioner Flores’ did not merely claim that the CDUA was “intentionally incomplete” for failing to identify certain find spots. Rather, Petitioner Flores reasoned that because initial UHH documents identified find spots in Area E that were not then also included in the TMT CDUA, there must have been an intent to remove them from the latter representation. Flores Tr. 9-30-11 at 122-23.

Second, far from “factually unfounded[,]” this assertion is supported by the record. CDUA omissions indeed mask the TMT Project’s actual adverse impacts upon historic properties in the surrounding areas. Comparing Figure 4.1: Historic Properties in the Vicinity of the TMT Project Areas in the CDUA (Exhibit A-311 at 4-2; Exhibit G-20) with Figure 5.1: Location of Historic Properties and Find Spots in the Astronomy Precinct and Surrounding Areas in the Final Report: Archaeological Inventory Survey of the Astronomy Precinct in the Mauna Kea Science Reserve (Exhibit A-28 at 5-5), demonstrates that the CDUA omitted these historic properties (SIHP Nos. 16169 and 2144) despite that these sites are identified in Figure 4.1 and are clearly located within the Astronomy Precinct. *See* Petitioners’ Combined Response to Applicant’s Proposed Findings of Fact, Conclusions of Law, Decision and Order at 26.

D. Summary

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240. Petitioners object and take exception to HO COL 240 at 117.

COL 240 is irrelevant or incomplete because it fails to note that UHH's CMP does not cover the TMT Project and remains an unimplemented plan. *See* Exhibit B-16, *Mauna Kea Anaina Hou v. BLNR*, Civ. No. 01-9-336 (Hawai'i 3rd Cir. 2009). Alternatively, COL 240 is irrelevant because BLNR's approval of the CMP absolutely does not entail their approval of future telescopes on Mauna Kea. *Mauna Kea Anaina Hou, et al v. BLNR*, Civ. No. 30397 WL at 7 (Haw. Ct. App. Jan. 5, 2012). UHH's CMP is "a stand-alone document unrelated to any specific proposed land use permit application" and therefore irrelevant to the present proceedings. *Id.* at 12.

243. Petitioners object and take exception to HO COL 243 at 118.

COL 243 is unsubstantiated. Petitioners have shown by a preponderance of the evidence that the TMT Project CDUA fails to ensure that Native Hawaiian traditional and customary practices are protected to the extent feasible and therefore granting a CDUA to the TMT would violate BLNR and UHH's obligations under *Ka Pa'akai*.

244. Petitioners object and take exception to HO COL 244 at 118-19.

COL 244 is unsubstantiated. Petitioners have shown by a preponderance of the evidence that the TMT Project fails to protect natural resources of the Mauna Kea summit area.

246. Petitioners object and take exception to HO COL 246 at 119.

COL 246 is unsubstantiated. Petitioners have shown by a preponderance of the evidence that the TMT Project CDUA meets none of the CDUP criteria and therefore UHH's CDUA should be denied.

247-249. Petitioners object and take exception to HO COLs 247-49 at 119-20.

COLs 247-49 are unsubstantiated. The TMT Project meets none of the CDUP criteria, nor have native Hawaiian rights been properly identified in the current proceedings by the Report. Despite having been deprived of due process – notice – that their rights as Native Hawaiian cultural practitioners were at issue, Hawaiian Petitioners have sufficiently demonstrated the substantial, adverse impact of the proposed TMT Project on their traditional and customary practices. If BLNR approves the TMT Management Plan, it will do so in error.

250. Petitioners object and take exception to HO COL 250 at 119.

COL is unsubstantiated. The record before the BLNR supports adopting proposed findings of fact submitted by KAHEA, MKAH, Mr. Ching, Ms. Ward, Mr. Neves, and the Flores-Case 'Ohana for reasons stated above.

DECISION AND ORDER

1-24. Petitioners object and take exception to HO DnO 1-24 at 120-24.

DnOs 1-24 are unsubstantiated and irrelevant. HO's decision to grant UHH's CDUA is unsubstantiated by the voluminous evidence in record. Because HO's decision is erroneous, conditions described in DnO 1-24 are irrelevant. Further, if UHH had better managed its Mauna Kea Management Areas previously, these conditions would already be implemented and the TMT CDUA would not have to overcome existing substantial, adverse impacts.

