

Authorization *Dean Uchida, Director*
Advertisement *May 24, 2021*
Public Hearing *June 23, 2021*

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

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DEPUTY DIRECTOR

DEPT OF PLANNING
AND PERMITTING
CITY & COUNTY OF HONOLULU


EUGENE H. TAKAHASHI
DEPUTY DIRECTOR

2020/SUP-7(FK)

May 20, 2021

MEMORANDUM

TO: Brian Lee, Chair
and Members of the Planning Commission

FROM: Dean Uchida, Director
Department of Planning and Permitting  Digitally signed by
Uchida, Dean
Date: 2021.05.20
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SUBJECT: Special Use Permit (SUP) Petition File No. 2020/SUP-7
Mahi Solar, LLC for a 120-Megawatt Solar Energy Generation Facility plus a
480-Megawatt-Hour Battery Energy Storage System and ancillary support
facilities (Project)
Honouliuli, Ewa District, Oahu
Tax Map Keys 9-2-001: 020 portion, 9-2-004: 003 portion, 9-2-004: 006 portion,
9-2-004: 010 portion, and 9-2-004: 012 portion

Attached for your appropriate action is our report and recommendation for conditional approval of an approximately 620.0-acre SUP petition for the establishment of a new solar energy generation and battery storage facility. The Project is the largest solar plus storage project proposed in Hawaii capable of generating four percent of Oahu's electricity needs. A unique aspect of this Project is the aggressive pairing of agriculture and solar energy generation called "Agrivoltaics". The Agrivoltaics program, in partnership with the Hawaii Agriculture Research Center, could be a model for future solar projects.

The Department of Planning and Permitting recommends conditions of approval relating to the provision of lands under the solar panels for compatible agriculture, submittal of a letter of credit for decommissioning, measures to mitigate potential wildlife impacts, protect historic, cultural and archeological resources, and various standard SUP conditions.

As the proposed Project exceeds the 15-acre threshold, or involves Important Agricultural Lands of any acreage designated by the State Land Use Commission (LUC), a favorable decision by the Planning Commission will require LUC review.

Should you have any questions, please contact Franz Krintz, of our staff, at (808) 768-8046 or by email at fkrintz@honolulu.gov.

Enclosures

DEPARTMENT OF PLANNING AND PERMITTING
OF THE CITY AND COUNTY OF HONOLULU

STATE OF HAWAII

IN THE MATTER OF THE PETITION OF)
)
 MAHI SOLAR, LLC)
)
 FOR A)
)
 SPECIAL USE PERMIT)
_____)

FILE NO. 2020/SUP-7

FINDINGS OF FACT, CONCLUSIONS
OF LAW, AND RECOMMENDATION

I. PETITION

A. Basic Information.

PETITIONER	:	Mahi Solar, LLC
OWNERS OF VARIOUS PARCELS	:	Monsanto Technology, LLC; Hartung Brothers Hawaii, LLC; Fat Law's Farm Inc.
LOCATION	:	Various parcels on the mauka or Waianae side of Kunia Road beginning approximately 10,000 feet north, northwest of the intersection of Kunia Road and the H-1 Freeway, Honouliuli, Ewa, (Exhibit A)
TAX MAP KEYS (TMK)	:	9-2-001: 020 portion, 9-2-004: 003 portion, 9-2-004: 006 portion, 9-2-004: 010 portion, and 9-2-004: 012 portion
ACREAGE OF PETITION AREA	:	Approximately 620.0
ACREAGE OF IMPROVEMENTS	:	Approximately 479.0
RECORDATION	:	Land Court
STATE LAND USE DISTRICT	:	Agricultural
EWA DEVELOPMENT PLAN	:	Agricultural and Preservation

CENTRAL OAHU SUSTAINABLE COMMUNITIES PLAN	:	Agricultural and Preservation
EXISTING ZONING	:	AG-1 Restricted Agricultural District
LAND STUDY BUREAU RATING	:	Overall Master Productivity Rating of Class “B”, “C”, “D”, “E”, and Unclassified
EXISTING USE	:	Diversified crops, cultivation of seed corn, fallow fields, open space
SURROUNDING LAND USES	:	Agriculture and open space and the Kunia Village residential community to the north, agriculture, golf course, Royal Kunia and Phase II proposed development, and open space to the east; agriculture to the south, upslope forest, open space, and patches of agricultural uses to the west.

Proposal. Mahi Solar, LLC (Petitioner) proposes to construct a 120-megawatt (MW) solar energy generation facility (SEF), a 480-megawatt-hour (MWh) battery energy storage (BESS) facility to address peak energy demand, and accessory support infrastructure and uses (together referred to as the Project) on 620.0 acres (Petition Area). The Project was selected as part of the Hawaiian Electric Company’s (HECO) Stage 2 renewable energy projects. The contract with HECO is expected to last 25 years with an option to extend 10 years for a total Project operational life of 35 years. The time period for the Special Use Permit (SUP) will include two years for permitting and construction and another two years for decommissioning of the Project at the end of its operational life, for a total of 39 years.

The Petition Area (Exhibit 1) is spread across five general Project areas (Areas 1, 2, 3, 4, and 5) which currently are configured in the initial Project design as 12 non-contiguous solar array areas (SAAs) [1, 2A, 2B, 2C, 3, 4A, 4B, 4C (two sites), and 5 (three sites)]. The Project will primarily consist of roughly 370,000 ground-mounted photovoltaic (PV) panels installed on 4,300 single-axis trackers aligned in a north-south direction. The trackers will rotate in order to follow the sun during the day to maximize solar exposure.

Each PV panel is approximately 48 inches wide and 79 inches long, dark in color, and stands approximately six to eight feet above ground level when flat (zero-degree tilt). At maximum rotation or 50-degree tilt, the height of the panel reaches approximately nine to 12 feet high and is approximately one to three feet off of the ground. There will be an approximately nine-foot wide aisle, between adjacent arrays of panels when they are in the horizontal position or zero-degree tilt.

The Project will include other electrical equipment such as “combiner” boxes, pad-mounted equipment, including 32 four-MW, PV inverter stations to convert the direct current to alternating current (AC), step-up transformers and communication equipment, electrical collector lines, a new electrical substation, and interconnection equipment. At the substation, the medium voltage AC output from the Project will be stepped up and interconnected to a new HECO owned, 138-kilovolt (kv) switchyard. The new

HECO-owned switchyard will connect the substation to the existing HECO Kahe-Waiiau 138-kv transmission line located west of Kunia Road. The Kahe-Waiiau circuit is expected to be the primary Point of Interconnection since the 138-kv line can accommodate the full output of the Project without requiring a more elaborate interconnection scheme. Interconnecting the Project to the Kahe-Waiiau circuit will enable Petitioner to dispatch the full 120-MW of the Project during the day, or at night via the BESS to deliver the energy when there is no solar production.

The Petition Area includes 12 separately fenced SAAs, within the five general Project areas (Table 1). Chain link fencing will define the perimeter each of these SAAs within the Petition Area. The chain link fencing will be eight feet tall and will not include the use of barbed wire, however, fencing around the switchyard, substation, and BESS within SAA 3 will require the use of barbed wire. The switchyard, substation, and BESS are considered a high voltage area and the use of barbed wire is a standard requirement of HECO to meet safety and security measures. This is typically required at any high voltage facility. The total fenced area for all the Project components amounts to approximately 479 acres of the 620-acre Petition Area. As currently designed, this is the area estimated to provide the 120 MW of electricity approved for this Project. However, as the layout is further defined and as field conditions dictate, the exact quantity of land used for the Project may ultimately differ slightly but in no case will the total Petition area exceed 620 acres. Consideration of possible adjustments builds in some flexibility for the Project.

The Petitioner indicates that the Project is needed to partially address energy production losses from the September 2022 closing of Hawaii's only coal-fired power plant located in Campbell Industrial Park. The Project is projected to generate a total of 120 MW of energy, capable of producing enough electricity to power 37,000 homes, and avoid burning 11 million barrels of oil and saving consumers an estimated \$175 million in lower power costs over the Project's 25-year lifespan. The Project will help move the State forward in meeting the goal of 100 percent of its energy needs from renewable sources by 2045.

Through legislation and other policies, the State of Hawaii has prioritized actions that contribute to the long-term economic, social, and environmental sustainability of the state, including actions that emphasize the importance of both locally produced agriculture and clean energy. In 2014, Hawaii House Bill 2203 approved amendments to Chapter 205, Hawaii Revised Statutes (HRS) to promote the dual use of agricultural land by requiring solar projects on Land Study Bureau (LSB) Class B and C land to provide land for compatible agricultural activities for the entire operational life of a project.

The Petitioner's proposed agricultural plan will bring even more land into agricultural production, not only in ranching, but in farming lettuce, basil and other vegetables, flowering plants for honey production, and nutritious grasses for animal feed. This agricultural plan, developed with input from local farmers, proposes to implement a comprehensive Agrivoltaic Program, first to research what local crops can be successfully grown along with solar panels and then to expand those agricultural activities at commercial scale across the entire Petition Area. The Project will directly meet the State's policy goals above by co-locating the cultivation of local market crops with a solar facility. The Petitioner will also work with the Hawaii Agriculture Research Center (HARC) to collect data on what works – successful crops, methods and best practices – and share the results with the local solar and agriculture industries, to help

expand the productive dual use of agricultural land in Hawaii. Implementing this agricultural plan will simultaneously increase both clean energy production and agricultural productivity on the lands used for the Project, supporting the state’s goals in both areas.

Table 1 – Petition Area		
Solar Array Areas	Project Acreage	Petition Area Acreage
1	63	114
2A, 2B, & 2C	44	73
3	76	86
4A, 4B, & 4C (2 sites)	273	306
5 (3 sites)	23	41
Total Petition Area:	479	620.0 ¹
<i>¹610 acres of the 620-acre Petition Area is designated for agricultural activities. Ten acres within SAA 3 (TMK 9-2-004: 003) will not be used for agricultural activities due to the high-voltage nature of the area.</i>		

Several commercial farmers and ranchers are already interested in participating in the Agrivoltaic Program, including HARC, Hartung Brothers (alfalfa forage), and Oahu Grazers (livestock grazing). HARC has also documented interest from Kunia Country Farms (hydroponic lettuce), Alluvion (nursery products), Fat Law Farms (basil), and Island Bee Removals (honey production). Even prior to the research phase, farmers with experience in Kunia believe that solar-compatible crops and livestock can be successful between and under the solar panels.

Land and water will be provided to farmers and ranchers, at minimal cost, for them to grow crops or products that will be commercially successful. The Petitioner will invest in adding or upgrading the agricultural infrastructure across the Petition Area. Irrigation infrastructure will be installed with a drip-feed irrigation system strategically located to support crop production. Currently, 262.3 acres of the Petition Area has water. Under the proposed agriculture plan, the Petitioner proposes to increase water available for irrigation of approximately 444.2 acres of the 620-acre Petition Area.

The Project will operate seven days per week throughout the year. The Project will have on-site staff during the regular working hours during the week and will be remotely monitored 24/7 by staff. There will be up to five staff supporting the solar PV operation at any given time to clean the panels, maintain accessory facilities, effect repairs as needed, and supplement grass and brush removal to maintain clear access to sunlight.

Parking areas for maintenance workers will be designated within each Project Area covered by gravel and provide space for up to four vehicles. Portable restroom unit(s) may be needed for use during operations and maintenance.

The Petitioner anticipates that upon receiving all land use and building permit approvals, construction would begin in 2022 and require approximately 18 to 24 months to complete. Commercial operations are projected to begin in late 2023. No announcement has been made by the HECO what interim measures will be needed to provide energy following the closure of the AES coal-fired plant and the start-up of the replacement SEFs.

The Project will have a 35-year design and operational life (25 years plus possible 10-year extension). The Petitioner is requesting an additional two years for permitting and construction and two years for decommissioning following the Project's operational life. Therefore, the SUP Petition is for a total of 39 years from the date of the State Land Use Commission (LUC) Decision and Order (D&O).

A 2020 surety estimate for the Petitioner estimated a gross decommissioning cost of \$3.0 million. However, the estimate assumes restoring 438 acres of the Petition Area. At the decommissioning rate of \$6,830 per acre estimated in this study, the total decommissioning cost for the entire 620-acre Petition Area (less 10 acres for the substation, switchyard, and BESS) is approximately \$4.166 million.

The Project was selected by HECO under a competitive bidding process to provide grid-scale renewable energy generation to the HECO system in order to assist the State of Hawaii attain its goal of generating 100 percent of the State's energy from renewable sources by 2045. The Project will also provide the landowners a portion of the revenues generated from the sale of power to HECO. A power purchase agreement between the Petitioner and HECO was executed in September 2020 and is pending approval by the Public Utilities Commission (PUC) in PUC Docket No. 2020-0140.

- B. Environmental Disclosure Requirements. The Project is not subject to the environmental disclosure requirements of Chapter 343, HRS, pursuant to the Hawaii Environmental Policy Act (HEPA). Actions that propose a power-generating facility under Chapter 343(a)(9), HRS, would be subject to the HEPA; however, under Section 343-2, HRS, the definition of power-generating facility does not include SEFs.

II. FINDINGS OF FACT

- A. Site Description and Surrounding Uses. The Petition Area consists of five general Project Areas scattered along the mauka (west) side of Kunia Road. Proceeding south to north, approximately 7,000 feet from the Kunia Road and H-1 Freeway interchange, the first area (SAA 5) is about 6,000 feet west or mauka of the nearest residential community, Royal Kunia. Further north along Kunia Road finds the bulk of the areas within the Petition Area situated adjacent to the roadway (SAA 3 and 4B) while SAA 4A and SAAs 1, 2a, 2b, and 2c located approximately 6,000 feet further west or mauka of Kunia Road. The last two sites of the Petition Area (split SAA 4C) lie north of SAA 4A and 4B approximately 1,500 feet west of Kunia Road. The 620 acres that comprise the

Petition Area are part of the vast 2,952 acres owned by the three owners involved in this Petition.

Historically, the Petition Area was part of a larger region of Ewa District dedicated to commercial sugarcane and pineapple agriculture. Today, the Petition Area hosts some actively farmed areas for food production (16 percent basil and other vegetables), the cultivation of crops, including seed corn (32 percent), while remaining 52 percent is fallow agricultural land, overgrown natural vegetation, and structures associated with farming and business operations. The use of these farmed areas on the Petition Area will be phased out to focus farming operations to more productive lands on each parcel. Less productive land will be shifted to solar uses and agrivoltaics. Leasing less productive lands for solar and agrivoltaics will enable the landowners to continue farming the more productive portions of their property.

The Petition Area is bounded by agricultural land to the north, south, and east and the Honouliuli Forest Reserve to the west. As previously described, lands surrounding the Petition Area are used for crop production and open space. Beyond the immediate surroundings of the Petition Area, Kunia Loa Ridge Farmlands, located directly adjacent to SAA 4A and 4B, is comprised of 99 leasehold co-ops intended for agriculture uses, including crop production and ranching, and includes structures related to agriculture activities, and apparent unauthorized dwellings. Hawaii Country Club Golf Course and Mililani Town lie to the north and northeast. Royal Kunia, the master-planned Royal Kunia Phase 2 project, and the Village Park master-planned residential communities and Waipahu town are to the east and southeast, while Monsanto-owned lands are in agricultural production to the south. The National Park Service, Honouliuli National Monument [Honouliuli Internment and Prisoner of War Camp Site – State Inventory of Historic Places (SIHP) Site 50-80-8-9068] is located southwest of SAA 5.

Of additional historic significance, two sites were identified: the Waiahole Ditch and the Oahu Sugar Company Irrigation System. The Waiahole Ditch (SIHP Site 50-80-09-2268) lies outside of the Petition Area but may be traversed during the installation of the overhead electrical transmission lines associated with the Project. The Oahu Sugar Company Irrigation System (collectively known as SIHP Site 50-80-12-7346) provided water to several cultivated fields within the Petition Area.

The State of Hawaii Agribusiness Development Corporation's (ADC) is proposing improvements to the Waiahole District Irrigation System in Kunia to improve the irrigation system's efficiency and enhance water supply security. Major components of the project include ditch diversion and intake piping, new lined earthen reservoir, new water well supply, interconnecting pipelines and appurtenances/control valves for the system, and new closed conduit at the existing hairpin bend in the ditch. An existing reservoir related to the system is adjacent to the south of SAA 3. ADC's improvements, including new irrigation lines and the new reservoir, are also located in proximity to the southern portion of SAA 3. Additionally, the proposed ditch connections and the hairpin bend repair is within proximity to SAA 1 and 5. However, all proposed construction for the Project will take place outside of the ADC's proposed improvement areas.

Honolulu Board of Water Supply (BWS) water service is not available to the Petition Area. The closest BWS water mains are the transmission mains located along Kunia Road. However, BWS does not allow service connections from these transmission

mains. Kunia Water Association (KWA) provides water service to the Petition Area and surrounding agricultural lands.

Access to the Petition Area is from Kunia Road, a State road, under the jurisdiction of the State of Hawaii, Department of Transportation (HDOT). The three established entrances to the interior roads of the Petition Area are located on the ewa (west) side of Kunia Road. The first entrance is at Plantation Road (Site Access #1), located approximately three miles north of the H-1 Freeway. Two existing roadways, Palawai Road and an unnamed road, form the other two entrances (Site Access #2 and #3). All access roadways are private roads with restricted use including gates at Site Access #1 and #2. Vehicles will circulate within and through the Petition Area via a series of existing dirt roads and proposed gravel driveways.

The Petition Area is situated on lands classified as Agriculture by the LUC (Exhibit 3). The Petition Area is entirely zoned as AG-1 Restricted Agricultural District (Exhibit 4).

- B. Climate and Wind Patterns. According to the University of Hawaii's, Geography Department's webpage, the Petition Area and immediate surroundings have an annual solar radiation of about 187-188 watts per square meter (W/m^2) (low is 129.89 W/m^2 and high is 296.45 W/m^2). There becomes a wider range of temperatures, rainfall, and wind speeds experienced by the different Project areas within the Petition Area. For instance, the lower elevation areas, closest to Kunia Road (Areas 3 and 4), experience an annual average air temperature of 22.4 degrees Celsius (C) or 72.3 degrees Fahrenheit (F) with an average high of 24.3 degrees C (75.8 degrees F) and an average low of 20.4 degrees C (68.7 degrees F). The highest hourly air temperature of 25.41 degrees C (77.74 degrees F) occurs in August at about 2:00 p.m. Average annual rainfall ranges between 775 and 860 millimeters (mm) or 30.5 to 34.1 inches with the highest monthly rainfall between 119 and 138 mm (4.69 to 5.43 inches) occurring in January. Wind direction is primarily from the northeast with an average annual wind speed of 2.5 meters per second or 5.6 miles per hour.

The areas at the highest elevation (Areas 1, 2, and 5) have annual average air temperatures of 22.1 degrees C or 71.8 degrees F with an average high of 24.1 degrees C (75.4 degrees F) and an average low of 20.1 degrees C (68.2 degrees F). The highest hourly air temperature of 25.16 degrees C (77.16 degrees F) occurs in August at about 2:00 p.m. Average annual rainfall ranges between 770 and 996 mm or 30.3 to 39.2 inches with the highest monthly rainfall between 122 and 160 mm (4.80 and 6.30 inches) occurring in January. Wind direction is primarily from the northeast with an average annual wind speed of 2.3 meters per second or 5.0 miles per hour.

C. Soil Type and Quality of Agricultural Land.

1. United States Department of Agriculture (USDA). According to the USDA Natural Resource Conservation Service, the following soil types are found in the Petition Area:

Helemano Series – The Helemano Series consists of well-drained soils on alluvial fans and colluvial slopes on the sides of gulches on Oahu. They developed in alluvium and colluvium derived from basic igneous rock. They are steep to extremely steep. Elevations range from 500 to 1,200 feet. Helemano

soils are geographically associated with Lahaina, Leilehua, Manana, Molokai, and Wahiawa soils. These soils are used for pasture, woodland, and wildlife habitat. The natural vegetation consists of bermudagrass, Christmas berry, eucalyptus, Formosa koa, guava, Japanese tea, Java plum, and koa haole. The site contains the following Helemano Series soils:

- Helemano silty clay, 30 to 90 percent slopes – On this soil, permeability and runoff are rapid, and the erosion hazard ranges from severe to very severe. This soil is used for pasture, woodland, and wildlife habitat.

Kawaihapai Series – This series consists of well-drained soils in drainage ways and on alluvial fans on the coastal plains on the islands of Oahu and Molokai. These soils formed in alluvium derived from basic igneous rock in humid uplands. They are nearly level to moderately sloping. Elevations range from nearly sea level to 300 feet. The annual rainfall amounts to 30 to 50 inches. Kawaihapai soils are geographically associated with Haleiwa, Waialua, and Jaucus soils. These soils are used for sugarcane, truck crops, and pasture. The natural vegetation consists of kiawe, koa haole, lantana, and bermudagrass. The site contains the following Kawaihapai Series soils:

- Kawaihapai clay loam, 0 to 2 percent slopes (KIA) – This soil is characterized by moderate permeability, slow runoff, and an erosion hazard that is no more than slight. In some places, this soil is subject to flooding. This soil is used for sugarcane, truck crops, pasture, and orchards.
- Kawaihapai clay loam, 2 to 6 percent slopes (KIB) – On this soil, runoff is slow and erosion hazard is slight. This soil is used for sugarcane, truck crops, and pasture.
- Kawaihapai stony clay loam, 2 to 6 percent slopes (KlaB) – This soil is similar to KIA except that there are enough stones to hinder, but not prevent, cultivation. Runoff is slow and the erosion hazard is slight. This soil is used for sugarcane, truck crops, and pasture.

Kolekole Series – This series consists of well-drained soils on uplands on the island of Oahu. These soils developed in old gravelly alluvium mixed with volcanic ash. They are gently sloping to moderately steep. Elevations range from 500 to 1,200 feet. The annual rainfall amounts to 35 to 50 inches, most of which occurs between November and April. Kolekole soils occur on the windward slopes of the Waianae Range. They are geographically associated with Kunia, Mahana, and Wahiawa soils. These soils are used for sugarcane, pineapple, and pasture. The natural vegetation consists of guava, lantana, bermudagrass, and Natal redtop. The site contains the following Kolekole Series soils:

- Kolekole silty clay loam, 1 to 6 percent slopes (KuB) – This soil occurs on smooth slopes. Permeability is moderately rapid to the pan like layer and moderate in the compact subsoil. Runoff is slow, and the erosion hazard

is slight. The available water capacity is about 1.3 inches per foot of soil. This soil is used for sugarcane, pineapple, and pasture.

- Kolekole silty clay loam, 6 to 12 percent slopes (KuC) – On this soil, runoff is medium and the erosion hazard is moderate. Workability is slightly difficult because of the slope. This soil is used for sugarcane, pineapple, and pasture.
- Kolekole silty clay loam, 12 to 25 percent slopes (KuD) – This soil occurs on narrow side slopes, mainly along drainage ways. Runoff is medium to rapid, and the erosion hazard is moderate to severe. Workability is difficult because of the slope. This soil is used for pasture and pineapple.

Kunia Series – This series consists of well-drained soils on upload terraces and fans on the island of Oahu. Kunia soils occur on the foot slopes of the Waianae Mountain Range, near Schofield Barracks. These soils are used for sugarcane, pineapple, homesites, and military reservations. Most areas are cultivated, and the natural vegetation is not significant. The site contains the following Kunia Series soils:

- Kunia silty clay, 0 to 3 percent slopes (KyA) – This soil occurs on broad, smooth slopes. The soil is characterized by moderate permeability, slow runoff, and an erosion hazard that is no more than slight. This soil is used for sugarcane, pineapple, and homesites.
- Kunia silty clay, 3 to 8 percent slopes (KyB) – On this soil, runoff is slow and the erosion hazard is slight. This soil is used for sugarcane, pineapple, and homesites.
- Kunia silty clay, 8 to 15 percent slopes (KyC) – This soil occurs on narrow side slopes, mainly along drainage ways. Runoff is medium, and the erosion hazard is moderate. This soil is used for sugarcane, pineapple, and homesites.

Lahaina Series – The Lahaina Series of soils consists of well-drained soils on uplands of Oahu. These soils developed in material weathered from basic igneous rock. They are nearly level to steep. Elevations range from 10 to 1,500 feet. Lahaina soils are geographically associated with Helemano, Hoolehua, Kahana, Molokai, Pamoia, and Wahiawa soils. These soils are used for sugarcane and pineapple. Small acreages are used for truck crops, pasture, homesites, and wildlife habitat. The natural vegetation consists of bermudagrass, feather fingergrass, ilima, kiawe, lantana, and uhaloa. The site contains the following Lahaina Series soils:

- Lahaina silty clay, 7 to 15 percent slopes, severely erode (LaC3) – On this soil, runoff is medium, and the erosion hazard is moderate. This soil is mainly used for sugarcane and pineapple. Small acreages are used for truck crops, pasture, and wildlife habitat.

Mahana Series – This series consists of well-drained soils on uplands on the islands of Kauai and Oahu. The soils developed in volcanic ash. These soils are used for pasture, woodland, wildlife habitat, irrigated sugarcane, and water supply. The natural vegetation consists of puakeawe, aalii, ricegrass, molasses grass, silver oak, yellow foxtail, lantana, joe, Japanese tea, passion flower, and associated plants. The site contains the following Mahana Series soils:

- Mahana silty clay loam, 12 to 20 percent slopes, eroded (McD2) – This soil is characterized by rapid runoff and the erosion hazard is severe. Most of the surface layer has been removed by erosion. This soil is used for sugarcane, pineapple, and pasture.
- Mahana silty clay loam, 20 to 35 percent slopes, eroded (McE2) – This soil is characterized by rapid runoff and the erosion hazard is severe. Most of the surface layer has been removed by erosion. This soil is used for pasture, pineapple, and irrigated sugarcane.

Wahiawa Series – The Wahiawa Series of soils consists of well-drained soils in the uplands of Oahu. These soils develop in residuum and alluvium derived from basic igneous rock. Elevations range from 500 to 1,200 feet. Wahiawa soils are geographically associated with Kunia, Lahaina, Leilehua, and Manana soils. The natural vegetation consists of bermudagrass, guava, honohono, koa haole, and lantana. The site contains the following Wahiawa Series soils:

- Wahiawa silty clay, 0 to 3 percent slopes (WaA) – This soil is found on the smooth, broad interfluves. The surface layer of the soil is dusky red and dusky red silty clay measuring approximately 12 inches thick and is medium acidic. The subsoil is a dark reddish-brown color measuring approximately 48 inches thick and is medium acidic to neutral. The underlying material is weathered igneous rock. On this soil, runoff is slow, and erosion hazard is no more than slight. This soil is used for sugarcane, pineapple, pasture, and homesites.

2. Agricultural Lands of Importance to the State of Hawaii (ALISH). The ALISH Map, prepared by the State of Hawaii, Department of Agriculture classifies lands into three categories:

- a) Prime Agricultural Land: Lands that are best suited for the production of food, feed, forage, and fiber crops. The land has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops.
- b) Unique Agricultural Land: Lands that are typically used for the production of specific high-value food crops, for example coffee, taro, rice, watercress, and non-irrigated pineapple. This land has a special combination of soil quality, growing season, temperature, humidity, sunlight, air drainage, elevation, aspect, moisture supply, or other conditions, such as nearness to market, that favor the production of a specific crop of high quality and/or high yield when the land is treated and managed according to modern farming methods.

- c) Other Important Agricultural Land (Other IAL): Land other than Prime or Unique Agricultural Land that is also of statewide or local importance for the production of food, feed, fiber and forage crops. The lands in this classification are important to agriculture in Hawaii yet they exhibit properties such as seasonal wetness, erodibility, limited rooting zone, slope, flooding, or droughtiness, that exclude them from the other two classifications.

The classification of ALISH does not in itself constitute a designation of any area to a specific land use. Rather, the classification is intended to provide decision makers with an awareness of the long-term implications of various land use options for production of food, feed, forage, and fiber crops in the State.

The Petition Area is comprised of all three types of ALISH lands (Prime, Unique, and Other IAL), and unclassified lands where gulches exist.

3. LSB Classification. The LSB rating system is based on the agricultural productivity of soils throughout the State, accounting for characteristics such as texture, slope, salinity, erodibility, and rainfall. The overall master productivity ratings are used to designate each area as Class A, B, C, D, or E, with Class A representing the most productive soils and Class E representing the least productive soils.

According to the LSB overall master productivity rating system, approximately 399.8 acres of the Petition Area are comprised of Class B soils, approximately 115.6 acres comprise Class C soils, approximately 36.8 acres are comprised of Class D soils, roughly 62 acres are comprised of Class E soils, and the remainder, or a little less than 6 acres, are Unclassified soils (Exhibit 5).

Pursuant to Section 205-2(4)(d)(6)(B), HRS, the proposed SEF will occupy more than ten percent of the acreage of the parcel or twenty acres of lands, (whichever is less), classified by the LSB as Class B and C and will require approval of a SUP. A SUP is not required for the development on lands classified as LSB D and E. As noted in Section 205-4.5(21), HRS, the SEF will be a permitted use on lands classified by the LSB as Class B and C with the approval of a SUP, provided that:

- A. The area occupied by the SEFs are also made available for compatible agricultural activities at a lease rate that is at least 50 percent below the fair market rent for comparable properties;
- B. Proof of financial security to decommission the facility is provided to the satisfaction of the appropriate county Planning Commission (PC) prior to the date of commencement of commercial generation; and
- C. SEFs shall be decommissioned at the owner's expense according to the following requirements:
 - (i) Removal of all equipment related to the SEF within 12 months of the conclusion of operation or useful life; and

- (ii) Restoration of the disturbed earth to substantially the same physical condition as existed prior to the development of the solar energy facility.
- 4. IAL. Chapter 205, Part III (IAL Law), HRS, states that there is a compelling State interest in conserving the State's agricultural land resource base and assuring the long-term availability of agricultural lands for agricultural use to achieve the purposes of conserving and protecting agricultural lands; promoting diversified agriculture; increasing agricultural self-sufficiency; and, assuring the availability of agriculturally suitable lands. Section 205-47, HRS, mandates that each county identify and map potential IAL within its jurisdiction based on the standards and criteria in Section 205-44, HRS. The City and County of Honolulu (City) completed its mapping of IAL and submitted its recommended IAL maps to the City Council. On August 28, 2019, the City Council submitted its recommended IAL maps identified in Resolution No. 18-233, CD1, FD1, to the LUC. The LUC administers the IAL program and is responsible for final approval and adoption of the IAL maps (Section 205-49, HRS).

Currently, approximately 69.5 acres are designated as IAL, however, this acreage has been voluntarily declared by petition by private landowners. The City has also recommended areas for IAL designation through its IAL Mapping Project. While not formally adopted by the LUC, the 305.6 acres of Area 4 (TMK 9-2-004: 010) within the Petition Area, has been recommended by the City as IAL (Exhibit 6). The IAL Mapping Project included additional areas recommended for IAL designation surrounding the Petition Area except for most of Areas 1, 2, and 3. Per Section 205-49(a)(3), HRS, these areas were excluded as IAL since they were the remaining landholdings for landowners who already had designated a majority of their land as IAL.

Farmers or landowners with lands qualifying under Section 205-44, HRS, may file petitions for a declaratory order to designate their lands as IAL. Two landowners involved in this Petition, Hartung Brothers Hawaii, LLC, and Monsanto Technology, LLC, did make voluntary IAL designations of their lands under this statute.

The first voluntary declaration was petitioned by Monsanto. Their voluntary IAL declaration of 1,550 acres of their land was approved under LUC Docket No. DR17-59, November 15, 2017, and are identified by TMKs 9-2-001: 001 portion, 9-2-001: 005, and 9-2-004: 009. Notably, TMK 9-2-001: 001 in the LUC Decision and Order refers to the land now identified as TMK 9-2-001: 020. The 40.2 acres of Area 5 were part of this voluntary IAL declaration. Currently, this portion of the IAL in the Petition Area is not being used for agricultural activity.

The second voluntary declaration involving the Petition Area was by Hartung Brothers, Hawaii LLC. Their petition for voluntary IAL declaration was approved by the LUC on June 1, 2018 under LUC Docket No. DR18-61 for 462.967 acres [TMKs 9-2-004: 006 portion, 9-2-004: 011 (outside of this SUP Petition Area), and 9-2-004: 012 portion]. Approximately 29.3 acres of the voluntary IAL declaration is located within Area 1 of the Petition Area (TMK 9-2-004: 006).

Currently, this portion of identified IAL in the Petition Area is not being used for agricultural activity.

Out of the 620-acre Petition Area, approximately 375 acres of the Project is, or will be if the LUC agrees with the City's IAL recommendations for IAL designation of this land, located within lands designated as IAL. These IAL are critical for the Project to generate the amount of clean solar energy needed for the State to reach its clean energy and greenhouse gas mandates. Furthermore, the current and proposed IAL portions of the Petition Area are not currently used for agriculture as such. However, the Petitioner anticipates that development of the Project will improve the Petition Area's agricultural infrastructure and thus support increases in the agricultural production on these IAL.

D. Existing and Proposed SEFs in the State Land Use (SLU) Agricultural District.

The State of Hawaii Energy Office's (HSEO) website indicates that, excluding federal government lands, there are several large SEFs currently in operation today in the SLU Agricultural District as follows:

**Table 2 - Existing SEFs in the SLU
Agricultural District - 5 MW and Larger**

Project Name/SUP	Operational As Of	Capacity MW/MWH Storage	Location	Approx. Acreage	LSB Rating*
Waihonu North & South (SUP Not Required)	Jul 2016	6.5/0	Mililani, Central Oahu	147	B
EE Waianae Solar, LLC (SUP Not Required)	Jan 2017	27.6/0	Mikilua, Waianae	198	E
Aloha Solar Energy Fund I (SUP Not Required)	Mar 2017	5/0	Maile, Waianae	29	E
Mililani Solar II (SUP Not Required)	Sep 2019	14.7/0	Mililani, Central Oahu	117	D
Waipio Solar (2014/SUP-3)	Sep 2019	45.9/0	Waiawa, Central Oahu	313	B
Kawailoa Solar (2014/SUP-6)	Nov 2019	49/0	Kawailoa, North Shore	300	B
Totals		148.7/0		1,104	

* LSB Overall Master Productivity Rating Class

The HSEO's website and information received by the Department of Planning and Permitting (DPP) also indicates that there are four SEF projects over five MW with energy storage facilities under development involving lands in the SLU Agricultural District as follows:

Table 3 - Proposed SEFs in the SLU
Agricultural District - 5 MW and Larger

Project Name	Projected Operational Date	Capacity MW/MWH Storage	Location	Approx. Acreage	LSB Rating
Kupehau Solar	Mid-2022	60/240	Upper Honouliuli, Ewa and Central Oahu	200	C, D, and E
Mililani 1 Solar	2022	39/156	Mililani, Central Oahu	N/A	D and E
AES West Oahu Solar	Dec 2022	12.5/50	Makakilo, Upper Honouliuli, Ewa	96	B, D, and E
AES Mountain View Solar	2023	7/35	Mikilua, Waianae	142	E
Totals		118.5/481		438+	

E. Agency Comments. The following government agencies provided significant substantive comments on the SUP Petition which are found in Attachment A. A summary of their comments are as follows:

Table 4 - Summary of Agency Comments

Source	Comments Summary
State of Hawaii, Department of Land and Natural Resources (DLNR) - Division of Fish and Wildlife (DOFAW)	<p>The DOFAW's comments support the findings of the Biological Resources Report in the Petition (Appendix D). Their comments are summarized as follows:</p> <p>State-listed endangered and threatened wildlife species that are known to occur, may occur, or may transit the Petition Area and possibly be impacted by the development include the Oahu Elepaio, Hawaiian Short-eared Owl or Pueo, Hawaiian Gallinule, Hawaiian Stilt, Hawaiian Coot, Hawaiian Hoary Bat (federally listed as endangered), Hawaiian Petrel, Newell's Shearwater (federally listed as threatened), and the Band-rumped Storm Petrel. The DOFAW offered species-specific avoidance and minimization measures:</p> <p>The DOFAW recommends follow-up ground surveys with a qualified biologist using 'playback' to determine if Elepaio are present in the vicinity of the Petition Area.</p> <p>Prior to the clearing of vegetation for construction, twilight surveys for the presence of the Pueo should be conducted by a qualified biologist. If Pueo nests are present, a buffer zone of 150 feet should be established in which no clearing occurs until the nesting ceases. DOFAW staff should be notified.</p> <p>Hawaiian hoary bat: Trees over 15 feet high should not be disturbed during bat birthing and pup rearing season (June 1 through September 15) and land clearing should be timed accordingly. Barbed wire should be avoided for fencing.</p> <p>If Hawaiian water birds such as the Stilt, Coot, and Gallinule are present during construction activities, then all activities within 100 feet should cease, and the bird should not be approached. Work may</p>

Source	Comments Summary
<p>DLNR-DOFAW Continued</p> <p>DLNR - Engineering Division</p> <p>DLNR - Commission on Water Resource Management (CWRM)</p>	<p>continue after the bird leaves the area. If a nest is found, the DOFAW is to be contacted.</p> <p>Hawaiian seabirds: Fully shield outdoor lights, use timers/motion sensors to control outdoor lighting, and avoid nighttime construction during seabird fledging period, September 15 to December 15.</p> <p>Endangered plant species (<i>Abutilon menziesii</i> and <i>Gardenia brighamii</i>) have the potential to occur and, if found, the DOFAW should be notified for guidance. Minimizing the movement of plant or soil between worksites should be avoided and all equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species.</p> <p>The Engineering Division of the DLNR took the opportunity to remind those involved in the Project that the rules and regulations of the National Flood Insurance Program, Title 44 of the Code of Federal Regulations are in effect when development falls within a Special Flood Hazard Area. No Special Flood Hazard Area are identified in the Petition Area.</p> <p>Comments from the CWRM were stipulated that a permit is needed from the CWRM if any alterations are made to stream channels. As there are no stream channel alterations proposed with this Project, no further action is required.</p>
<p>State of Hawaii, Office of Planning (OP)</p>	<p>The OP concurs that the proposed Project meets the criteria for an unusual and reasonable use within the SLU Agricultural District and recommends approval of the SUP with appropriate conditions to mitigate any adverse impacts. However, OP notes that the DLNR should be consulted for additional mitigation measures for State-recognized endangered, threatened, and candidate species, the recommendations of the Cultural Assessment be adhered to, and the State Historic Preservation Division (SHPD) should approve the archaeological inventory survey (AIS) report prior to a decision by the PC.</p>
<p>State of Hawaii, Department of Agriculture (HDOA)</p>	<p>The HDOA reviewed the SUP application and offered the following comments and recommendations:</p> <p>The HDOA reiterated the importance of this area for current and future agricultural use given the high quality soil. Moreover, the availability of sufficient irrigation water they noted, was fundamental to ensuring maximum agricultural productivity and recommended that the data and information on maximum water demand, sources, storage, pumping, delivery, and year-round availability to all five Project Areas be developed prior Phase Two of the Agrivoltaics Program of the Project's agricultural plan. The HDOA suggested the Petitioner explore extracting water from the Waiahole Ditch with permission by the CWRM, which is less expensive than the KWA, which may make the Agricultural Plan more economically feasible. They added that the combination of crops and livestock require the two to be adequately separated and recommended that the extent and type of fencing and gating be in place prior to the full operation of the SEF. Overall, the HDOA supports the proof-of-concept of the proposed Agrivoltaics Program and with the HARC's involvement, expects the results to be intensive agricultural activity in the Petition Area.</p>

Source	Comments Summary
<p data-bbox="289 222 516 285">HDOT - Airports Division (HDOT-A)</p> <p data-bbox="289 800 521 863">Highways Division - (HDOT-HWY)</p>	<p data-bbox="560 222 1399 768">No objections to the SUP Petition. No significant adverse impacts on State highways or to the airspace surrounding the island's airports are anticipated and no improvements are proposed or warranted. HDOT-A comments – The Petition Area is outside the transitional airspace of the Daniel K. Inouye International Airport. PV systems that are located in or near the protected approach and departure airspace can create a hazardous condition for pilots because of possible glint and glare reflected from the PV array. If glint or glare from the PV array creates a hazardous condition for pilots, the owner of the PV system shall be prepared to immediately mitigate the hazard upon notification by the HDOT-A and/or Federal Aviation Administration (FAA). In addition, PV systems have been known to emit radio frequency interference (RFI) to aviation dedicated radio signals, thereby disrupting the reliability of air-to-ground communications. HDOT-A advises that thick smoke plumes from uncontrolled fires in the protected airspace are hazardous to aircraft operations and that the battery storage facility have adequate fire suppression system and unobstructed access for emergency and fire fighting vehicles.</p> <p data-bbox="560 800 1399 1528">HDOT-HWY comments are as follows: Potential for construction-related traffic impacts will be addressed in the traffic management plan that will be reviewed by the HDOT and the City Department of Transportation Services (DTS). Verify with owner about an easement for future Kunia Road improvements. Agricultural crossing points and cane haul roads may not be considered legal access to HDOT highways. Although the construction traffic assessment (CTA) did not identify operations-phase traffic impacts to Kunia Road, the Petitioner should verify with HDOT-HWY, Oahu District, that these driveways meet current standards for the proposed use. The HDOT-HWY stresses close coordination with HDOT-HWY to ensure safety prior to construction and upon full operations of the Project by submitting the construction traffic management plan to HDOT-HWY Oahu District for review and acceptance. Access improvements may be required to accommodate heavy and oversized vehicles. Operational analysis should describe the anticipated trips generated by the farming activities within the project lease area as well as landowner land use plans for the parcel areas outside of the lease areas, with respect to each of the three access intersections with Kunia Road. The SUP Petition suggests more land area within the project lease area would be in production relative to existing conditions and the number of farming operations within the Petition Area will increase. Identify recommendations, as warranted, for safety improvements to address the additional operational traffic.</p>
<p data-bbox="289 1535 358 1564">HSEO</p>	<p data-bbox="560 1535 1399 1900">HSEO's comments are guided by its statutory purpose under HRS Section 196-71 and its mission to promote energy efficiency, renewable energy, and clean transportation to help achieve a resilient, clean energy, and ultimately a carbon negative economy. The Project is the largest solar plus storage project proposed in the State and would provide 15-16 percent of Oahu's electricity generation. The HSEO recognizes the Project would be capable of generating 271,525 MWh annually or four percent of Oahu's needs. Over its 25-year lifetime, the Project would avoid the consumption of 18 million gallons of oil per year, saving Oahu consumers \$175 million, and reduce carbon dioxide emissions by 192,425 metric tons annually. The HSEO asks that the LUC make a timely decision to enable the parties,</p>

Source	Comments Summary
HSEO Continued	including the Petitioner, the HECO, the DPP, and the Hawaii PUC to in turn take timely action based on the outcome of the LUC's decision.
Honolulu Fire Department (HFD)	Provide HFD access road within 150 feet of any building and a water supply system capable of supplying the required fire flow protection to all premises upon which facilities or buildings are constructed; on-site hydrants and mains capable of supplying the required fire flow shall be provided where facilities are located beyond 150 feet of a water supply.
DTS	DTS did not have objections to the proposed Project. DTS provided the following comments: Construction materials and equipment should be moved for the Project during off-peak hours (8:30 a.m. to 3:30 p.m.) to minimize any possible disruption to local traffic. Community representatives, residents, businesses, and emergency service should be informed on a continuous basis of the Project's impacts on local street area network.
Honolulu Emergency Services Department (HESD)	Provide site-safety plans to evaluate potential interference of radio/communications and a walk-through near or upon completion of construction for response pre-planning.
Honolulu Police Department (HPD)	The HPD recommends all necessary signs, lights, barricades, and other safety equipment be installed and maintained by the contractor during the construction phase of the Project. Traffic flow should not be adversely impacted from the ingress/egress of construction vehicles, equipment, and deliveries to the Project. The HPD recommends that the contractor address potential security issues with regards to the equipment and machinery to be used during construction as well as for the solar panels and battery storage kept on site after construction.
Historic Hawaii Foundation (HHF)	The HHF did not have significant concerns with the PV development in Areas 1-4 (except for the portion designated as IAL) subject to review and conditions as determined in consultation with the SHPD of the DLNR. However, the HHF was very concerned about the proposed 'industrial development' in Area 5, which has the majority of identified historic sites described in the AIS. The HHF proposed that Area 5 be eliminated from the Project. The Petition outlines proposed mitigation commitments to avoid or preserve and protect historic, cultural, or archeological sites and discoveries. It is believed that SHPD approval of the AIS and any recommended mitigation measures on historic resources in and around the Petition Area should be sufficient to address these concerns. It is noted that Area 5 overlooks the Honouliuli National Monument. The difference in elevation should prevent views of the Project from the National Monument site. Nevertheless, a recommendation to upgrade the landscape plan for the Project is necessary to add a landscape treatment or require the PV arrays to be setback further as warranted.

The following government agencies were contacted and neither objected nor provided comments on the SUP Petition as of the date of this Report:

City: BWS
Department of Budget and Fiscal Services
Department of Customer Services
Department of Design and Construction*
Department of Environmental Services*
Department of Facility Maintenance*
Department of Parks and Recreation*
Office of Climate Change, Sustainability, and Resiliency
Office of Council Services

State: ADC*
Department of Health (DOH)
DLNR – SHPD
LUC*
Hawaii Emergency Management Agency
Hawaiian Home Lands Commission
Office of Hawaiian Affairs
PUC

Federal: U.S. Department of the Army, Army Corps of Engineers*
U.S. Department of the Interior – Fish and Wildlife Service
U.S. Department of the Interior – Water Resources Division
U.S. Department of the Navy – Naval Facilities Engineering Command

* - Comment letter or e-mail received.

- F. Community Concerns. On March 24, 2021, the Petitioner presented the Project to the Mililani/Waipio/Melemanu Neighborhood Board (NB) No. 25. NB No. 25 members asked about actual farming occurring concurrently with the Project, radiant heat that might be emitted, and the future of HECO. Representatives of the Petitioner explained that lands beneath the PV panels will be available for compatible agricultural uses and no radiant heat would be noticeable. No action was taken by NB No. 25. On April 22, 2021, the Petitioner introduced the Project to the Waipahu NB No. 22. No action was taken by NB No. 22 since the Project is not within the NB No. 22 boundaries but the Petitioner offered to come back for a full presentation if the NB was interested. A presentation to the Makakilo/Kapolei/Honokai Hale NB No. 34 is scheduled for May 26, 2021. If there should be any outcome from the NB No. 34 meeting, they will be provided to the PC.

The DPP requested in writing comments on the SUP Petition from all three NBs. No comments on the SUP Petition have been received from NB No. 22, NB No. 25, or NB No. 34, as of the date of this Report. Comments from community organizations and individuals are provided in Attachments B and C, respectively.

As of the date of this Report, the DPP received testimony from one community organization expressing some concerns about the Project. The DPP received one letter from an elected official opposing the Project. There were no letters or emails from community members expressing support for the Project.

III. ANALYSIS

A. Laws and Public Policies

1. Chapter 205, HRS, SLU Law. The Petition Area is within the SLU Agricultural District. The Project's consistency with the policies of Chapter 205, HRS, is discussed below.

Section 205-6, HRS, allows the "county planning commission to permit certain unusual and reasonable uses within the agricultural and rural districts other than those for which the district is classified. The county planning commission may, under such protective restrictions as may be deemed necessary, permit the desired use, but only when the use would promote the effectiveness and objectives of this chapter."

In determining whether a proposed use is deemed "unusual and reasonable," Section 2-45 of the PC Rules established five guidelines (five tests) to be applied. These guidelines are also found in Title 15-15, of the Hawaii Administrative Rules (HAR) for the LUC.

The Director finds that the proposal to allow the Project meets the requirements of Chapter 205. The five guidelines of Section 2-45 of the PC Rules are as follows:

Guideline 1: Such use shall not be contrary to the objectives sought to be accomplished by the SLU Law and Regulations.

Pursuant to Section 205-4.5(a)(21), HRS, SEFs on lands with soil classified by the LSB's detailed land classification as overall (master) productivity rating B or C for which a SUP is granted pursuant to Section 205-6 are permitted provided that the Project is made subject to three conditions:

- A. The area occupied by the SEFs are also made available for compatible agricultural activities at a lease rate that is at least 50 percent below the fair market rent for comparable properties;
- B. Proof of financial security to decommission the facility is provided to the satisfaction of the appropriate county PC prior to the date of commencement of commercial generation; and
- C. SEFs shall be decommissioned at the owner's expense according to the following requirements:
 - (i) Removal of all equipment related to the SEF within 12 months of the conclusion of operation or useful life; and
 - (ii) Restoration of the disturbed earth to substantially the same physical condition as existed prior to the development of the solar energy facility.

The Project is located on lands rated LSB B, C, D, and E. No portion of the Petition Area is rated LSB A. The Project will not be contrary to the objectives established by the SLU Law and Regulations. With respect to Subsection A.1.a. of this section, the Petitioner submitted, as part of its Petition materials, information relating to the provision of land area occupied by PV panels for compatible agricultural use at a lease rent of 50 percent below market value, and a plan for decommissioning.

As required by Section 205-4.5(a)(21), HRS, the area occupied by the Project will be made available for agricultural activity. Through an established Agrivoltaic Program (the pairing of solar with agriculture), plots of agricultural land located directly between and under the PV arrays will be cultivated to test and study compatible market crops. These include lettuce and basil and the establishment of nitrogen-fixing legumes such as alfalfa and perennial peanut, and high quality, low growing grasses such as bahiagrass, oats, and barley. Livestock grazing and beekeeping are also proposed. The HDOA supports the proof-of-concept of the proposed Agrivoltaics Program and with the HARC's involvement, expects the results to be intensive agricultural activity in the Petition Area.

The Petitioner states they will coordinate with local agricultural organizations and agencies to discuss the Agrivoltaic Program and make available most of its 620 acres to local farmers, excluding the 10 acres of high-voltage equipment to be located for the substation, switchyard, and BESS. The Petitioner will also provide land plots and water to farmers at a nominal cost, which will be at a rate below 50 percent of the fair market rent for compatible properties, to support the cultivation and testing of agricultural activities at commercial scale.

With respect to subsections A.1.b. and A.1.c of this section, upon termination of the Project's operational life of approximately 35 years, the solar facility will be decommissioned by the Petitioner. Decommissioning of the Project is anticipated to take 12 months. The decommissioning activities will include the complete removal of the foundational piles and modules and all associated components to a depth of 24 inches below grade, which include any concrete foundations. PV panels and other components, such as inverters and substation components, are expected to retain value and may be resold. Those that cannot be resold will be scrapped and recycled. The site will be restored to the original topography and re-vegetated, except where the landowner requests that access roads remain. Site fencing and electrical power will temporarily remain in place during decommissioning. Once the materials have been removed and the terrain re-vegetated, then the site will be fully de-energized, and the security fence will be removed. The 2020 estimated cost of decommissioning is \$3 million, however, a more conservative estimate to cover the potential use of the entire 620-acre Petition Area is closer to roughly \$4.2 million.

The Petitioner states they will post security in the form of a bond, letter of credit, or similar financial instrument in favor of each landowner to ensure complete decommissioning of the Project at the end of commercial operations.

A condition of SUP approval is being recommended to allow at least 12 months for decommissioning and that proof of financial security be established for the entire duration of the Project, in favor of each landowner to fund decommissioning requirements per the SLU.

In addition, the Project, with the proposed agricultural plan, promotes the long-term viability of agricultural use with IAL designation, as stipulated in policies set forth Section 205-43, HRS. The Petitioner proposes to:

- (1) Promote the Petition Area in blocks of contiguous, intact, and functional land units large enough to allow flexibility in agricultural production and management;
- (2) Discourage fragmenting IAL in the Petition Area as only PV panels and agricultural uses beneath the panels are planned. IAL in the Petition Area are not currently being used for agricultural production. The Project will actually bring IAL into agricultural production through the implementation of the agricultural plan;
- (3) Direct agricultural uses for all IAL within the Petition Area except the substation, switch yard, and BESS areas located in Area 3;
- (4) Limit physical improvements on IAL to those only necessary to support proposed agricultural uses and activities. No grading for agricultural purposes is proposed. Best practices will include no-till practices that will increase carbon sequestration on the site. Soil conservation will also be improved in the Petition Area by no longer clearing the areas of vegetation. Livestock grazing will keep the vegetation short in areas where they are pastured. Livestock will be rotated between pastures as needed to allow grazed areas to recover and the animals to forage upon new growth. Maintenance crews will trim overgrown vegetation to ensure the PV panels are not shaded.
- (5) Commit to providing a basic level of infrastructure and services on IAL to support agricultural activity that will include water, soft-hose irrigations system, fencing, and roadways to maintain the affordability of these lands for farmers, therefore, supporting diverse agricultural activities, creating incentives for farmers, and creating opportunities to expand agricultural income and job opportunities;
- (6) Facilitate the long-term dedication of IAL for future agricultural use by licensing or subleasing plots of land underneath and between the solar panels to local farmers and ranchers, and support them with land, water, and start-up funds for the life of the Project to grow viable agricultural products. Full-scale farming at the site will support the sustained growth of the local agriculture industry and increase food production through long-term viable agricultural uses.
- (7) Facilitate the access of farmers to IAL for long-term viable agricultural use; and by licensing or subleasing plots of land underneath and between the PV panels to local farmers and ranchers, and will also support them

with land, water, and start-up funds to grow viable products. Farmers and ranchers will also be supported by data collected and shared through the Agrivoltaics Program. According to the Petition, examples of various agrivoltaics projects across the country and internationally have shown the successful integration of energy and agriculture production. This Agrivoltaics Program is designed to be flexible to include multiple farmers that can test different products and practices, and to continue to iterate and learn about what can be grown successfully. This will establish best practices for compatible solar and agricultural activities throughout the State; and

- (8) Promote the maintenance of essential agricultural infrastructure systems, including irrigation systems for agricultural activity. Water/irrigation will also be provided to farmers and ranchers to support agricultural uses.

DPP Analysis. Regarding Guideline 1 above, the DPP determined that the proposed Project is not contrary to the objectives sought to be accomplished by the SLU Law and regulations. The DPP's determination is based on the following:

- The proposed Project may be considered an unusual but reasonable use of agricultural lands. Under current technology, utility-scale PV facilities that utilize PV panels to collect and distribute generated energy, require large amounts of relatively gentle terrain, in close proximity to an existing electrical grid. SEFs and crop production share similar siting demands such as flat or gentle slopes and large parcels. Flat agricultural land with large parcel size are more suited to agriculture production. These lands are also highly desirable for SEFs which minimizes construction and maintenance costs, especially near and around existing electrical transmission lines. The Petitioner, by making land and water available to farmers and agriculture producers, are incentivizing agricultural use in combination with the energy generation in the Petition Area with this Project. Tables 2 and 3 indicate the largest existing and proposed SEFs will locate closer to or on higher quality agricultural lands where larger parcels of flat land are found.
- The Petition Area was formally used for sugar cane and pineapple cultivation and is currently in mixed agriculture and pasture use. The Petitioner proposes to make available most of its 620 acres to local farmers, excluding the 10 acres of land set aside for the high voltage equipment for the substation, switchyard, and BESS. The goals of the proposed Agrivoltaic Program are to: (i) research what types of solar-compatible farming could work in Hawaii; ii) support local farmers with land, water, and start-up funds to grow viable products; and (iii) share results with others in the local solar and agricultural industries to find new solutions for solar and agriculture to be productive on the same land. By partnering with the HARC, a 100+ year old agricultural research non-profit organization established to support agriculture in Hawaii, there appears to be a genuine interest in seeing this initiative succeed by allowing farmers and solar developers to find new and more productive ways to use Hawaii's agricultural land for both farming and renewable energy. The

HDOA supports the proof-of-concept of the proposed Agrivoltaics Program and with the HARC’s involvement, expects the results to be intensive agricultural activity in the Petition Area.

- The proposed Project’s agricultural plan will actually put more land into active food and agricultural production than currently exists in the Petition Area. Of the 620 acres in the Petition Area, current uses include approximately 197 acres in seed crops only and only about 99 acres in actual food production. Under the proposed agricultural plan and Agrivoltaic Program, 610 acres of the Petition Area (this excludes the 10-acre high-voltage substation, switchyard, and BESS area) would be made available for active agriculture while approximately 469 of those acres are proposed for local food production (see Table 5 below). Many types of crops have the potential to be grown under PV panels. Generally agrivoltaics work best for plants that are shade tolerant. These could include vegetables, fruits, pollinator species, pasture/hay, and others. The Petitioner has consulted with HARC on potential crops that may be successfully integrated into the Petition Area. In summary, the Project will be investing in local agriculture and increasing the number of acres actively farmed.

Table 5 - Current versus Planned Agricultural Activity

Project Area	Acreeage	IAL	Existing Agricultural Activity	Planned Agricultural Activity
1	63.3	Partial	Unused	Livestock Grazing
2A	33.2	No	Unused	Livestock Grazing
2B	5.7	No	Seed Corn	Pollinator plants/Honey
2C	4.9	Partial	Seed Corn	Pollinator plants/Honey
3	65.5	Partial	Seed Corn, Unused (10 percent)	Hydroponic Lettuce
4A	121.1	City Proposed	Seed Corn	Alfalfa, Other forage, grass, legumes
4B	108.0	City Proposed	Basil, Other Vegetables, Unused (50 percent)	Basil, Sweet Potato, Other Vegetables
4C	27.3	City Proposed	Other Vegetables	Basil, Sweet Potato, Other Vegetables
4C	15.2	City Proposed	Other Vegetables	Basil, Sweet Potato, Other Vegetables
5	25	Yes	Unused	Pollinator plants/Honey
TOTAL	469.2		295	469.2

- Several commercial farmers and ranchers are already interested in participating in the Agrivoltaic Program, including HARC, Hartung Brothers (alfalfa forage), and Oahu Grazers (livestock grazing). HARC has also documented interest from Kunia Country Farms (hydroponic lettuce), Alluvion (nursery products), Fat Law Farms (basil), and Island Bee Removals (honey production). Even prior to the research phase of the Agrivoltaics Program, farmers with experience in Kunia believe that solar-compatible crops and livestock can be successful between and under the PV panels.

- Therefore, the Project supports the objectives established by the SLU Law and regulations. As required by Section 205-4.5, HRS, agricultural activity is proposed throughout the life of the Project as an integrated use with the SEF. Therefore, the DPP recommends as a condition of the SUP approval, that the Petitioner continue its exploration and study of feasible compatible agriculture throughout the life of the Project and implement the findings and results of the Agrivoltaics Program to the fullest extent possible.

Based on the information submitted and materials to be submitted in compliance with the recommended conditions of approval, the Project is deemed consistent with the SLU Law which seeks to encourage the use of lands for uses best suited for the site.

Guideline 2: The desired use would not adversely affect surrounding property.

The DPP determined that the proposed Project would not adversely affect surrounding property as follows:

- The surrounding agricultural uses to the north, south, and east of the Petition are consistent and compatible with the proposed uses in the Petition Area. Use of the Petition Area for the Project will not adversely alter the land use character of the site or surrounding area. The Project will be integrated with compatible agriculture uses, including the cultivation and testing of market crops such as lettuce, basil, and alfalfa. As described in the Agrivoltaics Program, agricultural endeavors will be implemented in cooperation with HARC, who will test compatible market crops, including lettuce, basil, and alfalfa, between and underneath the PV panels and throughout the Petition Area. Licenses for land plots and water to cultivate crops will also be provided to participating farmers at a nominal cost. The planned use of the agricultural land for the Project is compatible with the existing land uses of the site and the surrounding area.
- Land and water will be provided to farmers by the Petitioner at a nominal cost to support co-location of agricultural activities by adding or upgrading agricultural infrastructure across the Petition Area. The proposed Agrivoltaics Program intends to increase agricultural productivity within the Petition Area, thereby increasing the overall acreage used for agriculture in the region. The Project will also support a variety of agricultural uses, including beekeeping/honey production, livestock grazing, and farming which will contribute to local food production.
- A view study for the Project involved taking photographs from several locations along Kunia Road and neighboring communities, including Makakilo, Waipahu, Waikele, Waipio, and Mililani. The Project components are relatively low profile and run with the existing topography of the land. Depending on one's proximity to the Petition area, the Project

may or may not be visible. The Project will likely not be visible from viewpoints in close proximity, such as along Kunia Road, the Royal Kunia residential community, and other adjacent locations. Landscape treatments identified for the Petition will augment existing vegetative screens along Kunia Road and other nearby locations. However, due to the wide viewshed of the Kunia area (and whole east flank of the Waianae Range) especially from the elevated viewpoints in the Kunia Loa Ridge Farmlands and farther locations such as Pearl City, Aiea, Red Hill, Halawa, and Waikele/Waipio, the roughly 500-600 acres of PV panels will be visible. Views of the Kunia area are also easily seen traveling west (ewa) on the H-1 Freeway. Given their dark color and depending on the atmospheric conditions at the time, the panels will either appear like a gray water body, a dark vegetative patch, or cloud shadow upon the earth from these distances. While the temptation is to screen these entirely from view, it would be impractical and unreasonable to do so without undermining the viability of the entire Project. Therefore, no conditions of SUP approval are required at this time.

- Although PV panel surfaces are designed to minimize reflection, a Glare Analysis was completed to assess glint and glare resulting from the proposed Project. The Glare Analysis identifies sensitive viewers near the Petition Area, including the Kunia Loa Ridge Farmlands (an unprotected private view), Kunia Road, Kalaeloa Airport, and Wheeler Army Airfield. Results of the Glare Analysis determined that no potential glare will be visible from the Project due to the orientation of the single-axis true tracking PV panels and distance from sensitive views to the Project. As such, it was determined that no glare related impacts to airport operations, nearby structures, and motorists on Kunia Road would occur as a result of the Project's development. Additionally, the heat island effect of the PV panels has been studied, and there is no evidence that the presence of the Project will raise temperatures in the area.

The Petitioner understands that if HDOT-A or the FAA identifies PV arrays that creates a hazardous condition for pilots, they must be prepared and willing to immediately mitigate it by adjusting the angle of the PV arrays. In addition, PV systems have been known to emit RFI to aviation dedicated radio signals, thereby disrupting the reliability of air-to-ground communications. The Petitioner is also prepared to adjust radio frequencies to avoid interference. A condition or conditions of SUP approval requiring adherence to FAA regulations is unnecessary.

- Noise or odors are not anticipated to adversely affect surrounding properties which are primarily in open space and agriculture. Short-term construction noise, air quality, and traffic impacts are likely to occur as a result of earth moving equipment and construction vehicles. Construction activities will comply with applicable state regulations. Operational noise and air quality impacts are anticipated to be below the State DOH residential noise and air quality standards, provided best management practices (BMP) are followed and enforced by responsible government agencies.

- The AIS noted the archaeological investigations conducted over an eleven-year period (2006-2017) at the Honouliuli Prisoner of War (POW) and Internment Camp. This work led to the listing of the Honouliuli Internment and POW Camp Site (SIHP Site 50-80-08-9068) on the National Register of Historic Places in 2012, and the designation in 2015 of the Honouliuli National Monument. The northern portion of the Honouliuli National Monument site is identified as Compound I of the POW camp on U.S. Army maps. This generally abuts the southern boundary of SAA 5. The HHF, in their response to the Request-for-Comments sent out by the DPP for this Petition, recommends the elimination of SAA 5 from the Petition Area. They state that eliminating SAA 5 is needed so that areas adjacent and surrounding this historic property are treated with extreme sensitivity and care to avoid adverse effects to the setting, location, and feeling of the site. It should be noted that the National Monument site and the SAA 5 are separated from each other by a 100-foot change in elevation difference. Rather than eliminate SAA 5, as it is needed for the Project, the landscape plan could add further landscape treatments along their common property border. Therefore, the stipulation of landscaping treatment to screen or distance setback from the Project panel array edges along the southern property line of SAA 5 is recommended as a condition of SUP approval.
- The AIS also noted that the Waiahole Ditch (SIHP Site 50-80-09-2268) is not within any of the footprints of the SAA but is crossed at two locations by the overhead electrical line serving the Project and travels between Areas 1 and 5 of the Petition Area. Considering the improvements being undertaken by the ADC to the Waiahole Ditch as a functioning water source for irrigation and other purposes, and since it will remain beyond the footprint of the Project, the recommended treatment for this site during development activities is to avoid and protect this resource to ensure the Project will not have any impacts.
- With respect to the Oahu Sugar Company Irrigation System (SIHP Site 50-80-12-7356), the AIS identified the portions of former irrigation systems deriving their water from the same source, the Waiahole Ditch, in Area 5 and at either end of Area 1. The infrastructure is no longer functional and has either deteriorated in place or been bulldozed into refuse piles. However, there is a remote possibility that significant undiscovered archeological resources could be encountered within Area 5, and to a lesser extent, Area 1 during mass grading and trenching activities.
- The DPP has not received SHPD's comments on the AIS as of the date of this Report. Should SHPD's comments be received in the near future, the required Conditional Use Permit (CUP) Minor review would address SHPD's comments and any recommended mitigating measures on historic resources in and around the Petition Area. Thus, a condition of SUP approval relating to historic sites is not recommended at this time.

- In December, 2020, the Petitioner’s consultant prepared a Ka Paakai O Ka Aina analysis for the identification of customary and traditional practices within the Petition Area. Several valued cultural and historical resources were identified, namely, evidence of the Pohakea Trail, traditional agricultural and endemic plant species, alii battle sites (kaua), and the possibility of remnant cultural sites in gulches, ravines, and along ridgelines. As a condition of SUP approval, the DPP recommends that: i) alignment of the Pohakea Trail be identified through a formal survey and a trail access plan be co-developed with the appropriate parties; ii) access granted to cultural practitioners to the uplands to access plant resources for cultural purposes; and iii) require an unanticipated discovery plan for cultural resources be prepared. This shall include, at a minimum, that any potential historic properties identified during construction activities, will cause all activities to cease in that area and the SHPD will be notified pursuant to HAR Chapter 13-280 Section 3, Procedure for Inadvertent Discoveries. Pursuant to Chapter 6E, HRS, in the event that iwi kupuna are uncovered during construction operations, the contractor shall immediately suspend work and notify SHPD. Additionally, a 100-ft. buffer will be installed to protect all cultural resources during construction.
- Construction of the Project would require some grading and grubbing which may be subject to the City’s grading ordinance. The Project is required to comply with the City’s *Rules Relating to Water Quality* and a condition of SUP approval regarding compliance with runoff water quality standards is not necessary.

Guideline 3: The use would not unreasonably burden public agencies to provide roads and streets, sewers, water, drainage and school improvements, police, and fire protection.

The DPP determined that the Project would not unreasonably burden public agencies to provide roads, sewers, drainage, schools, police, and fire protection based on the following:

- **Roads and Streets** – As the Petition Area was formerly used for plantation agriculture, access within the Petition Area is from various unpaved or partially paved privately-owned driveways. Three of these driveways which provide access to the Petition Area connect to Kunia Road, a State road, under the jurisdiction of the HDOT-HWY. The SUP Petition provided a CTA for the three established entrances to the Petition Area located on the ewa (west) of Kunia Road. The first entrance is at Plantation Road (Site Access #1), located approximately three miles north of the H-1 Freeway. Two existing roadways, Palawai Road and an unnamed road, form the other two entrances (Site Access #2 and #3). All access roadways are private roads with restricted use including gates at Site Access #1 and #2. Vehicles will circulate within and through the Petition Area via a series of existing dirt roads and proposed gravel driveways. Turnarounds for parking and maneuvering will be provided at the end of each driveway.

The Project will generate a negligible amount of vehicle traffic when it is fully constructed and operational. During the peak of construction, the site is expected to generate up to 454 daily vehicle trips including trucks and worker vehicles. During non-peak periods of construction, the forecast project-related trips will be approximately half of the data presented in the CTA. The traffic assessment indicates that the Project will result in temporary impacts during construction and negligible increases in delay once the Project is operational therefore, the Project will not require public agencies to provide new roads and streets. Thus, a condition of SUP approval to provide on-site or off-site traffic improvements is not recommended at this time.

However, while the HDOT-HWY did not object to the proposed Project, they noted that the CTA did not include the farming activities proposed on the 600+ acres of the Petition Area. The submittal of a complete traffic management plan, which would address potential farming activities, is required prior to City and State permit approvals.

The DTS commented that the 2019 Oahu Bike Plan proposes a shoulder bikeway on Kunia Road from Wilikina Drive to Farrington Highway. The Project does not impede the pursuit of this improvement.

- **Sewers** – The Project will operate independently seven days per week throughout the year. Typically, the Project will have on-site staff during regular working hours during the week and will be remotely monitored 24/7 by staff. The Project staff will include one Asset Manager, one Regional Operations Manager and two on-site operations and maintenance technicians for upkeep of the Project. Staff performing vegetation maintenance will also periodically access the site. There will be up to five staff supporting the solar PV operation on-site at any given time. Temporary portable sanitation units would be brought on-site for construction staff and removed when construction is completed. There is no public wastewater collection system or treatment facility located near the Petition Area. The nearest public wastewater collection system to the property is located approximately 1.5 miles away. Wastewater treatment is achieved with private, on-site wastewater systems.
- **Water** – The KWA provides water service to the site and surrounding agricultural lands. No occupied facilities are planned for the Project; therefore, domestic and fire protection water service is not required. Onsite water demand for supporting the farming activities will be designed to ensure compatibility with the operation and maintenance activities. Irrigation infrastructure will be installed as needed with soft-material hoses and a drip-feeder irrigation system strategically located to support crop production. The use of water trucks may be needed to provide start up irrigation for landscape/screening plants. Water would be required for controlling construction generated dust, vehicle wash-down, and temporary landscape irrigation, and the proposed agricultural activities. In addition, small amounts of water would be needed for occasional cleaning of the PV panels. The Petitioner proposes that water would be

available either from truck-filled tanks or connection to the KWA service. No hook-up to the municipal water system for domestic use is planned.

- **Drainage Improvements** – There is no City and County of Honolulu storm drainage system in the Petition Area. Storm drainage systems in the vicinity are limited to concrete culverts crossing Kunia Road. A portion of the Honouliuli Stream flows through SAA 4A, 4B, and 5 of the project site. However, placement of the PV arrays will avoid the stream areas. Other water features in the vicinity of the Petition Area include a variety of ditches and reservoirs used for agricultural purposes. Drainage across the site currently exists in the form of surface runoff based on the natural topography, with stormwater eventually flowing into the various tributaries of Honouliuli Stream.

Based on the Project design, no adverse effect to water resources, including Honouliuli Stream or its tributaries, is anticipated. Grading will be outside of the channel and limited to where it is needed, so the Project will not significantly alter existing drainage patterns. Stormwater runoff will be appropriately addressed through design features that incorporate temporary erosion controls and post-construction BMPs to minimize the quantity and water quality impacts of the runoff. BMPs will be identified as part of a Temporary Erosion and Sediment Control Plan (ESCP) and Permanent Post-Construction BMP Plan, which will be prepared and submitted for approval in accordance with the requirements of the National Pollution Discharge Elimination System and City's *Rules Relating to Water Quality*.

Temporary BMPs will include minimization of soil disturbance (particularly during periods of heavy rain), erosion prevention and sediment control measures (e.g., silt fencing, sediment traps/basins, etc.), proper stabilization and stockpiling procedures, and other good housekeeping measures. Permanent BMPs will include retention, bio-filtration, or filtration treatment controls. Given the relatively short duration of construction and with implementation of BMPs as part of an approved ESCP and Post-Construction Storm Water Quality Plan, the potential for sedimentation or increased pollutants in stormwater runoff is expected to be minimal.

- **School Improvements** – No residential use is being proposed and school improvements would not be required.
- **Fire and Police Protection** – The HFD provided standard comments with respect to the provision of fire protection infrastructure. Building permits for the Project would be circulated to the HFD for review. Two water hydrants are located along the 30-inch water line which could support fire-fighting equipment. Any fire-fighting infrastructure required by the HFD may be imposed at the time of building permit review. Therefore, recommendations of the HFD need not be included as conditions of SUP approval.

Wildfires are known to occur and are predominantly caused by human activity. Surrounding lands may be susceptible to brush fires and the Project could sustain damage from off-site fires. The Petitioner plans to establish “clear” areas which are buffers around the Project equipment area where combustible vegetation will be removed in order to slow or stop the spread of wildfire. A minimum clear area of 10 feet around ground-mounted PV installations will be provided. Particular attention will be paid to clearing areas around transformers, under power lines, and around the BESS cabinets. Batteries will be installed in self-contained enclosures that are constructed across an open-air gravel pad. The self-contained enclosures are remotely monitored and are intended to contain/suppress fires with no active fire response necessary from HFD. Coordination with the HFD will occur throughout the Project design and permit process to ensure adequate access and fire code requirements are met. This includes sufficient firefighting /fire suppressant ability to prevent hazardous smoke from uncontrolled fires in the HDOT-A identified protected airspace. If required by HFD, a vegetation management plan will also be provided. Throughout the life of the Project, clear areas and fuel breaks, or areas that are frequently mowed, will be maintained. Livestock grazing and animal forage integrated as part of the project’s agricultural plan will help to contribute to the maintenance of vegetation. A condition of SUP approval relating to wildfires is not necessary.

Fencing will also be provided around the perimeter of each SAA, at the Project substation, HECO switchyard, and the BESS area. The Project is only accessible via private, security-controlled driveways, and additional police protection services are not anticipated.

Guideline 4: Unusual conditions, trends and needs have arisen since the district boundaries and regulations were established.

The development of utility-scale SEFs on Oahu has continued to increase as the State works towards achieving its goal of 100 percent clean energy by the year 2045 through energy efficiency and renewable energy. The shift to renewable energy is also key in mitigating the effects of climate change and sea level rise on Oahu. This trend of increased renewable energy development is evident with the number of completed solar projects in the State, those currently under construction, approved by regulators, or have been proposed and are awaiting approval. HECO intends on continuing support for the development of renewable energy projects as future needs identified for Oahu include up to 1,300,000 MWh annually. This Project is one of several of HECO’s Stage 2 Renewable Energy Projects intended to help meet this goal.

The development of renewable energy projects, including utility-scale SEF installations, require large sites to accommodate the required system and layout. Land areas of this size are not abundantly available on lands designated as SLU Urban District. Therefore, renewable energy projects are increasingly being proposed on lands designated in the SLU Agricultural District. The co-location of solar energy production and agriculture results in a more efficient use of land, particularly on Oahu with a limited amount of land suitable for both. The Project’s

agricultural plan proposes to bring more land into production not only in ranching, but in farming lettuce, basil and other vegetables, flowering plants for honey production, and nutritious grasses for animal feed. Most of these agricultural lands identified are vacant and provide the acreage required for a successful project. SEF projects are an appropriate development of these lands as they typically have long-term leases commensurate to the hardware's expected life of about 20-25 years. Thereafter, the panels and support equipment may be removed or recycled, and the land can be returned to its original state or replaced by newer panels, subject to a modification of the SUP, should the Project owner exercise their options to extend energy production beyond the initial 25 years and subsequently after the 39-year projected life of this Project.

Utility-scale SEFs are considered low-impact development that will not adversely impact the use or quality of agricultural lands. The trend to use large areas of land for energy generation was not anticipated at the time of the establishment of the SLU Law. Furthermore, the local cost for electricity continues to rise. As of 2019, it is more than double the U.S. average.¹ The development of renewable projects such as SEFs will result in large savings to ratepayers and contribute to the economic benefit of the State while helping to meet the clean energy goals of 100 percent of electricity generation by renewable energy sources by year 2045. Therefore, the Project meets Guideline 4.

Guideline 5: The land upon which the proposed use is sought is unsuited for the uses permitted within the district.

The land upon which the Project is sought is suited for uses permitted within the SLU Agricultural District, including agricultural cultivation and SEFs. The Project is located on agricultural land with soils rated B, C, D, and E under the LSB system. Section 205-4.5(a)(21), HRS, allows SEFs on LSB lands rated B and C with the approval of a SUP and provided that certain conditions are met. Section 205-4.5(a)(21)(A), HRS, requires that the Petition Area be made available for compatible agricultural activities should the SUP be granted. Portions of the Petition Area are currently used for farming activities as part of each landowner's larger agricultural operations. With the Project's development, these lands will be shifted to support both solar energy generation and agricultural uses in coordination with the landowner. The Project's compatible use with agriculture will be developed in partnership with the HARC.

With the co-location of agricultural uses with solar, the Project will continue to be available for uses permitted in Section 205-4.5, HRS, and is thus considered suitable for the establishment of the Project. Upon completion of the Project's life-cycle, the Project will be decommissioned per requirements listed in Section 205-4.5(a)(21)(c), HRS.

While the Petitioner has undertaken a genuine effort to make lands available for compatible agriculture, due to the statutory requirements of Section 205-4.5, HRS, a requirement that lands under the PV panels be made available for compatible agriculture is being recommended as a condition of SUP approval.

¹ Source: HSEO.

2. Hawaii State Plan. The Hawaii State Plan (Chapter 226, HRS, as amended) establishes an overall theme, goals, objectives, policies, and priority guidelines for statewide planning. The proposed Project is consistent with the following objectives and policies of the Hawaii State Plan:

Section 226-7: Objectives and policies for the economy--agriculture.

- (a) *Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives:*
- (2) *Growth and development of diversified agriculture throughout the State.*
 - (3) *An agriculture industry that continues to constitute a dynamic and essential component of Hawaii's strategic, economic, and social well-being.*
- (b) *To achieve the general agriculture objective, it shall be the policy of this State to:*
- (2) *Encourage agriculture by making the best use of natural resources.*

Discussion: The Petitioner will incorporate compatible agricultural uses that will be integrated throughout the Petition Area. The Project will use agricultural lands to provide both renewable energy and agricultural farming, a practice which supports a dynamic agricultural component of Hawaii's strategic, economic, and social well-being. The HARC will test crops that may be suitable for growth between and under the SAA panels, such as hydroponic and conventional soil-planted lettuce, basil, and arugula, as well as the establishment of nitrogen-fixing legumes for livestock grazing. The Project will support farmers by providing land and water at a nominal cost, allowing farmers to conduct agricultural activities at a commercial scale. The Project promotes the best use of natural resources by allowing existing farmers to continue cultivating their most productive land for market crops, while generating clean energy and testing new agricultural crops on the areas sited for the Project.

Section 226-18: Objectives and policies for facility systems--energy.

- (a) *Planning for the State's facility systems with regard to energy shall be directed toward the achievement of the following objectives, giving due consideration to all:*
- (1) *Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people;*
 - (2) *Increased energy self-sufficiency where the ratio of indigenous to imported energy use is increased;*
 - (3) *Greater energy security and diversification in the face of threats to Hawaii's energy supplies and systems; and*

- (4) *Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use.*
- (b) *To achieve the energy objectives, it shall be the policy of this State to ensure the short- and long-term provision of adequate, reasonably priced, and dependable energy services to accommodate demand.*
- (c) *To further achieve the energy objectives, it shall be the policy of this State to:*
 - (1) *Support research and development as well as promote the use of renewable energy sources.*

The proposal supports the energy goals of the State Planning Act, Chapter 226, HRS, by providing alternative fuel-sourced energy that is capable of contributing to the needs of the people and support energy self-sufficiency. Operation of the Project also contributes to the reduction of greenhouse gases by offering a “clean” energy alternative to fossil fuel based energy production.

*Section 226-108: **Sustainability.***

Priority guidelines and principles to promote sustainability shall include:

- (1) *Encouraging balanced economic, social, community, and environmental priorities;*
- (2) *Encouraging planning that respects and promotes living within the natural resources and limits of the State;*
- (5) *Promoting decisions based on meeting the needs of the present without compromising the needs of future generations;*
- (7) *Emphasizing that everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawaii.*

Discussion: Development of the Project will help to support balanced economic and environmental policies by providing clean energy that helps the State to increase energy self-sufficiency and eliminate dependence on imported fuels for electrical generation. The low-impact design for the solar farm respects natural and cultural resources in the area and preserves the site as agricultural lands in perpetuity. The Project is one of several HECO Phase 2 projects and represents an opportunity for communities, businesses, and government to work toward achieving the State’s renewable energy goal of generating 100 percent of electricity sales from renewable energy resources by 2045. Meeting this goal will result in a more sustainable Hawaii.

- 3. Chapter 205A, HRS, Coastal Zone Management (CZM). All lands of the State, including the area extending seaward of the shoreline to the seaward limits of the State’s jurisdiction, are included in the CZM Area.

The proposal is consistent with the CZM objectives and policies pursuant to Section 205A-2, HRS, as follows:

(b)(2) Historic resources - Objective

- (A) 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.*

(c)(2) Historic resources - Policies

- (A) Identify and analyze significant archaeological resources;*
- (B) Maximize information retention through preservation of remains and artifacts or salvage operations; and*
- (C) Support State goals for protection, restoration, interpretation, and display of historic resources*

Discussion: The AIS identified historic resources which were primarily abandoned on-site irrigation structures and related infrastructure. The AIS recommended treatments for these resources were to avoid and protect and monitor for any undiscovered remains or undocumented historical aspects of the site or archeological resources that predate this site. The Ka Paakai Analysis identified several resources as well as traditional customary practices that took place within the general vicinity of the Petition Area. Efforts to identify the former alignment of the Pohakea trail will be made through a formal survey and a trail access plan co-developed with the appropriate parties to give preference for customary access rights. Additionally, native plant species will be avoided and there is the possibility of finding additional resources in the gulches, ravines, and ridgelines as well as remnant subsurface features in the formerly cultivated areas. Therefore, Project-related construction and disturbance activities have been directed to be cautious and aware of inadvertent cultural finds. As of the date of this report, the DPP has not received concurrence on the recommendations of the AIS from the SHPD. Consistency with the above objectives and policies at this time is subject to SHPD's response on the AIS's recommendations.

(b)(3) Scenic and open space resources - Objective

- (A) Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.*

(c)(3) Scenic and open space resources - Policies

- (A) Identify valued scenic resources in the CZM area;*
- (B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to*

minimize the alteration of natural landforms and existing public views to and along the shoreline;

- (C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and*
- (D) Encourage those developments that are not coastal dependent to locate in inland areas.*

The Petition Area is located on the lower slopes of the Waianae Mountains, far away from the shoreline. Landscape treatments will screen the Project from close-up views. Situated at the base of the Waianae Range, the Project should not block long-distance views of the Waianae Range. Given these circumstances, a SUP condition of approval relating to additional screening or mitigative measures is not necessary.

(b)(8) Public Participation - Objective

- (A) Stimulate public awareness, education, and participation in coastal management.*

(c)(8) Public Participation - Policies

- (A) Promote public involvement in CZM processes;*
- (B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and*
- (C) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.*

The Petitioner made presentations about its proposal to the area's neighborhood boards and the Project was shared with community stakeholders through virtual public presentations and various one-on-one meetings. In addition, the SUP Petition is available online at the DPP's webpage. Based on the above analysis, the Director finds that the proposed Project is in compliance with the objectives and policies of the CZM Program.

4. Oahu General Plan (GP). The GP consists of comprehensive objectives and policies that outline the City's long-range development goals. The proposed Project conforms to the following objectives and policies of the Oahu's GP as cited below:

Part VI. **Energy**

Objective A: To maintain an adequate, dependable, and economical supply of energy for Oahu residents.

Policy 3. Support programs and projects which contribute to the attainment of energy self-sufficiency on Oahu.

The Project would contribute toward energy self-sufficiency by converting solar energy to electricity and reduce the amount of fossil fuels needed to provide Oahu's energy needs.

5. Central Oahu Sustainable Communities Plan, (Central Oahu SCP). Areas 1, 2, 3, and 4 are covered by the Central Oahu SCP. The Project's compliance with the recently adopted Central Oahu SCP (Ordinance No. 21-6) is discussed below.
 - a. Community Growth Boundary (CGB), Section 2.2.1 of the Central Oahu SCP. The CGB for Central Oahu was drawn to give long-range protection from urbanization for 10,350 acres of prime and unique agricultural lands and for preservation of open space while providing adequate land for residential, commercial, and industrial uses needed in Central Oahu for the foreseeable future. It is the intent that urban zoning not be approved beyond this Boundary. The Petition Area is outside the CGB.

Discussion: The Project is consistent with the intent of the CGB and will not require urban zoning for the development of the Project. The Project will be built on agricultural-zoned lands and will incorporate sustainable agricultural and farming uses with the Project design and overall operations. The Petitioner is requesting approval of a SUP for the Project in that LSB rated B and C lands are involved but SEFs of this magnitude are best suited for large open spaces in the Agricultural District. The Project will include active agricultural and farming uses compatible with the solar development and will maintain the intent of the Central Oahu SCP CGB to protect prime and unique agricultural lands.
 - b. Retention of Agricultural Lands (Section 2.2.2 of the Central Oahu SCP). The Central Oahu SCP protects the highest value prime and unique agricultural lands from urban development. Former sugar lands in Kunia are rated as some of the highest value agricultural lands because they are supported by an extensive, well-developed agricultural infrastructure, water availability from the Waiahole Ditch, and have access to the local markets of Honolulu and the export markets through the Daniel K. Inouye International Airport. By protecting agricultural lands from urban development, an opportunity is created for long-term retention and development of diversified agriculture on small farms, large landholdings, and agricultural parks. Public-private partnerships will be needed to solve problems of lease terms and tenure, access to capital, research, and marketing if this vision is to be realized.

Discussion: The Petition Area is located within areas designated by the Central Oahu SCP Land Use Map for “Agriculture and Preservation.” Development of the Project supports the retention of these agricultural lands identified in the Central Oahu SCP. An agricultural plan prepared for the Project in coordination with HARC includes the co-location of PV panels with crops suitable for cultivation beneath the panels (Agrivoltaics). The Project will therefore retain the site for agricultural uses, while also using the land to generate renewable energy to meet State and City clean energy goals. After the project is decommissioned, the land will continue to be retained for agricultural uses.

- c. Preservation and Enhancement of Historic and Cultural Resources and Map A1: Open Space Map (Section 2.2.9 of the Central Oahu SCP). Several significant historic and pre-historic features from the plantation era and earlier periods were identified in the Petition area. While not specifically mentioned in the Central Oahu SCP, the significant historic features include the irrigation systems and infrastructure of the Waiahole Ditch, the Oahu Sugar Company Irrigation System, native Hawaiian traditional and customary cultural practices associated with the gathering of plants, historic and cultural sites in the vicinity of Puu Kuua and Pohakea Trail, and the possibility of still undiscovered finds in the gulches, ravines, and ridgelines within and around the Petition Area. Views of the Waianae Range are regarded by the Central Oahu SCP as a scenic resource to be protected.

Discussion: Approval by the SHPD and adherence to the mitigation plan should safeguard identified historic and cultural resources. Additional surveying for the Pohakea Trail and development of an access plan should augment appreciation of these assets. Protocols for unanticipated discovery are necessary should historic and cultural resources be found in the Petition Area during construction and Project operations. Retaining significant vistas, particularly of the Waianae Range, as shown in the view study from Kunia Road towards the Waianae Range will not be impacted because the Project will have a relatively low profile and will run with the existing topography of the land. This effort to protect key landmarks and historic features in the Petition Area is in conformance with the general policies (Section 3.4.1) of the Central Oahu SCP for historic and cultural resources.

- 6. Ewa Development Plan (Ewa DP). The following section discusses the key elements in the recently amended Ewa DP (Ordinance No. 20-46) most relevant to Area 5 of the Petition Area.
 - a. CGB, Section 2.2.1 of the Ewa DP. The CGB for Ewa gives long-range protection from urbanization for over 3,000 acres of prime agricultural land and preservation of open space while providing adequate land for urban development in Ewa. Preservation of prime agricultural lands mauka of the H-1 Freeway and on the Waianae side of Kunia Road (Area 5) for use in diversified agriculture will help retain open space and views in addition to supporting economic diversification. Area 5 of the Petition Area is outside the CGB.

Discussion: The Petitioner does not propose to establish urban-type zoning in order to develop the Project. The proposal is to establish the use via a SUP that is best suited for SEFs on large open spaces in the SLU Agricultural District, and does not result in an urban-type zone change. An urban zone change would designate the site from an agricultural use to permit the proposal in an urban setting. After the initial operation, the Project could be removed and the land returned to agriculture after its useful life. In addition, a majority of the site is being made available for compatible agricultural use such as leafy vegetables, herbs, livestock grazing, and beekeeping. The Project will have a relatively low profile and will run with the existing topography of the land, thereby maintaining the open space character of the area. Thus, the Project is consistent with the intent of the CGB.

- b. Protect Agricultural Lands and Open Space (Section 2.2.2 of the Ewa DP). The Ewa DP protects the highest value prime and unique agricultural lands from urban development. Former sugar lands in Kunia are rated as some of the highest value prime agricultural lands and identified as the highest priority for retention. Area 5 and the surrounding areas are designated by the Ewa DP as “Agriculture and Preservation Area.”

Discussion: The use of the site for utility-scale solar and accessory farm uses is consistent with the Ewa DP’s vision to protect agricultural lands in the region. The Project spans several parcels that are actively being used for agriculture. An agricultural plan prepared for the project in coordination with the HARC includes the co-location of PV panels with crops suitable for cultivation beneath the panels, a concept known as Agrivoltaics. Preliminary research of agricultural uses that may be compatible with the solar development will be grown and tested on the site. These include both hydroponic and conventional soil planted lettuce, basil, and arugula, as well as livestock grazing and the establishment of nitrogen-fixing legumes. The Petitioner will retain the site for agricultural uses, while also using the land to generate renewable energy. After the project is decommissioned, the land will continue to be retained for agricultural uses.

- c. Preservation and Enhancement of Historic and Cultural Resources and Open Space Map (Section 2.2.9 of the Ewa DP). Several significant historic and pre-historic features from World War II, the plantation era and earlier periods were identified in the Petition area. The significant historic features include establishment of the Honouliuli National Monument, the irrigation systems and infrastructure of the Waiahole Ditch, the Oahu Sugar Company Irrigation System, native Hawaiian traditional and customary cultural practices associated with the gathering of plants, historic and cultural sites in the vicinity of Puu Kuua, and the possibility of still undiscovered finds in the gulches, ravines, and ridgelines within and around the Petition Area. The views of the Waianae Range from Kunia Road are identified as a significant scenic resource in the Ewa DP.

Discussion: Cultural and historical resources within the Petition Area will be preserved by retaining visual landmarks and significant views, and by preserving significant historic, cultural, and archaeological features found within the Petition Area. Approval by the SHPD and adherence to the mitigation plan should safeguard identified historic and cultural resources. Additional surveys may need to be conducted to thoroughly assess the historical significance of sites and structures affected by development projects and to identify the appropriate measures to preserve the historic and cultural values of the resources. Area 5 of the Petition Area is within the panoramic view of the Waianae Range from Kunia Road identified in the Ewa DP Open Space Map for preservation. It also is situated mauka of and overlooking the Honouliuli National Monument.

The view study, shows that the views from Kunia Road towards the Waianae Range will not be impacted by the Project. The Project will have a relatively low profile and will run with the existing topography of the land. Views of the PV panel racks are blocked along Kunia Road by existing berms. The low profile of the PV panel racks and the 100-foot elevation above the Honouliuli National Monument prevent views of the racks. Nevertheless, sensitivity to the context of this historic site may require additional landscaping treatments or additional setbacks are recommended as a condition of SUP approval to avoid any adverse effects to the setting, location, and feeling of the site. With no timeline set for the opening of the Honouliuli National Monument to the public, the Project will not cause any immediate adverse effects. The effort to protect key landmarks and historic features in the Area 5 of the Petition Area is in conformance with the general policies (Section 3.4.1) of the Ewa DP for historic and cultural resources.

7. Revised Ordinances of Honolulu (ROH), Chapter 21, Land Use Ordinance (LUO). Pursuant to the LUO, the Project is located within the AG-1 Restricted Agricultural District and is considered a "Utility Installation, Type 2." An approved CUP is required for the establishment of the Project.
 8. ROH, Chapter 25, Special Management Area (SMA). The Petition Area is located outside of the SMA and a Special Management Permit is not required.
- B. Protection of Endangered Species. The Biological Resources (BR) Report noted that several endangered and threatened wildlife species that are known to occur, may occur, or may transit the Petition Area there such as the Oahu Elepaio, the Hawaiian hoary bat, the Pueo (Hawaiian short-eared owl), and various Hawaiian water-birds and seabirds, as well as some native flora species (iliahialoe, wiliwili, and uhaloa). With respect to protection of endangered species and their habitats, the DOFAW raised concerns that the Project may adversely impact breeding Hawaiian hoary bats, the Pueo, and endangered or migratory birds. The DOFAW indicated that bats and their young may forage in the site and surrounding area and recommends suspending any disturbance of trees taller than 15 feet in height until after breeding and pup-rearing season which runs from June 1 through September 15. Similarly, if Pueo nests are found, all activities within 150 feet of the nest should cease. The Petition Area will be monitored for the presence of Pueo prior to construction-related clearing and the trimming or removal of

trees. Pueo have been known to become entangled in barbed wire fencing which will not be included in the construction and the majority of the Project except for the switchyard, substation, and the BESS with Area 3. The BR also indicates that birds have been known to mistake PV panels for bodies of water and flying into the panels could result in unintended bird kills, injuries, or predation of injured birds. The BR recommends careful on-site monitoring, observation, and detailed record-keeping of bird activity to assist in minimizing impacts.

Endangered plant species, *Abutilon menziesii* and *Gardenia brighamii*, have the potential to occur and, if found, the DOFAW should be notified for guidance. Minimizing the movement of plant or soil between worksites should be avoided and all equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species.

The BR Report outlined mitigative measures to protect the flora and faunal species that may be found in the Petition Area. As a condition of SUP approval, the Petitioner will be required to follow and implement these measures.

- C. Social Impacts. The Project will have minimal impact on population increases or decreases in the area and minimal adverse impact, if any, on the area's farming community. Positive impacts of the Project would result in an increase in energy produced by a renewable source for use by the island's businesses and residences. The testing and subsequent establishment of a variety of agricultural crops and livestock grazing and beekeeping operations would actually increase agricultural production in the Petition Area than what the current landowners are doing.
- D. Decommissioning and Restoration. According to Section 205-4.5(a)(21)(C), HRS, the Petitioner is required to remove all equipment related to the SEF within 12 months of the conclusion of operations or useful life, and restore the disturbed earth to substantially the same physical condition as existed prior to the development of the SEF².

The Petitioner indicates that the Project is expected to have an operational life of approximately 25 years to extend with a 10-year option. Thereafter, the facility may be re-powered with new equipment or decommissioned, and the site reclaimed. Should the Petitioner decide to renew the SEF with an up-to-date system at the time, the Petitioner must obtain a new SUP or modify the existing SUP and CUP approvals to extend its deadline to decommission, and reclaim the site.

Decommissioning would involve removal of all of the Project's above ground structures, including, but not limited to, the panels, transformers, and substation equipment, as well as removal of all below-ground structures and foundations to a depth of no less than 24 inches below grade. It is anticipated that most of the materials would be either salvaged or recycled, with the majority of this material likely being shipped to a recycling facility on the mainland. The remaining materials would be disposed of by the contractor at authorized sites, in accordance with applicable laws. Site restoration would be based on site-specific requirements and techniques commonly employed at the time of decommissioning. It is expected to include grading, spot replacement of topsoil, removal of gravel, and re-vegetation of all disturbed areas with an appropriate hydro-seed mix,

² Act 55 provides no timeframe for the restoration of the disturbed earth to substantially the same physical condition as existed prior to development of the SEF.

such that the physical conditions of the Project site would be comparable to the existing conditions prior to construction of the Project.

The Petitioner is required to comply with Section 205-4.5(a)(21)(C), HRS, and a condition of SUP approval is not required.

- E. Glint and Glare. The Petitioner's consultant prepared a glare in accordance with the FAA's guidelines. PV panels are typically designed with anti-reflective glass front surfaces to capture and retain as much of the solar spectrum as possible. In general, solar module glass has less reflectivity than water or window glass. The study identifies sensitive viewers near the project including structures, major roadways and approach slopes associated with the Kalaeloa Airport and Wheeler Army Airfield. The study also characterizes typical glare behavior experienced from the Project throughout the day and year and evaluates when and where glare may be visible to structures, motorists and pilots on final approach. The Petitioner's consultant utilized the Glare Gauge tool to input viewer position, solar facility location, solar technology, and elevation data to obtain results. Findings of the analysis determined that no potential glare will be visible from the Project's operations due to the orientation of the single-axis true tracking PV panels and distance from sensitive views to the Project. As such, it was determined that the project would have no negative impacts to airport operations at the Kalaeloa Airport and Wheeler Army Airfield, nearby structures, and motorists on Kunia Road.

The Petitioner is required to comply with all FAA and HDOT regulations in the development and operation of the Project. As enforcement of FAA and HDOT glint and glare regulations is not the responsibility of the City, the requirement for immediate mitigation of hazards is not being recommended as a condition of SUP approval.

F. Other Issues and Concerns.

1. Ka Paakai O Ka Aina Cultural and Practices and Resources Analysis.

Under Article XII, Section 7, of the Hawaii State Constitution, the State reaffirms and shall protect all rights, customarily and traditionally exercised for subsistence, cultural, and religious purposes and possessed by ahupuaa tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights. In the context of land use permitting, these issues are commonly addressed when the LUC is asked to approve a petition for the reclassification of district boundaries, as such, an action most often initiates activities that precede initial intensive development.

To effectuate the State's (and its agencies) constitutional responsibility to protect native Hawaiian customary and traditional practices while reasonably accommodating competing private interest, the framework assesses the following: (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 SLU Commission to reasonably protect native Hawaiian rights if they are found to exist.

The Petitioner included a Ka Paakai O Ka Aina Cultural and Practices and Resources Analysis in its SUP Petition which summarizes five interviews with community members who have genealogical ties and, or, long-standing residency or knowledge of cultural and historic properties in the Honouliuli ahupuaa.

A review of the culture-historical background material in conjunction with the results of the consultation process has resulted in the identification of several resources, as well as traditional and customary practices that formerly took place within the general project area vicinity. In general, this reflects on the remnants of the Pohakea Trail, traditional Hawaiian agricultural practices and endemic plant references and uses, alii battle sites, cultural sites and resources in the vicinity of Puu Kuua, the possibility of remnant cultural sites in gulches, ravines, and along ridgelines, and the Waiahole Ditch.

The Project has the potential to impact all of the above-referenced resources and associated practices to a degree if proper mitigative measures are not thoughtfully considered and implemented. Concerning Pohakea Trail, if access remains obstructed, then the proposed project infringes upon customary access rights and any concomitant resources and traditional customary practices (i.e. gathering of plant resources for cultural purposes) that would otherwise occur along this trail.

With respect to plant resources, while the majority of the Petition Area is dominated by non-native species, a biological survey of the Petition Area resulted in the identification of several native species including scattered individuals of iliahaloe, scattered individuals of wiliwili in the dry lower gulches, and uhaloa found in fallow fields and roadsides. The former two plant species were noted in historical literature and traditional accounts. If the Project footprint extends into native plant habitat then such resources would be adversely impacted. Conversely, if the Project footprint does not extend into native plant habitat then there would be no impact on such resources.

Concerning potential impacts to the battle site associated with the alii Mailikukahi, based on the available information, it is difficult to ascertain the exact location of the battle site. Historical records indicate that the battle occurred on the plains of Keahumoa which is located to the area north of the Petition Area. While there may be few, if any, remnant sites or resources directly associated with the battle site, it is unlikely the Project would have any direct adverse impacts to the battle site. However, this battle site is still important to Oahu's history.

A substantial portion of the Petition Area is within formerly cultivated and existing fields which are devoid of any surface archaeological sites and features. Although surface features may not be present within these extensively plowed areas, encountering subsurface features, although unlikely, remain a possibility. Additionally, in locations where Project activities (i.e., clearing and grubbing) may extend into gulches, ravines, and previously undisturbed areas, the possibility of encountering archaeological and cultural resources increases substantially, and thus the Project has the potential of impacting such resources.

Portions of the Project appear to cross over at least four natural waterways as well as small segments of the historic Waiahole Ditch (SIHP Site 50-80-09-2268). The Project does not appear to alter, modify, or redirect the existing flow of freshwater

nor the Waiahole Ditch, thus no apparent impacts to water resources or to the Waiahole Ditch are anticipated.

Concerning Pohakea Trail, the DPP recommends as a condition of SUP approval that consultation be conducted with the appropriate agencies and persons who would have more knowledge of the trail's historical location and possible status. Such action would ensure that the Petitioner consider the trail in their development plans. Concerning plant resources, they should be identified and the Project's clearing and grubbing activities should avoid all native plant species and their associated habitat to preserve these resources for traditional cultural practices. Similarly, archaeological resources should also be identified and avoided. If the above described recommendations are considered and implemented, impacts to traditional and customary practices would be mitigated.

2. Senate Concurrent Resolution No. 119, S.D. 1 (SCR 119).

SCR 119 (Attachment D) requests that the HSEO, in collaboration with the HDOA, create and implement a strategic plan to increase renewable energy and local food production in a symbiotic relationship. It also requests an economic impact report to the Hawaii State legislature based on the implementation of the strategic plan. The HSEO continues to work on fulfilling the request of the SCR 119 and anticipates the strategic plan could be developed for the 2022 legislative session.

Meanwhile, HSEO has a number of ongoing projects that could inform the preparation of a strategic plan and report to the legislature, including:

- The development of a visualization model to assist with understanding the land use implications of SEFs;
- An online mapping tool known as the Hawaii Brightfields Initiative to assist in identifying appropriate sites for SEFs; and
- The upgrading of its Renewable EnerGIS tool to assist with siting of new renewable energy projects based on criteria selected by the users, including resource availability, land characteristics, zoning, as well as a variety of agricultural attributes of individual sites.

When available, the economic report and strategic plan would inform policy and decision-makers on future grid-scale renewable energy generation projects that are proposed on quality agricultural land. However, at this time, based on available information and best practices applicable to local conditions, the need for additional renewable energy projects to meet the State's energy goals, would likely continue to place development pressure on low and higher quality agricultural land for energy generation projects from renewable energy.

IV. CONCLUSION

The Petition addresses the energy goals of the State and City while providing agricultural production on land under the PV panels which addresses the integration of compatible agricultural use requirements of Section 205-4.5(a)(21)(A), HRS.

The Petition is in compliance with relevant State and City policies and no adverse infrastructure impacts are anticipated. Thus, the Project to allow a SEF on quality agricultural land is “unusual and reasonable” as set forth in Section 205-6, HRS, and the five guidelines established by the PC, pursuant to Section 2-45 of the *“Rules of the Planning Commission.”*

V. RECOMMENDATIONS

The Director of the Department of Planning and Permitting (DPP) recommends that Special Use Permit (SUP) Petition File No. 2020/SUP-7, for the establishment of a 120-megawatt (MW) solar energy generation facility (SEF), a 480-megawatt-hour (MWh) battery energy storage (BESS) facility to address peak energy demand, and accessory support infrastructure and uses (together referred to as the Project) on approximately 620.0 acres (Petition Area), Tax Map Keys 9-2-001: 020 portion, 9-2-004: 003 portion, 9-2-004: 006 portion, 9-2-004: 010 portion, and 9-2-004: 012 portion as approximately shown on Exhibit A, be approved, subject to the following conditions:

1. Usable lands of the Petition Area, as required under Condition No. 4a, shall be made available for compatible agricultural use at a lease rate that is at least 50 percent below the fair market rent for comparable properties, as long as the Project is in operation. Compatible agricultural operations shall be established, or Petitioner shall be actively seeking to have such operations established, within six months of the start of commercial power generation (referred to as the “initial six-month period”). Extensions to this deadline may be granted by the Director of the DPP for unforeseen extenuating circumstances. The agricultural plan, approved by the Director of the DPP, shall include the following:
 - a. The Agrivoltaics Program as outlined in the Petition as ‘proof-of-concept’ to determine the suitability of the to-be-determined agricultural activities to be researched and field trialed by the Hawaii Agriculture Research Center (HARC).
 - b. A collaborative process establishing an organization or association between the HARC and the individual agricultural operators interested in and working in the Petition Area for agricultural productions including livestock, crops, or hydroponics.
 - c. A drip irrigation system proposed for future agricultural activities that may occur under and adjacent to the solar panel arrays.
 - d. Fencing and gating to be in place prior to full operation of the Project to prepare for the needs of the anticipated agricultural activities.
2. If at any time during the term of the SUP, no compatible agricultural operations exist on the usable lands of the Petition Area for six months after the initial six-month period (referred to as the “subsequent six-month periods”), the Petitioner shall notify the Planning Commission (PC) and the Director of the DPP in writing within 30 days of the end of any subsequent six-month periods. If requested by the PC, the Petitioner shall attend a meeting of the PC and submit a report to the PC detailing the Petitioner’s actual and reasonable efforts to actively seek the establishment of compatible agricultural operations on the usable lands of the Petition Area. The PC shall determine whether

probable cause exists to re-evaluate the SUP and to hold a hearing pursuant to Section 2-49 of the Rules of the PC. Extension to any subsequent six-month period's deadlines may be granted by the PC for unforeseen extenuating circumstances.

3. This SUP operational period shall be valid for a period of 25 years plus a 10-year extension preceded by two-years of construction and 18 to 24 months of decommissioning from the date of the State Land Use Commission's (LUC) Decision and Order approving the SUP, subject to further extensions upon a timely request for extension filed with the PC at least 120 days prior to the SUP's 39-year expiration.
4. The Petitioner shall establish the Project within two years of the date of the LUC's Decision and Order approving the SUP. Requests for extension of this deadline shall be submitted to the Director of the DPP prior to the expiration of the deadline. The PC may grant an extension to the deadline to establish the Project due to unforeseen circumstances that were beyond the control of the Petitioner.
5. Approval of the Archaeological Inventory Survey (AIS) from the State Historic Preservation Division (SHPD) shall be obtained prior to the PC decision. Any recommendations from the SHPD shall be included in such decision. Should SHPD approval of the AIS and recommended mitigation measures not be obtained prior to the PC's decision, the identified historic sites shall be preserved in place with an adequate buffer to avoid disturbance of the sites.
6. The Petitioner shall submit for review and obtain the approval of the following from the Director of the DPP, prior to any subdivision action or the issuance of a grading or building permit:
 - a. The agricultural plan listed in Condition No. 1 with a site plan showing the minimum land area to be made available and the types of agricultural activity proposed for compatible agricultural use.
 - b. A revised landscape plan showing a landscape treatment to screen the Project along the southern (makai) boundary of Project Area 5.
 - c. A Pohakea Trail survey and access plan conducted with consultation by the appropriate agencies and persons who would have more knowledge of the trail's historical location and possible status.
7. The Petitioner, its assignees, or the landowner, shall cause the decommissioning of the Project at the Petitioner's, assignee's, or owner's expense by removing all of the equipment related to the SEF by no more than 24 months of the conclusion of Project operation, or it's useful life, and the restoration of the disturbed earth to substantially the same physical condition as existed prior to the development of the SEF.
8. Prior to the issuance of a building permit for the SEF, the Petitioner shall submit to the DPP proof of financial security, i.e., bond, letter of credit, or similar financial instrument, to decommission the Project and restore the Petition Area to substantially the same physical condition as existed prior to the development of the Project. Such proof may include, but not be limited to, a posted letter of credit or similar mechanism from a creditworthy financial institution. This shall be in favor of the owners of the land subject to the SUP, in the amount based on the used acreage of that landowner by the Project

multiplied by the 2020 estimated rate of decommissioning established by the Petitioner's consultant, Engineering Analytics, Incorporated (\$6,830 per acre escalated per year for inflation). Said security shall remain in place for the duration of the SUP.

9. The Petitioner shall comply with the recommendations of the State of Hawaii, Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW), regarding the protection of endangered, threatened, and native flora and fauna species and their associated habitat should be monitored and observed. If identified in the Petition Area, the Petitioner shall follow the mitigation, monitoring, and avoidance measures contained in the Biological Resource Report prepared for the Project.
10. On or before December 31 of each year that the SUP is in effect, the Petitioner or its successor shall file an annual report to the DPP that demonstrates the Petitioner's compliance with conditions of the SUP. The annual report shall also include, but not be limited to:
 - a. The total acreage per type of agricultural activity, their yields, amount sold locally and out-of-state, and revenues in aggregate for each agricultural activity.
 - b. Evidence of proof of financial security for decommissioning of the Project.
 - c. Detailed records of inspection of deceased wildlife as a result of natural causes or facility operations; the hours spent by specialists training operations staff in the proper response, documentation, and reporting of any downed wildlife observed; the results of the established and implemented Downed Wildlife Observation Program; the recorded fatalities of state-listed species, federally-listed species, or species protected under the Migratory Bird Treaty Act that were reported to the DOFAW and the United States Fish and Wildlife Service; and invasive species found in the Petition Area that were reported to the Oahu Invasive Species Committee.
 - d. Avoidance and mitigation measures conducted to protect and preserve historic, cultural, and archeological features, sites, and resources.
 - e. Quantities of water demand, storage, pumping, delivery, availability by source for each of the five Project Areas prior to Phase Two of the Agrivoltaics Program of the agricultural plan.
11. Major modifications to: (1) The Project plans, including but not limited to significant increases in the number of PV panels; (2) Amendments to the conditions of approval; (3) Significant expansions of the approved area; or (4) Change in uses stated herein, shall be subject to the review and approval of the PC and the LUC. Minor modifications including minor additions to accessory uses and structures, and new incidental uses and structures in the approved area are subject to review and approval by the Director of the DPP.
12. The Petitioner and/or landowner shall notify the Director of the DPP of:
 - a. Any change or transfer of licensee on the property;
 - b. Any change in uses on the property;

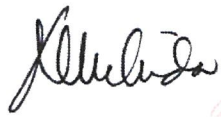
- c. Termination of any uses on the property; and/or
- d. Transfer in ownership of the property.

The PC, in consultation with the Director of the DPP, shall determine the disposition of this SUP, and the facilities permitted herein.

- 13. Enforcement of the conditions of the SUP shall be pursuant to the Rules of the PC, including the issuance of an order to show cause as to the reason the SUP should not be revoked if the PC has reason to believe that there has been a failure to perform consistent with representations made by the Petitioner or the conditions imposed herein.

Dated at Honolulu, Hawaii this 20th day of May 2021.

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
STATE OF HAWAII

By  Digitally signed by Uchida,
Dean
Date: 2021.05.20 12:19:46
-10'00'

Dean Uchida
Director

Attachments

Exhibit A and Exhibits 1-6

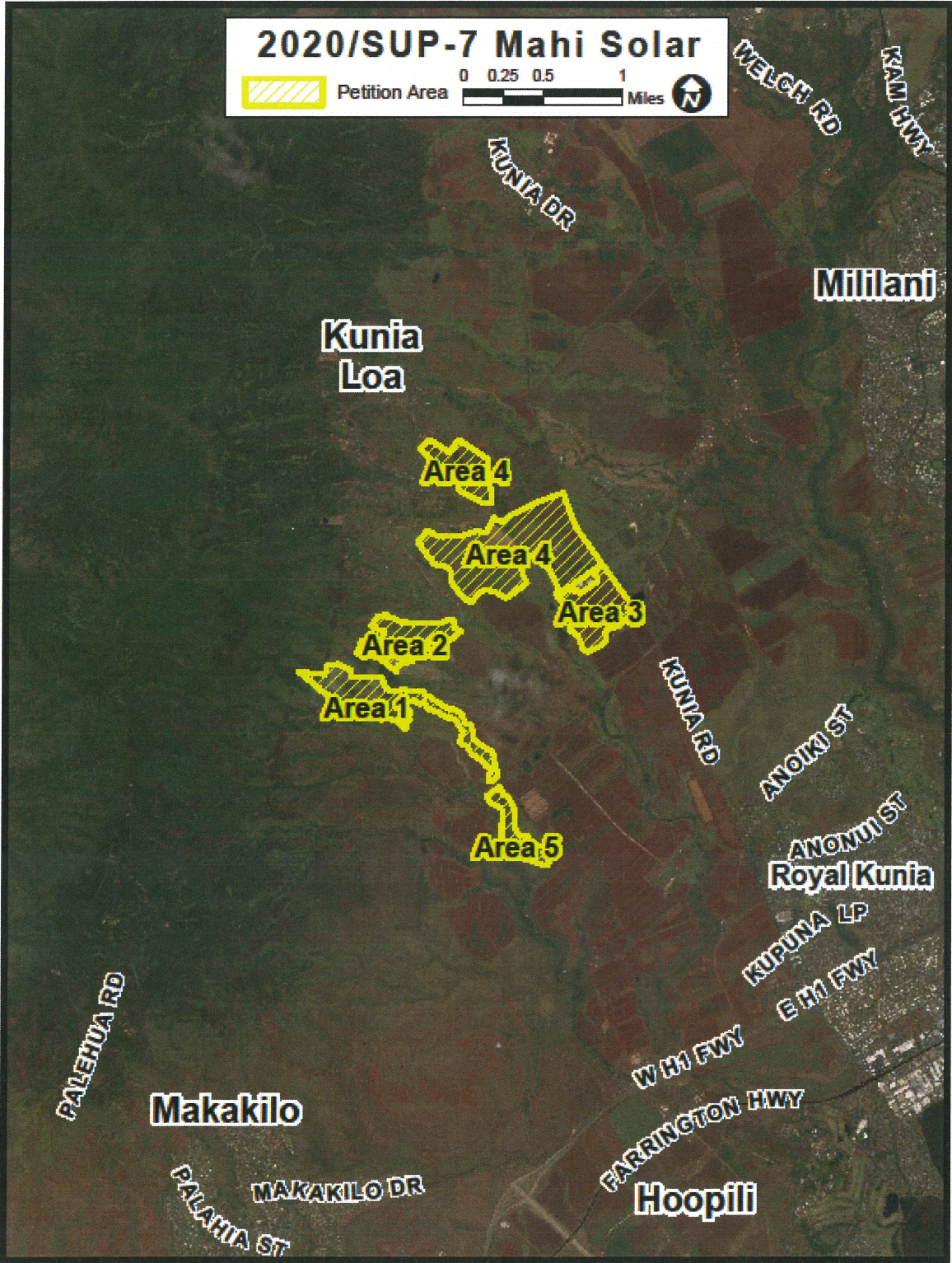
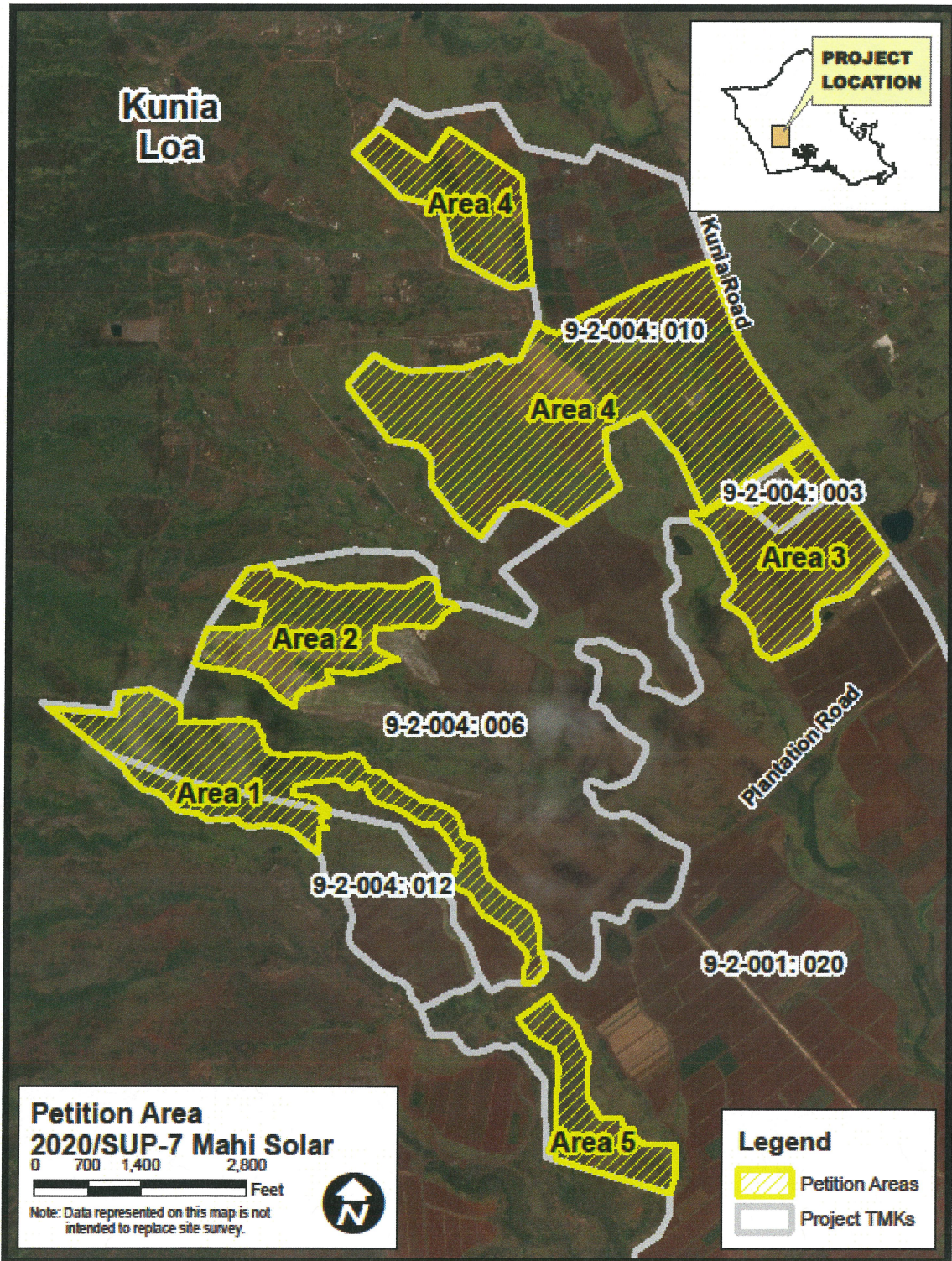


EXHIBIT A



Kunia
Loa



Area 4

9-2-004:010

Kunia Road

Area 4

9-2-004:003

Area 3

Area 2

9-2-004:006

Plantation Road

Area 1

9-2-004:012

9-2-001:020

Area 5

Petition Area
2020/SUP-7 Mahi Solar
 0 700 1,400 2,800 Feet
 Note: Data represented on this map is not intended to replace site survey.

Legend
 Petition Areas
 Project TMKs

EXHIBIT 1

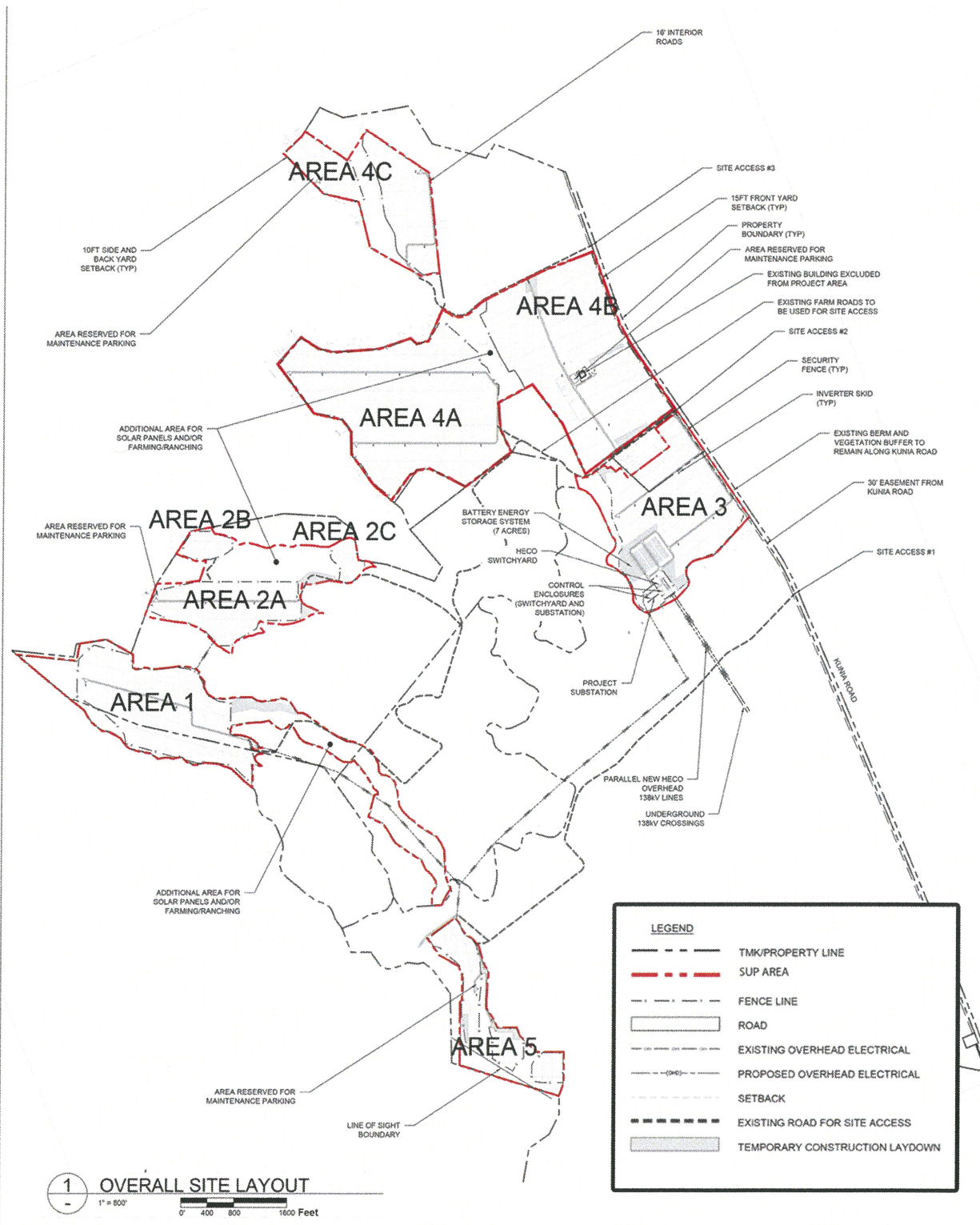


EXHIBIT 2

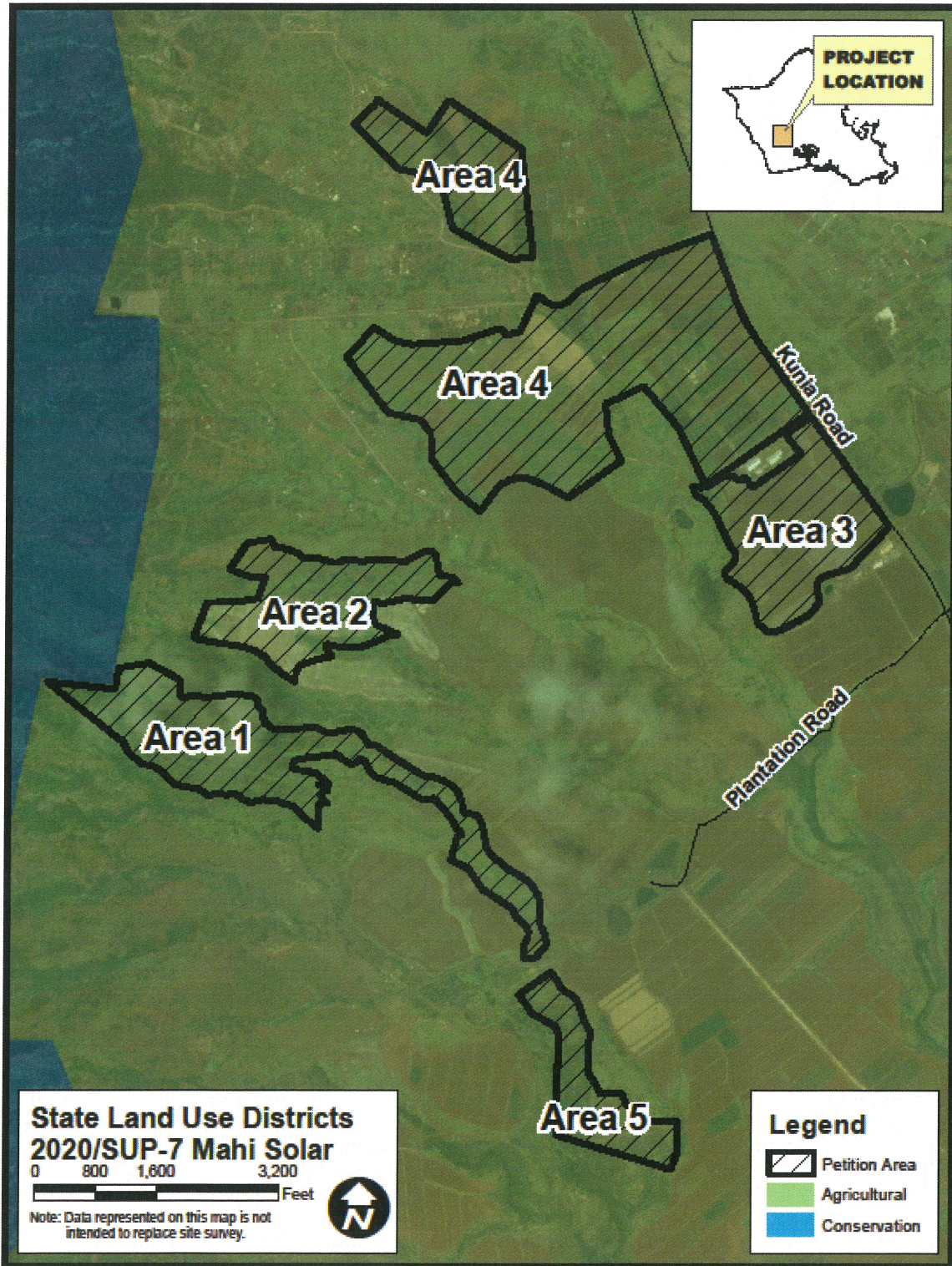


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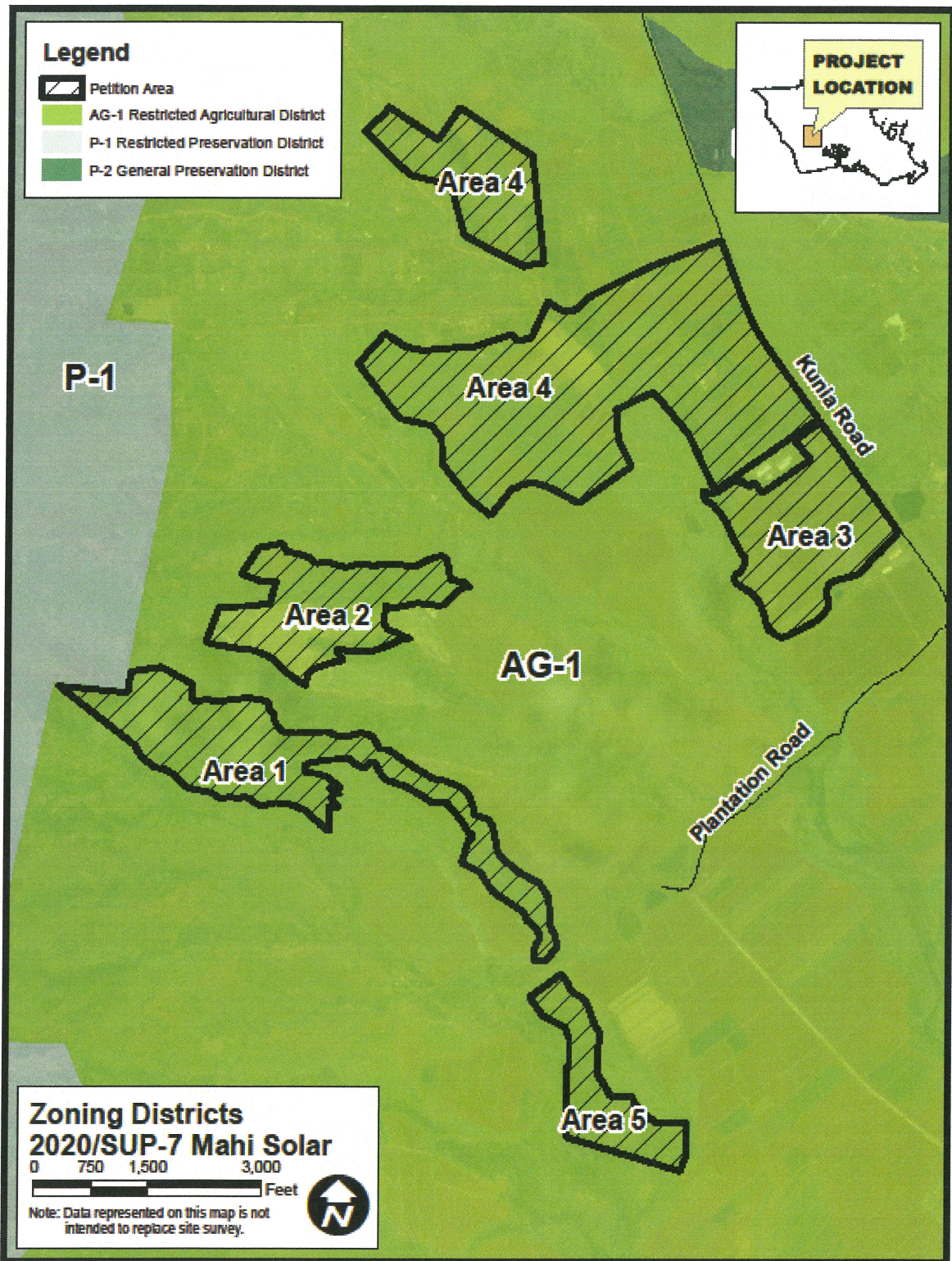


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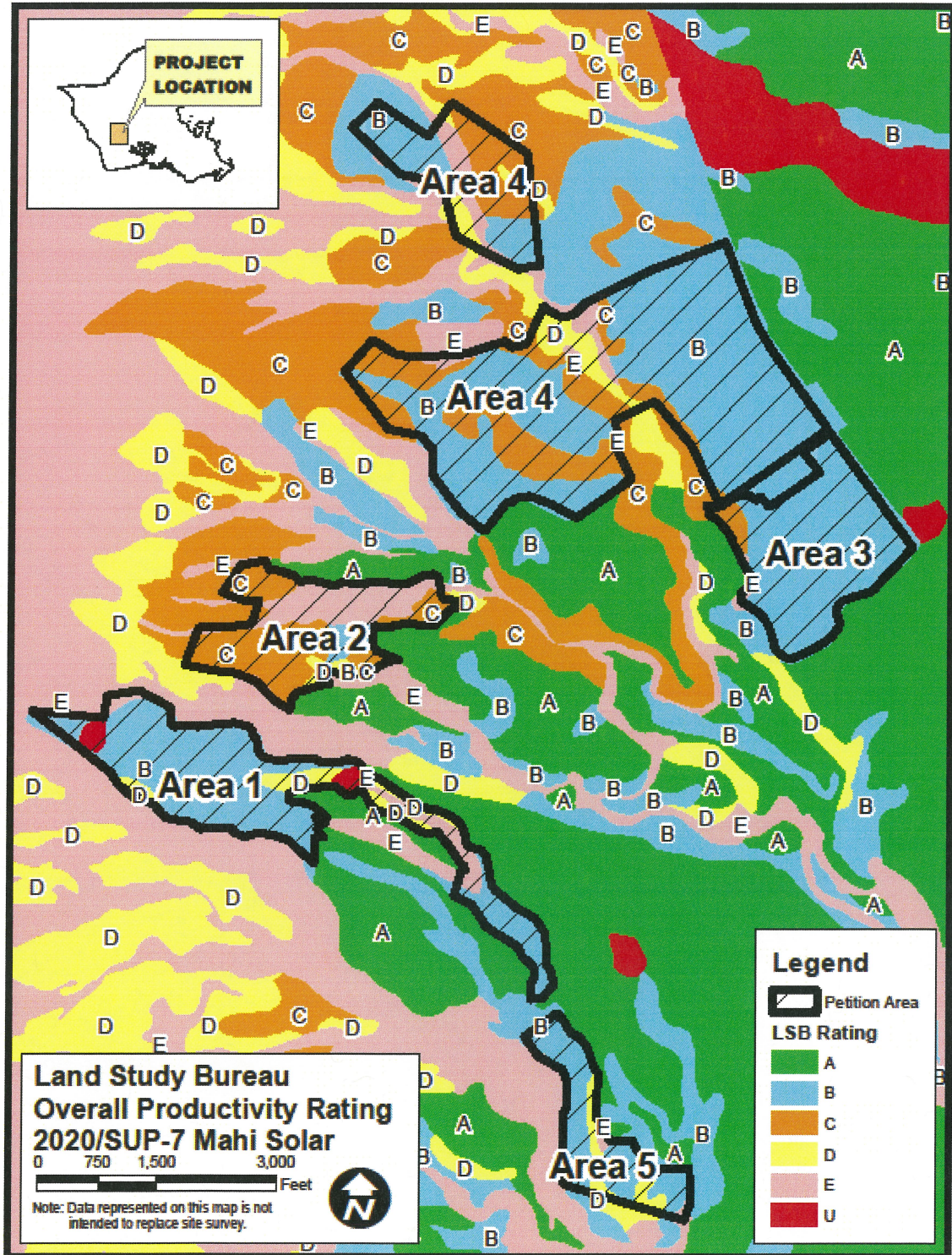


EXHIBIT 5

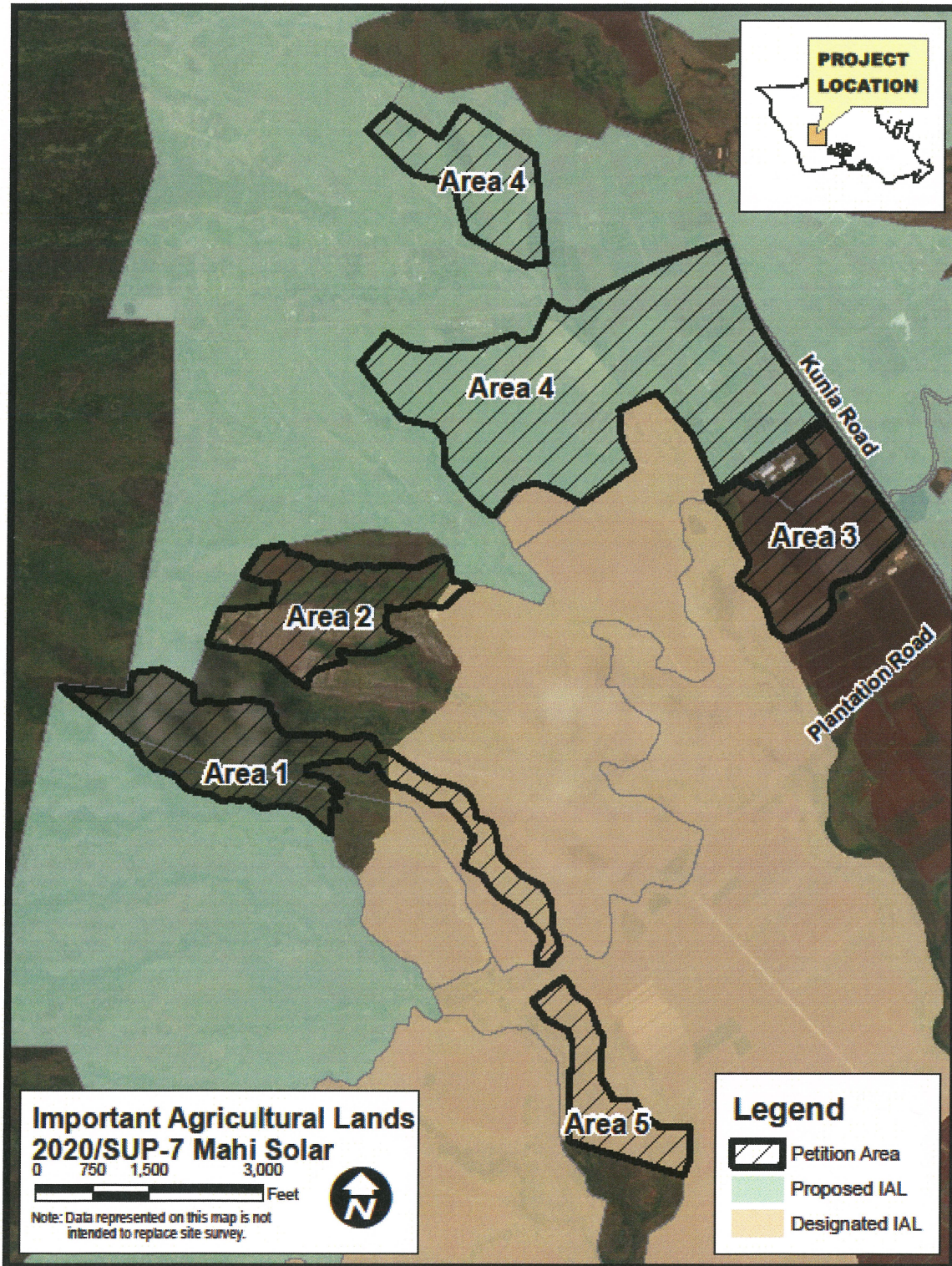
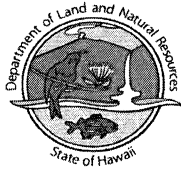


EXHIBIT 6

Attachment A
Agency Comments

DAVID Y. IGE
GOVERNOR OF HAWAII



SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 12, 2021

LD 0413

Raymond Young, Acting Branch Chief
Community Planning Branch
Department of Planning & Permitting
City and County of Honolulu
650 S. King Street, 3rd Floor
Honolulu, HI 96813

(Via email: fkraintz@honolulu.gov)

Dear Sirs:

SUBJECT: Special Use Permit (SUP) Application No. 2020/SUP-7
Mahi Solar Project
Honouliuli, Ewa, Island of Oahu
TMK: (1) 9-2-001:020 (por.), 9-2-4:003 (por.), 9-2-004:006 (por.), 9-2-004:010 (por.), and 9-2-004:012 (por.)

Thank you for the opportunity to review and comment on the subject project. In addition to previous comments sent to you from the Department of Land and Natural Resources (DLNR) dated May 07, 2021, and May 10, 2021, enclosed are comments received from DLNR's Division of Forestry and Wildlife.

Should you have any questions, please feel free to contact Barbara Lee via email at barbara.j.lee@hawaii.gov. Thank you.

Sincerely,

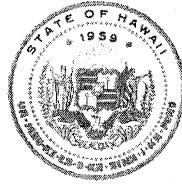
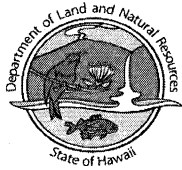
Russell Tsuji

Russell Y. Tsuji
Land Administrator

Attachments

Cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII



SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 22, 2021

LD 0413
2020/SUP-7

MEMORANDUM

TO: **DLNR Agencies:**
 ___ Div. of Aquatic Resources
 ___ Div. of Boating & Ocean Recreation
X Engineering Division (via email: DLNR.Engr@hawaii.gov)
X Div. of Forestry & Wildlife (via email: Rubyrosa.T.Terrago@hawaii.gov)
 ___ Div. of State Parks
X Commission on Water Resource Management (via email: DLNR.CWRM@hawaii.gov)
 ___ Office of Conservation & Coastal Lands
X Land Division – Oahu District (via email: DLNR.Land@hawaii.gov)

FROM: *Russell Tsuji*
 Russell Y. Tsuji, Land Administrator

SUBJECT: **Special Use Permit Application No. 2020/SUP-7**
Mahi Solar Project

LOCATION: Honouliuli, Ewa, Island of Oahu, Hawaii; TMKs: (1) 9-2-001-020 (por.), 9-2-4:003 (por.), 9-2-004:006 (por.), 9-2-004:010 (por.), and 9-2-004:012 (por.)

APPLICANT: **Department of Planning and Permitting, City & County of Honolulu**

Transmitted for your review and comment is information on the above-referenced project. Please review the attached information and submit any comments by the internal deadline of **Friday, May 07, 2021** to the Land Division at DLNR.Land@hawaii.gov, and copied to barbara.j.lee@hawaii.gov.

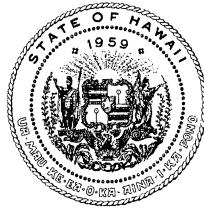
If no response is received by the above due date, we will assume your agency has no comments at this time. If you have any questions, please contact Barbara Lee at barbara.j.lee@hawaii.gov. Thank you.

- () We have no objections.
- () We have no comments.
- () We have no additional comments.
- () Comments are attached.

Signed: *DGS*
 Print Name: DAVID G. SMITH, Administrator
 Division: Division of Forestry and Wildlife
 Date: May 12, 2021

Attachments
Cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET, ROOM 325
HONOLULU, HAWAII 96813

May 7, 2021

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
FIRST DEPUTY

M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

MEMORANDUM

Log no. 3118

TO: RUSSELL Y. TSUJI, Administrator
Land Division

FROM: DAVID G. SMITH, Administrator
Division of Forestry and Wildlife

SUBJECT: Division of Forestry and Wildlife Comments for the Special Use Permit (SUP)
Application No.2020/SUP-7 Mahi Solar Project

The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) has received your inquiry regarding the SUP application for the Mahi Solar Project in Ewa on O'ahu, Hawai'i, TMKs: (1) 9-2-001:020 (por.), 9-2-004:003 (por.), 006 (por.), 010 (por.) and 012 (por.). The proposed project consists of constructing a 120-megawatt alternating current solar and energy storage facility which includes a ground-mounted, single-axis tracking photovoltaic (PV) arrays on a 480-megawatt-hour Battery Energy Storage System on 620 of existing agricultural land.

The State SUP application identifies State listed endangered and threatened wildlife species that are known to occur, may occur, or may transit the project site. DOFAW agrees that the listed species possibly impacted by the development of the project include the O'ahu 'Elepaio (*Chasiempis ibidis*), Hawaiian Short-eared Owl or Pueo (*Asio flammeus sandwichensis*), Hawaiian Moorhen (*Gallinula galeata sandvicensis*), Hawaiian Stilt (*Himantopus mexicanus knudseni*), Hawaiian Coot (*Fulica alai*), Hawaiian Hoary Bat (*Lasiurus cinereus semotus*), Hawaiian Petrel (*Pterodroma sandwichensis*), Newell's Shearwater (*Puffinus auricularis newelli*), and the Band-rumped Storm Petrel (*Oceanodroma castro*).

We appreciate the inclusion of recommended mitigation, monitoring and avoidance measures in Appendix D of the Biological Resources Report by SWCA intended to avoid construction and operational impacts to State listed species. Based on the information from the SWCA's report, DOFAW provides the following comments on the potential of the proposed work to affect listed species in the vicinity of the project area.

DOFAW recommends conducting follow-up ground surveys using playback to determine if 'Elepaio are present in the vicinity of the proposed project site. We recommend a qualified biologist with a Section 6 ESA permit conduct these surveys. Please contact DOFAW at (808) 587-0166 for further guidance and information.

Survey records indicate endangered plant species, such as *Abutilon menziesii* and *Gardenia brighamii*, have the potential to occur within or near the proposed project area. DOFAW recommends that a qualified botanist survey for these rare and endangered plants that may occur

and be impacted in the proposed project area. If any of these species are found, please notify DOFAW for further guidance.

The State endangered Pueo has been observed in the project site vicinity. Pueo are a crepuscular species, most active during dawn and dusk twilights. DOFAW recommends twilight pre-construction surveys by a qualified biologist prior to clearing vegetation for construction. If Pueo nests are present, a buffer zone of 46 m (150 feet) should be established in which no clearing occurs until nesting ceases, and DOFAW staff should be notified. Work should not resume until directed by DOFAW.

State listed waterbirds such as the Hawaiian Stilt, Hawaiian Coot, and Hawaiian Common Gallinule have the potential to occur in the vicinity of the proposed project site. It is against State law to harm or harass these species. If any of these species are present during construction activities, then all activities within 100 feet (30 meters) should cease, and the bird should not be approached. Work may continue after the bird leaves the area of its own accord. If a nest is discovered at any point, please contact the O'ahu DOFAW Office at (808) 973-9778.

The State listed Hawaiian Hoary Bat or 'Ōpe'ape'a has the potential to occur in the vicinity of the project area and may roost in nearby trees. If any site clearing is required this should be timed to avoid disturbance during the bat birthing and pup rearing season (June 1 through September 15). If this cannot be avoided, woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed without consulting DOFAW. It has been documented that hoary bats can become ensnared in barbed wire during flight and die. We therefore recommend the use of barbed wire be avoided, and are pleased to note that your plan states that barbed wire will not be installed at the project site.

We note that artificial lighting can adversely impact seabirds that may pass through the area at night by causing disorientation. This disorientation can result in collision with manmade artifacts or grounding of birds. For nighttime lighting that might be required, DOFAW recommends that all lights be fully shielded to minimize impacts. Nighttime work that requires outdoor lighting should be avoided during the seabird fledging season from September 15 through December 15. This is the period when young seabirds take their maiden voyage to the open sea. For illustrations and guidance related to seabird-friendly light styles that also protect the dark, starry skies of Hawai'i please visit: <https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf>.

DOFAW appreciates the applicant's commitment to implementing a Downed Wildlife Observation Program program that informs site personnel of species that may occur in the project vicinity and could potentially be harmed by solar panels. Site personnel should document sightings of threatened or endangered species, as well as immediately report any mortality or injury of these species to DOFAW so that we may assist in avoiding and minimizing impacts.

DOFAW recommends minimizing the movement of plant or soil material between worksites, such as in fill. Soil and plant material may contain invasive fungal pathogens (e.g. Rapid 'Ōhi'a Death), vertebrate and invertebrate pests, or invasive plant parts that could harm Hawai'i's native species and ecosystems. We recommend consulting the O'ahu Invasive Species Committee at (808) 266-7994 during planning, design, and construction of the project to be informed of any high-risk invasive species in the area and ways to mitigate their spread. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species.

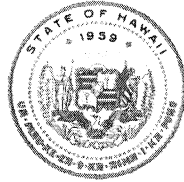
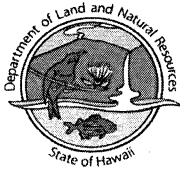
We appreciate your efforts to work with our office for the conservation of Hawai'i's native species. Should the scope of the project change significantly, or should it become apparent that threatened or endangered species may be impacted, please contact our staff as soon as possible. If you have any questions, please contact Paul Radley, Protected Species Habitat Conservation Planning Coordinator at (808) 587-0010 or paul.m.radley@hawaii.gov.

Sincerely,



DAVID G. SMITH
Administrator

DAVID Y. IGE
GOVERNOR OF HAWAII



*Emailed to Franz Kraitz
at 9:43am on 5/10/21*

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 07, 2021

LD 0413

Raymond Young, Acting Branch Chief
Community Planning Branch
Department of Planning & Permitting
City and County of Honolulu
650 S. King Street, 3rd Floor
Honolulu, HI 96813

(Via email: fkraitz@honolulu.gov)

Dear Sirs:

**SUBJECT: Special Use Permit (SUP) Application No. 2020/SUP-7
Mahi Solar Project
Honouliuli, Ewa, Island of Oahu
TMK: (1) 9-2-001:020 (por.), 9-2-4:003 (por.), 9-2-004:006 (por.), 9-2-004:010 (por.), and 9-2-004:012 (por.)**

Thank you for the opportunity to review and comment on the subject project. The Land Division of the Department of Land and Natural Resources (DLNR) distributed copies of your request to various DLNR divisions for their review and comment.

Attached are comments received from our Division of Engineering. Should you have any questions, please feel free to contact Barbara Lee via email at barbara.j.lee@hawaii.gov. Thank you.

Sincerely,

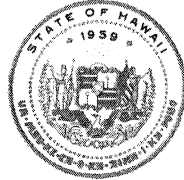
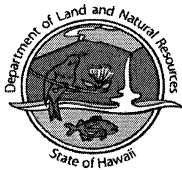
Russell Tsuji

Russell Y. Tsuji
Land Administrator

Attachments

Cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII



*Emailed to Franz Krainke
at 9:43am on 5/10/21*

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 22, 2021

LD 0413
2020/SUP-7

MEMORANDUM

FROM:

~~TO:~~

DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division (via email: DLNR.Engr@hawaii.gov)
- Div. of Forestry & Wildlife (via email: Rubyrosa.T.Terrago@hawaii.gov)
- Div. of State Parks
- Commission on Water Resource Management (via email: DLNR.CWRM@hawaii.gov)
- Office of Conservation & Coastal Lands
- Land Division – Oahu District (via email: DLNR.Land@hawaii.gov)

TO:

FROM:

Russell Y. Tsuji, Land Administrator

Russell Tsuji

SUBJECT:

Special Use Permit Application No. 2020/SUP-7

Mahi Solar Project

LOCATION:

Honouliuli, Ewa, Island of Oahu, Hawaii; TMKs: (1) 9-2-001-020 (por.), 9-2-4:003 (por.), 9-2-004:006 (por.), 9-2-004:010 (por.), and 9-2-004:012 (por.)

APPLICANT:

Department of Planning and Permitting, City & County of Honolulu

Transmitted for your review and comment is information on the above-referenced project. Please review the attached information and submit any comments by the internal deadline of **Friday, May 07, 2021** to the Land Division at DLNR.Land@hawaii.gov, and copied to barbara.j.lee@hawaii.gov.

If no response is received by the above due date, we will assume your agency has no comments at this time. If you have any questions, please contact Barbara Lee at barbara.j.lee@hawaii.gov. Thank you.

- We have no objections.
- We have no comments.
- We have no additional comments.
- Comments are attached.

Signed:

Carty S. Chang

Print Name:

Carty S. Chang, Chief Engineer

Division:

Engineering Division

Date:

Apr 26, 2021

Attachments

Cc: Central Files

**DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION**

LD/Russell Y. Tsuji

Ref: Special Use Permit (SUP) Application No. 2020/SUP-7

Mahi Solar Project

Location: Honouliuli, Ewa, Oahu

TMK(s): (1) 9-2-001-020 (por.), 9-2-4:003 (por.), 9-2-004:006 (por.), 9-2-004:010 (por), and 9-2-004:012 (por.)

Applicant: Department of Planning and Permitting, City & County of Honolulu

COMMENTS

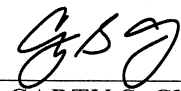
The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high-risk areas). State projects are required to comply with 44CFR regulations as stipulated in Section 60.12. Be advised that 44CFR reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zones are designated on FEMA's Flood Insurance Rate Maps (FIRM), which can be viewed on our Flood Hazard Assessment Tool (FHAT) (<http://gis.hawaiiinfip.org/FHAT>).

If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency below:

- Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7253.
- Kauai: County of Kauai, Department of Public Works (808) 241-4896.

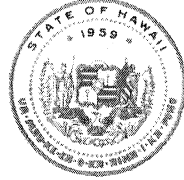
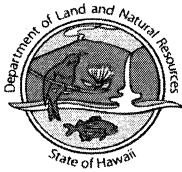
Signed: _____



CARTY S. CHANG, CHIEF ENGINEER

Date: Apr 26, 2021

DAVID Y. IGE
GOVERNOR OF HAWAII



SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 10, 2021

LD 0413

Raymond Young, Acting Branch Chief
Community Planning Branch
Department of Planning & Permitting
City and County of Honolulu
650 S. King Street, 3rd Floor
Honolulu, HI 96813

(Via email: fkraintz@honolulu.gov)
at 10:36am on 5/10/21

Dear Sirs:

**SUBJECT: Special Use Permit (SUP) Application No. 2020/SUP-7
Mahi Solar Project
Honouliuli, Ewa, Island of Oahu
TMK: (1) 9-2-001:020 (por.), 9-2-4:003 (por.), 9-2-004:006 (por.), 9-2-004:010 (por.), and 9-2-004:012 (por.)**

Thank you for the opportunity to review and comment on the subject project. In addition to previous comments sent to you from the Department of Land and Natural Resources (DLNR) dated May 07, 2021, enclosed are comments received from DLNR's Commission on Water Resource Management.

Should you have any questions, please feel free to contact Barbara Lee via email at barbara.j.lee@hawaii.gov. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Attachments

Cc: Central Files



E-mailed to fkrautz@hawaii.gov
at 10:36am on 5/10/21

SUZANNE D. CASE
CHAIRPERSON

KAMANA BEAMER, PH.D.
MICHAEL G. BUCK
ELIZABETH A. CHAR, M.D.
NEIL J. HANNAHS
WAYNE K. KATAYAMA
PAUL J. MEYER

M. KALEO MANUEL
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

May 7, 2021

REF: RFD.5656.3

TO: Mr. Russell Tsuji, Administrator
Land Division

FROM: M. Kaleo Manuel, Deputy Director *Kaleo Manuel*
Commission on Water Resource Management

SUBJECT: Special Use Permit Application No. 202/SUP-7; Mahi Solar Project

FILE NO.: RFD.5656.3
TMK NO.: (1) 9-2-001:020, (1) 9-2-004:003, (1) 9-2-004:006, (1) 9-2-004:010, (1) 9-2-004:012

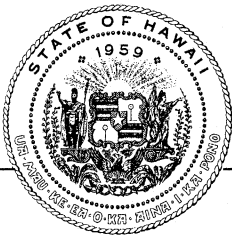
Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at <http://dlnr.hawaii.gov/cwrmm>.

Our comments related to water resources are checked off below.

1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at <http://www.usgbc.org/leed>. A listing of fixtures certified by the EAP as having high water efficiency can be found at <http://www.epa.gov/watersense>.
5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at <http://planning.hawaii.gov/czm/initiatives/low-impact-development/>
6. We recommend the use of alternative water sources, wherever practicable.
7. We recommend participating in the Hawaii Green Business Program, that assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. The program description can be found online at <http://energy.hawaii.gov/green-business-program>.
8. We recommend adopting landscape irrigation conservation best management practices endorsed by the Landscape Industry Council of Hawaii. These practices can be found online at http://www.hawaiiscape.com/wp-content/uploads/2013/04/LICH_Irrigation_Conservation_BMPs.pdf.

- 9. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.
 - 10. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.
 - 11. A Well Construction Permit(s) is (are) are required before the commencement of any well construction work.
 - 12. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
 - 13. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
 - 14. Ground-water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
 - 15. A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a steam channel.
 - 16. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered.
 - 17. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
 - 18. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.
- OTHER:

If you have any questions, please contact Dean Uyeno of the Commission staff at 587-0234.



OFFICE OF PLANNING STATE OF HAWAII

DAVID Y. IGE
GOVERNOR

MARY ALICE EVANS
DIRECTOR
OFFICE OF PLANNING

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: <http://planning.hawaii.gov/>

DTS 202104161004NA

May 11, 2021

Mr. Dean Uchida
Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813
Attn: Franz Kraintz

Dear Mr. Uchida:

Subject: Special Use Permit (SUP) Application, Mahi Solar Project,
2020/SUP-7
Applicant: Mahi Solar, LLC
Land Area: Approximately 620 Acres
Location: Kunia, Central Oahu, Oahu, Hawaii
TMKs: (1) 9-2-001: 020 Por.; 9-2-004: 003 Por., 006 Por., 010 Por., and
012 Por.

The Office of Planning (OP) has reviewed the subject proposal to establish a solar photovoltaic and battery energy storage system on approximately 620 acres of land in five separate areas west of Kunia Road and mauka of the H-1 Freeway. The proposed project would provide 120 Megawatts (MW) of solar energy with a 480-MW Battery Storage system. The project also includes a 34.5 kilovolt substation and a new 138 KV transmission circuit west of Kunia Road.

According to the submittal, the Project site is designated as Agriculture and Preservation in the Central Oahu Sustainable Communities Plan ("SCP") and the Ewa Development Plan ("DP"). The Project site is within the State Agricultural Land Use District and zoned AG-1 Restricted Agricultural District. The site is bounded by agricultural lands to the north, south and east, and the Honouliuli Forest Reserve, designated as conservation land, to the west side. Kunia Loa Ridge Farmlands are located adjacent to areas 4A and 4B. The Honouliuli National Historic Site administered by the National Park Service is located south of Area 5.

Approximately 98.8 acres are currently in diversified agricultural production. 109.9 acres are fallow and about 204 acres are overgrown. The applicant proposes to increase the agriculture productivity on the project area by utilizing about 600 acres for agriculture.

Special Permit Guidelines

The guidelines for Special Permits (SP) are contained within Hawaii Administrative Rules (HAR) § 15-15-95 which allow certain “unusual and reasonable” uses within Agricultural and Rural Districts other than those for which the district is classified. HAR § 15-15-95 lists five (5) guidelines for determining whether a proposed use is “unusual and reasonable.” The following assesses the proposed project relative to the Special Permit guidelines:

- 1. The use shall not be contrary to the objectives sought to be accomplished by Chapters 205 and 205A, HRS, and the rules of the Land Use Commission (LUC).**

Hawaii Revised Statutes (HRS) Chapter 205 seeks to protect agricultural lands and ensure their continued availability for agricultural use. It provides that the Agricultural District shall include lands with a high capacity for agricultural production, grazing, or other agricultural uses. Chapter 205 also recognizes, however, that some lands in the Agricultural District may not be suitable for the uses permitted in the Agricultural District and, therefore, other uses may be allowed with a Special Permit.

Page 7-2. The document indicates that the applicant will make available about 610 acres of the project area for agricultural use through an Agrivoltaics Program in cooperation with the Hawaii Agricultural Research Center.

Page 4-5 to 4-7. The document indicates that, under the Agricultural Lands of Importance to the State of Hawaii (ALISH) classification, the project area contains Prime, Unique and Other Important Agricultural Lands.

Page 4-5 to 4-6. There are no A rated lands as designated by the Land Study Bureau. Other soils on the proposed West Oahu Solar project site are designated by the Land Study Bureau as:

B Lands	399.8 Acres
C Lands	115.6 Acres
D Lands	36.8 Acres
E Lands	61.9 Acres
Unclassified	5.9 Acres
Total	620 Acres

As noted in HRS § 205-4.5(a)(21), solar facilities on lands classified as B for which a special permit is granted pursuant to HRS § 205-6 may be permitted under certain restrictions relating to the decommissioning of the solar project, and the use in conjunction with compatible agricultural uses at reduced rates.

Page 4-7 to 4-12. Important Agricultural Lands (IAL). Approximately 415.3 acres, or 67% of the project lands are in IAL-designated or recommended IAL areas. The document indicates that approximately 69.5 acres located within Area 1 are lands designated as IAL via Land Use Commission (LUC) Docket No. DR18-61 by the owner Hartung Brothers. Another 40.2 acres of IAL located within Area 5 are owned by Monsanto and designated as IAL via LUC Docket No. DR17-59. Also, about 305.6 acres owned by Fat Law's Farm, Inc. have been included in the City's IAL recommendations currently before the LUC.

Page 4-21 to 4-27. Cultural and Historic Resources and Ka Paakai Analysis. The document provides a Cultural Analysis (Appendix E) and an Archaeological Inventory Survey (AIS) (Appendix F). Several features were discovered on the project site, and the AIS notes that the Honouliuli Internment Camp, designated a National Park, is adjacent to Area 5. The study also indicates that there may also be possible impacts to the Pohakea Trail which is located along some of the proposed project areas, and portions of the historic Waiahole Ditch are also located within the project area. While the studies include proposed mitigation measures, these should be included as conditions of approval for the project.

We note that the Application does not include a letter from the Department of Land and Natural Resources, State Historic Preservation Division ("SHPD") for the review and approval of the AIS, mitigation and preservation measures for the proposed project. Any recommendations from SHPD should be included as conditions of approval.

The Application does not specifically incorporate the mitigation recommendations on Page 52 of the Cultural Assessment relative to the Pohakea trail, native plant resources, and archaeological resources in fulfillment of the Ka Paakai Analysis requirements. These recommendations should be incorporated as conditions of approval.

OP is concerned with these omissions and strongly recommends that a complete description, analysis, and mitigation measures, including approval of the AIS from SHPD, be provided for the Planning Commission's consideration, and included in the record of the Special Permit decision that is sent to the LUC for approval.

2. The desired use would not adversely affect surrounding property.

The 620-acre project area is located in Kunia, Central Oahu, bounded by agricultural land to the north, south and east sides. The Honouliuli Forest Reserve is located to the west side. Kunia Loa Ridge Farmlands is located adjacent to Areas 4A and 4B. The Honouliuli National Historic Site Internment Camp is located nearby Area 5 to the south side. The nearest residential area is about 1.2 miles to the southeast.

Section 4.9 Views. The Petitioner has assessed visual impacts to the surrounding areas. The solar arrays would have a relatively low profile and would not be visible from surrounding locations. The panels would be most visible from Palawai Street. Landscaping would be installed along the fence line to provide screening.

The application also includes Attachment H, a Glare Study. The study indicates that there would be no impacts to airport operations from the solar panels. The State Department of Transportation should be contacted to provide comments on the project. The DOT may also require that a radiofrequency study be included. However, we note that the proposed site is about 10 miles from Kalaeloa Airport.

Sections 4.4 and 7.2.3. Potential Impacts and Mitigation Measures. Biological Resources. The project areas border and is close to the Oahu Elepaio critical habitat. Also, other endangered species such as the Hawaiian short-eared Pueo and the Hawaiian Hoary Bat may use the project sites for nesting and foraging. The application provides proposed mitigation measures on page 7-4 that should be included as conditions if the application is approved. The application also indicates that there were no federally or State-listed endangered, threatened, or candidate plant species identified in the project area. We note that other species may transit the site, such as various migratory seabirds. However, the document did not indicate migratory seabird species as a possible biological resource.

3. The use would not unreasonably burden public agencies to provide streets, sewers, water, drainage, schools, fire, and police resources.

According to the application, the proposed project would not require additional infrastructure support from public agencies for the proposed solar project. A Traffic Impact Study was provided, indicating little to no impacts. Stormwater runoff was assessed and would not have adverse impacts on drainage. The proposed project will incorporate multiple layers of fire prevention and suppression measures on the property such that it will not impact fire protection services.

4. Unusual conditions, trends, and needs have arisen since the district boundaries and rules were established.

OP recognizes the State interest in encouraging renewable energy in appropriate locations around the State to promote energy self-sufficiency and reduce the State's dependence on fossil fuels. We note that the proposed solar project is within the State Agricultural District, however the proposal will be utilizing lands that are classified as B, C, D and E lands. Solar facilities are allowed via the Special Permit procedures under HRS § 205-4.5(a)(21) on lands classified as B rated lands under certain restrictions relating to the decommissioning of the solar project, and the use in conjunction with compatible agricultural uses at reduced rates. The application appears to meet these requirements.

5. The land upon which the proposed use is sought is unsuited for the uses permitted within the district.

The land upon which the proposed use is sought is suitable for the uses permitted within the district. As noted above, the project would be located on approximately 620 acres of Class B, C, D and E lands, as rated by the LSB productivity rating system. The project site lands would be considered suitable for agricultural uses which allow solar energy facilities.

State Issues and Concerns

OP also offers the following comments on other matters of concern.

- A. Pursuant to Hawaii Administrative Rules § 15-15-95(b), Special Permits for areas greater than 15 acres require approval of both the county planning commission and the LUC. Since the proposed project site is larger than 15 acres, the LUC must approve the project and can impose additional conditions of approval.
- B. HRS § 205-4.5(a)(21) provides that:
 - (A) The area occupied by the solar energy facilities is also made available for compatible agricultural activities at a lease rate that is at least fifty per cent below the fair market rent for comparable properties;
 - (B) Proof of financial security to decommission the facility is provided to the satisfaction of the appropriate county planning commission prior to date of commencement of commercial generation; and
 - (C) Solar energy facilities shall be decommissioned at the owner's expense according to the following requirements:

Mr. Dean Uchida
May 14, 2021
Page 6

- (i) Removal of all equipment related to the solar energy facility within twelve months of the conclusion of operation or useful life; and
- (ii) Restoration of the disturbed earth to substantially the same physical condition as existed prior to the development of the solar energy facility.

Recommendation

Having reviewed the application relative to State interests and the applicable Special Permit guidelines, OP recommends approval of the State Special Permit to establish the Mahi Solar Project subject to appropriate conditions. OP concurs that the proposed project meets the Special Permit guidelines for an unusual and reasonable use within the State Agricultural Land Use District. The applicant has met the requirements for the issuance of a Special Permit for the proposed use, and appropriate conditions can be imposed to mitigate any adverse impacts from the proposed project. Accordingly, the following are OP's recommended conditions of approval:

1. The State Department of Land and Natural Resources shall be consulted regarding additional mitigation measures for State-recognized endangered, threatened, and candidate species. Any recommendations shall be incorporated in the development and operation of the solar project.
2. The recommendations of the Cultural Assessment relative to the Pohakea Trail, native plant resources, and archaeological resources shall be undertaken by the Applicant.
3. Approval of the Archaeological Inventory Survey from the State Historic Preservation Division shall be obtained prior to the Planning Commission decision. Any recommendations from the SHPD shall be included in such decision. Should SHPD approval of the AIS and recommended mitigation measures not be obtained prior to the Planning Commission's decision, the identified historic sites shall be preserved in place with an adequate buffer to avoid disturbance of the sites.

Thank you for the opportunity to review the Special Permit application. If you have any questions, please contact Lorene Maki of our Land Use Division at Lorene.k.maki@hawaii.gov

Mahalo,

Mary Alice Evans

Mary Alice Evans
Director

c: Land Use Commission
Department of Agriculture

DAVID Y. IGE
Governor

JOSH GREEN
Lt. Governor



PHYLLIS SHIMABUKURO-GEISER
Chairperson, Board of Agriculture

MORRIS M. ATTA
Deputy to the Chairperson

State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 South King Street
Honolulu, Hawaii 96814-2512
Phone: (808) 973-9600 FAX: (808) 973-9613

May 14, 2021

Mr. Dean Uchida, Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street 7th Floor
Honolulu, Hawaii 96813

Dear Mr. Uchida:

Subject: Special Use Permit (SUP) Application No. 2020/SUP-7
Mahi Solar Project
TMK: 9-2-01: por. 20, 9-2-04: por. 03, 9-2-04: por. 06, 9-2-04: por. 10, and
9-2-04: por. 12
Honouliuli, Ewa, Oahu
Area: 620 acres of 2,952.3 gross acres

The Department of Agriculture (Department) has reviewed the SUP application and offers the following comments and recommendations.

Background

The 620-acre project site consists of five project areas located to the west of Kunia Road. (Application, Figure 2.2, page 2-4; and Appendix B, Figures 2 through 6, unpaginated)

Project Area	Project Area Acreage	Landowner	Historic Agricultural Use
1	21.5	Hartung Bros. Hawaii	irrigated sugar
1, 2A, 2B, 2C, and 3	240.1	Hartung Bros. Hawaii	Irrigated sugar
3	12.1	Hartung Bros. Hawaii	Unirrigated pine
4A, 4B, and 4C	305.6	Fat Law's Farm	Unirrigated pine
5	40.7	Monsanto Technology	Irrigated sugar



Planning and zoning status

All project areas are in the State Agricultural District, within the Agriculture and Preservation Area of the Central Oahu Sustainable Communities Plan and the Ewa Development Plan, and zoned AG-1 (Restricted Agricultural).

Soil index classifications

The soils and historic agricultural uses on the five project areas reflect the availability of irrigation. Irrigated sugarcane was grown makai of the Waiahole Ditch and unirrigated pineapple grown mauka of the Waiahole Ditch. About 400 acres (65 percent) of the project site has "B"-rated soils according to the Land Study Bureau's (LSB) Overall Productivity Rating. "C"-rated soils comprise 115 acres (18 percent), and "D" and "E" soil are 69 acres (11 percent). (Application, Figure 4.2, page 4-5) A cursory review of the project site using the original LSB maps (147, 162, 163, 177) shows that the unirrigated "B", "C", and "D" rated soils would have had their Overall Productivity Ratings improved to "A", "B", and "C", respectively, if irrigation had been available for these soils at the time of the study.

The Agricultural Lands of Importance to the State of Hawaii (ALISH) system classifies the former unirrigated pineapple lands in project areas 4A, 4B, and 4C as mostly "Unique" agricultural lands and "Other Important" agricultural lands in the more sloped areas. "Prime" agricultural lands are found in the project areas makai of the Waiahole Ditch. (Application, Figure 4.3, page 4-8)

The Soil Survey Geographic Database (SSURGO) of the Natural Resource Conservation Service, U. S. Department of Agriculture describes slight to moderately sloped topography for the majority of the project areas with the exception of the southwestern most section of project area 1 and the easternmost section of 2A and 2C. (Application, Figure 4.1, page 4-2) Despite the slope, Appendix B, Figure 2 (unpaginated) indicates installation of solar panel arrays in these three areas.

Designated and proposed Important Agricultural Land status

About 69.5 acres of the 620-acre project site are designated as Important Agricultural Lands (IAL) (Application, Figure 4.4, page 4-10). On page 5-20 of the Application, 85 acres is identified as designated IAL. Assuming the 69.5 acres as the correct acreage, their location and current use are as follows:

29.3 acres in project area 1 (Hartung Bros., unspecified total acreage) and not in agricultural use, and

40.2 acres in project area 5 (Monsanto, total acreage of 40.7) and not in agricultural use.

About 305.6 acres of the 620-acre project site is recommended by the City and County of Honolulu for IAL designation (Application, Figure 4.5, page 4-11). Their location and current use are as follows:

305.6 acres in project area 4 (A, B, and C, Fat Law's Farm) of which about 99 acres is in basil and other vegetables (Application, Figure 3.1, page 3-10), about 200 acres in seed corn, and 51.7 acres located in the gap between 4A and 4B are not in agricultural use. (Application, page 4-9).

Current agricultural use

Of the 620 acres in the project site, 314 acres are currently not in agricultural production. The 306 acres in agricultural production is comprised of seed corn (197 acres), basil and other vegetables (56 acres), and other vegetables (43 acres). (Application, Figure 3.1, page 3-10; Appendix C, Mahi Solar Agricultural Plan, Figure 8, Current Agricultural Activity Map, page 8) The food crops are found in project areas 4B and 4C (Fat Law's Farm) along Kunia Road. (Application, page 3-9)

Irrigation water

The availability of sufficient irrigation water when needed is fundamental to ensuring maximal agricultural productivity for conventional soil-based agricultural production. This is particularly critical during the dry and windy summer months experienced in the area and for crops such as alfalfa. The Kunia Water Association (KWA) provides water service to the project site pursuant to KWA's "lease agreements for the property" (Application, page 6-1) but it is unclear if water will be available to each of the project areas to meet projected needs. The current agricultural activity map (Appendix C, page 23) indicate that irrigation water of unknown quantity is supplied to project areas 2B, 2C, 3, 4A, 4B and 4C for seed corn and basil/other vegetables. Crop irrigation for future agricultural uses will be done by soft hoses (*usually as part of a traveling sprinkler or cable-tow system*) and drip feeder line (*typically drip tape*) (Appendix C, page 39). The Application states that the Agribusiness Development Corporation (ADC) is proposing improvements to the Waiahole Ditch, however "all proposed construction for Mahi Solar project will take place outside of the ADC's proposed improvement areas". (Application, page 6-2)

Department staff notes that Fat Law's Farms has a permit from the Commission on Water Resource Management (CWRM) allowing the withdrawal of up to 0.551 million gallons per day from the Waiahole Ditch to irrigate 329 acres of diversified agriculture, the area of which encompasses all of project areas 4A, 4B, and 4C. Use of the water by parties other than the permittee and the crops that may be irrigated may require

CWRM approval. The cost of water from the KWA ranges from \$1.47 to \$2.04 per thousand gallons. In comparison, Waiahole Ditch water is noted to be \$0.517 (now, \$0.87) per thousand gallons for agricultural usage.

Appendix C (pages 25-26) state that the area to be provided with water infrastructure will increase from the current 262 acres to 442 acres of the of the project site but does not provide further details.

Mean annual rainfall is about 30 inches with January being the wettest month at 4.8 inches. (Application, page 4-1)

The Department strongly recommends that data and information on maximum water demand, sources, storage, pumping, delivery, and year round availability to all five project areas be developed prior to Phase Two of the Agricultural Plan described in Appendix C. Further, this data and information should be provided to agricultural operators interested in the project site or specific project areas for agricultural production including livestock, hydroponic, and aquaponic.

Solar panel coverage by project area

There will be a net area of 147 acres of solar panel coverage on the project site (Application, page 3-7). Department staff was unable to find a breakdown of this area by project area. From Appendix B (Site Plan and Drawings, Prepared by Revamp Engineers and Walters, Kimura, Motoda, Inc. February 2021, Figures 2-5, unpaginated) nearly all of project areas 4A and 4B, and most of 4C (all Fat Law's Farm) will be covered by solar panels. There is a gap between 4A and 4B (described as 51.7 acres in Application, page 4-9) that may be used for "solar panels and/or farming/ranching."

Department staff roughly estimates solar panel coverage as follows:

Nearly all of project area 3 (Hartung Bros.) will be under solar panels.

About 70% of project area 5 (Monsanto) will be under solar panels.

About 50% of project area 1 (Hartung Bros.) in the far western portion of the area will be covered by solar panels and the remainder that may be used for "solar panels and/or farming/ranching."

About 60% of project areas 2A, 2B, and 2C (Hartung Bros.) will be under solar panels and the remainder may be used for "solar panels and/or ranching."

The solar arrays will be six- to eight-feet off the ground when panels are zero degrees tilt (parallel to the ground) At maximum rotation (50 degrees tilt) the arrays will have the lowest edge of the solar panels one- to three-feet off the ground. There will be nine-foot spacing between adjacent arrays of panels at zero degrees tilt. (Application, page

Mr. Dean Uchida
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3-4; Appendix B, "Site Plan and Drawings...", Figure 7, unpaginated; and Appendix C, "Agricultural Plan", pages 15-16)

The Agricultural Plan, research, and field testing should include the soft hose irrigation system being proposed for future agricultural activities that may occur under and adjacent to the solar panel arrays.

Fencing

Fencing is important to discourage trespassing and crop or animal theft and to keep livestock from dislocation.

Department staff notes that there will be fencing on the perimeters of the solar paneled areas, however the "solar panels and/or ranching" areas appear to not be fenced. (Appendix B: Site Plan and Drawings, Prepared by Revamp Engineers and Walters, Kimura, Motoda, Inc. February 2021, Figures 2-5)

The extent and type of fencing and gating to be in place prior to full operation of the solar energy facility should reflect the needs of the anticipated agricultural activities and not just providing security for the solar energy facility.

Mahi Solar Agricultural Plan

The proposed agricultural plan would utilize 610 of the 620-acre project. Of the 610 acres, 488.9 acres will be cultivated in crops and used for livestock grazing and bee keeping. (Application, pages 3-10 to -11) Department staff notes that livestock grazing and crop cultivation are not compatible in the same area if they are not effectively separated. The aforementioned proposed fencing can contain livestock under the solar panels to do weed control but that will likely preclude the cultivation of in-ground crops within the same area. Further, as noted on page 3 of this letter, irrigation water in sufficient quantity and availability on demand is fundamental to any crop or livestock operation. There is scant mention of irrigation water and no mention of water for livestock in the Application and Appendix C (Mahi Solar: Agricultural Plan), although water infrastructure is planned for all project areas (Appendix C, Table 1, page 7)

The Agricultural Plan has three phases –

Phase One is two years of research to be done by the Hawaii Agriculture Research Center (HARC) that will include field trials of identified crops at the Clearway solar facility just south of Mililani Town. Conventional and hydroponic cultivation will be used for crops such as lettuce, basil, and alfalfa and other legumes and grasses for livestock forage. The field trials are to determine what crops can be productively grown with what practices under and between solar panels. (Appendix C, pages 19-21)

Phase Two occurs after Mahi Solar is in operation, they "will make available" 610 of the 620-acre project site "to local farmers to grow agricultural products at a commercial scale." (Application, page 3-12). Department staff find this phase confusing as the Application further states that Mahi Solar will coordinate with local farmers and ranchers, along with HARC and local experts "to propose agrivoltaic projects that they believe will be successful". (Application, page 3-12) This differs considerably from the description of Phase Two further on in the Application - "As each new agricultural use is tested at the project site in research trials or grown in the solar fields by farmers, HARC and Mahi Solar will gather data and evaluate the results. This will help farmers and ranchers learn and modify their work, in an iterative process." (Application, page 5-2) Similarly, the linkage between Phase One and Two is made in the Agricultural Plan (Appendix C, page 5), where land and water will be provided to farmers and ranchers to grow out these crops (from Phase One) at commercial scale. This is more in line with the description of Phase Two in the Agricultural Plan (Appendix C, pages 22-26) Mahi Solar needs to make consistent its intention to link the research in Phase One and its application by farmers and ranchers in Phase Two.

Phase Three is the sharing of data collected on agrivoltaic farming.

The Department supports proof-of-concept as the best way to determine the suitability of the to-be-determined agricultural activities to be researched and field trialed by HARC and interested farming operations at the Clearway Mililani solar facility.

The proposed agricultural activities (Appendix C, Figure 4, page 6) shows about 41 percent (250 acres) of the 610 acres available for agricultural uses may be in directly edible commodities such as honey, vegetable, sweet potatoes, and hydroponic lettuce. Another 19 percent (121 acres) will be in livestock grazing, presumably sheep, as cattle and goats are not mentioned.

Oahu Grazers has expressed interest in using a few hundred acres of the project site as additional pasture land for their sheep (500 head) and maybe calves. This operation already runs sheep on existing solar energy facilities on Oahu.

With respect to the market for sheep and lambs, the Department understands that Oahu's primary livestock slaughter facility has expressed reluctance to offer services to hogs. The Department is not aware that this reluctance also applies to sheep and lambs. The Department recommends Oahu Grazers to confirm their agreement(s) with their slaughter facilities.

Mr. Dean Uchida
May 14, 2021
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While sales of sheep/lamb is not required by State law (Section 205-4.5(21), HRS), it is the generation of revenue by agricultural operators selling their agricultural products such as vegetables, melons, fruits, honey, and so forth that will ensure continued agricultural activity. This is why the Department focuses on the application's references and commitments to infrastructure, research, and field trials that affect agricultural operators and the establishment and continuation of their agricultural activities.

The Department has read the HARC Solar White Paper (Appendix B within Appendix C "Agricultural Plan") and has every confidence that this venerable Hawaii agricultural institution will follow through on their commitments to the best of their ability and produce data and information that will help those agricultural operators who are committed to the project site be economically viable.

Conclusion

The Department strongly encourages Mahi Solar to fulfill its commitments and assertions and go beyond the minimum statutory requirement of making the project site available for agricultural activities at a lease rate that is at least 50 percent below the fair market rent for comparable properties. The Department believes that research alone is not a satisfactory outcome, nor is sheep used only for weed control. The majority of the land area under the project site contains some of the State's most potentially productive soils for intensive agricultural production. The Department expects the research to be done by HARC along with the field trials with interested farmers to result in intensive agricultural activity on the project site.

Thank you for the opportunity to provide our input on this very important application. Should you have any questions, please contact Earl Yamamoto at 973-9466 or email at earl.j.yamamoto@hawaii.gov.

Sincerely,



Phyllis Shimabukuro-Geiser
Chairperson, Board of Agriculture

c: Office of Planning
Land Use Commission

DAVID Y. IGE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

JADE T. BUTAY
DIRECTOR

2021 MAY -5 PM 2:16

DEPT OF PLANNING
AND PERMITTING
CITY & COUNTY OF HONOLULU

Deputy Directors
LYNN A.S. ARAKI-REGAN
DEREK J. CHOW
ROSS M. HIGASHI
EDWIN H. SNIFFEN

IN REPLY REFER TO:
DIR 0365
STP 8.3162

May 4, 2021

Mr. Dean Uchida
Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Attention: Mr. Raymond Young

Dear Mr. Uchida:

Subject: Special Use Permit (SUP) Application No. 2020/SUP-7
Mahi Solar Project
Ewa, Oahu, Hawaii
Tax Map Keys: Portions of (1) 9-2-001: 020 and 9-2-004: 003, 006, 010, 012

Thank you for your letter dated April 9, 2021, requesting the State of Hawaii Department of Transportation's (HDOT) review and comment on the subject SUP application. HDOT understands that Mahi Solar, LLC is proposing a 120-megawatt (MW) photovoltaic (PV) energy generation system, a 480-megawatt hour battery storage system, and other supporting facilities on approximately 620 acres of land in Kunia.

Access to the project will be via Kunia Road (State Route 750) at three existing unsignalized, stop-controlled intersections with private roads as follows: Palawai Road, Plantation Road, and an unnamed road to the Monsanto Technology LLC parcel.

HDOT has the following comments:

Airports Division (HDOT-A)

1. The subject solar project is located just outside the transitional airspace for the Daniel K. Inouye International Airport. PV systems that are located in or near the protected approach and departure air space can create a hazardous condition for pilots because of possible glint and glare reflected from the PV array. If glint or glare from the PV array creates a hazardous condition for pilots, the owner of the PV system shall be prepared to immediately mitigate the hazard upon notification by the HDOT-A and/or Federal Aviation Administration (FAA).

PV systems have also been known to emit radio frequency interference (RFI) to aviation-dedicated radio signals, thereby disrupting the reliability of air-to-ground communications. Again, the owner of the PV system shall be prepared to immediately mitigate the RFI hazard upon notification by the HDOT-A and/or FAA.

2. Thick smoke from uncontrolled fires are potential obstruction hazards to flight operations. Therefore, the energy or battery storage facility for the solar project shall have sufficient firefighting/fire suppressant ability to prevent hazardous smoke in the protected air space.

Highways Division (HDOT-HWY)

The HDOT-HWY reviewed the application, including Appendix J, Draft Mahi Solar Construction Traffic Assessment (CTA), dated September 2020 and have the following comments relevant to State highways:

1. We note that the site plan includes a 30-foot easement from Kunia Road along a segment of the frontage. Verify with the landowner that the easement was designated in anticipation of future Kunia Road widening.
2. Agricultural crossing points and cane haul roads may not be considered legal access to HDOT highways. Although the CTA did not identify operations-phase traffic impacts to Kunia Road, verify with HDOT-HWY Oahu District that these driveways meet current standards for the proposed use.
3. The CTA included the following assumptions and findings:
 - a. The heavy truck access route is likely to originate at Sand Island, and travel east on Interstate H-1 to the Kunia Road Exit. All three project access driveways on Kunia Road would be used by construction vehicles.
 - b. Eight intersections, including the three project access driveways were included in the analysis. Baseline 2020 Level of Service (LOS) is unacceptable (LOS D or E) during AM and/or PM peak traffic hours at the following intersections: 1) Kunia Road/H-1 eastbound ramp (AM only), 2) Site Access: Kunia and Plantation Road (AM and PM), and 3) Site Access: Kunia Road and Palawai Road (AM only). The through traffic on Kunia Road is uncontrolled and operates at a LOS A. The unacceptable LOS at the site access driveways is associated with the traffic delays on the private roads.
 - c. Year 2022 was projected to be the horizon year for peak project construction. The cumulative effect of concurrent construction of two other planned solar farms (i.e., Hoohana, Kupehau) in the vicinity was included in the 2022 horizon year; however, it is unlikely the construction schedules would overlap.
 - d. The project-related peak construction workforce is estimated at 340 workers and the number of vehicles was adjusted to 227, based on carpooling assumptions. The scenario assumes all construction personnel trips would occur during peak traffic hours and 50 percent would be to/from Honolulu.
 - e. In 2022, the LOS at all three site access intersections with Kunia Road was projected to be unacceptable. The Kunia Road/H-1 ramp would remain at an unacceptable LOS. The Kunia Road and Anonui Road intersection would degrade to LOS E during PM peak traffic conditions.
 - f. The heavy truck traffic was assumed to occur outside of peak traffic hours.
 - g. The construction-related impacts would be temporary and largely attributed to the assumed concurrent construction of three solar projects. No capacity-building recommendations are warranted or proposed to mitigate the regional traffic impacts.

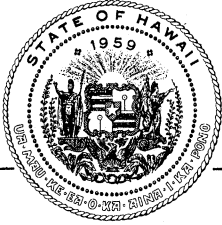
- h. The report recommends specific elements be included in the Construction Traffic Management Plan (TMP) to improve safety at the three site access intersections.
4. The HDOT-HWY shares the CTA concern for construction-phase traffic safety at the three access intersections and supports the CTA recommendations for specific elements to be included in the Construction TMP. Submit the Construction TMP to HDOT-HWY Oahu District for review and acceptance. Access improvements may be required to accommodate heavy and oversized vehicles.
5. HDOT-HWY agrees the impact of the solar farm operations on State highways would be negligible; however, the operational analysis should describe the anticipated trips generated by the farming activities within the project lease area as well as landowner land use plans for the parcel areas outside of the lease areas, with respect to each of the three access intersections with Kunia Road. The application suggests more land area within the project lease area would be in production relative to existing conditions and the number of farming operations within the project lease area would increase. Describe the existing and future operational access control at the intersections. Identify recommendations, as warranted, for safety improvements to address the additional operational traffic.
6. No additional discharge of surface water run-off onto Kunia Road right-of-way (ROW) is permitted. This includes the use of the existing State drainage culverts and channels. All additional stormwater runoff from the project site shall be managed and mitigated onsite.
7. No work appears to be proposed within the State ROW. Note that any work within the State ROW requires a Permit to Perform Work Upon State Highways and a TMP. Construction plans prepared by a Hawaii licensed engineer shall be submitted to the HDOT-HWY Oahu District for review and approval prior to applying for a permit to perform work.

If there are any questions, please contact Mr. Blayne Nikaido of the HDOT Statewide Transportation Planning Office at (808) 831-7979 or via email at blayne.h.nikaido@hawaii.gov.

Sincerely,



JADE T. BUTAY
Director of Transportation



HAWAII STATE ENERGY OFFICE STATE OF HAWAII

235 South Beretania Street, 5th Floor, Honolulu, Hawaii 96813
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*E-mailed to R Young at 6:32pm on
5/10/21 and cc'd to F Krantz @ 10:19a
on 5/11/21*

DAVID Y. IGE
GOVERNOR

SCOTT J. GLENN
CHIEF ENERGY OFFICER

May 10, 2021

City and County of Honolulu
Department of Planning and Permitting, Community Planning Branch
Mr. Raymond Young, Acting Branch Chief
Via email: rcsyoun@honolulu.gov

Subject: Hawai'i State Energy Office Comments on Special Use Permit (SUP) Application
No. 2020/SUP-7
Mahi Solar Project
Tax Map Keys 9-2-001: 020 portion, 9-2-004:003 portion,
9-2-004:006 portion, 9-2-004:010 portion, and 9-2-004:012 portion,
Honouliuli, 'Ewa, O'ahu

Dear Mr. Young,

The Hawai'i State Energy Office (HSEO) offers the following comments to the Department of Planning and Permitting (DPP) on the Special Use Permit (SUP) Application for the Mahi Solar Project (Project) proposed by project developer Longroad Energy (Mahi Solar, LLC) on 620 acres across five (5) different parcels in Kunia, O'ahu. The Project would be a 120-megawatt (MW) alternating current solar photovoltaic (PV) project with a 120 MW/480 megawatt-hour battery energy storage system consisting of approximately 362,000 ground-mounted PV modules mounted on 4,300 single-axis trackers, thirty-two four-MW inverters, an overhead 34 kilovolt (kV) collector line, a 34.5/138 kV substation, and possibly an additional 138 kV collector line. HSEO is supportive of the renewable energy, electricity cost savings, and greenhouse gas (GHG) displacement reduction benefits from the Project. HSEO appreciates many topics are evaluated as part of the SUP but focuses its comments on the stakeholder engagement and energy aspects of the Project.

HSEO's comments are guided by its statutory purpose under Hawai'i Revised Statutes §196-71 and its mission to promote energy efficiency, renewable energy, and clean transportation to help achieve a resilient, clean energy, and ultimately carbon negative economy. As an island community currently dependent on imported fossil fuels for over 60% of its electrical power, Hawai'i is particularly vulnerable to fuel and energy disruptions, unpredictable cost fluctuations, unintended fuel releases into marine environments, and the many impacts of climate change. That is why Hawai'i's 100% renewable energy goal is critical to the health, safety, affordability, and well-being of Hawai'i's residents. It is important that reaching 100% renewable energy generation by 2045 be done in a manner that prioritizes the health, safety, and well-being of Hawai'i's residents, natural resources, culture, and environment.

Mr. Raymond Young
May 10, 2021
Page 2

The Project is the largest solar plus storage project proposed in Hawai'i and would provide, when expected to be operational in December 2023, renewable energy to help replace the 15-16% of O'ahu's electricity generation that will be lost upon the planned retirement of O'ahu's 180 MW coal power plant on September 1, 2022. The SUP states the Project would be capable of generating 271,525 MWh annually, or 4% of O'ahu's annual electricity needs.¹ HSEO asks that the LUC make a timely decision to enable the parties, including Longroad, Hawaiian Electric, DPP, and the Hawai'i Public Utilities Commission (PUC) to in turn take timely action based on the outcome of the LUC's decision.

Longroad would sell power from the Project to Hawaiian Electric at a unit price of \$0.097 per kilowatt-hour under a 25-year power purchase agreement (PPA) approved by the PUC on December 30, 2020.² The SUP states that over its 25-year lifetime the Project would avoid the consumption of 18 million gallons of oil per year, thus saving O'ahu consumers \$175 million over the project lifetime.³

According to the U.S. Environmental Protection Agency's Greenhouse Gas Equivalencies Calculator, displacing the Project's annual generating capacity of 271,525 MWh would be equivalent to reducing carbon dioxide emissions by 192,425 metric tons annually.⁴

As part of its solicitation process, Hawaiian Electric required all bidders to develop a comprehensive community outreach and communications plan to work with and inform neighboring communities and stakeholders about the projects before developers could submit project bids to Hawaiian Electric for consideration. Accordingly, Exhibit 8 of the PPA submitted to the PUC for the Project on September 15, 2020, includes copies of the public comments from Longroad's community outreach efforts and a summary of Longroad's community outreach efforts conducted before the PPA was executed.⁵

The SUP identifies the following community and stakeholder engagement activities:

- virtual public meetings for the Project were held on July 15, 2020, and October 29, 2020;
- meetings with various State and City and County of Honolulu agencies occurred in 2020;
- Longroad is conducting ongoing outreach with key community stakeholders through presentations to organizations such as Kunia Ridge Farmlands;

¹ 271,525 is 4.39% of 6,183,093, the amount of electricity in MWh sold by Hawaiian Electric to its customers in 2020.

² <https://dms.puc.hawaii.gov/dms/DocumentViewer?pid=A1001001A20L30B45115B00135>

³ Oil prices are projected to rise (United State Energy Information Administration <https://www.eia.gov/outlooks/steo/report/prices.php>); HSEO has calculated that if oil prices over the project lifetime are similar to actual historical O'ahu oil prices over the past 15 years, savings would be \$389 million over the lifetime of the project.

⁴ <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

⁵ <https://dms.puc.hawaii.gov/dms/DocumentViewer?pid=A1001001A20I16B3213II01172>

Mr. Raymond Young
May 10, 2021
Page 3

- Longroad is conducting one-on-one interviews with cultural practitioners from the region; and,
- presentations are being planned for the two neighborhood Boards in the Project area: Waipahu (No. 22) and Mililani-Waipii'o-Melemanu (No. 25).


The SUP states the following issues and concerns were most prevalent during this outreach and includes the mitigation measures proposed by Longroad for each:

1. Loss of agricultural land for renewable energy projects.
2. Concerns about ability to successfully co-locate solar panels and plants or crops.
3. Potential impacts to the 'elepaio, pueo, and Hawaiian hoary bat due to the Project's proximity to their habitats.
4. Loss of access to cultural resources and impacts to historic sites.
5. Use of equipment made outside the United States.
6. Glare from the panels and the possibility of the 'heat island effect.'
7. Decommissioning and disposal of the Project materials (panels, etc.) upon the end of the Project lifetime.
8. Stormwater runoff due to the impervious surface of the panels and impacts to stormwater fees.
9. Impacts to views and public view planes.
10. Renewable energy contribution.

HSEO encourages Longroad to continue its stakeholder engagement and agency consultation to address these impacts and any others identified. Every project has some degree of impacts and through close coordination with community members and stakeholders can the impacts be mitigated or minimized to an acceptable degree.

Thank you for the opportunity to provide these comments. If you have any questions, please feel free to contact me at scott.glenn@hawaii.gov.

Sincerely,



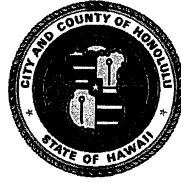
Scott J. Glenn
Chief Energy Officer

HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

636 South Street
Honolulu, Hawaii 96813-5007
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

2021 APR 27 PM 1:50

RICK BLANGIARDI
MAYOR



DEPT OF PLANNING
AND PERMITTING
LIONEL CAMARA JR.
ACTING FIRE CHIEF
SHELDON K. HAO
ACTING DEPUTY FIRE CHIEF

April 26, 2021

TO: DEAN UCHIDA, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

ATTN: RAYMOND YOUNG, ACTING BRANCH CHIEF
COMMUNITY PLANNING BRANCH

FROM: LIONEL CAMARA JR., ACTING FIRE CHIEF

SUBJECT: SPECIAL USE PERMIT APPLICATION NO. 2020/SUP-7
MAHI SOLAR PROJECT
TAX MAP KEYS: 9-2-001: 020 PORTION; 9-2-004: 003 PORTION;
9-2-004: 006 PORTION; 9-2-004: 010 PORTION; AND 9-2-004: 012
PORTION
HONOULIULI, EWA, OAHU

In response to a memorandum from Mr. Raymond Young dated April 9, 2021, regarding the abovementioned subject, the Honolulu Fire Department (HFD) requires that the following be complied with:

1. Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 feet (46 meters) from fire department access roads as measured by an approved route around the exterior of the building or facility. (National Fire Protection Association [NFPA] 1; 2012 Edition, Section 18.2.3.2.2.)

A fire department access road shall extend to within 50 feet (15 meters) of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. (NFPA 1; 2012 Edition, Section 18.2.3.2.1.)
2. A water supply approved by the county, capable of supplying the required fire flow for fire protection, shall be provided to all premises

Dean Uchida, Director
Page 2
April 26, 2021

upon which facilities or buildings, or portions thereof, are hereafter constructed, or moved into or within the county. When any portion of the facility or building is in excess of 150 feet (45,720 millimeters) from a water supply on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the AHJ [Authority Having Jurisdiction]. (NFPA 1; 2012 Edition, Section 18.3.1, as amended.)

3. The unobstructed width and unobstructed vertical clearance of a fire apparatus access road shall meet county requirements. (NFPA 1; 2012 Edition, Sections 18.2.3.4.1.1 and 18.2.3.4.1.2, as amended.)
4. Adherence to applicable requirements for stationary storage battery systems. (NFPA 1; 2012 Edition, Chapter 52)
5. Submit civil drawings to the HFD for review and approval.

Should you have questions, please contact Assistant Chief Socrates Bratakos of our Planning and Development division at 723-7106 or sbratakos@honolulu.gov.



LIONEL CAMARA JR.
Acting Fire Chief

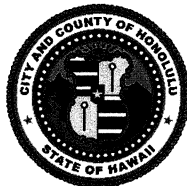
LCJ/MI:jl

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8305 • Fax: (808) 768-4730 • web: www.honolulu.gov

2021 MAY 13 AM 10:36
DEPT OF PLANNING
AND PERMITTING
CITY & COUNTY OF HONOLULU

RICK BLANGIARDI
MAYOR



J. ROGER MORTON
DIRECTOR

JON Y. NOUCHI
DEPUTY DIRECTOR

TP4/21-848519

May 10, 2021

MEMORANDUM

TO: Raymond Young, Acting Branch Chief – Community Planning Branch
Department of Planning and Permitting

FROM: J. Roger Morton, Director
Department of Transportation Services

A handwritten signature in black ink, appearing to read "J. Roger Morton", is written over the printed name and title.

SUBJECT: Special Use Permit (SUP) Application No. 2020/SUP-7
Mahi Solar Project
Tax Map Keys 9-2-001: 020 portion, 9-2-004: 003 portion, 9-2-004: 006
portion, 9-2-004: 010 portion, and 9-2-004: 012 portion,
Honouliuli, Ewa, Oahu

Thank you for the opportunity to provide written comments on file number 2020/SUP-7. We have the following comments.

1. **Traffic Management Plan.** Construction materials and equipment should be transferred to and from the project site during off-peak traffic hours (8:30 a.m. to 3:30 p.m.) to minimize any possible disruption to traffic on the local streets.
2. **Shoulder Bikeway.** The 2019 Oahu Bike Plan proposes a shoulder bikeway on Kunia Road from Wilikina Drive to Farrington Highway as a Priority 1 Project. Contact Department of Transportation Services, Traffic Engineering Division at (808) 768-8335 or csayers@honolulu.gov to coordinate.
3. **Neighborhood Impacts.** The area representatives, neighborhood board, as well as the area residents, businesses, emergency personnel (fire, ambulance, and police), Oahu Transit Services, Inc. (TheBus and TheHandi-Van), etc., should be kept apprised of the details and status throughout the

Raymond Young, Acting Branch Chief
May 10, 2021
Page 2

project and the impacts that the project may have on the adjoining local street area network.

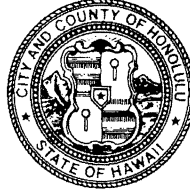
4. **Disability and Communication Access Board (DCAB).** Project plans (vehicular and pedestrian circulation, sidewalks, parking and pedestrian pathways, vehicular ingress/egress, etc.) should be reviewed and approved by DCAB to ensure full compliance with Americans with Disabilities Act requirements.

Should you have any questions, please contact Greg Tsugawa, of my staff, at 768-6683.

HONOLULU EMERGENCY SERVICES DEPARTMENT
CITY AND COUNTY OF HONOLULU

3375 KOAPAKA STREET, SUITE H-450 • HONOLULU, HAWAII 96819-1814
Phone: (808) 723-7800 • Fax: (808) 723-7836

RICK BLANGIARDI
MAYOR



2021 APR 27 PM 3:02
DEPT OF PLANNING
AND PERMITTING
CITY AND COUNTY OF HONOLULU
JAMES H.E. IRELAND, MD
DIRECTOR DESIGNATE

IAN T.T. SANTEE, MPA
DEPUTY DIRECTOR

April 23, 2021

MEMORANDUM

TO: Raymond Young, Acting Branch Chief
Department of Planning and Permitting

FROM: James H.E. Ireland, MD, Director Designate
Honolulu Emergency Services Department

SUBJECT: Special Use Permit – Mahi Solar Project

This is in response to your memorandum dated April 9, 2021. The Honolulu Emergency Services Department (HESD), submits the following comments:

Our Emergency Medical Services (EMS) and Ocean Safety (OS) Divisions find no objections or hindrances presented by this project. However, HESD requests receiving updated site-safety plans to keep our responders apprised of any specific concerns, any anticipated inference with one or both Division's radio/communications and if possible, a walk-through near or upon completion of construction for response pre-planning purposes.

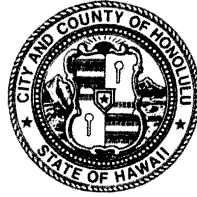
Should you have any questions, please contact me at 723-7800 or james.ireland@honolulu.gov.

Thank you for the opportunity to input on this Special Use Permit application.

cc: Christopher Sloman, TA EMS Chief, EMS
John Titchen, Chief, Ocean Safety

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813
TELEPHONE: (808) 529-3111 · INTERNET: www.honoluluupd.org



2021 APR 23 PM 1:02

DEPT OF PLANNING
AND PERMITTING
CITY & COUNTY OF HONOLULU

SUSAN BALLARD
CHIEF

JOHN D. McCARTHY
AARON TAKASAKI-YOUNG
DEPUTY CHIEFS

RICK BLANGIARDI
MAYOR

OUR REFERENCE EO-DC

April 21, 2021

MEMORANDUM

TO: Dean Uchida, Director
Department of Planning and Permitting

VIA: Raymond Young, Acting Branch Chief, Community Planning Branch

ATTENTION: Franz Kraintz, Planner VI

FROM: Darren Chun, Assistant Chief of Police, Support Services Bureau

SUBJECT: Special Use Permit Application No. 2020/SUP-7
Mahi Solar Project
Tax Map Keys 9-2-001: 020 portion, 9-2-004: 003 portion, 9-2-004: 006 portion,
9-2-004: 010 portion, and 9-2-004: 012 portion

Thank you for the opportunity to review the subject application request for the proposed establishment of a 120-megawatt photo-voltaic energy generation system and accessory 480-megawatt-hour battery storage system, and ancillary support facilities.

The Honolulu Police Department (HPD) recommends that all necessary signs, lights, barricades, and other safety equipment be installed and maintained by the contractor during the construction phase of the project. The impact of the ingress/egress of construction vehicles, equipment, and deliveries should be evaluated to ensure the traffic flow is not adversely affected.

The HPD recommends that the contractor address potential security issues with regards to the equipment and machinery to be used to construct the project, as well as the location of the solar modules and battery storage to be kept on site when the project is completed.

If there are any questions, please call Major Gail Beckley of District 8 (Kapolei, Waianae) at 723-8400.

A handwritten signature in black ink, appearing to read "Darren Chun".

Darren Chun
Assistant Chief of Police
Support Services Bureau

DEPARTMENT OF FACILITY MAINTENANCE
CITY AND COUNTY OF HONOLULU

1000 Ulu'ohia Street, Suite 215, Kapolei, Hawaii 96707
Phone: (808) 768-3343 • Fax: (808) 768-3381
Website: www.honolulu.gov

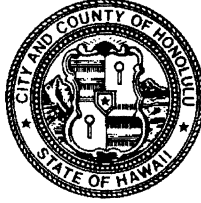
2021 APR 28 PM 2:00

DEPT OF PLANNING
AND PERMITTING
ROGER BABCOCK, JR., PH.D., P.E.
DIRECTOR AND CHIEF ENGINEER

TYLER K. SUGIHARA, P.E.
ACTING DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 21-231

RICK BLANGIARDI
MAYOR




April 27, 2021

MEMORANDUM

TO: Dean Uchida, Director
Department of Planning and Permitting

ATTENTION: Frank Kraintz

FROM: 
Roger Babcock, Jr., Ph.D., P.E.
Director and Chief Engineer
Department of Facility Maintenance

SUBJECT: Special Use Permit (SUP) Application No. 2020/SUP-7
Mahi Solar Project
Tax Map Keys 9-2-001:020 portion, 9-2-004:003 portion,
9-2-004:006 portion, 9-2-004:010 portion, and 9-2-004:012 portion,
Honouliuli

Thank you for the opportunity to review and comment on the subject project.

We have no comments at this time, as we do not have any facilities or easements on the subject property.

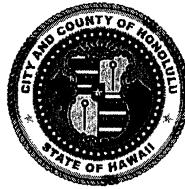
If you have any questions, please call Mr. Kyle Oyasato of the Division of Road Maintenance at 768-3697.

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 768-4567
Web site: www.honolulu.gov

2021 MAY -4 PM 2:36

RICK BLANGIARDI
MAYOR



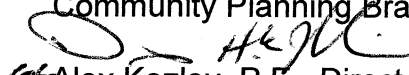
DEPT OF PLANNING
AND CONSTRUCTION
CITY & COUNTY OF HONOLULU
ALEX KOZLOV, P.E.
DIRECTOR

HAKU MILLES, P.E.
DEPUTY DIRECTOR

April 30, 2021

MEMORANDUM

TO: Raymond Young, Acting Branch Chief
Community Planning Branch

FROM:  Alex Kozlov, P.E., Director
Department of Design and Construction

SUBJECT: Special Use Permit (SUP) Application No. 2020/SUP-7
Mahi Solar Project
TMK 9-2-001; 020 portion, 9-2-004; 003 portion,
9-2-004: 006 portion, 9-2-004: 010 portion, and 9-2-004: 012 portion,
Honouliuli, Ewa, Oahu

Thank you for the opportunity to review and comment. The Department of Design and Construction does not have comments to offer at this time.

Should there be any questions, please contact Alex Kozlov at x88480.

AK:krm (848511)

DEPARTMENT OF ENVIRONMENTAL SERVICES
CITY AND COUNTY OF HONOLULU

1000 ULUOHIA STREET, SUITE 308, KAPOLEI, HAWAII 96707
TELEPHONE: (808) 768-3486 • FAX: (808) 768-3487 • WEBSITE: <http://envhonolulu.org>

2021 APR 21 PM 2:32

RICK BLANGIARDI
MAYOR



DEPT OF PLANNING
WESLEY T. YOKOYAMA, P.E.
DIRECTOR
CITY & COUNTY OF HONOLULU

MICHAEL O'KEEFE
DEPUTY DIRECTOR

ROSS S. TANIMOTO, P.E.
DEPUTY DIRECTOR


IN REPLY REFER TO:
PRO 21-036

April 21, 2021

MEMORANDUM

TO: Dean Uchida, Director
Department of Planning and Permitting

ATTN: Raymond Young, Acting Branch Chief
Community Planning Branch

FROM: 
Wesley T. Yokoyama, P.E.
Director

SUBJECT: Special Use Permit (SUP) Application No. 2020/SUP-7
Mahi Solar Project
Tax Map Keys 9-2-001: 020 portion, 9-2-004: 003 portion,
9-2-004: 006 portion, 9-2-004: 010 portion, and 9-2-004: 012 portion,
Honouliuli, Ewa, Oahu

We have reviewed the subject SUP application as transmitted to us by your memo dated April 9, 2021, reference no. 2020/SUP-7 (fk). We have no comments, and no objections to the proposed project.

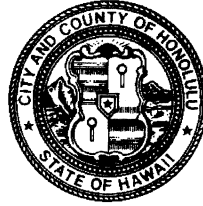
Should you have any questions, please call Marisol Olaes, Civil Engineer, at 768-3467.

DEPARTMENT OF PARKS & RECREATION
CITY AND COUNTY OF HONOLULU

1000 Uluohia Street, Suite 309, Kapolei, Hawaii 96707
Phone: (808) 768-3003 • Fax: (808) 768-3053
Website: www.honolulu.gov

2021 APR 22 PM 1:59
DEPT OF PLANNING
AND PERMITTING
CITY & COUNTY OF HONOLULU
LAURA H. THIELEN
DIRECTOR


RICK BLANGIARDI
MAYOR



April 19, 2021

MEMORANDUM

TO: Dean Uchida, Director
Department of Planning and Permitting

FROM: Laura H. Thielen 
Director

SUBJECT: Special Use Permit (SUP) Application No. 2020/SUP-7
Mahi Solar Project
Tax Map Keys 9-2-001:020 portion, 9-2-004: 003 portion,
9-2-004:006 portion, 9-2-004:010 portion and 9-2-004:012 portion,
Honouliuli, Ewa, Oahu

Thank you for the opportunity to review and comment on the subject Special Use Permit for a 120-megawatt photo-voltaic energy generating system and accessory 480-megawatt-hour battery storage system and ancillary support facilities.

The Department of Parks and Recreation has no comment. As the proposed project will not impact any program or facility of the Department, you may remove us as a consulted party to the balance of the EIS process.

Should you have any questions, please contact Mr. John Reid, Planner, at 768-3017.

Sincerely,

Laura H. Thielen
Director

LHT:jr
(848514)

DAVID Y. IGE
Governor

JOSH GREEN
Lt. Governor



JAMES J. NAKATANI
Executive Director

STATE OF HAWAII
AGRIBUSINESS DEVELOPMENT CORPORATION
235 S. Beretania Street, Room 205
Honolulu, HI 96813
Phone: (808) 586-0186 Fax: (808) 586-0189

2021 MAY -3 PM 2:39
DEPT OF PLANNING
AND PERMITTING
CITY & COUNTY OF HONOLULU

April 30, 2021

Mr. Raymond Young, Acting Branch Chief
City and County of Honolulu
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Dear Mr. Young:

Subject: Mahi Solar Project
Project No. 2020/SUP-7

We are writing in response to your notice dated April 9, 2021, regarding the Special Use Permit Application by Mahi Solar, LLC for the Mahi Solar Project. The Agribusiness Development Corporation has no comments on the subject project.

Thank you for the opportunity to provide comments.

Sincerely,

James J. Nakatani
Executive Director

DAVID Y. IGE
Governor

JOSH B. GREEN
Lieutenant Governor

MIKE McCARTNEY
Director



LAND USE COMMISSION
Department of Business, Economic Development & Tourism
State of Hawai'i

DANIEL E. ORODENKER
Executive Officer

SCOTT A.K. DERRICKSON AICP
Planner

RILEY K. HAKODA
Planner/Chief Clerk

NATASHA QUINONES
Program Specialist

FRED A. TALON
Drafting Technician

May 17, 2021

Dean Uchida, Director
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, HI 96813

RE: State Special Permit Application No. 2020/SUP-7
Mahi Solar Project, TMK Nos. 9-2-001:020 (por.), 9-2-004:003 (por.),
9-2-004:006 (por.), 9-2-004:010 (por.), and 9-2-004:012 (por.)
Honouliuli, 'Ewa, O'ahu

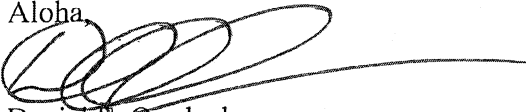
The Commission staff has the following comments to your email received April 9, 2021,
regarding this matter:

The proposed site is within the State Agricultural District and on designated Important Agricultural Lands ("IAL"). Pursuant to Hawai'i Revised Statutes ("HRS") §205-50(b) requires the County to send the application to both the State Department of Agriculture ("DOA") and the State Office of Planning ("OP") for review and comments. Additionally, sections (c) to (e) specifically identify the standards and criteria required for analysis of any use proposed in the State Agricultural District where IAL are involved. Findings and an ultimate decision should reflect these sections in addition to the decision-making guidelines used in determining an "unusual and reasonable use" as found in Hawai'i Administrative Rules ("HAR") §15-15-95(c)(1) to (5).

Staff would also like to make sure there has been coordination with the State Historic Preservation Division and DLNR's Aha Moku Council; and a Ka Pa'akai analysis is provided as part of the petition.

Should you have any questions please contact me or Scott A.K. Derrickson, AICP at 587-3822.

Aloha,

A handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

Daniel E. Orodener
Executive Officer

cc: Mary Alice Evans, OP
Earl Yamamoto, DOA

Kraintz, Franz

From: Winter, Frank J II CIV (USA) <Frank.J.Winter@usace.army.mil>
Sent: Thursday, May 13, 2021 9:56 AM
To: Kraintz, Franz
Subject: RE: Special Use Permit - Mahi Solar Project Ewa Oahu

CAUTION: Email received from an EXTERNAL sender. Please confirm the content is safe prior to opening attachments or links.

Aloha Mr. Kraintz,

Thank you for reaching out to the Corps in regards to the Mahi Solar Project Ewa, Oahu. The Honolulu District, U.S. Army Corps of Engineers (Corps), Regulatory Branch has received your request for comments on May 10, 2021 for a Department of the Army (DA) scoping comments. Your request has been assigned DA file number POH-2021-00093. Please reference this number in all future correspondence with our office relating to this action.

To determine if a DA permit is required for a proposed action, the Corps must first determine whether the proposed project is located within the Corps' geographic jurisdiction (i.e., whether the activity is located within a water of the U.S.). If the activity is within a water of the U.S., the Corps must then determine whether the proposed project is a regulated activity under Section 10 and/or Section 404 or if the activity is exempt. The determination provided in this letter pertains only to the question of geographic jurisdiction.

Based on our review of the information you provided we are not able to determine if the project area contains waters of the U.S., and/or wetlands, under the Corps' regulatory jurisdiction. I'm providing the following information in regards to the Regulatory program.

DA authorization is required if you propose to place dredged and/or fill material into waters of the U.S., including wetlands and/or perform work in navigable waters of the U.S.

Section 404 of the Clean Water Act requires that a DA permit be obtained for the placement or discharge of dredged and/or fill material into waters of the U.S., including jurisdictional wetlands (33 U.S.C. 1344). The Corps defines wetlands as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Section 10 of the Rivers and Harbors Act of 1899 requires that a DA permit be obtained for structures or work in or affecting navigable waters of the U.S. (33 U.S.C. 403). Section 10 waters are those waters subject to the ebb and flow of the tide shoreward to the mean high water mark, and/or other waters identified by the Honolulu District.

Based on the information provided, it would appear that there is a high probability that portions of the land being used would have waters of the US present on the site. As you are preparing the EA, it would be prudent to include a delineation of waters of the US for the Corps review. The Corps is requesting that all requests be submitted electronically to our general inbox (CEPOH-RO@usace.army.mil) which is monitored daily. If you have any questions or would like to discuss further please contact me via email at Frank.J.Winter@usace.army.mil, by phone at (808) 835-4107 if you have questions. I appreciate your cooperation with the Corps' Regulatory Program.

Thank you,

Frank J. Winter
Biologist, Regulatory Branch
Honolulu District
U.S. Army Corps of Engineers
Building 230
Fort Shafter, Hawaii 96858-5440
808-835-4107
Frank.J.Winter@usace.army.mil

-----Original Message-----

From: Krantz, Franz <fkraintz@honolulu.gov>
Sent: Wednesday, May 12, 2021 9:37 AM
To: Speerstra, Linda CIV USARMY CEPOH (USA) <Linda.Speerstra@usace.army.mil>; Winter, Frank J II CIV (USA) <Frank.J.Winter@usace.army.mil>
Cc: CEPOH-RO, POH <CEPOH-RO@usace.army.mil>; Hipolito, Ailene <ailene.hipolito@honolulu.gov>
Subject: [Non-DoD Source] RE: Special Use Permit - Mahi Solar Project Ewa Oahu

Good morning

Just wondering if there might be a chance we will be getting comments from the USACE on the above-referenced project today or tomorrow? We are trying to close out our draft report and would like to include as many comments as possible. If they cannot be submitted by today or tomorrow, please send in and we will make sure that your comments reach the Planning Commission for their public hearing on June 23.

Mahalo.

Franz Krantz, AICP
Urban Planner
Community Planning Branch
Planning Division
Department of Planning and Permitting
City and County of Honolulu
650 S. King Street, 7th Floor
Honolulu, Hawaii 96813
(808) 768-8046
fkraintz@honolulu.gov
Blockedwww.honoluludpp.org

-----Original Message-----

From: Krantz, Franz
Sent: Tuesday, May 04, 2021 10:31 AM
To: 'Speerstra, Linda CIV USARMY CEPOH (USA)' <Linda.Speerstra@usace.army.mil>; Winter, Frank J II CIV (USA) <Frank.J.Winter@usace.army.mil>
Cc: CEPOH-RO, POH <CEPOH-RO@usace.army.mil>; Hipolito, Ailene <ailene.hipolito@honolulu.gov>
Subject: RE: Special Use Permit - Mahi Solar Project Ewa Oahu

Aloha Linda

Attachment B
Community Organizations

E-mailed to RYoung, cc'd FKran
@ 5:45pm on 5/10/21

HISTORIC HAWAII FOUNDATION

680 Iwilei Road Suite 690, Honolulu HI 96817 • (808) 523-2900 • preservation@historichawaii.org • www.historichawaii.org

May 10, 2021

Raymond Young, Acting Branch Chief
Community Planning Branch
Department of Planning and Permitting
City and County of Honolulu
650 South King Street, Seventh Floor
Honolulu, Hawaii 96813

**Re: Special Use Permit (SUP) Application No. 2020/SUP-7
Mahi Solar Project
Honouliuli, 'Ewa, Island of O'ahu
TMKs: (1) 9-2-01:020 portion, 9-2-004:003 portion, 9-2-004:006 portion,
9-2-004:010 portion, 9-2-004:012 portion**

Dear Mr. Young:

Historic Hawai'i Foundation received notice and request for comments from the Department of Planning and Permitting, City & County of Honolulu on a Special Use Permit (SUP) for the proposed photo-voltaic energy generation system, accessory battery storage system, and ancillary support facilities. Thank you for the opportunity to comment.

Interests of Historic Hawai'i Foundation

Historic Hawai'i Foundation (HHF) is a statewide nonprofit organization established in 1974 to encourage the preservation of sites, buildings, structures, objects and districts that are significant to the history of Hawai'i. HHF is providing these comments as an organization that is concerned with the effect of the project on historic properties.

Project Summary

The Mahi Solar project is a 120-megawatt alternating current solar and energy storage facility located in Kunia, O'ahu. The site will be developed in five areas identified as Areas 1, 2A/2B/2C, 3, 4A/4B/4C, and 5, across portions of five TMK parcels. The total project area is approximately 620 acres, while the project parcels total approximately 2,952.3 acres.

The project will be interconnected to HECO's Kahe-Wai'au 138 kV transmission circuit located west of Kunia Road. The medium voltage collection system will transmit generation from the solar array inverters to the BESS and substation along overhead lines to be installed as part of the project.

Project Context

The SUP Application notes that "the Kunia lands are some of the best agricultural sites in Hawai'i with deep soil, excellent sunlight and available water. As such, it is vital that agricultural operations be included as an important part of the solar project providing both energy and food products." Specifically, Area 5 and part of Area 1 are categorized as "Important Agricultural Lands."

Numerous historic properties and features are located in the project area, with a cluster of sites and objects in Area 5 (SIHP 50-80-12-7346). The Waiāhole Ditch system (SIHP 50-80-09-2268), which is exceptionally significant, also has numerous contributing features in the project area.

Summary of HHF Comments and Concerns

Historic Hawai'i Foundation does not have significant concerns with the PV development in Areas 1-4 (except for the portion designated as Important Agricultural Lands) subject to review and conditions as determined in consultation with the State Historic Preservation Division of the Department of Land and Natural Resources.

However, HHF is very concerned with the proposed industrial development in Area 5 and recommends that this portion of the proposed project be eliminated from the development.

HHF's concerns include:

1. The majority of the historic sites identified and described in the Archaeological Inventory Survey lie within Area 5 (SUP Appendix F, Figure 39 on page 67). It would be prudent to avoid that area if at all possible. Otherwise, a detailed preservation plan to avoid specific features and to mitigate for the effect overall will be needed.
2. The southern boundary of Area 5 is adjacent to the Honouliuli National Historic Site, which is listed on the National Register of Historic Places and is a unit of the National Park system. The areas adjacent and surrounding this historic property need to be treated with extreme sensitivity and care to avoid adverse effects to the setting, location and feeling of the site. With the National Park Service currently engaging in long-range planning with the intent to open the historic park in the coming years, the City and adjacent landowners should avoid inflicting any significant impacts or irreversible development that could irreparably harm this national historic resource.
3. Area 5, and a portion of Area 1, are designated as Important Agricultural Lands and should be available for high level agricultural use. In addition to the importance for food production, the rural and agricultural context of this area is also part of its historic character. While some level of new development is expected, Important Agricultural Lands are inappropriate locations for intense energy or industrial development. A more harmonious use that is compatible with the rural and agricultural history of the area would be more appropriate.

Historic Property Mitigation Commitments

The SUP application outlines proposed mitigation commitments to address effects to the historic properties. HHF recommends additional mitigation, which should enhance and continue documentation of the Waiāhole Ditch System that has been required for other projects (including PV development) for parcels that affected other segments of the historic irrigation system. For example, the features should be added to the Historic American Engineering Report (HAER) and an update or amendment to the “Waiāhole Ditch Context Study” (Mason Architects, 2018) may be needed.

If the existing documentation is deemed complete and sufficient, then additional mitigation would be appropriate. For example, public history and educational materials could be developed using the source materials from the technical studies.

Thank you for the opportunity to comment. Please let me know if you have any questions or would like to discuss these recommendations.

Very truly yours,



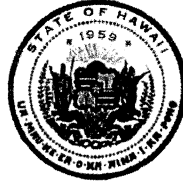
Kiersten Faulkner, AICP
Executive Director

Copies via email:

Hawai'i State Historic Preservation Division

- Susan Lebo [Susan.A.Lebo@hawaii.gov]
- Stephanie Hacker [stephanie.hacker@hawaii.gov]
- Julia Flauaus [julia.flauaus@hawaii.gov]

Attachment C
Individual Comments



2021/ELOG-761

2021 APR 22 AM 7:58

DEPT OF PLANNING
AND PERMITTING
CITY & COUNTY OF HONOLULU

The Senate

STATE CAPITOL
HONOLULU, HAWAII 96813

April 20, 2021

Dean Uchida, Director
Department of Planning and Permitting
650 S. King Street, 7th Floor
Honolulu, HI 96813

Aloha Mr. Dean Uchida,

I am writing in STRONG OPPOSITION of the Mahi Solar Project for the following Tax Map Keys 9-2-001:020 portion, 9-2-004:003 portion, 9-2-004:006 portion, 9-2-004:010 portion, and 9-2-004:012 portion, Honouliuli, Ewa, Oahu. The project will establish a 120-megawatt photo-voltaic energy system and 480-megawatt hour battery storage. I am in opposition of this project because there were no community public discussion or transparency about this development. There is a disadvantage use of battery storage which is a very high concern because it can cause Fire and Smoke Hazard. In 2012, at the Kahuku First Wind Project there was a battery fire that occurred, spewing toxic lead smoke into the air for three days as the First Wind battery warehouse burned to the ground. The battery storage also contains acid and lead that can leak and contaminate the ground. I am also concerned with more agricultural lands being taken out of farming and sustainability to accommodate more solar farm projects. The renewable energy process is flawed, and we need to inform the community of all effects these projects will have on the danger, health, safety, and welfare that it will impose on the public and community.

I hope that you take this letter as a serious concern because we should be notifying the community of any future developments that will affect the health and safety of those surrounding the project area. Should you have any further questions please contact my office by email reply or by phone at (808) 586-6360.

Sincerely,

April 20, 2021

Page 2 of 2



Senator Kurt Fevella

State of Hawaii, District 19

Minority Leader/ Minority Floor Leader

State Capitol, Room 217

415 S. Beretania Street,

Honolulu, HI 96813

Phone: (808) 586-6360

Fax: (808) 586-6361

senfevella@capitol.hawaii.gov

Attachment D
SCR No. 119, S. D. 1

SENATE CONCURRENT RESOLUTION

REQUESTING THE STATE ENERGY OFFICE, IN COLLABORATION WITH THE DEPARTMENT OF AGRICULTURE, TO CREATE AND IMPLEMENT A STRATEGIC PLAN TO INCREASE RENEWABLE ENERGY AND LOCAL FOOD PRODUCTION AND CREATE AN ECONOMIC IMPACT REPORT BASED ON IMPLEMENTATION OF THE STRATEGIC PLAN.

1 WHEREAS, renewable energy and agriculture can coexist and
2 contribute to the State's self-sufficiency, energy security, and
3 resilience; and

4
5 WHEREAS, the State currently imports fossil fuels and is
6 highly dependent on foreign imports; and

7
8 WHEREAS, Act 97, Session Laws of Hawaii 2015, established
9 the electric renewable portfolio standard of one hundred percent
10 of net electricity sales by 2045, and the Governor has set a
11 goal of doubling local food production by 2020; and

12
13 WHEREAS, utility-scale solar developments in Hawaii need to
14 increase to reach the one hundred percent renewable portfolio
15 standard and be able to provide stable, low-cost energy,
16 especially for low to moderate income ratepayers and small
17 businesses; and

18
19 WHEREAS, the State has not yet developed a long-term
20 strategic plan to achieve one hundred percent renewable
21 electricity to achieve the State's renewable portfolio standard
22 and policies; and

23
24 WHEREAS, renewable energy developments such as utility-
25 scale solar developments will require thousands of acres of flat
26 land that are close to major transmission lines to keep
27 infrastructure costs low; and

28



1 WHEREAS, the Department of Agriculture has not yet
2 developed a strategic plan that incorporates renewable energy
3 development in its plans and policies to increase local food
4 production; and

5
6 WHEREAS, the State has thousands of acres of agricultural
7 land that is classified by the Land Study Bureau with B, C, D,
8 and E land-based productivity ratings, but these lands are
9 fallow and not being utilized for farming; and

10
11 WHEREAS, new agricultural technology creates updated
12 requirements for land use that are not dependent on the
13 seemingly outdated Land Study Bureau's land-based rating system;
14 and

15
16 WHEREAS, the Netherlands has embraced new agricultural
17 technology, shifted away from land-based farming, and utilizes
18 low cost renewable energy to power greenhouse and vertical
19 farms, leading the Netherlands to become one of the largest
20 producers of agricultural exports in the world; and

21
22 WHEREAS, the majority of Hawaii's commercially farmed
23 produce is grown on lands owned by non-farmers who issue short-
24 term leases to farmers, who therefore are unable to make the
25 capital investments necessary to upgrade and modernize Hawaii's
26 food production; and

27
28 WHEREAS, the State must entertain new alternatives to
29 current agricultural operations that protect and promote
30 agriculture in a manner that assures long-term secure access to
31 land and supports capital investments to increase agricultural
32 production; and

33
34 WHEREAS, there is a nexus between land use for renewable
35 solar energy developments and growing the State's agricultural
36 industry; now, therefore,

37
38 BE IT RESOLVED by the Senate of the Thirtieth Legislature
39 of the State of Hawaii, Regular Session of 2019, the House of
40 Representatives concurring, that the State Energy Office, in
41 collaboration with the Department of Agriculture, is requested
42 to create and implement a strategic plan that encompasses



1 increasing renewable energy and local food production in a
2 symbiotic relationship; and

3
4 BE IT FURTHER RESOLVED that the strategic plan is requested
5 to include findings and recommendations related to the
6 following:

- 7
8 (1) Land use policy initiatives;
9
10 (2) Protected agriculture;
11
12 (3) Agricultural technology;
13
14 (4) Necessary recommendations for legislation at the state
15 and county levels to implement agricultural technology
16 and energy developments on the same lands;
17
18 (5) Identification and implementation of mutually-
19 beneficial relationships between agriculture and
20 energy; and
21
22 (6) Identification of potential conflicting relationships
23 and solutions to those conflicts; and
24

25 BE IT FURTHER RESOLVED that the State Energy Office, in
26 collaboration with the Department of Agriculture, is requested
27 to create an economic impact report based on the successful
28 implementation of the strategic plan; and
29

30 BE IT FURTHER RESOLVED that the State Energy Office is
31 requested to submit a report of its findings and
32 recommendations, including any proposed legislation and the
33 strategic plan, to the Legislature no later than twenty days
34 prior to the convening of the Regular Session of 2020; and
35

36 BE IT FURTHER RESOLVED that the State Energy Office is
37 requested to submit a report of its findings and
38 recommendations, including any proposed legislation and the
39 economic impact report, to the Legislature no later than twenty
40 days prior to the convening of the Regular Session of 2021; and
41



1 BE IT FURTHER RESOLVED that certified copies of this
2 Concurrent Resolution be transmitted to the Administrator of the
3 State Energy Office and the Chairperson of the Board of
4 Agriculture.

