

**Annual Compliance Report
In the Matter of:**

Special Use Permit (Docket No. SP21-412) for a 120-Megawatt Solar and Energy
Storage Facility

Prepared by:

Mahi Solar, LLC

November 2023

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1.0 Introduction

This Annual Compliance Report has been prepared in compliance with the State Land Use Commission's Decision and Order, Special Use Permit, Docket No. SP21-412, approved by the Land Use Commission on (September 9, 2021) (the "Special Use Permit" or "SUP"). This Annual Report by Mahi Solar, LLC ("Permittee") provides an update on land ownership, project schedule, and agricultural activities which demonstrate the status of compliance of the Mahi Solar Project ("Project") with the conditions of the SUP. This report covers the period from (September 9, 2021) through September 30, 2023, and is meant to meet the reporting requirements for 2022 and for 2023.

As overall update on the Project, due to the global supply chain crisis in 2021-2022, the Project was forced to withdraw from the HECO Stage 2 procurement and instead enter the Stage 3 procurement which is now underway. This will result in a delay to the project schedule of approximately 2 years.

Despite the delay to the project construction scheduler, the Petitioner has continued to develop the project and its agricultural plan by investing in agricultural research, planning farming infrastructure and negotiating its first lease with a farming tenant. While the schedule delay is unfortunate, the Petitioner is committed to moving forward with the Project and excited to bring this important source of renewable energy online as soon as possible. Longroad Energy has been funding the Hawaiian Agricultural Research Center (HARC)'s research at the operational Mililani Solar site (owned by Clearway Energy) where many crops are being tested for commercial production. A recent summary of the agrivoltaic testing program is provided with this report (Attachment I).

2.0 Annual Compliance Report on Conditions of Special Use Permit

2.1 SUP Condition #1

Usable lands of the Petition Area, as required under Section 205-4.5(a)(21)(A), 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 the 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 circumstances that were beyond the control of the Applicant. 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 HARC.*
- b. A collaborative process establishing an organization or association between the Petitioner and the individual agricultural operators interested in and working in the Petition Area for agricultural productions including livestock, crops, or hydroponics.*
- c. An 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.*

2.1.1 Response to Condition #1

By way of overall project update, the HECO procurement of power from Mahi Solar has been delayed, but the Petitioner has continued to pursue the agricultural use plan prior to construction of the solar facility. The current land remains in similar agricultural use and will remain in such use until construction start, which is anticipated in 2025. Longroad Energy (LRE) has launched and funded the "Agrivoltaic Research and Development Program" which is designed and managed by the Hawaii Agricultural Research Center (HARC). Now in its third year, the HARC research is taking place at the Mililani Solar Project in Mililani and has tested more than 20 different crops growing under and between solar panels, including mamaki tea, lettuce, sweet potato, taro, swisschard, cabbage, broccoli, radish and many more. The HARC research is actively providing "proof of concept" for agrivoltaics in Hawaii and will help develop the agricultural plan at Mahi Solar, which will include plans for irrigation, produce washing, a working association between tenant farmers and ranchers, and fencing to support the agricultural activities. The Petitioner has already substantially negotiated a lease with its first farming tenant, at a nominal annual rate.

2.2 SUP Condition #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 and the Director of the DPP in writing within 30 days of the end of any subsequent six-month periods. If requested by the Planning Commission, the Petitioner shall attend a meeting of the Planning Commission 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 Planning Commission 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 Planning Commission for unforeseen extenuating circumstances.

2.2.1 Response to Condition #2

See response to Condition #1. Currently, several farmers and ranchers have indicated interest in conducting agricultural activities at the Project. However, if the issue described in this condition does arise, the Permittee will comply as required.

2.3 SUP Condition #3

This SUP operational period shall be valid for a period of 25 years plus a 10-year extension preceded by three-years of construction and 12 months of decommissioning from the date of the State LUC Decision and Order approving the SUP, subject to further extensions upon a timely request for extension filed with the Planning Commission at least 120 days prior to the SUP's 39-year expiration. Approval of time extensions shall be required from the Land Use Commission.

2.3.1 Response to Condition #3

See response to Condition #1.

The LUC's Decision and Order approving the SUP was issued on September 17, 2021. Due to the global supply chain crisis and the delay to the Project's schedule, which was out of the Permittee's control, Mahi Solar will provide a written letter to the DPP requesting an extension of time to establish the Project, which would be then be filed with the Planning Commission.

2.4 SUP Condition #4

The Petitioner shall establish the Project within three 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 Land Use Commission may grant an extension to the deadline to establish the Project due to unforeseen circumstances that were beyond the control of the Petitioner.

2.4.1 Response to Condition #4

See response to Condition #1.

The LUC's Decision and Order approving the SUP was issued on September 17, 2021. Due to the global supply chain crisis and the subsequent delay to the Project's schedule, which was out of the Permittee's control, Mahi Solar will provide a written letter to the DPP requesting an extension of time to establish the Project.

2.5 SUP Condition #5

Approval of the AIS from the SHPD shall be obtained prior to the issuance of building permits. Any specific required conditions of such approval may be added to the CUP or grading permit or building permit at the discretion of the Director of DPP.

2.5.1 Response to Condition #5

An Archaeological Inventory Survey (AIS) was conducted by ASM Affiliates in April 2021, and subsequently reviewed and accepted by SHPD on September 8, 2021 (Project No. 2021PR00380, Doc No. 2109SL01). The HRS Chapter 6E-42 determination of effect for the proposed Mahi Solar project is "effect with agreed upon mitigation." As mitigation for this effect, archaeological monitoring will occur during ground-disturbing activities pursuant to an Archaeological Monitoring Plan that will be prepared in accordance with HAR §13-279-4 and submitted to the SHPD for review and acceptance prior to initiating ground-disturbing activity.

2.6 SUP Condition #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 the 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 proposed landscape treatment to screen the Project along the southern (makai) boundary of the Petition Area Number 5, adjacent to Honouliuli National Historic site. If the Project created a negative visual impact to the Honouliuli National Historic site in the future, and vegetative visual screening is requested by the National Park Service, the Petitioner shall install such screening.*

2.6.1 Response to Condition #6

See response to Condition #1. The Permittee will comply with this condition prior to applying for grading and building permits.

2.7 SUP Condition #7

Upon the conclusion of Project operations, 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 12 months of the conclusion or operation or its useful life and the restoration of the disturbed earth to substantially the same physical condition as existed prior to the development of the SEF.

2.7.1 Response to Condition #7

The decommissioning plan will be implemented at the end of Project operations.

2.8 SUP Condition #8

Prior to the closing of a building permit for the SEF, the Petitioner shall submit to the DPP proof of financial security to decommission the Project and restore the Petition Area to substantially the same physical condition as existing prior to development of the Project. Such proof may include, but not be limited to, a posted letter of credit, performance bond, escrow account, 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 of the constructed Project, escalated per year for inflation), which security shall remain in place for the duration of the SUP.

2.8.1 Response to Condition #8

See response to Condition #1.

A reclamation cost estimate will be completed prior to the closing of a building permit for the project, and the Permittee will post financial security in the form of a bond, letter of credit, or similar instrument in favor of the landowners to ensure that the decommissioning funds will be available at the time that the project is decommissioned, should the project owner be unable to complete the decommissioning.

2.9 SUP Condition #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.

2.9.1 Response to Condition #9

See response to Condition #1.

At the appropriate time, the Permittee will ensure compliance with recommendations of the State of Hawaii, Department of Land and Natural Resources, Division of Forestry and Wildlife ("DOFAW"), are adequately met.

2.10 SUP Condition #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, the State Office of Planning and Sustainable Development, the State Department of Agriculture and the Land Use Commission 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, 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 decreased 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 archaeological features, sites, and resources.*
- e. Quantities of water demand, storage, pumping, delivery, availability by sources for each of the five Project Areas prior to Phase Two of the Agrivoltaics Program of the Agricultural Plan.*

2.10.1 Response to Condition #10

See response to Condition #1. This SUP Compliance Report will be provided to the DPP, the State Office of Planning and Sustainable Development, and the State Department of Agriculture and the Land Use Commission prior to December 31, 2023, noting the project status and overall delay relating to the HECO procurement of Power from Mahi Solar.

2.11 SUP Condition #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 Planning Commission and the LUC. Minor modifications including minor additional 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 DPP.

2.11.1 Response to Condition #11

See response to Condition #1. Currently no major modifications are planned by the Permittee.

2.12 SUP Condition #12

The Petitioner and/or landowner shall notify the Director of 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 Planning Commission, in consultation with the Director of the DPP, shall determine the disposition of this SUP, and the facilities permitted herein.

2.12.1 Response to Condition #12

See response to Condition #1. Approximately 220 acres of the planned Project site was purchased from Hartung Brothers, Inc. by Mahi Land Holdings, LLC an affiliate of the Permittee. The remaining land for the Project will be leased.

2.12.2 SUP Condition #13

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

2.12.3 Response to Condition #13

See response to Condition #1. The Permittee plans to comply with all required conditions.

2.13 SUP Condition #14

The Applicant shall develop and operate the facility, including the implementation of measures to mitigate potential impacts of the Project, in substantial compliance with the representations made to the Planning Commission and the LUC as reflected in this Decision and Order. Such mitigation measures include, but are not limited to, the use of temporary and permanent BMPs to ensure that the development and operation of the facility does not result in an increase in stormwater runoff that adversely impacts downstream properties. Failure to develop the Petition Area may result in revocation of the SP.

2.13.1 Response to Condition #14

See response to Condition #1. At the appropriate time, the Permittee will ensure the Project is developed and operated, including the implementation of measures to mitigate potential impacts in compliance with representations made to the Planning Commission and LUC as reflected in the Decision and Order.

2.14 SUP Condition #15

In the event that historic resources, including skeletal remains, structural remains, cultural deposits, artifacts, sand deposits, or sink holes, are identified during demolition and/or construction activities, all work shall cease in the immediate vicinity of the find, the find shall be protected from additional disturbance, and the SHPD and O'ahu Island Burial Council, as applicable, shall be contacted immediately. Without any limitation to any other condition found herein, if any burials or archaeological or historic sites are discovered during the course of construction of the facility, all construction activity in the vicinity of the discovery shall stop until the issuance of an archaeological clearance from the SHPD that mitigation measures have been implemented to its satisfaction. An Archaeological Monitoring Plan ("AMP") that satisfies the requirements of HAR section 13-279-4, shall be prepared to guide monitoring and be reviewed and accepted by SHPD before work begins.

2.14.1 Response to Condition #15

See response to Condition #1. As part of the Project's future construction activities, the Permittee will comply with established mitigation processes relating to the potential identification of historic resources.

2.15 SUP Condition #16

The Applicant will comply with the recommendations made in the Archaeological Inventory Survey with regards to the:

- Waiahole Ditch – avoidance and protection during development activities*
- Oahu Sugar Company irrigation infrastructure – conduct archaeological monitoring during development activities and prepare an archaeological monitoring plan subject to acceptance by the State Historic Preservation Division prior to ground-disturbing activities.*

2.15.1 Response to Condition #16

See response to Condition #1. As part of the Project's future development, the Permittee will comply with recommendations made in the Archaeological Inventory Survey.

2.16 SUP Condition #17

The Applicant and its successors shall (1) maintain the surface and aboveground areas of the easement of the Waiahole Ditch where it traverses the Petition Area and shall have non-exclusive access to such areas; and (2) not interrupt or impair delivery of Waiahole Ditch water during construction and operation of the Project.

2.16.1 Response to Condition #17

See response to Condition #1. At the appropriate time, conditions relating to the *Waiahole Ditch* will be met as part of the Project's development.

2.17 SUP Condition #18

As recommended by Petitioner's Ka Paakai O Ka Aina analysis to mitigated impacts to traditional and customary practices, Petitioner shall consult with appropriate agencies and persons who have knowledge of the Pohakea trail's historical location and possible status and incorporate consultation recommendations in its development plans. Petitioner shall also identify and avoid all native plant communities and their associated habitats.

2.17.1 Response to Condition #18

See response to Condition #1. At the appropriate time, the Permittee will meet mitigation measures as recommended in the Ka Paakai O Ka Aina analysis.

Attachment I

Hawaiian Agricultural Research Center APV Phase 2 Project Report



HAWAII AGRICULTURE RESEARCH CENTER

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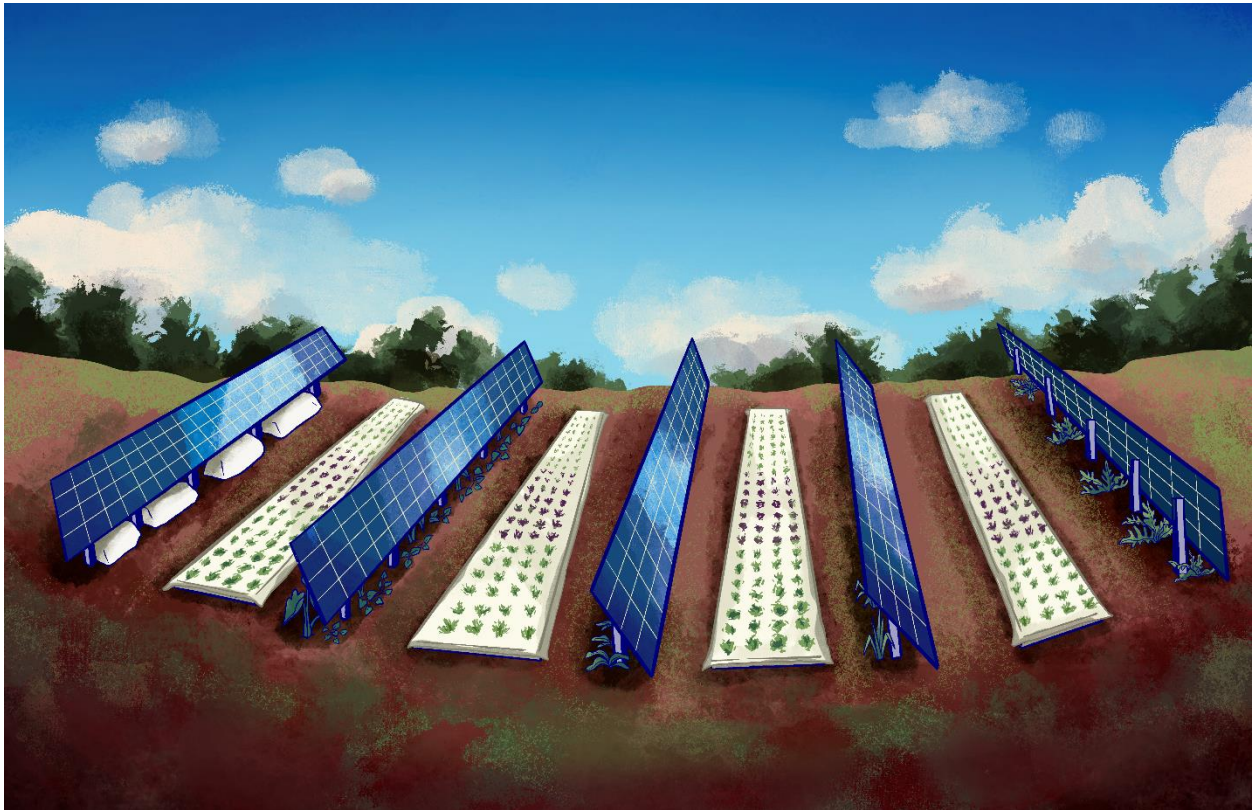
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APV Phase 2 Project Report

Juli Burden

September 8th, 2023



Executive Summary

- The Bright Lights Chard biomass experiment is complete, planting the second local pumpkin crop and bush beans for yield and economic data.
- Mana Ulu taro harvested with yield data.
- Kunia Country Farms lettuce blend trials in hydroponic troughs.
- Log mushroom and nursery crops update.
- Crop plan and calendar of events to be distributed.
- More vegetable crop screening at Mililani 2.

New Site at Mililani 1 and Control Plot at Mililani 2 Update

The first Chard biomass trial has concluded. The full data and economic analysis will be included in the next quarterly report. We have since removed the chard from the control plot as well as Mililani 1 and replanted with Provider Green Bush beans as well as a new variety called 88-11 an improved local squash on August 23rd. We will be putting together a planting calendar and schedule to share with everyone in the following weeks as to better plan tours, when to take promotional videos and photos, and when future quarterly reports are to be expected.

Mililani 2 Site (Demonstration Site) Update

Hydroponic Lettuce Update

The hydroponic trough was planted with a specific blend of lettuce from Kunia Country Farms. The lettuce was harvested, and a second trough was reseeded using the same seed source. Unfortunately, germination was very low for the second trough (576 plants of 2000) so the second round of data will be much lower, but we are hoping to continue to see a trend of improved establishment, quality and biomass in the new temporary trough in Mililani 1 as compared to the original trough in Mililani 2. The next trough will be planted once again by the original 5 variety (Casey, Cherokee, Red Butter, Magenta, Fusion) blocks. We will begin germination next week and they should be ready to transplant close to the harvest date of this current smaller trough grow-out.

In the next couple of months, we also plan to hire an electrician to help get the hydroponic circulating again. We will likely need to purchase new batteries, controllers, and an inverter to power the water pump and sterilizer continuously off-grid for 24 hours. The panels we will use were loaned to us by Clearway and we can hopefully get something put together by the end of the year.

Mana Ulu Taro Planting and Harvest

The primary crop of this system is taro (*Colocasia esculenta*), known in Hawaiian as kalo, an incredibly important crop to Native Hawaiian people. Hawaiian taro varieties are tremendously diverse. In Indigenous Systems, taro is typically planted using Ha'ilima spacing, described as the length from a person's fingertips to their elbows, approximately 2 ft x 2ft. A typical growing season for upland taro is about 9 months to 12 months.

We planted a single line directly under the center of the panels in July 2022 with a spacing of 1.5 ft between clones (huli in Hawaiian). This area has the lowest light available for plant growth but the highest amount of space in terms of height for crops because mature Mana ulu taro can grow up to 4-5 feet tall. The bed space was calculated at 3ft x 150 ft (0.006 acres) with 102 individual plants. Taro as a crop in Hawai'i is both economic and cultural. Yields are

sometimes less relevant for economic purposes since cultivating taro is an essential indigenous practice in Hawai'i. However, these corm yields are low and if farmers are going to grow taro in



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this low light space, the best use might be for leaf (lau) production vs corm production. There are several other compounding factors that could have contributed to low yields including soil nutrients (high potassium) or harvesting timing. We replanted the same variety (Mana ulu) in the same transect and will continue to record yield data for a second time to better understand if it is a continuing trend.

Log Mushroom and Nursery Crops Update

So far one species has been collected (*Albizia*) and inoculated with the four mushroom strains. We have been collecting the additional invasive species cut log pieces from our site in Maunawili. We have increased the number of species to inoculate to include Gunpowder tree, African Tulip, Koa (*Acacia koa*), Java Plum, Silk Oak, and Octopus Tree. We plan on finishing collectin on August 26th and will be planning an education event with UH Grad students to assist in inoculating all remaining 120 logs on September 23rd. To test nursery crops under the panels, we have started by moving some of our coffee seedling from our Kunia site under the panels. We will also be adding additional fruit trees and native plants in the coming months.

Vegetable Crop Screening Blocks

To accommodate more tours the panel space dedicated to additional crop screening will be replanted slowly with some new crops and new varieties that we could test at commercial scale in the coming months depending on their performance. We plan to plant amaranth, two new varieties of broccoli, 2 varieties of tomato, collards, radish, daikon, beans, beets, fennel, borage (for pollination) and sorrel. We also have received a recommendation on two watermelon varieties to try: Georgia Rattlesnake and Crimson Sweet. We plan to test those out in the spring of 2024 at commercial scale in the control plot and Mililani 1 site.

Tours and Site Visits

Over the last two months we have had an increase in tours at the site. The site guests have been enthusiastic about not just the work we have accomplished and are in the process of but also seem engaged in the idea of agrivoltaic systems. Nearly all guests have been served iced Mamaki tea grown from the site, and it has been a popular addition to the site visits. Guests over the last few months include representatives from Kamehameha Schools, AES staff, Public Utility Commission, HSEO staff, and Ulupono. Since the tours have been increasing in popularity, we are planning to start a shared google sheet to record the tours/dates/number of people for better record keeping.



Clockwise from left to right: Coffee seedlings on site under panels, Albizia logs inoculated and delivered to site, log collection in progress at Maunawili site, asparagus establishment (purple passion variety), Mana uli taro harvest corms, bottled iced mamaki tea served during tours.



Clockwise from left to right: new squash and bushbean planting, crowning Romanesco under panels, mamaki plants under panels, control plot chard, new site chard, Kunia Country Farms lettuce variety planting, mature Mana uli before harvest.