



University of Hawai'i at Hilo

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

March 20, 2015

Mr. Samuel Lemmo
Administrator
Office of Conservation and Coastal Lands
Department of Land and Natural Resources
1151 Punchbowl Street, Room 131
Honolulu, Hawaii 96813

RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS
2015 MAR 20 P 2:56
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

Subject: Notice of Start of Construction for the Thirty Meter Telescope Project,
CDUP-HA-3568

Dear Mr. Lemmo:

Pursuant to Condition 4. of CDUP-HA-3568 the University of Hawaii at Hilo is hereby notifying the Department of Land and Natural Resources that construction of the Thirty Meter Telescope (TMT) commenced on March 14, 2015. TMT began surveying the boundaries of their subleased area and started staging fencing materials on their property.

Your acknowledgement and concurrence of TMT's start of construction is respectfully requested. Should you have any questions or require additional information, please contact me at (808) 933-0734 or by email at nagatas@hawaii.edu.

Sincerely yours,

Stephanie Nagata
Director

c: Gary Sanders, Project Manager, TMT

APPROVED
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Office of Conservation and Coastal Lands
BY:
DATE: 3.20.15
REFERENCE NO. _____

DAVID Y. IGE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

CARTY S. CHANG
INTERIM CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DANIEL S. QUINN
INTERIM FIRST DEPUTY

W. ROY HARDY
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

CDUP HA-3568

Dr. Donald Straney, Chancellor
University of Hawai'i at Hilo
200 West Kāwili Street
Hilo, HI 96720

MAR 06 2015

SUBJECT: NOTICE TO PROCEED, CONSERVATION DISTRICT USE PERMIT (CDUP) HA-3568
Thirty Meter Telescope(TMT)
Mauna Kea Science Reserve, Ka`ohe Mauka, Hāmakua District, Hawai'i
TMK (3) 4-4-015:009

Dear Dr. Straney,

The Department of Land and Natural Resources has reviewed the status of the mitigation measures related to the pre-construction requirements of Conservation District Use Permit (CDUP) HA-3568 for the Thirty Meter Telescope (TMT) on the above subject parcel.

The Board of Land and Natural Resources approved CDUP HA-3568 on February 12, 2013.

Condition 20 of the permit reads:

No construction work shall be initiated until the applicant demonstrates compliance with all pre-construction conditions and mitigation measures outlined in this report. Once this condition has been satisfied, the Department will issue notice to proceed with construction;

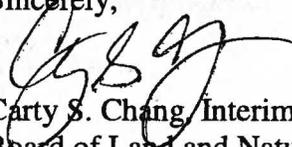
The mitigation measures required by the CDUP include actions related to cultural and natural resources training, invasive species control, a ride-sharing program, a community benefits package, an archaeological monitoring plan, and the sublease rent for Mauna Kea Management.

Additional mitigation measures were agreed to in the Final Environmental Impact Statement and the TMT Management Plan. These include actions related to access way paving and design, arthropod monitoring, noise pollution, noise permit and noise variance, independent construction monitors, best management practices documentation, a rock movement plan, decommissioning, site documentation, construction mitigation measures, a cultural and archaeological monitoring plan, an NPDES permit, and an oversize and overweight vehicles permitting plan.

Based upon our review of the information you provided, it appears that the TMT project has met the preconstruction requirements contained in the CDUP and associated management plan. The Department thus issues TMT a Notice to Proceed.

If you have any questions, please feel free to contact Michael Cain at the Office of Conservation and Coastal Lands (OCCL) at 587-0048.

Sincerely,



Carty S. Chang, Interim Chairperson
Board of Land and Natural Resources

c: OMKM; Dep AG



UNIVERSITY
of HAWAII
HILO

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baselines*

Office of the Chancellor

RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS

2015 FEB 23 2015
February 23, 2015

DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

Mr. Samuel Lemmo
Administrator
Office of Conservation and Coastal Lands
Department of Land and Natural Resources
1151 Punchbowl Street, Room 131
Honolulu, Hawaii 96813

Subject: Request for Notice to Proceed with Construction, CDUP HA 3568 Thirty Meter Telescope on Maunakea

Dear Mr. Lemmo:

The University of Hawaii at Hilo respectfully requests a notice to proceed with the construction of the Thirty Meter Telescope (TMT) project. This notice is a requirement of Condition 20 of CDUP HA 3568:

“No construction work shall be initiated until the Applicant demonstrates compliance with all preconstruction conditions and mitigation measures outlined in this report. Once this condition has been satisfied, the Department will issue a notice to proceed with construction.”

The Office of Maunakea Management received a notice from TMT International Observatory LLC (TIO) indicating its intent to start construction. The Office reviewed the conditions of the CDUP and is satisfied that the TMT project has complied with all the pre-construction conditions and mitigation measures related to the start of construction for Phase I, Civil Package. A table containing the pre-construction conditions and compliance measures is attached. The table does not include CDUP conditions that are not related to the start of construction. These will be addressed in TMT’s annual project report to OMKM. Also attached are appendices describing the mitigation measures and corresponding compliance measures.

The TIO is requesting to start construction on March 2, 2015. This is within the two-year limit specified in Condition 4 of the subject CDUP which was issued on April 12, 2013.

In addition to meeting all the pre-construction requirements of the CDUP, the TMT project is seeking approval of a minor design modification to its plans. The project plans

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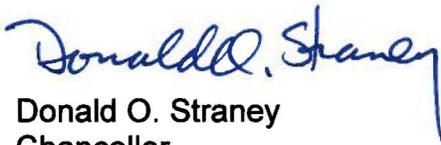
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Mr. Samuel Lemmo
February 23, 2015
Page 2

to install a camera within the boundaries of its subleased area. The camera will be mounted on a pole and will photograph construction activities and document the building of the facility. A second short pole will hold a solar panel and power supply. An internet connection cable will be laid the length of the TMT access road and will connect to the northernmost Smithsonian Submillimeter Array antenna located just outside the start of the access road. This cable is temporary, involves no ground disturbance, and will be removed following the installation of the utility lines under the access road.

We look forward to receiving the notice to proceed and approval of the installation of the camera. Should you have any questions or require additional information, please contact Stephanie Nagata, Director, Office of Maunakea Management at (808) 933-0734 or by email at nagatas@hawaii.edu.

Sincerely yours,



Donald O. Straney
Chancellor

Attachments

c: Stephanie Nagata, Director, OMKM
Gary Sanders, Project Manager, TMT

Appendix A

Mitigation Measures Related to Pre-Construction Requirements of CDUP HA: 3568 (Thirty Meter Telescope)

CDUP Condition	Topic	Mitigation Measure or Condition	Reference	Compliance
10.1	Cultural and Natural Resources Training	A mandatory Cultural and Natural Resources Training Program will be implemented to educate employees to understand, respect, and honor Maunakea’s cultural landscape and cultural practices.	FEIS Executive Summary, Section 3 TMT Mgmt. Plan p. 4-9, 4-24, 4-28	All TMT employees participated in annual orientation training sessions in July 2013 and 2014. All TMT employees will continue, and new hires will attend mandatory annual orientation training. Mandatory training is included in contractual provisions for contractors, and vendors.
		Implementation of a Cultural and Natural Resources Training Plan will reduce potential conflicts with current uses by cultural practitioners. The portion of the Access Way near or around the SMA core will be paved to reduce dust that could impact their operation.		
		Staff and visitors to the TMT Observatory need to be sensitive to the fact that they are in a unique place considered sacred by Native Hawaiians. TMT would develop a Cultural and Natural Resources Training Program. The training should impart an understanding of the cultural significance and guidance regarding appropriate behavior; a description of the resources and threats to the resources; existing rules and regulations; how to prevent resource damage; prohibited uses; and steps to ensure personal safety and avoidance of potential hazards.	FEIS p. S-16 TMT Mgmt. Plan p. 4-10, 4-13, 4-14, 4-17	See above for discussion on cultural and natural resources training. Pavement of access way is included in the construction documents approved by the Department
		The training program would be updated regularly to incorporate UH Management Area-wide updates by OMKM. All people involved in the TMT Observatory operation and maintenance activities, including but not limited to scientists and support staff, shall receive the training on an annual basis.		See above for discussion on cultural and natural resources training. TMT employees completed their second annual training on July 11, 2014. A cultural and natural resources training is included in the Best Management Practices document.

Appendix A

Mitigation Measures Related to Pre-Construction Requirements of CDUP HA: 3568 (Thirty Meter Telescope)

CDUP Condition	Topic	Mitigation Measure or Condition	Reference	Compliance
10.4	Invasive Species Control Program	<p>Although OMKM will be developing a mountain-wide Invasive Species Prevention and Control Program, in relation to the TMT Project, TMT would develop an Invasive Species Prevention and Control Program to aggressively reduce the potential for invasive species introduction, especially during construction of the TMT Project. This Program would be developed in coordination with OMKM. In summary, this program will include the following: Inspections procedures; actions and activities to avoid introducing invasive species; washing and cleaning, monitoring activities; control measures and education and training activities.</p> <p>The plan will be further developed and expanded as necessary and will be part of the project plans and specifications for construction bidding.</p>	<p>TMT Mgmt. Plan 4-12, 4-20, Appendix B-20;</p> <p>FEIS Section 3.4</p>	<p>TMT is required to follow OMKM's invasive species management plan which was approved on February 10, 2015. When TMT's permit and OMKM's plan conflict, OMKM's more recent approved plan will be followed.</p> <p>TMT secured the services of the Big Island Invasive Species Committee to implement permit requirements. BIISC is coordinating with OMKM with implementation.</p> <p>TMT's contract with BIISC to carry out this activity in compliance with the TMT Mgmt Plan and FEIS. Preconstruction monitoring of the wekiu bug has commenced, and will continue throughout construction and for two years after construction.</p>
10.8	Ride-Sharing Program	<p>"TMT will implement a Ride-Sharing Program. This program will reduce the number of vehicle trips a day to the summit, including pickup and deliveries. This will reduce the presence of vehicles on the mountain, in turn reducing the amount of dust and noise generated by vehicles."</p> <p>"The TMT vehicles would be selected based on balancing the needs for fuel efficiency, low emissions, and safety for transportation to the summit. An average of five vehicles would be used for day-time trips and two for night-time trips. This required ride sharing would reduce the total number of Project trips beyond Hale Pohaku to the summit area to approximately 9 trips per day (7 staff trips and 2 other trips, such as deliveries), thus, lessening the Project's impact on air quality."</p>	<p>FEIS p. S-9, S-14, S-16, S-17, 3-6, 3-36, 3-76, 3-167, 3-186</p> <p>TMT Mgmt. Plan p. 4-12, 4-16, 4-24, 4-27, 4-35, 4-37</p>	<p>A ride sharing program is included in TMT's Best Management Practices document.</p>

Appendix A

Mitigation Measures Related to Pre-Construction Requirements of CDUP HA: 3568 (Thirty Meter Telescope)

CDUP Condition	Topic	Mitigation Measure or Condition	Reference	Compliance
10.10	Community Benefits Package	<p>“A Community Benefits Package (CBP), which will commence upon the start of Project construction and continue for the term of the sublease so long as the CDUP is not invalidated or construction stayed by court order. As part of the CBP, the TMT Observatory Corporation will provide \$1 million annually during such period; the dollar amount will be adjusted annually using an appropriate inflation index (the baseline from when inflation index will be applied will be the date of the start of construction). The CBP will be administered via The Hawai’i Island New Knowledge (THINK) Fund Board of Advisors.”</p>	<p>FEIS p. S-9, 3-6, 3-36, 3-137; TMT Mgmt. Plan p. 4-27, 4-33</p>	<p>The THINK Initiative commenced in October 2014. the fund is administered by Hawaii Community Foundation (\$750,000) and Pauahi Foundation (\$250,000). Advisory Committees were established. Grant proposals and scholarship applications are being reviewed and will soon, if not already awarded.</p>
10.17	Archaeological Monitoring Plan	<p>In the event that a TMT maintenance activity has the potential to adversely affect a historic property, TMT would develop a Cultural and Archaeological Monitoring Plan for that activity. Such activities would be those that require movement or disturbance of any previously undisturbed material; no such maintenance activities are anticipated at this time. The monitoring plan would have similar aspects as the monitoring plan outlined in A[p]pendix A for the initial construction of the TMT Project. A qualified archaeologist, selected by OMKM and a cultural specialist, would be on-site to monitor any impacts, real or potential, of maintenance activity on archaeological and historic properties. The monitoring plan would be reviewed and approved by SHPD prior to implementation.</p>	<p>TMT Mgmt. Plan 4-17; FEIS p. 3-35</p>	<p>TMT shall comply with SHPD's approved Final Archaeological Monitoring Plan . Kahu Ku Mauna was consulted on the cultural monitoring plan. DLNR indicated they do not review or approve cultural monitoring plans because there are no State guidelines or criteria.</p>

Appendix A

Mitigation Measures Related to Pre-Construction Requirements of CDUP HA: 3568 (Thirty Meter Telescope)

CDUP Condition	Topic	Mitigation Measure or Condition	Reference	Compliance
10.18	Sublease Rent for Mauna Kea Management	TMT would pay sublease rent to the University, which would be directed toward Mauna Kea management through the Mauna Kea Special Management Fund. These funds may be used by OMKM to support educational efforts to generate public awareness about the importance of preserving the cultural landscape of Mauna Kea.	TMT Mgmt. Plan p. 4-10	TMT rent is addressed in the sublease

Appendix B
Additional Mitigation Measures Related to Pre-Construction of Phase I, Civil Package
(Sources: FEIS and TMT Management Plan)

Topic	Mitigation Measure or Condition	Reference	Compliance
Access Way Paving and Design	UHH will obtain the authorization from DLNR before construction starts. (By OMKM with TMT notice to OMKM)	FEIS p. S-10, 3-161	The construction and grading construction documents which were approved by the Department on June 17, 2013, includes design and paving of the access way to the TMT site.
	Access Way Options have been designed to reduce the impact to cultural resources by including the steep slopes of Option 2 and modifying Option 3 to a single lane configuration, even though these designs are not desirable from an observatory operation standpoint.	FEIS p. S-12, S-14, 3-35, 3-76, 3-112	
	"[T]he Access Way will be paved to reduce dust generation from traffic and the pavement will have a reddish color to blend with the surroundings. In addition, the embankment facing will be treated so as to blend into the natural environment to the extent feasible. A wire type guardrail which will be treated so as to blend in with the surrounding natural environment will also be utilized. No retaining walls will be used and all utility lines will be buried and pull boxes will be camouflaged to blend with the natural surroundings."	TMT Mgmt. Plan p. 4-26, 4-28, 4-36; FEIS p. S-13, 3-35	
Arthropod Monitoring	Arthropod monitoring will be performed prior to, during, and for two years following construction of the Access Way through the cinder cone habitat.	TMT Mgmt. Plan Appendix E FEIS p. S-14, 3-76;	Preconstruction monitoring of the wekiu bug has commenced, and will continue throughout construction and for two years after construction. Surveys were conducted in August 2014.

Appendix B
Additional Mitigation Measures Related to Pre-Construction of Phase I, Civil Package
(Sources: FEIS and TMT Management Plan)

Topic	Mitigation Measure or Condition	Reference	Compliance
Noise Pollution	A connection to HELCO-supplied power will be sought early in the construction process to reduce the need to operate generators.	TMT Mgmt. Plan p. 4-25	The construction and grading construction documents which were approved by the Department on June 17, 2013, includes a connection to the HELCO power line.
	To address radio frequency interference, TMT would also limit the amount of cell phone and walkie talkie usage on the summit of Mauna Kea.	TMT Mgmt. Plan p. 4-15	TMT is aware of the need to limit the use of wireless communication on the summit and coordinates with other observatories on such use.
Noise Permit and Noise Variance	The contractor will obtain and comply with both a noise permit and noise variance, as applicable.	TMT Mgmt. Plan p. 4-25	Noise and Noise Variance permits have been obtained from the the DOH.
Independent Construction Monitor	"During all construction related activities, an independent, on-site construction monitor would be present at all appropriate times who would have authority to order any and all construction activity cease if and when, in the construction monitor's judgment, (a) there has been a violation of the permit that warrants cessation of the construction activities, or (b) that continued construction activity would unduly harm cultural resources; provided that the construction monitor's order to cease construction activities be for a period not to exceed seventy two (72) hours for each incident. All orders to cease construction issued by the construction monitor would immediately be reported to OMKM and DLNR."	TMT Mgmt. Plan p. 4-19	A construction monitor and alternates have been identified and approved by the Department

Appendix B
Additional Mitigation Measures Related to Pre-Construction of Phase I, Civil Package
(Sources: FEIS and TMT Management Plan)

Topic	Mitigation Measure or Condition	Reference	Compliance
Best Management Practices Document	TMT would develop and implement a Best Management Practices Plan for Construction Practices (BMP) that will cover a range of topics including dust generation and a protocol for construction vehicle washing.	TMT Mgmt. Plan p. 4-19	The BMP has been reviewed and approved by OMKM.
Rock Movement Plan	Prior to the commencement of construction activities, TMT would develop a Rock Movement Plan that would identify the location and type of source material (cinder, rocks), provide estimates on the volume of material to be excavated and moved, provide details regarding the extraction and movement process, and identify a storage and/or disposal location.	TMT Mgmt. Plan p. 4-19	A rock movement plan was prepared and reviewed by OMKM. It is included in the Best Management Practices plan.
	A Rock Movement Plan will be developed prior to construction in compliance with CMP Management Action C-3. The plan will detail excavation and grading activities. TMT will balance the excavated (cut) material with the need for fill (material brought in to raise the ground level) so that there will be a slight amount of excess cut material.	TMT Mgmt. Plan p. 4-25, Appendix B-3	

Appendix B

Additional Mitigation Measures Related to Pre-Construction of Phase I, Civil Package (Sources: FEIS and TMT Management Plan)

Topic	Mitigation Measure or Condition	Reference	Compliance
Decommissioning	<p>The TMT Observatory and the extent of the Access Way exclusively used to access the TMT Observatory would be dismantled and the site restored at the end of the TMT Observatory's life, in compliance with the provisions and conditions of the BNL approved Decommissioning Plan and amendments.</p> <p>Deconstruction and site restoration efforts would be managed by TMT with oversight by OMKM. . . . TMT has included in the planned TMT Project operating budget an annual set aside of funds intended to be used for decommissioning of the TMT Observatory and Access Way. The Project anticipates decommissioning and site restoration requirements would be included in the sublease.</p>	<p>TMT Mgmt. Plan p. 4-22, 4-39;</p> <p>FEIS p. 2-32</p>	<p>This is addressed in the sublease.</p>
Future Land Use	<p>"TMT site will be documented prior to the start of construction. This will be accomplished with high-resolution surface and aerial photography to document existing natural conditions. "</p>	<p>TMT Mgmt. Plan p. 4-23;</p> <p>FEIS p. 3-204</p>	<p>Documentation of the site has been completed.</p>
Construction Mitigation Measures	<p>The contractor selected to build the project shall prepare the following:</p> <ul style="list-style-type: none"> Safety and Accident Prevention Plan Fire Prevention and Response Plan 	<p>TMT Mgmt. Plan p. 4-24</p> <p>TMT Mgmt. Plan p. 4-25</p>	<p>These plans are included in the Best Management Practices document that was reviewed and approved by OMKM.</p>

Appendix B
Additional Mitigation Measures Related to Pre-Construction of Phase I, Civil Package
(Sources: FEIS and TMT Management Plan)

Topic	Mitigation Measure or Condition	Reference	Compliance
Cultural and Archaeological Monitoring Plan	The archaeological monitoring plan describes actions to be taken, such as halting construction activities when deemed appropriate.	TMT Mgmt. Plan p. 4-20 FEIS p. 3-34, 3-191	The Final Archaeological Monitoring Plan requires that the archaeological monitor and TMT Site Superintendent "will make it clear to the construction personnel that the archaeologist is authorized to halt work when it is deemed appropriate. (See Independent Construction Monitor above for description of responsibilities and authority, including halting work when deemed appropriate.)
NPDES Permit	The Project will obtain a Notice of General Permit Coverage (NGPC) for general construction activities. The contractor will prepare a Site-Specific Best Management Practices (BMP) plan and submit it to the State of Hawaii Department of Health (HDOH) for review prior to construction. The BMP plan will include a Materials Storage/Waste Management Plan and Spill Prevention and Response Plan which will include measures outlined in Sections 3.15.1 and 3.15.2 of the Final EIS, including measures related to Erosion and Water Quality, Solid and Hazardous Materials and Waste, Air Quality and Lighting, and Additional Disturbance and Encroachment. The permit and component plans will comply with CMP Management Action C-2.	TMT Mgmt. Plan p. 4-25	TMT has obtained an NPDES permit which is project specific versus a general permit. The NPDES requires a stormwater pollution prevention plan which contains a spill prevention and response plan, materials storage and waste management plan.

Appendix B

Additional Mitigation Measures Related to Pre-Construction of Phase I, Civil Package (Sources: FEIS and TMT Management Plan)

Topic	Mitigation Measure or Condition	Reference	Compliance
<p style="text-align: center;">Oversize and Overweight Vehicles Permit</p>	<p>TMT will arrange for more frequent grading of the unpaved Mauna Kea Access Road in order to maintain it in good condition. The Project will endeavor to reduce noise in the vicinity of cultural practices. Connection to HELCO-supplied power will be sought early in the process to eliminate the need for generators, except for limited emergency use. In addition to the NPDES BMP plan that will require flagging of the planned limits of disturbance, the location of nearby property boundaries will be surveyed to ensure the limits of disturbance do not encroach on neighboring parcels.”</p>	<p style="text-align: center;">TMT Mgmt. Plan P. 4-25, FEIS p. S-18</p>	<p>The contractor is responsible for obtaining this permit whenever moving oversize and overweight vehicles.</p> <p>TMT will contract with MKSS for additional grading. Currently, the road is grading twice a week. TMT intends to increase this to three times per week when needed.</p> <p>A hookup to HELCO power is included in the Phase I construction documents approved by the Department.</p> <p>As part of its early construction activities, TMT will flag the planned limits of disturbance around its sublease area.</p>

Appendix B

**Additional Mitigation Measures Related to Pre-Construction of Phase I, Civil Package
(Sources: FEIS and TMT Management Plan)**

Topic	Mitigation Measure or Condition	Reference	Compliance
General/Misc.	<p>Additional plans:</p> <ul style="list-style-type: none"> Ride Sharing Program with workers at TMT observatory Cultural and Natural Resources Training Program Invasive Species Prevention and Control Program 	<p>TMT Mgmt. Plan p. 4-12, 4-14, 4-20, 4-24, 4-25</p> <p>FEIS Executive Summary, Section 3</p>	<p>TMT employees including new hires will be required to undergo training before working on Mauna Kea. Mandatory training will be included in contractual provisions for contractors, and vendors with followup by TMT management. TMT employees completed their second annual training on July 11, 2014.</p> <p>A ride sharing program is incorporated into the Best Management Practices Pan</p> <p>TMT is required to comply with OMKM's Invasive Species Management Plan, a CMP management action. This plan was approved by the Maunakea Management Board on February 10, 2015. TMT also secured the services of the Big Island Invasive Species Committee to assist with the inspection as required in OMKM's invasive species management plan.</p>

Appendix C

Feb 23, 2015

CDUP HA3568 Condition 7 Relevant Pre-Construction Requirements

Topic	Mitigation Measure or Condition	Reference	Compliance
TMT Management Plan			
Native biodiversity	Monitor arthropod activity in the vicinity of the Access Way....prior to, during, and for at least two years after construction in this area.	pg. 4-14	Surveys conducted in August 2014
Plans in Place	Institute a waste minimization plan that will include an annual audit of products and processes	pg. 4-18, pg. 4-24	See Best Management Practices Document
	Cultural and Archaeological Monitoring Plans....reviewed and approved by SHPD prior to implementation.	pg. 4-19	Archaeological Monitoring Plan approved by SHPD in 2013. Cultural monitoring plan reviewed by Kahu Ku Mauna. SHPD declines review/approval - no guidelines or criteria to review
	Best Management Plan...including dust generation and construction vehicle washing	pg. 4-19	Completed
	Rock Movement Plan	pg. 4-19	See Best Management Practices document
	Reporting Plan (pg. 5-2, annual reports filed by the last day of December)	pg. 4-19	See Best Management Practices document
	Historic Preservation Mitigation Plan	pg. 4-20	Final Report submitted to SHPD
	Safety and Accident Prevention Plan	pg. 4-24	See Best Management Practices document
	Fire Prevention & Response Plan	pg. 4-25	See Best Management Practices document
	Materials Storage/Waste Management Plan and component Spill Prevention and Response Plan	pg. 4-32	See Best Management Practices document
Invasive Species	Develop and implement an Invasive Species Prevention & Control Program	pg. 4-20	OMKM's plan was approved by the Maunakea Management Board on February 10, 2015. Should any conflicts arise between TMT's permit and OMKM's plan conflict, OMKM plan will be followed.

CDUP HA3568 Condition 7 Relevant Pre-Construction Requirements

Topic	Mitigation Measure or Condition	Reference	Compliance
Design Guidelines	Construction documents submitted by OMKM following the granting of a CDUP and prior to construction activity.	pg. 4-23	Construction documents shall be submitted to DLNR for approval in advance of the start of the respective phased construction. Phase I, Civil Package approved by DLNR
Site Documentation	high-resolution surface and aerial photography of existing conditions	pg. 4-23	TMT sites were photographically documented
Construction Plan	Rock Movement Plan, submit to OMKM for review and approval prior to construction	pg. B-3	See Best Management document
	Crawler Crane Construction Plan	pg. B-10	TMT will provide at prior to construction. Crane not required equipment in the Phase I construction
Arthropod Monitoring Plan	Single arthropod monitoring event prior to the start of construction activities. Timing of monitoring will be coordinated with OMKM's ongoing survey schedule	pg. E-1	See topic Native Biodiversity above
Archaeological Monitoring Plan	Identification of when an Archaeological Monitor is required	pg. 26	Archaeological Monitoring Plan approved by SHPD
	Pre-construction conference: includes on-site archaeological monitor, cultural monitor, TMT site superintendent, construction crew.	pg. 33	Pre-conference will be held before the start of construction

**CDUP HA 3568 Thirty Meter Telescope CDUP Requirements for Start of Construction Phase I,
Civil Package**

Condition	CDUP Condition	Compliance (See Also Attached Appendices for Additional Discussion)
2	UHH shall obtain appropriate authorization from the Department for the occupancy of state lands, if applicable.	The consent to sublease between the University and TIO, LLP was approved by the BLNR on July 25, 2014
3	UHH shall comply with all applicable Department of Health administrative rules.	All applicable DOH rules were followed in securing required permits: NPDES; Noise, and Noise Variance. See Appendix A
4	Any work done or construction to be done on the land shall be initiated within two (2) years of the Board's final approval of such use following the conclusion of the contested case proceeding, in accordance with construction plans that have been signed by the Chairperson, and, unless otherwise authorized, shall be completed within twelve (12) years of the Board's final approval. (Such periods shall exclude any time when final approval and implementation of the CDUP is stayed.) UHH shall notify the Department in writing when construction activity is initiated and when it is completed.	The BLNR approved the granting of the final CDUP on April 13, 2013. TMT intends to start construction on March 2, 2015.
5	Before proceeding with any work authorized by the Board, UHH shall submit four copies of the construction and grading plans and specifications to the Chairperson or his authorized representative for approval for consistency with the conditions of the permit and the declarations set forth in the permit application. Three of the copies will be returned to UHH. Plan approval by the Chairperson does not constitute approval required from other agencies.	The required number of copies of Phase I construction and grading were approved by the Department on June 17, 2013.
6	All representations relative to mitigation set forth in the Environmental Impact Statement and Conservation District Use Application are Incorporated as conditions of the permit.	The attached Appendices contains a listing and discussion of mitigation measures

7	All mitigation measures and management actions contained in the Historic Preservation Mitigation Plan, Construction Plan, Historical & Archeological Site Plan, Maintenance Plan, and Arthropod Monitoring Plan, are incorporated as conditions of this permit.	See Appendix C
8	The TMT Project will comply with any terms and conditions outlined in the Comprehensive Management Plan and associated sub-plans.	The terms and conditions of the Comprehensive Management Plan and subplans are incorporated in the TMT Management Plan which was part of the CDUA.
9	The TMT Management Plan is approved, including all specific management actions articulated in the TMT Management Plan including, Cultural Resources Management, Natural Resources Management, Education & Outreach, Astronomical Resources, Permitting and Enforcement, Infrastructure and Maintenance, Construction Guidelines, Site Recycling, Decommissioning, Demolition & Restoration, Future Land Uses, and Monitoring, Evaluation & Updates. These management actions and their associated mitigation measures and the implementation of the recommendation contained in these plans (for example, the incorporation of a Decommissioning Funding Plan in any sublease) are incorporated as conditions of this permit.	The terms and conditions of the Comprehensive Management Plan and subplans are incorporated in the TMT Management Plan which was part of the CDUA.
10.1	Ensuring that employees attend mandatory cultural and natural resources training.	All TMT employees participated in annual orientation training sessions in July 2013 and 2014. All TMT employees will continue, and new hires will attend mandatory annual orientation training. Mandatory training is included in contractual provisions for contractors, and vendors. See Appendices
10.4	Implementing an invasive species control program.	TMT is required to comply with OMKM's Invasive Species Management Plan, a CMP management action. This plan was approved by the Maunakea Management Board on February 10, 2015. TMT also secured the services of the Big Island Invasive Species Committee to assist with inspections required in OMKM's invasive species management plan. See Appendices

10.8	Mandating that employees traveling beyond Hale Pohaku take part in a ride-sharing program using project vehicles.	The terms and conditions of the Comprehensive Management Plan and subplans are incorporated in the TMT Management Plan which was part of the CDUA. See Appendix A and B
10.10	Providing \$1 million annually, adjusting for inflation, for 'Community Benefits Package' which will commence with construction and continue through the term of the sublease. The package will be administered via The Hawai'i Island New Knowledge (THINK) Fund Board of Advisors.	The THINK Initiative commenced in October 2014. the fund is administered by Hawaii Community Foundation (\$750,000) and Pauahi Foundation (\$250,000). Advisory Committees were established. Grant proposals and scholarship applications are being reviewed and will soon, if not already awarded. See Appendix A
10.15	UHH will present a plan for handling recreational parking during construction to the OCCL for review and approval prior to beginning construction.	Recreational parking was included in the Phase I construction and grading drawings approved by the Department on June 17, 2013. The parking area is located in the summit batch plat near the start of the trail to Lake Waiau, Mauna Kea Ice Age Natural Areas.
10.17	The Archaeological Monitoring Plan will be submitted to the State Historic Preservation Division for review and approval prior to the onset of construction.	TMT's Archaeological Monitoring Plan was approved by SHPD and a final plan was submitted in May 2013. See Appendices
10.18	TMT will pay a 'substantial' amount for sublease rent. The rent would be deposited into the Manna [sic] Kea Land Fund, and only used for management of Mauna Kea.	On July 25, 2014 the BLNR issued its final decision approving the University's request for a consent to sublease to the TMT International Observatory LLC (TIO). The BLNR granted the consent along with the sublease which includes an annual rent amount of \$1 million. Pursuant to Act 132 (2009), the rent shall be deposited into the Mauna Kea Lands Management Special Fund.
20	No construction work shall be initiated until the Applicant demonstrates compliance with all preconstruction conditions and mitigation measures outlined in this report. Once this condition has been satisfied, the Department will issue notice to proceed with construction.	



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mc
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 COPY

June 6, 2013

Mr. Samuel Lemmo
 Administrator
 Office of Conservation and Coastal Lands
 Department of Land and Natural Resources
 P. O. Box 621
 Honolulu, Hawaii 96809

RECEIVED
 DEPARTMENT OF LAND AND NATURAL RESOURCES
 OFFICE OF CONSERVATION AND COASTAL LANDS
 2013 JUN 10 A 11:31

Dear Mr. Lemmo:

Subject: Thirty Meter Telescope Civil Package Construction Documents

Pursuant to the conditions of CDUP HA 3568 for the Thirty Meter Telescope (TMT), I am submitting the minimum four (4) copies of the Civil Package Construction Documents for the TMT project for your review and approval. As requested, one set is printed at half size and is intended to be DLNR's copy. The remaining sets (including a fifth copy) are printed at full size and are intended for the University of Hawaii at Hilo's use.

These documents include the geotechnical borings and the first phase of construction for the Thirty Meter Telescope. The work consists of the following:

- Geotechnical Studies, which consist of drilling borings and removing samples at selected locations, and other associated geotechnical tests;
- Access Way, which consists of the road and underground utility infrastructure from the existing paved road near the Submillimeter Array building to the TMT site; and
- Rough Grading, which consists of excavating and filling to provide a level site at the TMT site.

Pursuant to the management and implementation framework approved by the Board of Land and Natural Resources on March 25, 2010, the Kahu Kū Mauna Council and the Mauna Kea Management Board (MKMB) are required to review civil packages (construction documents) prior to submittal to the Department of Land and Natural Resources. Kahu Kū Mauna and the MKMB reviewed the documents on May 7, 2013, and May 15, 2013, respectively. No changes to the documents were requested.

Mr. Samuel Lemmo
June 6, 2013
Page 2

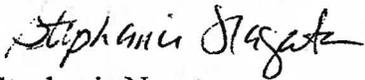
The proposed work covered in the civil package will be performed in accordance with the twenty-four conditions listed in the BLNR permit for this project. In particular, the following conditions are noted:

- All required building, grading, mechanical, electrical and other permits required for each activity will be obtained before construction on that activity is started.
- All employees will attend mandatory cultural and natural resources training before working on the site.
- A cultural monitor and an archaeological monitor will be on site when any of the Phase 1 work is underway.
- If any historical remains are encountered during construction activities, work will cease immediately and the State Historic Preservation Division will be immediately notified.

In addition, all activities associated with this project will comply with relevant actions contained in the Comprehensive Management Plan and sub-plans. Attached is a table summarizing the relevant components, including compliance activities, of those plans that are listed in the TMT Management Plan, Exhibit B, of the Conservation District Use Application.

I wish to express, in advance, my appreciation for your review and approval of these documents.

Sincerely yours,



Stephanie Nagata
Director

Attachment