SITE PLAN APPROVAL APPLICATION (SPA)

File No:	
Acceptance Date:	30-Day Expiration Date:
Assigned Planner:	

for DLNR Use

Pursuant to Hawai‘i Administrative Rules (HAR) §§13-5-22 through 24, identified land uses beginning with letter (B) require a site plan approval by the department.

PROJECT NAME: DKIST Utility Building Photovoltaic System

Conservation District Subzone: General

Identified Land Use: Hawai‘i Administrative Rules (HAR) section 13-5-22, P-8 STRUCTURES AND LAND USES, EXISTING (B-1) Demolition, removal, or minor alteration of existing structures, facilities, land, and equipment. Any historic property shall be evaluated by the department for historical significance.

(See Hawai‘i Administrative Rules (HAR) §13-5-22 through §13-5-25)

Project Address: University of Hawai’i Haleakala High Altitude Observatory (HO) Site

Ahupuaʻa, District, Island: Papa’anui, Waiakoa, Maui

Tax Map Key(s): (2) 2-2-007-008

Proposed Commencement Date: Upon approval of SPA

Proposed Completion Date: 160 days project time, ongoing land use thereater

[redacted]

Total area of proposed use: 47' x 52' = 2444 sqft

ATTACHMENTS

- ☒ $50 application fee *(ref §13-5-32 through 34)*
- ☒ Location map
- ☒ Site plan
- ☐ Construction, grading, site restoration, landscaping, or fire buffer plans, as applicable

Note: The application fee for State projects is waived pursuant to HAR §13-5-32.

REQUIRED SIGNATURES

Applicant

Name: Daniel K. Inouye Solar Telescope
Title; Agency: National Solar Observatory / AURA
Mailing Address: 22 Ohia Ku Street, Makawao, HI 96768
Contact Person & Title: Brialyn Onodera, Senior Mechanical Engineer
Phone: (808) 727-8187
Email: bonodera@nso.edu
Interest in Property: Lessee

Signature: _____ Date: 10/31/2024
Signed by an authorized officer if for a Corporation, Partnership, Agency or Organization

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Landowner (if different than the applicant)

Name: University of Hawai'i
Title; Agency: David Lonborg, Associate Director, Insitutte for Astronomy (IfA)
Mailing Address: 2680 Woodlawn Drive, Honolulu, HI 96822
Phone: (808) 956-8678
Email: dlonborg@hawaii.edu

Signature: _____ Date: _____
For public lands, the government entity with management control shall sign as landowner.

Agent or Consultant

Agency: Click or tap here to enter text.
Contact Person & Title: Click or tap here to enter text.
Mailing Address: Click or tap here to enter text.
Phone: Click or tap here to enter text.
Email: Click or tap here to enter text.

Signature: _____ Date: _____

For DLNR Managed Lands

Chairperson, Board of Land and Natural Resources
P.O. Box 621
Honolulu, Hawai'i 96809-0621

Signature: _____ Date: _____

PROPOSED USE

Total size/area of proposed use (indicate in acres or sq. ft.): 2444 sq ft

Please provide a detailed description of the proposed land use(s) in its entirety. Information should describe what the proposed use is; the need and purpose for the proposed use; the size of the proposed use (provide dimensions and quantities of materials); and how the work for the proposed use will be done (methodology). If there are multiple components to a project, please answer the above for each component. Also include information regarding secondary improvements including, but not limited to, grading and grubbing, placement of accessory equipment, installation of utilities, roads, driveways, fences, landscaping, etc.

In 1961, Executive Order (EO) 1987 by Hawaii's Governor Quinn to UH, as amended by EO 4452 in 2014, set aside 18.166 acres of land on the summit of Haleakalā to establish the Haleakalā High Altitude Observatory (HO) site. EO 1987 has no expiration date. This area of the Conservation District was set aside for "…Haleakalā High Altitude Observatory Site purposes only" (EO 1987).

A number of astronomical observatories and related facilities are located on the HO site, including the Daniel K. Inouye Solar Telescope (DKIST). DKIST, the world's largest and most advanced telescope for observing the Sun, completed construction in 2019 and is now in operation.

The proposed project is the installation of 70 PV array panels mounted to the roof of the existing DKIST Utility Building (UB), shown in Figure 1, in order to support the energy sustainability of DKIST and reduce operating costs. Project work will be performed in accordance with the provisions of the Haleakalā High Altitude Observatory Management Plan. PV projects of greater magnitude have been constructed on the W.M. Keck Observatory, Gemini Observatory and Halepōhaku summit facilities on Maunakea.

With the implementation of this project, DKIST estimates an energy production of 30.1kW, resulting in a 2.3% reduction in electrical use and an expected cost savings of $16,000 per year.

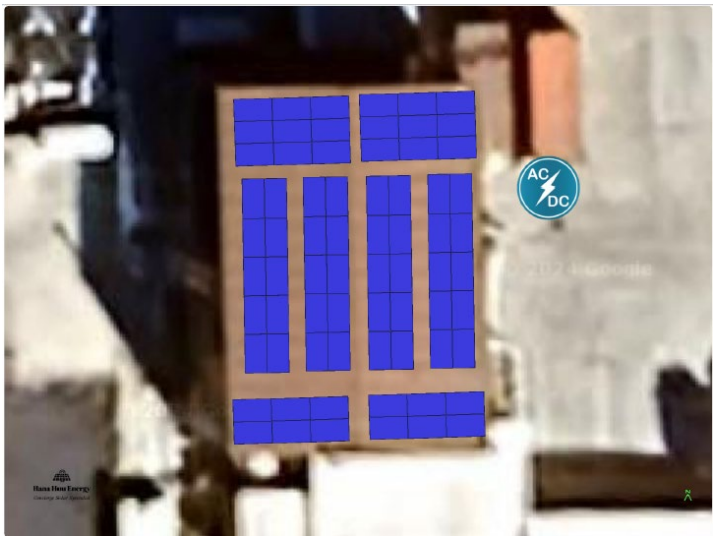


FIGURE 1: The proposed PV array on the UB as seen from above

PROPOSED EXEMPTION

An exemption from needing an environmental assessment (EA) refers to specific situations or projects that are not required to undergo the standard EA process due to their minimal potential impact on the environment.

Government agencies should use the appropriate exemption list as concurred by the Environmental Advisory Council as found at planning.hawaii.gov/erp/agency-exemption-list

Private parties should use DLNR's Exemption List as concurred by the Environmental Council on November 10, 2020 as found at files.hawaii.gov/dbedt/erp/Agency_Exemption_Lists/State-Department-of-Land-and-Natural-Resources-Exemption-List-2020-11-10.pdf

The project is exempt from needing an EA pursuant to UH Exemption Class #6, Construction or placement of minor structures accessory to existing facilities. The project involves the placement of photovoltaic panels on the roof of an existing building as an accessory use to supply a portion of the electrical needs of the facility.

EXISTING CONDITIONS

Please describe existing conditions on the parcel (geology, ecology, cultural and recreational resources, historic resources, structures, landscaping, etc). Provide information regarding existing buildings and structures as well as infrastructure and utilities as applicable.

Geology & Hazards: The summit area is covered with volcanic ejecta consisting of lava, cinder, and ash of the Kula and Hana Volcanic Series. There is no soil development in the immediate vicinity of HO. Soil development occurs with increased distance (greater than 1.5 miles) from the summit. Most of the area is situated on Cinder Land (rCl), which is thought to be of the Kula period of volcanism (U.S. Soil Conservation Service, 1972). The proposed project site is on the roof of the UB on the DKIST site.

Flora, Fauna, Ecology, Water Resources: None, the project site is on the roof of the existing DKIST UB. IfA performs routine monitoring for invasive species

Cultural Resources: Comprehensive inventories have been conducted of HO: A Cultural Resource Survey (CKM 2003), Traditional Practices Assessment (CKM 2002), and an archeological inventory (Fredericksen 2003). In 2006 a subsequent cultural resources study, Cultural and Historical Compilation of Resources Evaluation and Traditional Practices Assessment was conducted (CKM 2006). Cultural Surveys Hawai'i, Inc. (CSH) conducted a Supplemental Cultural Impact Assessment (SCIA) in 2007, and annual routine monitoring continues by the IfA.

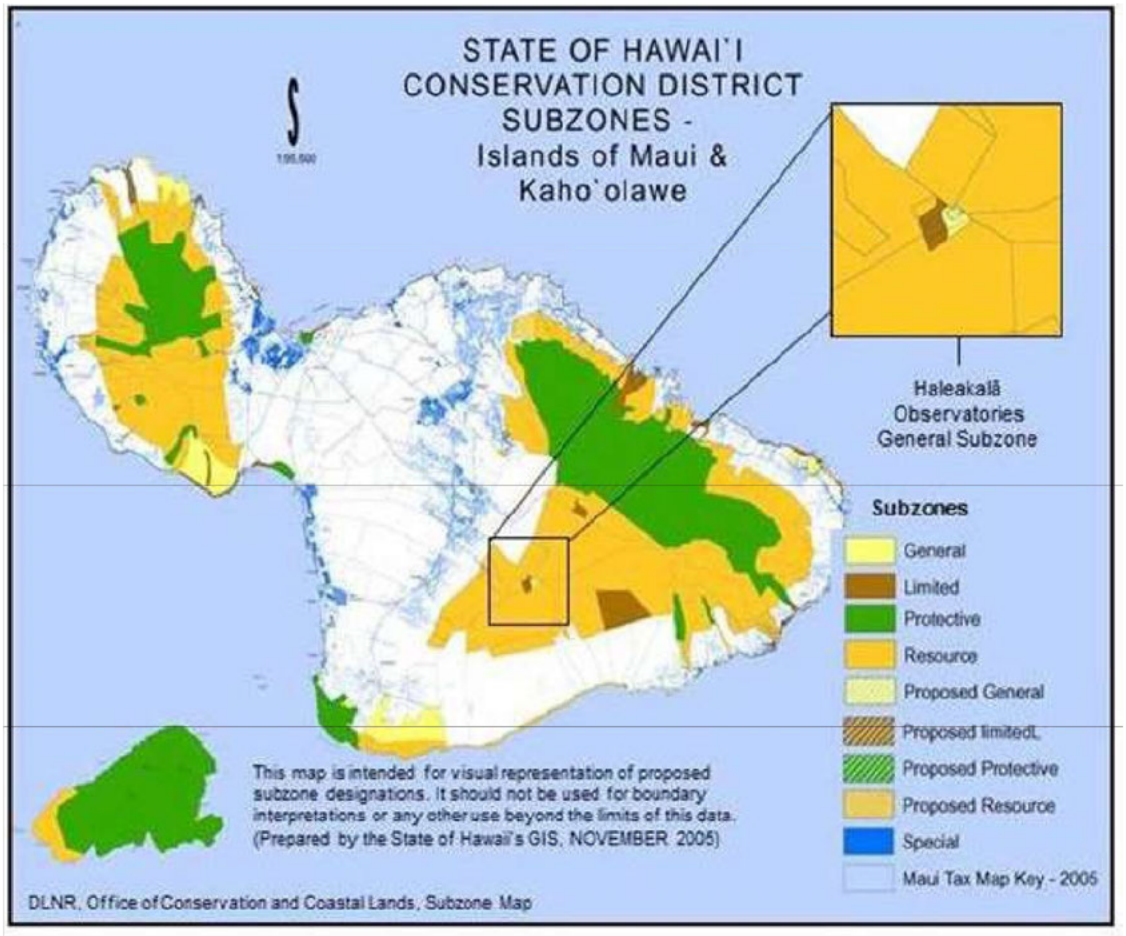


FIGURE 2. Haleakalā Observatories General Subzone

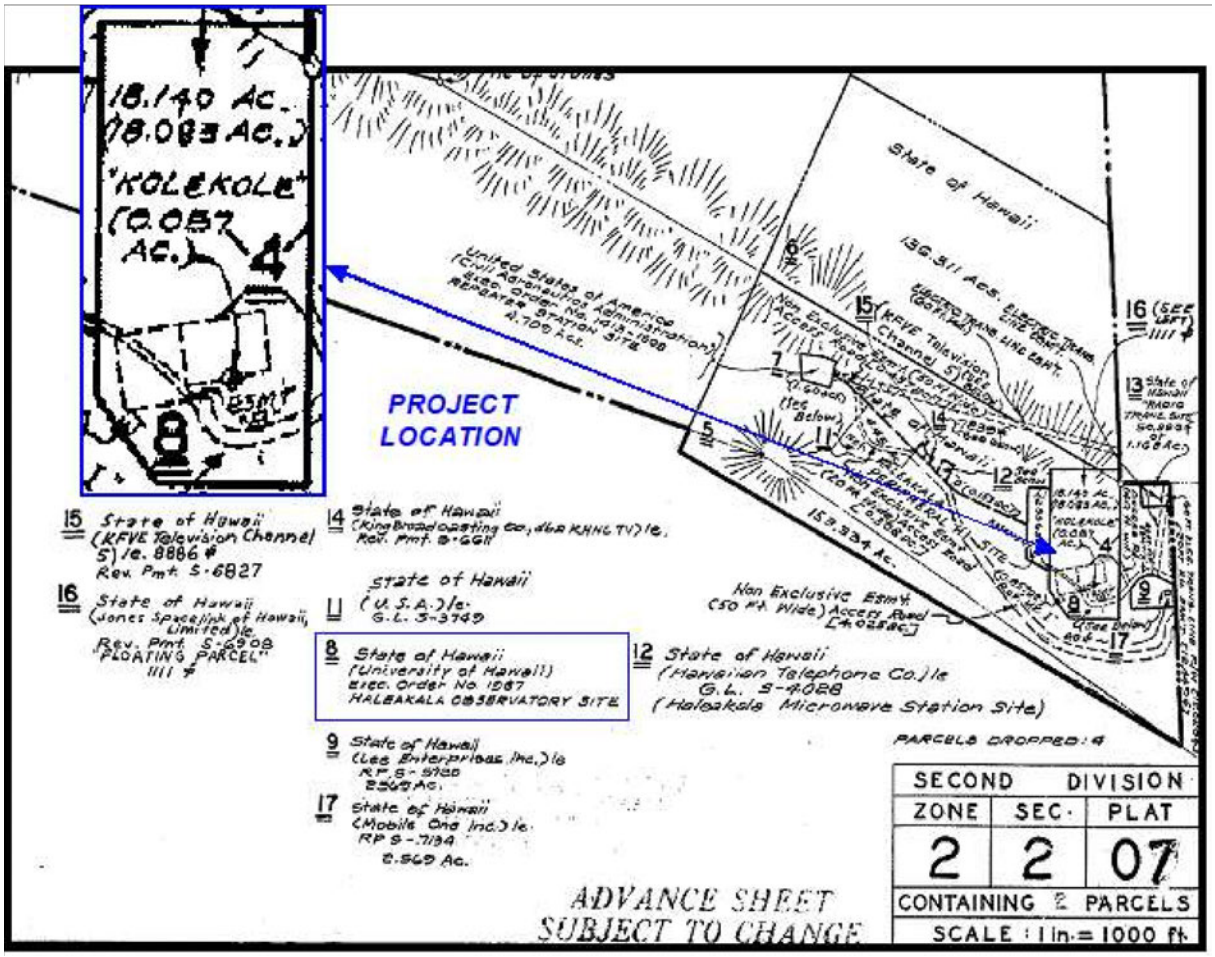


FIGURE 3. State of Hawai'i tax map key and general location of proposed project

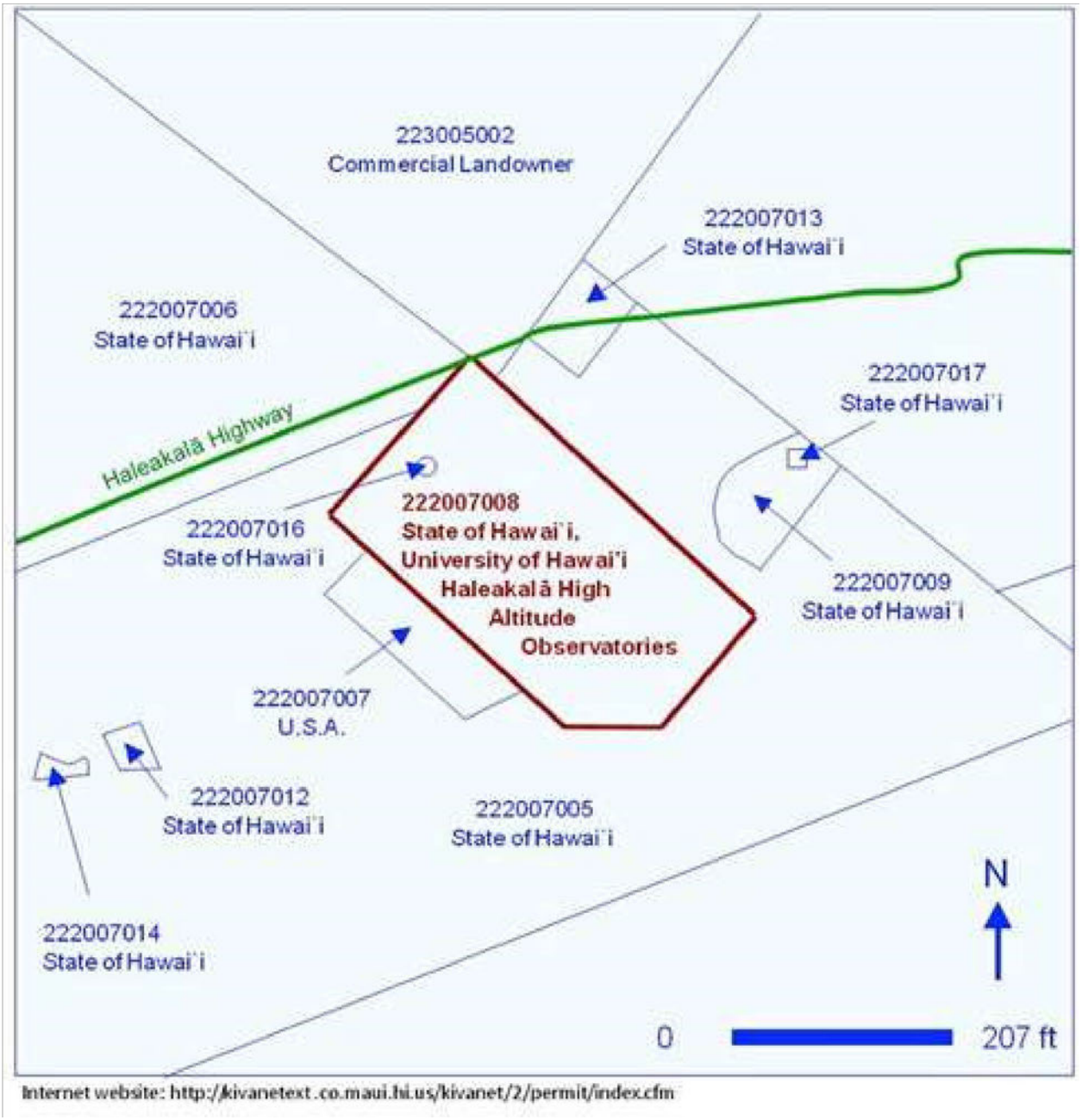


FIGURE 4. Map displaying HO and adjacent property owners

Built Infrastructure: The DKIST PV project relates to the construction of a solar panel array accessory to an existing facility.

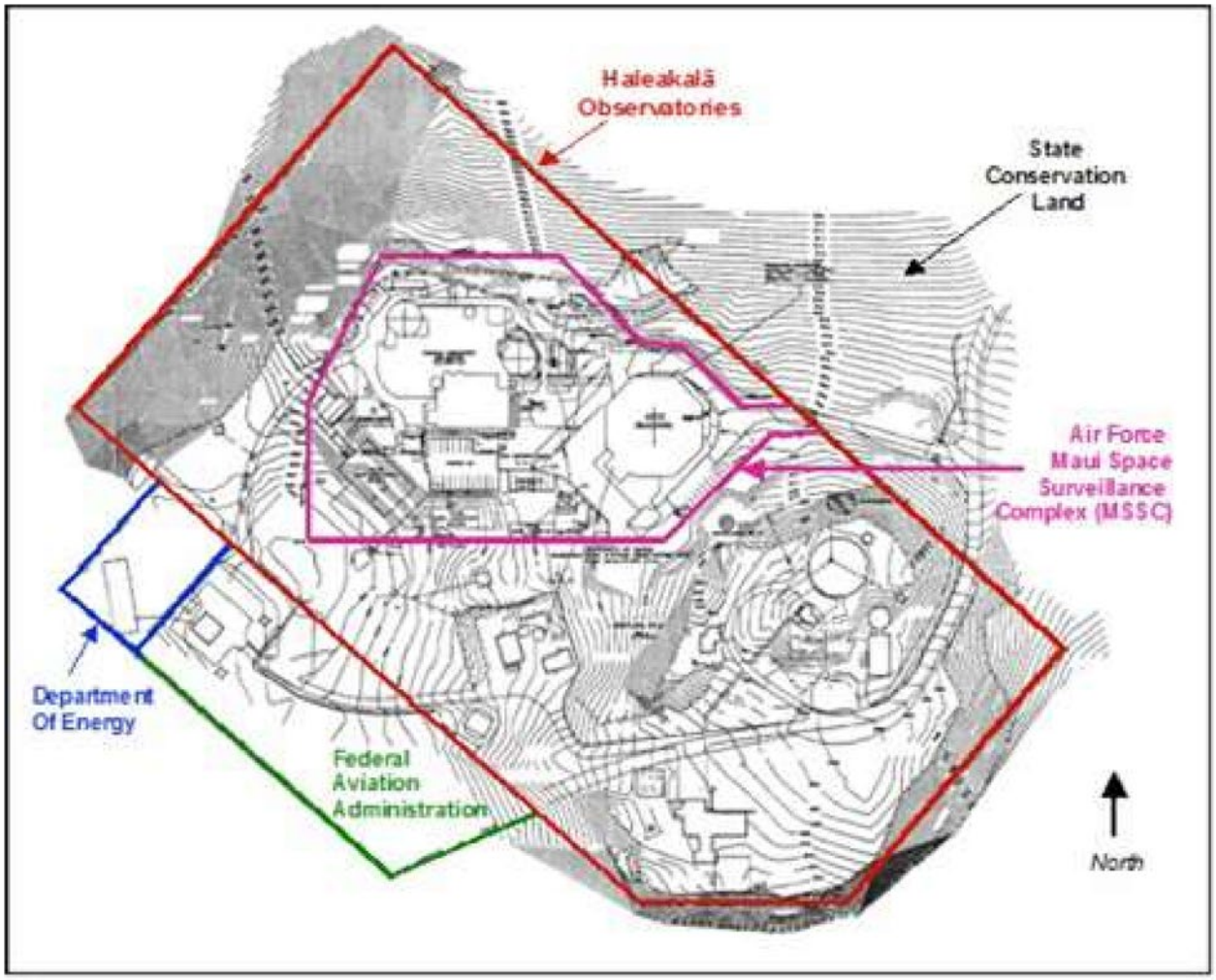


FIGURE 5. Topographic map of Pu'u Kolelole with property boundaries

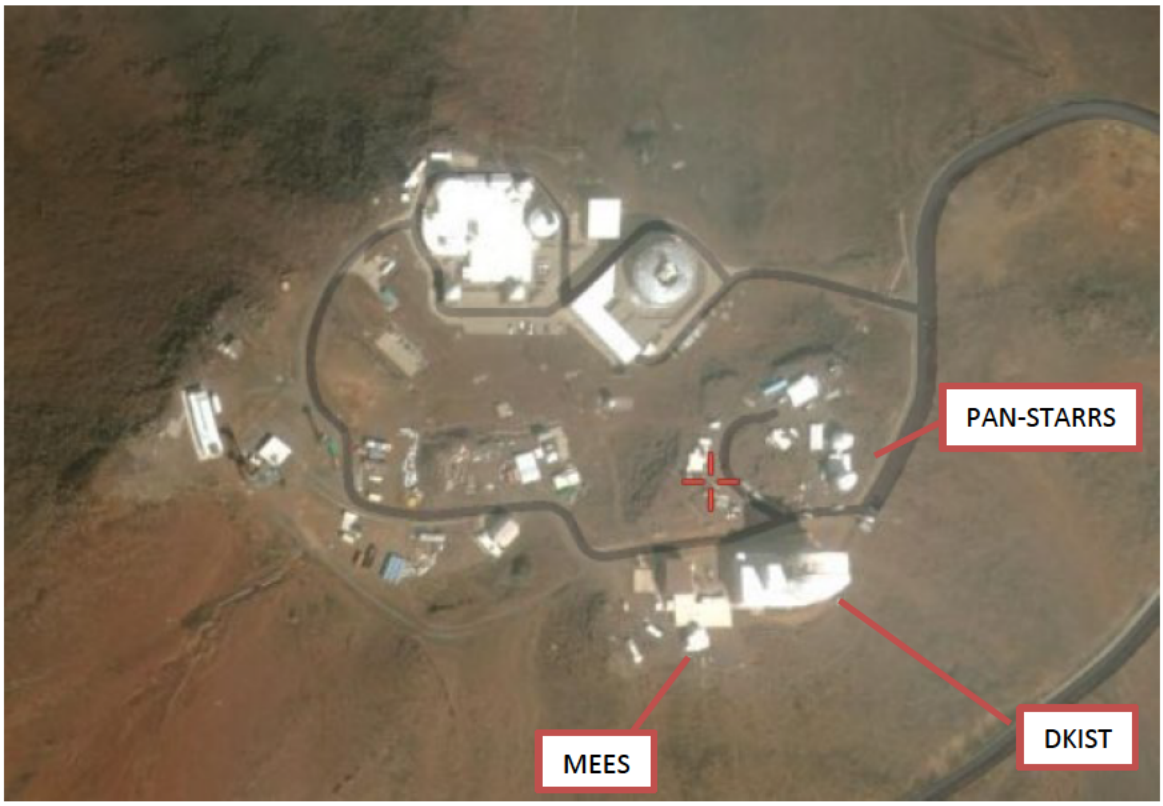


FIGURE 6. DKIST, MEES and Pan-STARRS telescope facilities.

FIGURE 7. DKIST UB placement relative to DKIST and MEES facilities

FIGURE 8. Overhead view of the existing DKIST UB

Landscaping & Visual Conditions: The placement of the PV systems on the existing UB roof means there will be no impact on landscaping or overall visual appearance once complete. The equipment chosen is non-reflective and only visible when viewed from above.

EVALUATION CRITERIA

The Department or Board will evaluate the merits of a proposed land use based upon the following eight criteria (*ref §13-5-30(c))*

1. **The purpose of the Conservation District is to conserve, protect, and preserve the important natural and cultural resources of the State through appropriate management and use to promote their long-term sustainability and the public health, safety, and welfare. How is the proposed land use consistent with the purpose of the conservation district?** *(ref §13-5-1)*

   The HO area was conveyed to the University of Hawai'i by Governor's Executive Order 1987/4452. This area of the Conservation District has been set aside for astronomical research, and facilities conducting astronomy and advanced space surveillance already exist in the HO area. DKIST is an existing facility, and the proposed PV project will be located entirely on its existing rooftop. The PV project will enhance sustainability by enabling on-site, renewable generation of a portion of DKIST's electricity needs and reducing the amount of electricity DKIST draws from Maui's grid.

2. **How is the proposed use consistent with the objectives of the subzone of the land on which the land use will occur?** *(ref §13-5-11 through §13-5-15)*

   The objectives of the General Subzone are to designate open space where specific conservation uses may not be defined, but where urban uses would be premature. HO consists of lands with topography and soils that are not normally adaptable or presently needed for urban, rural, or agricultural use. Astronomy facilities are an identified use in this subzone (HAR §13-5-24(c)). In addition to being an identified use, the IfA is committed to the stewardship of the natural and cultural resources throughout HO in a way that fulfills the objective of the General Subzone of the Conservation District. The PV project is accessory to an existing astronomy facility and will enhance the sustainability of the facility by generating a portion of its electricity needs on site and renewably.

3. **Describe how the proposed land use complies with the provisions and guidelines contained in chapter 205A, HRS, entitled "Coastal Zone Management"** *(see 205A objectives on p. 7).*

   This criterion does not apply to the proposed activity. HO is not located in a Coastal Zone Management area pursuant to the State of Hawai'i Office of Planning Locator Map, accessed through the Office's website or as a direct link, which was last updated April 16, 2021.

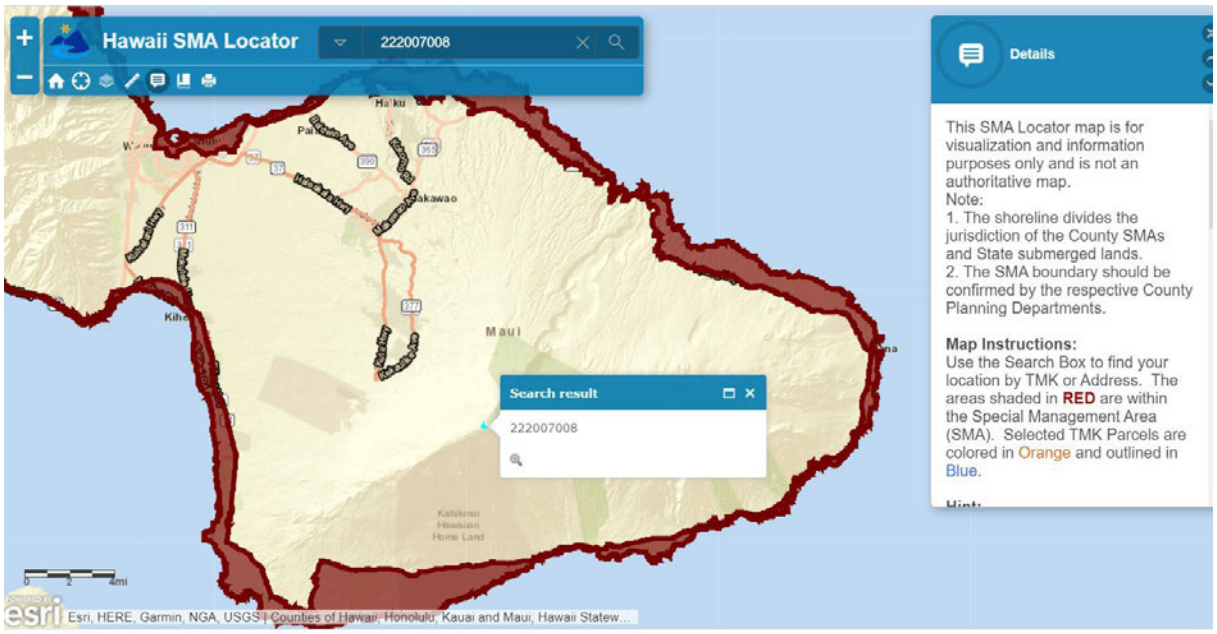


FIGURE 9. Screenshot of Coastal Zone Management Area Planning Locator Map

4. **Describe how the proposed land use will not cause substantial adverse impact to existing natural resources within the surrounding area, community or region.**

   The installation of the PV systems on the existing UB roof means that no ground disturbance or habitat disruption will occur at the site. The panels are non-reflective and are only visible when viewed from above, so there is little to no impact on visual resources.

5. **Describe how the proposed land use, including buildings, structures and facilities, is compatible with the locality and surrounding areas, appropriate to the physical conditions and capabilities of the specific parcel or parcels.**

   The installation of the PV system enhances the sustainability of an existing land use, DKIST. The project will be executed according to the the terms and conditions established in the 2010 Haleakala Observatories Management Plan. It will be located on an existing rooftop and will have little or no incremental impact on the scientific, natural resource or historic properties in the summit region.

6. **Describe how the existing physical and environmental aspects of the land, such as natural beauty and open space characteristics, will be preserved or improved upon.**

   The installation of the PV systems on the existing UB roof means that no ground disturbance or habitat disruption would occur at the site. The panels are only visible when viewed from above resulting in minimal change to existing conditions on the site.

7. **If applicable, describe how subdivision of land will not be utilized to increase the intensity of land uses in the Conservation District.**

   Not applicable as no subdivision is involved.

8. **Describe how the proposed land use will not be materially detrimental to the public health, safety and welfare.**

   The installation of the PV systems on the existing UB is consistent with the DKIST CDUP and their installation helps to reduce strain on local power grids, especially during peak demand periods, which

enhances the reliability of energy supply for the community. It will reduce DKIST's reliance on non-renewable energy sources via the Hawaiian Electric grid. The system has been engineered for the environmental conditions present on the site and will not adversely affect public health, safety, or welfare.

CULTURAL IMPACTS

Articles IX and XII of the State Constitution, other state laws, and the courts of the State, require government agencies to promote and preserve cultural beliefs, practices, and resources of Native Hawaiian and other ethnic groups.

Please provide the identity and scope of cultural, historical, and natural resources in which traditional and customary native Hawaiian rights are exercised in the area.

Cultural, historical, and natural resources present on the HO site are protected in accordance with the HO Management Plan. Cultural access to the site for the exercise of traditional and customary native Hawaiian rights is protected in accordance with the Management Plan. This project will have no incremental impact on cultural, historical, or natural resources, or on traditional and customary native Hawaiian rights, because it is located entirely on an existing rooftop and involves no new ground disturbance and no change in the existing impacts of the DKIST project (which were fully analyzed and considered in connection with the CDUP for the DKIST project).

Identify the extent to which those resources, including traditional and customary Native Hawaiian rights, will be affected or impaired by the proposed action.

There will be no impact to these resources. The installation of the PV systems will occur entirely on the existing UB roof and will be executed according to the the terms and conditions established in the 2010 HO Management Plan. It will have no incremental negative impact on the scientific, natural resource or historic properties in the summit region, and will have a positive impact on natural resources by reducing fossil fuel use.

What feasible action, if any, could be taken by the Board of Land and Natural Resources regarding your application to reasonably protect Native Hawai'i rights?

No additional action needed beyond continuing adherence to existing requirements for the DKIST project and HO site.

CHAPTER 205A – COASTAL ZONE MANAGEMENT

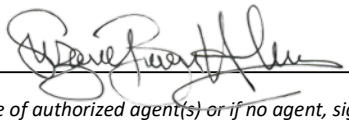
Land uses are required to comply with the provisions and guidelines contained in Chapter 205A, Hawai'i Revised Statutes (HRS), entitled "Coastal Zone Management," as described below:

- **Recreational resources:** Provide coastal recreational opportunities accessible to the public.
- **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.
- **Scenic and open space resources:** Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.
- **Coastal ecosystems:** Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.
- **Economic uses:** Provide public or private facilities and improvements important to the State's economy in suitable locations.
- **Coastal hazards:** Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.
- **Managing development:** Improve the development review process, communication, and public participation in the management of coastal resources and hazards.
- **Public participation:** Stimulate public awareness, education, and participation in coastal management.
- **Beach protection:** Protect beaches for public use and recreation.
- **Marine resources:** Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

CERTIFICATION

I hereby certify that I have read this completed application and that, to the best of my knowledge, the information in this application and all attachments and exhibits is complete and correct. I understand that the failure to provide any requested information or misstatements submitted in support of the application shall be grounds for either refusing to accept this application, for denying the permit, or for suspending or revoking a permit issued on the basis of such misrepresentations, or for seeking of such further relief as may seem proper to the Land Board.

I hereby authorize representatives of the Department of Land and Natural Resources to conduct site inspections on my property. Unless arranged otherwise, these site inspections shall take place between the hours of 8:00 a.m. and 4:30 p.m.



Signature of authorized agent(s) or if no agent, signature of applicant

AUTHORIZATION OF AGENT

I hereby authorize *Click or tap here to enter text.* to act as my representative and to bind me in all matters concerning this application.

Signature of applicant(s)