

Sustainable Land Use Planning

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Jennifer Chirico, PhD, MPH
Susty Pacific, President



What is Sustainable Land Use?

- ❖ “Meeting the needs of the present without compromising the needs of future generations to meet their needs.” – UN Bruntland Report
- ❖ Striking a balance among economic, environmental, and social needs
- ❖ Neutral or positive environmental, social, and economic impacts
 - ❖ Energy independence through renewable energy and energy efficiency
 - ❖ Water conservation through reuse, catchment, and watershed protection
 - ❖ Affordable housing for residents
 - ❖ Positive community contribution
- ❖ Respect of host culture
 - ❖ Sense of place and strong connection to the land

Current Land Issues Related to Sustainability in Hawaii

❖ Food security

- ❖ 80% dependence on imports
- ❖ Decreasing number of farmers
- ❖ Depleted soils for growing

❖ Energy

- ❖ 85% dependence on fossil fuels from abroad

❖ Water

- ❖ Utilities need upgrades
- ❖ High energy costs
- ❖ Water diversions

❖ Natural resources

- ❖ Destruction of native habitat
- ❖ Invasive species
- ❖ Watershed issues

❖ Cultural

- ❖ Neglected in previous generations

❖ Housing

- ❖ Not affordable for average resident



Sustainable Land Use Plan Example



A Regenerative Agricultural and Restoration
Community

Project Overview

- ❖ **Water:** Integrated rooftops, roadways, and pond system for water catchment; alleviates pressure on utilities
- ❖ **Energy:** Renewable and energy efficiency
- ❖ **Agriculture:** Regenerative – restores soil, carbon sequestration; supports farmers; food production; integrated into community; food crop trees;
- ❖ **Natural Resources:** Native habitat restoration and introduction
- ❖ **Housing:** Affordable; alternative building materials to decrease cost of construction and implement green building practices
- **Cultural:** Hawaiian family building a native plant nursery to plant native habitat; hula halau





Sustainability for Affordable Housing

❖ Typical Housing

- ❖ Conventional agricultural subdivisions are 2-5 acres
- ❖ Lose the ability to have active agriculture; separate and unaffordable for average resident
- ❖ Lose rural aspect
- ❖ Lose green design potential

❖ HNM Affordable Housing

- ❖ Utilize 201(h) process; 51% of total number of units are affordable housing planned for farmers
- ❖ HNM approaches the property comprehensively; planning workforce housing holistically as a sustainable community (i.e. clustered housing sustaining agriculture)
- ❖ Value is in people thinking different about affordable housing—not **about** it being provided, but **how** it is being provided.



HNM Unique Affordable Housing Aspects

❖ Innovative Approach

- ❖ Clustered Housing Design
- ❖ Unique in terms of how ownership and delivery is constructed. Framework had to be very different due to the agricultural context of trying to advance and support agriculture within a residential community.
- ❖ Affordable is integrated with market housing so it creates a diversified community.

❖ Maintains Rural Sense of Place

- ❖ 21 acres of housing, represents less than 10% of entire property.
- ❖ Gives more back to the community by reserving the majority of the property for agriculture and minimizing footprint.



HNM Unique Affordable Housing Aspects

❖ Targeted Toward Farm Workers

- ❖ Targeted toward having farm workers that live on the property;
- ❖ Housing is provided in a way that is affordable and compatible with agriculture.

❖ Integration of Sustainability Throughout

- ❖ Sustainability is integrated into all aspects of development:
 - ❖ Green building design
 - ❖ Net zero/positive water/waste/energy
 - ❖ Regenerative agriculture; carbon neutral approach; carbon sequestration
 - ❖ Contributes to food security and supports farmers
 - ❖ Affordability
 - ❖ Etc.



Affordable Housing Business Model

❖ Affordable Business Model

- ❖ Uses conventional high-end housing to supplement the affordable housing land
- ❖ Conventional housing drives return of capital, resulting in inexpensive farmland and a respectable return on agricultural property
- ❖ Run by a co-op of farmers, many which may reside on the property; Currently a full-time beekeeper, 160 head of cattle, and 500 egg-layers (all pasture-based with no confinement systems)



Planning Geography

Google Earth Image
Boundary





Planning

Geography

Google Earth Image
Boundary
Physical Features

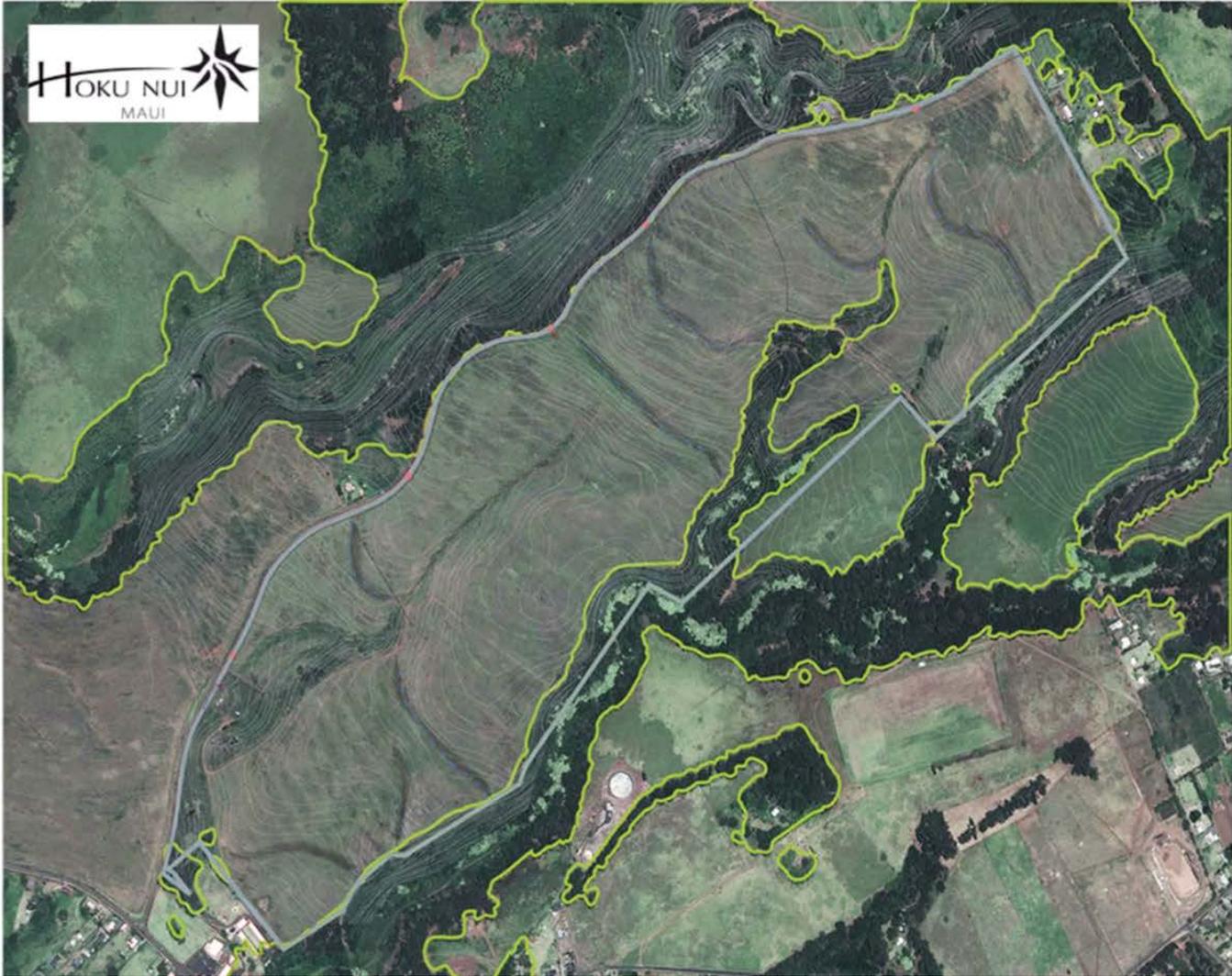




Planning

Geography

- Google Earth Image
- Boundary
- Physical Features
- Forests and Gulches





Planning

Geography

- Boundary
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Planning

Geography

Boundary

Physical Features

Forests and Gulches

Water



Planning

Geography

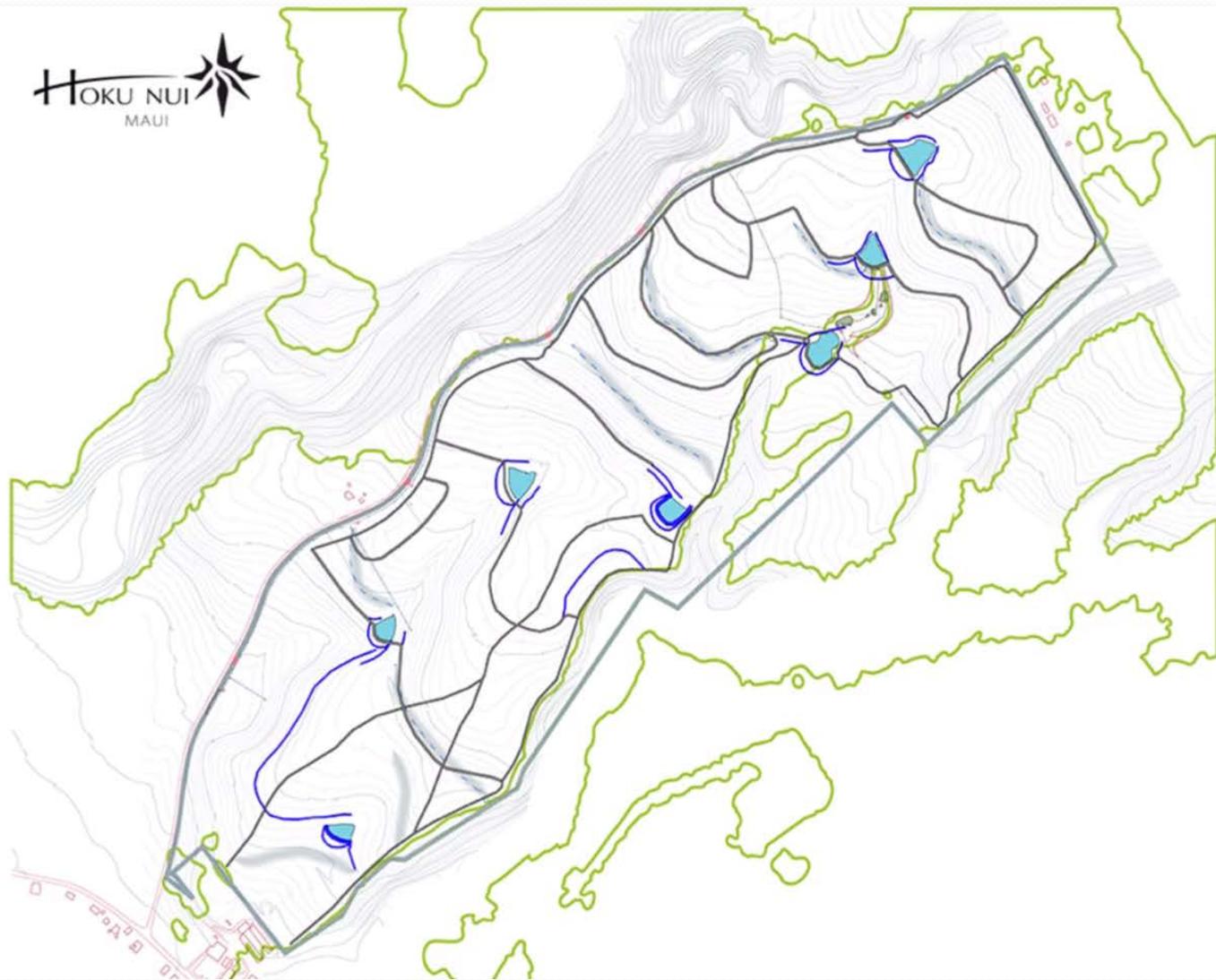
Boundary

Physical Features

Forests and Gulches

Water

Access



Planning

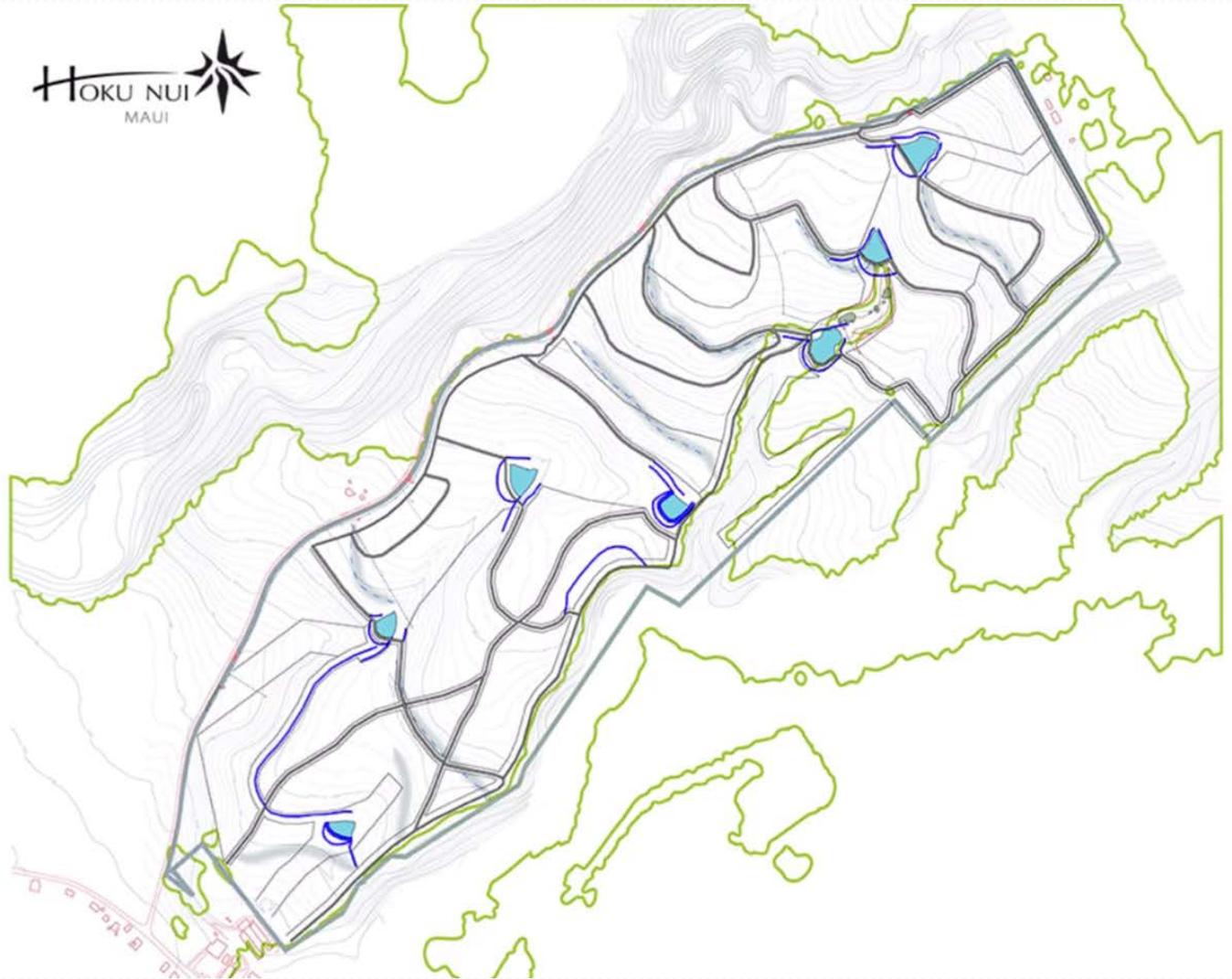
Geography

Boundary
Physical Features
Forests and Gulches

Water

Access

Fences



Planning

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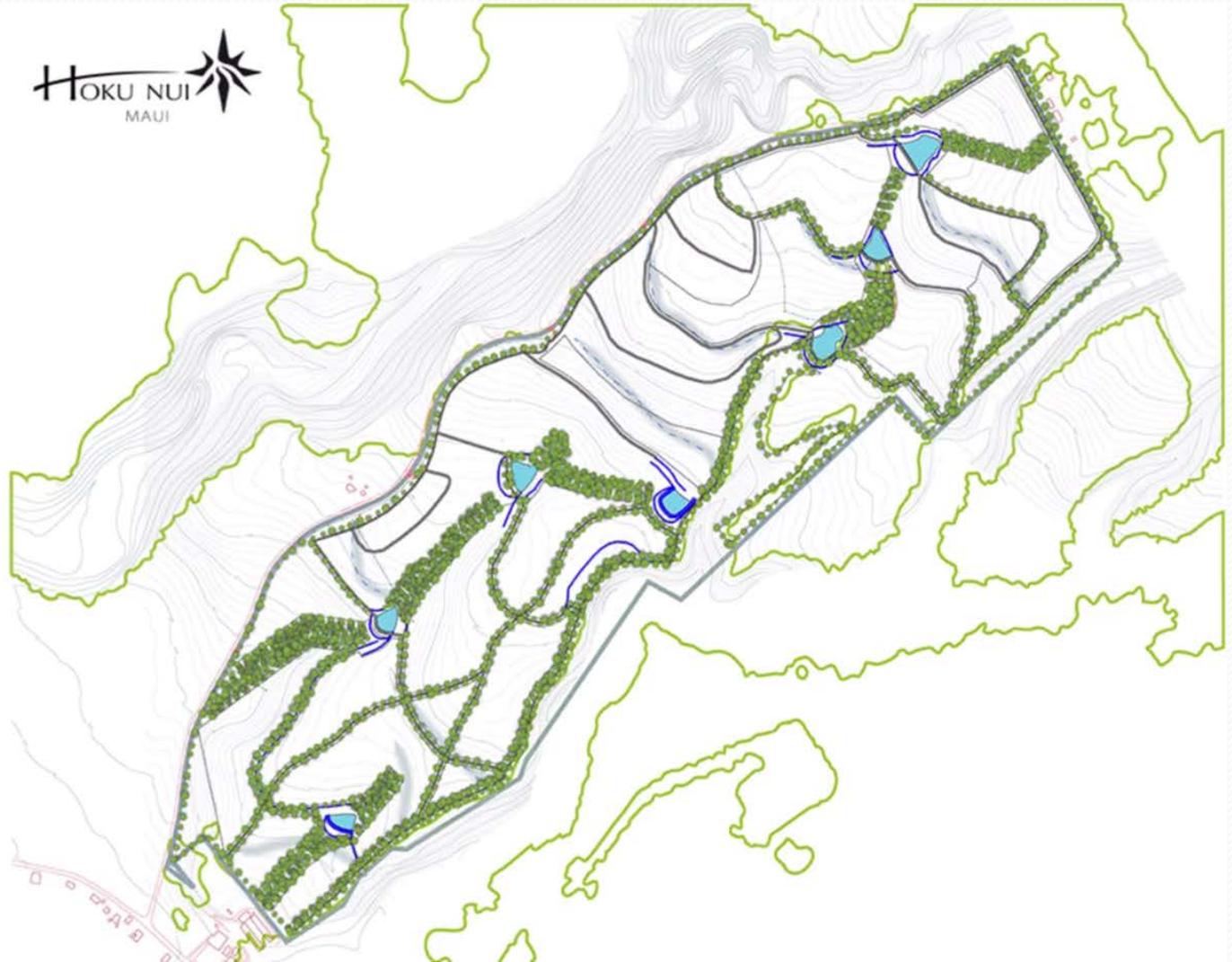
Forests and Gulches

Water

Access

Fences

Native Forest





Planning

Geography

Boundary

Physical Features

Forests and Gulches

Water

Access

Fences

Native Forest

Savanna Trees



Planning

Geography

- Boundary
- Physical Features
- Forests and Gulches

Water

Access

Fences

- Native Forest
- Savanna Trees
- Food Forestry



Planning



Geography

Boundary

Physical Features

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Native Forest

Savanna Trees

Food Forestry

Housing Lots



Planning

Geography

- Boundary
- Physical Features
- Forests and Gulches

Water

Access

Fences

Native Forest

Savanna Trees

Food Forestry

Housing Lots

Not yet on the Map

- Hula Halau
- Hawaiian Language Library
- Historical Botanical Museum
- Farmer's Market
- Commercial Kitchen



Planning

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Housing Lots

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Hula Halau

Hawaiian Language Library

Historical Botanical Museum

Farmer's Market

Commercial Kitchen



Project Summary

- ❖ Affordable housing within a live-work agricultural community
- ❖ Clean sustainable water: source, use, and treat water on site
- ❖ Regenerative agricultural approach
- ❖ Local food for the Maui and Hawaii Communities
- ❖ Clean, renewable energy
- ❖ Energy efficient design with energy efficient equipment
- ❖ Green building design using responsible and local sourcing of materials
- ❖ Respect of culture with cultural sites center for Hawaiian cultural practice
- ❖ Governance

Mahalo!

Jennifer Chirico, PhD, MPH, LEED GA
jennifer@sustypacific.com