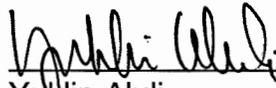


Exhibit No.	Description	Rec'd Into Evidence
B.44	Preliminary Draft Report for Review - Cultural Impact Assessment for the Thirty Meter Telescope (TMT) Observatory Project and Hale Pohaku Mid-Level Support Facilities Project, Maunakea, Kaohe Ahupua'a, Hamakua District, Hawai'i Island TMK: [3] 4-4-015:001 por., 009 por., 012 por. (May 2009)	

DATED: Kailua, Hawaii, 10-14-16



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 a domestic non-profit Corporation



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Preliminary Draft Report for Review
Cultural Impact Assessment for the
Thirty Meter Telescope (TMT) Observatory Project and
Hale Pōhaku Mid-Level Support Facilities Project,
Maunakea, Ka'ohē Ahupua'a, Hāmākua District, Hawai'i
Island
TMK: [3] 4-4-015:001 por., 009 por., 012 por.

Prepared for
PB, Inc.

Prepared by
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Cultural Surveys Hawai'i, Inc.
Kailua, Hawai'i
(Job Code: MAUNA KEA 2)
May 2009

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EXHIBIT ^{"B.44"}

Management Summary

Reference	Cultural Impact Assessment for the Thirty Meter Telescope (TMT) Observatory Project and Hale Pōhaku Mid-Level Support Facilities Project, Maunakea, Ka'ōhe Ahupua'a, Hāmākua District, Hawai'i Island, TMK: [3] 4-4-015:001 por., 009 por., 012 por.
Date	May 2009
Project Number	Cultural Surveys Hawai'i (CSH) Job Code: MAUNA KEA 2
Project Location	The proposed TMT Observatory Project area is located on the northern plateau of the Maunakea summit area, within Area E of the Astronomy Precinct of the Mauna Kea Science Reserve. Approximately 3.5 miles south of the proposed TMT Observatory Project site, are the Hale Pōhaku Mid-Level Support Facilities, two discreet parcels located in the Hale Pōhaku area, at approximately 2,800 m (9,200 ft.) elevation on the southern slope of Maunakea. The Project areas are depicted on the U.S. Geological Survey 7.5-Minute Series Topographic Map, Mauna Kea Quadrangle (1993) (Figure 1)
Land Jurisdiction	State of Hawai'i
Agencies	State of Hawai'i Department of Health, Office of Environmental Quality Control (DOH/OEQC), and State Historic Preservation Division (SHPD), Department of Land and Natural Resources (DLNR)
Project Description	<p>The proposed TMT Observatory Project involves the construction of a thirty meter diameter telescope and associated infrastructure on an approximately 5-acre site within Area E of the Astronomy Precinct. Minimally, land disturbing activities would include grading of the TMT Observatory Project site and access road and excavations associated with building construction and installation of subsurface utilities.</p> <p>The proposed Mid-Level Support Facilities include construction staging areas and development of housing for TMT Observatory Project staff and contractors. The proposed Project also involves upgrades to the existing Hawai'i Electric Light Company (HELCO) power substation at Hale Pōhaku. Minimally, land disturbing activities would include grading of the construction staging areas, and excavations associated with construction of residential and associated structures, installation of subsurface utilities, and substation upgrades.</p>
Project Acreage	The footprint of the proposed TMT Observatory Project ground disturbance measures approximately 5 acres. The footprint of the

	proposed Mid-Level Support Facilities measures approximately 6 acres (see Figures 1-3).
Area of Potential Effect (APE)	The APE for the TMT Observatory Project includes the entire approximately 36-acre Area E of the Astronomy Precinct, as the precise location of the 5-acre Project area has yet to be determined. The APE for the Mid-Level Support Facilities includes the entire approximately 6 acres. The APE also includes the rest of the island of Hawai'i and other Hawaiian Islands and places in Polynesia (e.g., Kahiki, or Tahiti), associated with Maunakea in the larger context of Hawaiian beliefs (e.g., <i>mo'olelo</i> or legends, oral histories and <i>wahi pana</i> or storied places), resources and practices.
Document Purpose	The Project requires compliance with the State of Hawai'i environmental review process [Hawai'i Revised Statutes (HRS) Chapter 343], which requires consideration of a proposed project's effect on cultural practices and resources. At the request of PB, Inc., CSH is conducting this <i>preliminary</i> Cultural Impact Assessment (CIA). Through document research and ongoing cultural consultation efforts, this report provides <i>preliminary</i> information pertinent to the assessment of the proposed Projects' impacts to cultural practices and resources (per the <i>Office of Environmental Quality Control's Guidelines for Assessing Cultural Impacts</i>) as well as consideration of eligibility for inclusion on the State Register of Historic Places including Traditional Cultural Properties (TCPs) of ongoing cultural significance according to Hawai'i State Historic Preservation Statute (Chapter 6E) guidelines for significance criteria (HAR §13-275-6) under Criterion E. The document is intended to support the Project's environmental review and may also serve to support the Project's historic preservation review under HRS Chapter 6E-8 and Hawai'i Administrative Rules (HAR) Chapter 13-275.
Consultation Effort	Hawaiian organizations, agencies and community members were contacted in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the Project area and the vicinity. The agencies consulted include the State Historic Preservation Division (SHPD), the Office of Hawaiian Affairs (OHA), and the Hawai'i Island Burial Council (HIBC) in addition to community groups such as Mauna Kea Anaina Hou, Royal Order of Kamehameha 'E kahi, Mamalahoa, Hilo Chapter and Hale o Lono. This effort is ongoing and is being made by letter, e-mail, telephone, and in person contact. In the majority of cases, letters are mailed along with a map

<p>Note on Spelling of Maunakea</p>	<p>and an aerial photograph of the Project area.</p> <p>For this preliminary CIA, both spelling variations of the name Maunakea are used. The two word format—Mauna Kea—is used to address official entities such as the “Mauna Kea Science Reserve” and when quoting content from other sources such as books or past published interviews that include the name of the mountain as two words. All other uses of the mountain will be written as one word, Maunakea. See Section 3.2 on Place Names for further details on the spelling of Maunakea.</p>
<p>Results of Background Research</p>	<p>Background research conducted for this Project yields the following results:</p> <ol style="list-style-type: none"> 1. Maunakea is a sacred cultural landscape; symbolic of Wākea (the ‘Sky Father’ to all Hawaiians), home of Poli‘ahu, the goddess of snow and foe of Pele (the fire goddess), and of many other resident deities and supernatural entities (e.g., Līlīnoe, Kūkahau‘ula and Mo‘oinanea) and the <i>piko</i> (umbilical cord) of the island-child, Hawai‘i which connects the land to the heavens (Maly and Maly 2005:v); home of Waiau, the highest permanent lake in the Hawaiian Islands; location of the highest and most extensive basalt quarry in all of Polynesia and perhaps the entire world; and numerous trails, <i>ahu</i> (stone markers), religious shrines and cinder cone <i>pu‘u</i> (hills), based on extensive historical and oral-historical documentation. 2. Maunakea is rich in <i>mo‘olelo</i>, <i>mele</i> (chants, songs), and <i>‘ōlelo no‘eau</i> (proverbs, poetical sayings) associated with <i>akua</i> (God, male and female deities, spirits) and storied places (<i>wahi pana</i>). Poli‘ahu, the snow goddess and Pele, the volcano goddess engaged in legendary battles to control Maunakea. Pele also had legendary battles with the pig demi-god Kamapua‘a on the summit of Maunakea. Numerous stories of Wākea and Papa, Poli‘ahu, Līlīnoe, Kūkahau‘ula and Mo‘oinanea, to name a few, are written into the landscape. 3. The TMT Observatory Project area is located on a ridge line north of the summit cone, Pu‘u Kūkahau‘ula, at approximately 13,700 feet elevation. The Hale Pōhaku Project area is located at approximately 9,160 feet in

	<p>elevation. Maunakea, the tallest mountain in the Hawaiian Islands at 13,796 feet elevation, is also the tallest mountain on earth as measured from the ocean floor to the summit, a distance of some 29,500 feet (thus, exceeding by approximately 1,000 feet the non-volcanic Mount Everest).</p> <ol style="list-style-type: none"> 4. Vegetation is almost non-existent in the summit region of Maunakea; the tree-line is located nearly a mile in elevation below the summit (at approximately 9,000 feet elevation); the highest major vegetation zone, known as the Alpine Scrub Zone, generally ends at approximately 11,300 feet elevation. Plants in the so-called Alpine Stone Desert Zone of the summit region are mostly limited to small lichens and mosses. More plant life is present in the Hale Pōhaku Project area characterized by scrub vegetation including a number of natives such as <i>māmāne</i> (<i>Sophora chrysophylla</i>), <i>pūkiawe</i> (<i>Leptecophylla tameiameia</i>) and the endangered endemic, <i>ahinahina</i>, also known as Maunakea silversword (<i>Argyroxiphium sandwicense</i>) as well as introduced exotics such as mullein (<i>Verbascum thapsus</i>) and various grasses. 5. Maunakea translates literally as white (<i>kea</i>) mountain (<i>mauna</i>), so named for its breathtaking snow-capped summit. However, according to Nā Maka o ka 'Āina (2008) and according to other authorities on Hawaiian culture (e.g., Kepa Maly, Pualani Kanahale), Maunakea has numerous other meanings and translations. It is a short version of Mauna a Wākea, a name that connects it to the sky father, Wākea; this would be one of its <i>kaona</i> (hidden or more subtle meanings). 6. Hale Pōhaku literally “stone house,” refers to the two stone cabins constructed by the Civilian Conservation Corps in 1936 and 1939 at an elevation of 9,220 feet on the southern slope of Maunakea. L.W. Bryan, who served as the Territorial Forestry Office and oversaw the construction of the “stone houses,” also named them Hale Pōhaku. 7. Pu‘u Poli‘ahu is named for Poli‘ahu, “the woman who wears the snow mantle of Mauna Kea”; Poli‘ahu, which is also the name of a land division on Maunakea, is translated as “garment [for the] bosom (referring to the snow)” by Pukui
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	<p>et al. (1974) and as “Snow goddess of Mauna Kea. Lit. Bosom goddess” by Pukui and Elbert (1986). Maly & Maly include a citation by W.D. Alexander regarding the naming of Pu‘u Poli‘ahu. As the peak was nameless, Alexander called it “Poliahu” since it had “a poetical name, being that of the demigoddess with snow mantle who haunts Mauna Kea” (Maly and Maly 2005:200).</p> <ol style="list-style-type: none"> 8. Waiau, the permanent lake located within Pu‘u Waiau near the summit of Maunakea at approximately 13,020 feet elevation, translates as “swirling water,” and is associated with the snow goddess Poli‘ahu and is guarded by the supernatural water spirit (<i>mo‘o</i>) known as Mo‘oinanea. Queen Emma went to the top of Maunakea to bathe in the waters of Waiau. The ceremony was to cleanse in Lake Waiau at the <i>piko</i> (navel or center) of the island. The water caught at Lake Waiau is considered pure water of the gods much like the water caught in the <i>piko</i> of the <i>kalo</i> (taro) leaf and is thought of as being pure, therefore it is used medicinally (Nā Maka o ka ‘Āina 2008). 9. The Mauna Kea Adze Quarry, also known as Ke-ana-kāko‘i, “the adze-making cave” (Pukui et al 1974:103), is located on the southern slopes of the mountain, at elevations up to 12,400 feet. The site was listed on the National Register of Historic Places in 1969, and the Hawai‘i State Register of Historic Places in 1981. 10. The <i>ahupua‘a</i> of Ka‘ohe was government land on which four native claims were made following the Māhele in 1848. Only one <i>kuleana</i> claim was awarded in the entire ahupua‘a. The single awarded claim indicates coffee, arrowroot, banana, and taro were all cultivated in the lands of Ka‘ohe. Ka‘ohe was also known as a habitat for <i>uwa‘u</i>, or ‘<i>ua‘u</i> (dark-rumped petrel) seabirds that reside in rocky, dry, elevated areas (Foster 1893). 11. While historic accounts and <i>mo‘olelo</i> tell of the presence burials on Maunakea (Maly and Maly 2005), archaeological evidence until recently, was relatively limited concerning confirmed human burials in the summit region. Prior to 2005, archaeological authorities on Maunakea, including Pat
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	<p>McCoy, had documented only one confirmed burial site (with multiple burials) and four possible burial sites in the summit region (McCoy 1991). All of these sites are located on Pu'u Mākanaka to the northeast of the subject Project area. In progress work by McCoy and Nees however, has documented 28 sites designated as burials and possible burials (McCoy et al 2008).</p> <p>12. Several extensive cultural studies have been previously carried out for Maunakea (McEldowney 1982; Kanahale and Kanahale 1997; Maly 1998; Langlas et al. 1999; Maly 1999; PHRI 1999; Maly and Maly 2005). The most comprehensive study by Maly and Maly (2005) builds on archival and oral-historical research conducted by the authors beginning in 1996 (to 2005) and presents a wide range of information on natural and cultural beliefs, resources and practices associated with Maunakea. Among the many critical findings of Maly and Maly's (2005) cumulative research is the emphasis on Maunakea as a sacred landscape and native lore associated with traditional knowledge of the heavens—documenting 270 Hawaiian names for stars.</p> <p>13. Past studies identify Traditional Cultural Properties (TCP) on Maunakea. Three places that have been identified by SHPD as TCPs and documented in a study done by PHRI (1999) are: (1) Kūkahau'ula, the summit (Site 21438), (2) Līlinoe (Site 21439) and (3) Lake Waiiau (Site 21440). Other traditional places may also qualify (Figure 6). Maly (1998:29) has suggested the entire Maunakea summit region down to the 6,000 foot elevation contour be designated a Traditional Cultural Property (Figure 16).</p> <p>14. Archival and oral-historical evidence confirms that Maunakea has long been, and continues to be, a place where significant cultural practices are carried out: where, the <i>piko</i> of newborn children is taken to Pu'u Kūkahau'ula and Lake Waiiau to ensure long life and safety; the remains of individuals with generational ties to Maunakea are taken to <i>pu'u</i> and the summit plateau for interment (Maly and Maly 2005:vi); shrines and stone markers are erected and; ceremonial and other activities related to birth, death,</p>
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	<p>healing, navigation and more, occur.</p>
<p>Results of Community Consultation</p>	<p>CSH attempted to contact 58 community members (government agency or community organization representatives, or individuals such as residents, cultural and lineal descendants, and cultural practitioners) for the purposes of this preliminary CIA. Thirty people responded and 13 <i>kūpuna</i> (elders) and/or <i>kama'āina</i> (native born) were interviewed for more in-depth contributions to the <i>preliminary</i> draft CIA. Community consultation with a few respondents is ongoing. The results of preliminary cultural consultations indicate that there are major concerns (and several ancillary ones) regarding potential adverse impacts on cultural and natural resources and associated beliefs and practices as result of the proposed development of the Thirty Meter Telescope, construction of the staging area for the TMT Observatory Project and the HELCO electrical transformer needed to supply electrical power to the TMT Observatory Project:</p> <ol style="list-style-type: none"> 1. All of the community consultants interviewed for this study stress that Maunakea is a sacred landscape and that any future development activities on the mountain proceed with greater awareness of, and the utmost respect for Hawaiian culture, Hawaiians' spiritual connection to the mountain, and the sanctity of Maunakea. 2. Nine of the community consultants interviewed, and three of the respondents who provided brief commentary, explicitly stated their opposition to the proposed actions on Maunakea which is traditionally, and continues to be, one of the most sacred locations in all of Polynesia, not to mention Hawai'i Nei. These participants voiced sadness, frustration or negative feelings about the cumulative impacts of past and present developments on Maunakea. In the words of one participant, referring to the telescopes on the summit of Maunakea, "When is enough, enough?" Specific <i>mana'o</i> (thoughts, ideas), concerns and recommendations from those that oppose the proposed TMT Observatory Project and Hale Pōhaku Mid-Level Support Facilities Project are: <ol style="list-style-type: none"> a. Three participants called for astronomy facilities to be removed and Maunakea be repaired to its original

	<p>condition. Two of these participants recommended that the proponents of the TMT Observatory Project make an effort to better reach out to the community about the findings of the Mauna Kea Science Reserve and scientific intent of the proposed TMT Observatory Project through public education events.</p> <ul style="list-style-type: none"> b. One participant stated that there should be no further development until issues are rectified with the Hawaiian people. c. One participant called for the proposed TMT Observatory Project to be installed in Chile rather than in Hawai'i. d. A number of these participants stressed the importance of astronomy to Hawaiians, particularly discussing voyaging traditions. e. Several interview participants and respondents expressed concern about the disturbance of burials and associated cultural artifacts, markers and shrines (<i>ahu</i>) and in <i>pu'u</i> as result of construction of the proposed TMT Observatory Project and support facilities. f. Five participants discussed environmental concerns, particularly about Lake Waiau and the mountain aquifer, as well as other impacts to environmental services. These participants assert that Maunakea—the principle aquifer and watershed for Hawai'i Island—is being contaminated by human use (i.e., sewage and toxic chemicals leaching from astronomy facilities). Participants also mention the threatened endemic Maunakea Wēkiu Bug (<i>Nysius wekiuicola</i>) and cleaning up trash left by visitors to Maunakea. g. One participant notes that the entire Mauna Kea Science Reserve has been identified by SHPD as an historic district; suggesting that a Cultural Reserve be created and that the following landscape features qualify as TCPs: the Mauna Kea Adze Quarry Complex; the cluster of 3 <i>pu'u</i> of Kūkahau'ula that
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	<p>make up the summit region of Maunakea; Lake Waiau; and Līlīnoe, referring to the <i>pu'u</i> southeast of the summit and within the Science Reserve (Section 7.7, Appendix C).</p> <ul style="list-style-type: none"> h. Three participants question legal aspects of the lease agreement between the University of Hawai'i and the state and legitimacy of the Mauna Kea Science Reserve to operate on ceded and/or occupied lands. i. Two participants question the benefits to the local economy and education promised by past and proposed telescope projects on Maunakea. j. Two interview participants, the SHPD and OHA asked that the current proposed TMT Observatory Project and Hale Pōhaku Mid-Level Support Facilities Projects be viewed in light of the long history of development on Maunakea and cumulative impacts to cultural resources and practices and not on an isolated basis. <p>3. Three participants interviewed for this <i>preliminary</i> draft CIA, and one respondent who provided brief commentary, are in favor of the development of the TMT Observatory Project and its associated facilities on Maunakea. These participants recommend Project proponents proceed with care and respect to the sacredness of Maunakea and advised mitigation measures and/or alternatives to the current proposed design and location of the TMT Observatory Project and support facilities. In the words of one participant, "The future of Maunakea...can serve as an educational center and a place for man to view the stars and the universe but it has to remain a sacred and holy place. It's like stepping into a sanctuary, a very sacred place of peace, a place that one can learn the things beyond what man knows now." Mana'o, concerns and recommendations from these participants are:</p> <ul style="list-style-type: none"> a. One participant believes the TMT Observatory Project should be built on a recycled site. He states that if an outdated telescope site on Maunakea is
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	<p>identified, the site should be recycled for TMT Observatory Project usage to avoid unnecessary intrusions that detracts from the beauty and majesty of Maunakea.</p> <ol style="list-style-type: none"> b. One participant calls for a process to be put in place that respects community and allows projects such as TMT Observatory Project telescope to continue. c. One participant recommends the removal of all other telescopes and that only one telescope be utilized and shared by interested parties. d. All three of these participants state that if the TMT Observatory Project proceeds, it should be developed to blend in with the natural setting and not detract from the natural beauty and sacredness of Maunakea. <ol style="list-style-type: none"> 4. Interviewees discussed salient features of the cultural landscape, resources and associated uses of Maunakea including, <i>mo'olelo</i> about Wākea and Papa, Poli'ahu, Līlinoe, Kūkahau'ula and Mo'oinanea; the summit as an area where families take the <i>piko</i> of their babies to bury, and where the bones or ashes of deceased family members are placed, burials and burial complexes; shrines and stone markers; navigation traditions and astronomy; the adze quarry, ancient and historic trails; the healing and purifying waters of Lake Waiau and snow and ice collected for medicinal and ceremonial purposes; bird hunting; and other past and present cultural practices (see Sections 7 and 8). 5. SHPD, responding in a memo sent on May 4, 2009, states that, "As you may have discerned from the most recent Mauna Kea Comprehensive Management Plan (MCMP) for the UH Management Area (January 2009) and the public hearings for that plan that Mauna Kea is a very sensitive subject that truly needs and deserves more time to consider all the cultural impacts to this iconic symbol of all cultural connections including but not limited to the genealogical connections, and the spiritual connections to all of the deities in the Hawaiian cosmos and to the <i>kanaka maoli</i> world view." Additionally, SHPD recognizes Maunakea's place in
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	<p>Hawaiian navigation as “the first sighting for voyaging canoes to arrive safely to our islands in the middle of the Pacific [and] a significant part of the Pacific Rim mythological connections to all the Pacific Rim.” SHPD recommends:</p> <ul style="list-style-type: none"> a. An assessment of buildings no longer functional be done before building new structures or “perhaps no more development on this sacred mountain”; b. access for cultural practitioners be clearly addressed and defined; c. the entire summit of Maunakea be treated as one traditional cultural landscape and not as a piecemeal analysis of just the Science Reserve and that; d. more community outreach occur for all cultural impacts on the summit and the proposed area to properly assessed—see list of contacts in the MCMP. <p>6. OHA, responding in a letter dated January 9, 2009 (Appendix B), acknowledges the different perspectives on Maunakea as a spiritual, sacred place, home to “<i>wao akua</i>” (dwelling, place of the gods) and the place where the presence of numerous <i>ahu</i> and <i>iwi kūpuna</i> provide silent testimony that generations of Hawaiians have worshipped and buried loved ones “at the highest point possible to rest in peace.” The “life sustaining waters known as Kanekawaiola...contribute to a healthy natural environment, which in turn allow man to thrive.” The letter describes the 40-year debate surrounding the development of Maunakea and recommends that the current proposed TMT Observatory Project study be viewed in context of this long history to “consider the overall impacts of development on Mauna Kea.” OHA suggests several parties for consultation and is currently reviewing the Hale Pōhaku Mid-Level Support Facilities Project area information to determine whether they will provide additional comments.</p>
<p>Recommendations</p>	<p>For several participants in this cultural impact study, as well as the wider community (some of whom opted not to participate in the CIA, see Section 6.1.1), there are <i>no</i> mitigation measures that could begin to</p>

address the variety of cultural concerns and concomitant issues (legal, economic and environmental) raised by the proposed actions; future developments are viewed as further desecration of a sacred mountain (a realm of the gods) and do not honor Maunakea's place in Native Hawaiian contributions to navigation and astronomy. For a few participants in this assessment, careful planning, better attention to community desires and cultural concerns regarding protection of Maunakea, access to cultural and natural resources and other considerations suggest a way forward; the proposed actions are viewed as an extension of Native Hawaiian knowledge of the stars and voyaging traditions.

Recommendations are based on a synthesis of all available findings to date, including background research and community consultation, gathered during preparation of this *preliminary* draft CIA. The following mitigation measures are offered as a way to remediate and address present and future adverse impacts to Hawaiian cultural beliefs, practices and resources as result of developments on Maunakea generally, and specifically for the proposed TMT Observatory Project and Hale Pōhaku Mid-Level Support Facilities Project:

1. Based on the majority view of participants in this current study who have voiced their concerns against proposed actions on Maunakea, it is recommended that Project proponents strongly consider no further development, including the TMT Observatory Project and the Mid-Level Support Facilities at Hale Pōhaku, take place on Maunakea. Consequent to this determination of no action, it is further suggested that Project proponents consider alternative proposals and remediation measures suggested by CIA study participants (see Community Consultation Results above).
2. Should the Project move forward in Hawai'i, faithful attention to the following measures may help minimize adverse impacts:
 - a. As expressed by one participant in this current study and several participants in past cultural studies (see Maly 1998, 1999; Maly and Maly 2005), it is recommended that the TMT Observatory Project be built on a recycled site of an outdated telescope on the summit instead of Area E of the Northern

	<p>Plateau.</p> <ul style="list-style-type: none"> b. An <i>exit plan</i> should be created, including an estimated life span for the TMT Observatory Project and a detailed strategy for the removal of the TMT Observatory Project from the summit of Maunakea, before development begins. c. Personnel involved in development activities in the Project area should be informed of the possibility of inadvertent cultural finds, including human remains. Should cultural or burial sites be identified during ground disturbance, all work should immediately cease, and the appropriate agencies notified pursuant to applicable law. d. Cultural monitors should be present during ground disturbance and construction phases of the TMT Observatory Project and its Mid-Level Support Facilities Projects. e. Access for all cultural practitioners to culturally significant sites on Maunakea should be clearly addressed, defined and allowed before, during and after construction of the TMT Observatory Project and its Mid-Level Support Facilities. f. Project proponents consider expansion and further development of education programs, such as the star gazing program at the annual Makahiki festival, that share the findings of the TMT Observatory and astronomy research with schools and the general public. At the same time, project proponents should consider training programs for TMT Observatory staff that incorporates Polynesian perspectives in the study of astronomy. g. Based on prior cultural studies (e.g., Maly 1998, PHRI 1999) and the statements of respondents in this CIA—including the SHPD—it is recommended that project proponents explore the possibility of nominating the entire summit region of Maunakea, from the 6,000 foot level to the summit at Pu'u
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	<p>Kūkahau'ula as Traditional Cultural Property for the State Register of Historic Places. The SHPD maintains the Hawai'i and National Register of Historic Places and processes all nominations to either register (see, http://www.state.hi.us/dlnr/hpd/hpinvntory.htm).</p> <p>h. Generally, it is recommended that Project proponents—to employ a phrase used by OHA in their response letter for this CIA—develop a paradigmatic shift in how they engage with the community in a way that truly recognizes cumulative impacts and addresses interrelated concerns (cultural, legal, environmental and socio-economic) enumerated in this <i>preliminary</i> CIA report and voiced by the wider community.</p>
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BOARD OF LAND AND NATURAL RESOURCES

STATE OF HAWAI'I

In the Matter of:) Case No. BLNR-CC-16-002
)
A Contested Case Hearing Re:) **CERTIFICATE OF SERVICE**
Conservation District Use Permit)
(COUP) HA-3568 for the Thirty Meter)
Telescope at the Mauna Kea Science)
Reserve, Kaohe Mauka, Hamakua)
District, Island of Hawai'i, TMK (3) 4-4-015:009)
_____)

CERTIFICATE OF SERVICE

We hereby certify that a copy of the foregoing was served on the following via email unless otherwise specified below:

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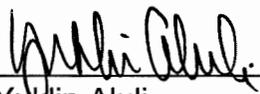
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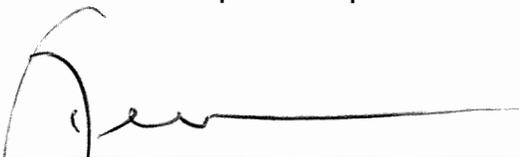
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