

Mahi Pono Irrigation and Water Efficiency Upgrades

Developed for the Hawaii BLNR

June 2021

EMI and Mahi Pono are committed to being responsible stewards of the environment and water resources. To follow through on that commitment, we have been upgrading the main irrigation lines that previously served the HC&S sugar operation. In addition to these main line upgrades, we are also installing new in-field irrigation systems that have been engineered from the ground-up with water efficiency as a foundational component. The result of these improvements will be an irrigation system that can support our farm with an IIFS-compliant amount of water. Below is a summary outlining our irrigation system and water efficiency upgrades.

IRRIGATION UPGRADES IMPLEMENTED SINCE INCEPTION (2019):

- Eliminated irrigation on 4,000+ acres of pastureland (previously sugar cane).
- Upgraded gauging equipment in our ditches allows us to better measure our ditch levels and water use at various parts of the farm.
- Installed remote gate technology in our ditches to allow for efficient real-time on-farm management of water.

IRRIGATION UPGRADES CURRENTLY BEING UNDERTAKEN

- Ongoing in-field installations use system and pump designs that are right-size engineered for the specific crops they are irrigating. This allows for more fine irrigation adjustments than an all-or-nothing system.
- Direct flow irrigation emitters are being installed at the base of each tree for our tree crops. This ensures the most efficient and direct application of irrigation water, thus minimizing evaporation losses.
- Weed mat installations are ongoing for all of our tree crops. Weed mat keeps applied irrigation water in the soil longer by preventing evaporation and reducing weeds (and their water uptake).
- Digital flow meters are being installed at each irrigation station as fields come online. These meters enable us to track our water use more accurately on a field-by-field basis.
- Infield soil moisture probes are also being installed in each field. Once calibrated, these probes will provide us with soil moisture information so we can monitor and adjust our irrigation schedules accordingly.
- On-farm siphons from the HC&S operation are being replaced with more modern infrastructure.

FUTURE UPGRADES

- Future lining of reservoirs to reduce seepage losses pending the completion of an ongoing analysis of the operational significance of all existing reservoirs.
- Farm-wide installation of improved SCADA remote irrigation monitoring system will be completed by December of 2022.
- 2nd phase of remote gate installations will be completed by Q3 2023.