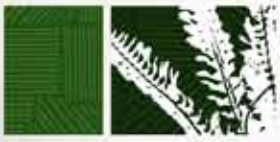

HĀMĀKUA

COMMUNITY DEVELOPMENT PLAN

# APPENDIX V4A:
# ʻĀINA: NATURAL AND CULTURAL RESOURCE MANAGEMENT ANALYSIS

*Draft (August 2013)*

# APPENDIX V4A:

# ʻĀINA: NATURAL AND CULTURAL RESOURCE MANAGEMENT ANALYSIS

## Appendix Overview

### Purpose

This appendix summarizes the background information that informs consideration of alternative strategies in the CDP Chapter IV: ʻĀina: Manage Natural and Cultural Resources. This is the first of three substantive analyses (ʻĀina, Community, Economy).

Importantly, **this appendix is NOT the Hāmākua CDP**, instead, for each of Hāmākua's resource management priorities, this appendix does four things:

- Outlines *existing policy*, especially County policy established in the General Plan;
- Summarizes related, *past planning and studies;*
- Introduces *alternative strategies* available to achieve Hāmākua's community objectives;
- Preliminarily identify *feasible strategy directions*.

In other words, this appendix sets the context for identifying preferred CDP strategies. Existing policy provides the framework in which the CDP is operating, related plans identify complementary initiatives, and alternative strategies introduce the "tool box" from which the CDP can choose the best tools for the CDP Planning Area.

### CDP Outline

Currently, the CDP is structured as follows. This Appendix is highlighted in green. It will inform the CDP strategy chapter highlighted in blue.

**I. EXECUTIVE SUMMARY**

**II. HĀMĀKUA TODAY – BRIEF SUMMARY OF VALUES, ASSETS, CHALLENGES**

**III. HĀMĀKUA TOMORROW – BRIEF SUMMARY OF VISION, OBJECTIVES, STRATEGIES**

**IV. THE PLAN – STRATEGIES: POLICIES, ADVOCACY, AND ACTIONS**

1. ʻĀINA: MANAGE NATURAL AND CULTURAL RESOURCES
2. PRESERVE AND STRENGTHEN COMMUNITY CHARACTER
3. BUILD A ROBUST LOCAL ECONOMY
4. BUILD AND STRENGTHEN COMMUNITY CAPACITY

**V. APPENDIX**

1. HCDP ORDINANCE AND ENABLING LANGUAGE (INCLUDING CDP PURPOSE & SCOPE)
2. PLANNING PROCESS
3. COMMUNITY PROFILE
4. BACKGROUND ANALYSIS & RATIONALE
   - *A. Natural and Cultural Resource Management Analysis*
   - *B. Community Analysis*
   - *C. Local Economy Analysis*
5. SUPPORTING MATERIALS
6. IMPLEMENTATION METHODS AND TOOLS
   - *A. Required Regulatory Actions*
   - *B. Implementation Action Matrix*

C. *Financing Strategies*
D. *Monitoring Plan*
7. GLOSSARY

## Notes on this August 2013 Draft

This draft is a work-in-progress. It is largely complete, but some information is still pending, and it is expected that the document will be updated as conditions change and new information is brought to light. Known gaps in information are typically highlighted in yellow.

Note also that some of the formatting is required to keep the document compliant with the American with Disabilities Act (ADA). For example, complete hyperlinks have to be inserted so that reading machines for the visually-impaired can correctly interpret Internet addresses.

## Feedback Wanted

Because this an incomplete draft, and because we know that there are plans and strategies that can inform CDP strategies that may not be included, *constructive feedback is welcome and encouraged*. We ask that you use the feedback form available in the "Draft Hāmākua CDP Documents" folder at www.hamakuacdp.info. You may also mail or email comments to the Planning Department.

## Navigating the Document

This appendix is not designed to be read from start to finish. Consider reading this introductory section and then using the tables of contents, figures, and tables to find material of greatest interest. Internal hyperlinks have been inserted to simplify navigation within the document.

The appendix also has "Bookmarks," which can be seen by opening the Bookmark navigation pane in Adobe Acrobat Reader: View/ Navigation Panels/ Bookmarks. After following an internal link, it is easy to return to the previous point in the document by using either the Bookmark navigation pane or the "Previous View" button, which can be added to the "Page Navigation" toolbar in Acrobat Reader.

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# HĀMĀKUA'S NATURAL AND CULTURE RESOURCE VALUES, VISION, AND OBJECTIVES

Based on extensive community input, the Hāmākua CDP Steering Committee summarized the Hāmākua community's core values and priorities. Those values include **'ĀINA/NATURAL RESOURCES** (natural beauty, viewplanes, natural resources, shoreline, weather, open space, environmental quality), and priorities emphasize **'ĀINA** (natural resources, land use, public access, environmental quality, natural beauty, sustainability).

Building on those values and priorities, the community's Values and Vision Statement is clear:

> We, the residents of Hāmākua recognize that the foundation of our life, livelihood and well-being comes from the 'āina - the land, the seas, the rivers and streams, the forests, and the skies. As active stewards, we mālama the 'āina as the source of sustenance for ourselves and future generations. This Kanaka Maoli wisdom guides our actions with the principle that "what is good for the land, is good for the people."
>
> *'O ka mea kupū ono 'aīna ka mea kupū ono kanaka.*
>
> Our pristine landscapes and rich agricultural lands from mauka to makai, native forests to coastal waters, streams and watersheds, the sweeping views and open spaces are protected and enhanced. We protect our culturally significant and sacred places, and nurture our diverse cultural and plantation heritage. Access to natural resources and care for the 'āina supports and perpetuates subsistence and recreation, Native Hawaiian, and other cultural traditions.

## Hāmākua's Natural and Cultural Resource Objectives

Based on community values, vision, assets, and challenges, the Steering Committee adopted clear natural and cultural resource objectives (see Planning Process Appendix):

- Protect, restore, and enhance watershed ecosystems, sweeping views, and open spaces from mauka forests to makai shorelines, while assuring responsible public access for recreational, spiritual, cultural, and sustenance practices.
- Protect and restore viable agricultural lands and resources. Protect and enhance viewscapes and open spaces that exemplify Hāmākua's rural character.
- Encourage community-based collaborative management plans to assure that human activities are in harmony with the quality of Hāmākua's unique natural and cultural landscape.
- Protect and nurture Hāmākua's social and cultural diversity and heritage assets, including sacred places, historic sites and buildings, and distinctive plantation towns.

## Alignment with County Policy

Hāmākua's community objectives are well-aligned with and supported by County of Hawai'i policy, as established in the County Charter and General Plan.

County Charter[1] Section 13-29, "Conservation of Natural and Cultural Resources," states that "the county shall conserve and protect Hawai'i's natural beauty and all natural and cultural resources,

1 http://www.hawaiicounty.gov/lb-file-review/files/2010%20Hawaii%20County%20Charter.pdf.

including but not limited to land, water, air, minerals, energy sources, wahi pana, surf spots, historic sites, and historic structures, and shall promote the development and utilization of these resources in a manner consistent with their conservation and in furtherance of the self-sufficiency of the county. All public natural and cultural resources are held in trust by the county for the benefit of the people."

General Plan policies are also clear about the need to protect natural and cultural resources and will be identified in each subsection of this analysis document.

## Types of Strategies for Managing Natural and Cultural Resources

To protect Hāmākua's natural and cultural resources and to address community objectives, the Hāmākua CDP will employ four complimentary and sometimes overlapping types of overarching, **core strategies** for managing natural and cultural resources which:

- **Establish Policy** with policy maps and policy statements related to land use, watersheds and natural features, public improvement priorities, government services, and public re/development;
- **Recommend Advocacy** with federal and state policy makers and agencies for policies, regulations, incentives, programs, and action;
- **Detail Community-based, Collaborative Resource Management**, including research, place-based planning and program design, and program implementation; and
- **Identify Easement and Acquisition Priorities**, either by fee simple ownership or through conservation easements.

The next three sections below introduce three of those overarching core strategy types: 1) Land use policy maps, 2) Community-Based, Collaborative Resource Management, and 3) Easements and Acquisition. These are core strategies because they will be used and referred to throughout the focus areas throughout the rest of the document.

The remainder of this analysis addresses strategies specific to the focus areas below:

- Focus Area: Ahupua'a/Watershed
    - Focus Area: Wao (Mauka and Forest Lands);
    - Focus Area: Kula (Agricultural Lands);
    - Focus Area: Kahakai (Coastal Lands)
- Focus Area: Cultural Resources
- Focus Area: Waipi'o Valley Natural And Cultural Resource Management
- Focus Area: Public Access

# CORE STRATEGY: LAND USE POLICY MAP

**Resource Protection Overlays**: Comprehensive, regional, conservation, watershed, and open space plans often use resource protection overlay districts to link land use policies and conservation strategies with specific landscapes. For example,

- Falmouth, a coastal community in Maine, established Resource Conservation, Shoreland Resource Protection, and Stream Protection Zoning overlay districts in its Open Space Plan and Zoning Code[2].

- Similarly, in its "East of Sandy River Rural Area Plan[3]," Multnomah County, which includes Columbia River Gorge (a State Scenic Waterway, a National Scenic Area, and a federal Wild and Scenic River), established a "Sandy River Significant Environmental Concern (SEC) Zoning Overlay." The SEC overly extends one-quarter mile on both sides of the Columbia River banks and 100-300 feet of the centerline of sensitive streams. In the SEC, all proposed development must meet standards related to protection of the waterways and their banks from erosion, unsightly views, elimination of wildlife habitat, and other similar issues.

- Likewise, the Town of Westminster, Vermont, established Historic Preservation, Agricultural Land, Resource Conservation, Connecticut River Conservation, Water Supply Resource Protection, and Ridgeline Protection overlay districts in its Zoning Ordinance.[4]

**Urban Growth Boundaries** identify areas to be protected for agriculture/open uses and areas where growth will be encouraged. Urban Growth Boundaries (UGBs) are intended to accommodate anticipated growth and to separate areas appropriate for future growth from areas intended for agricultural/open use. Most comprehensive plans include an open space element and resource protection overlay districts, which can incorporate agricultural land.

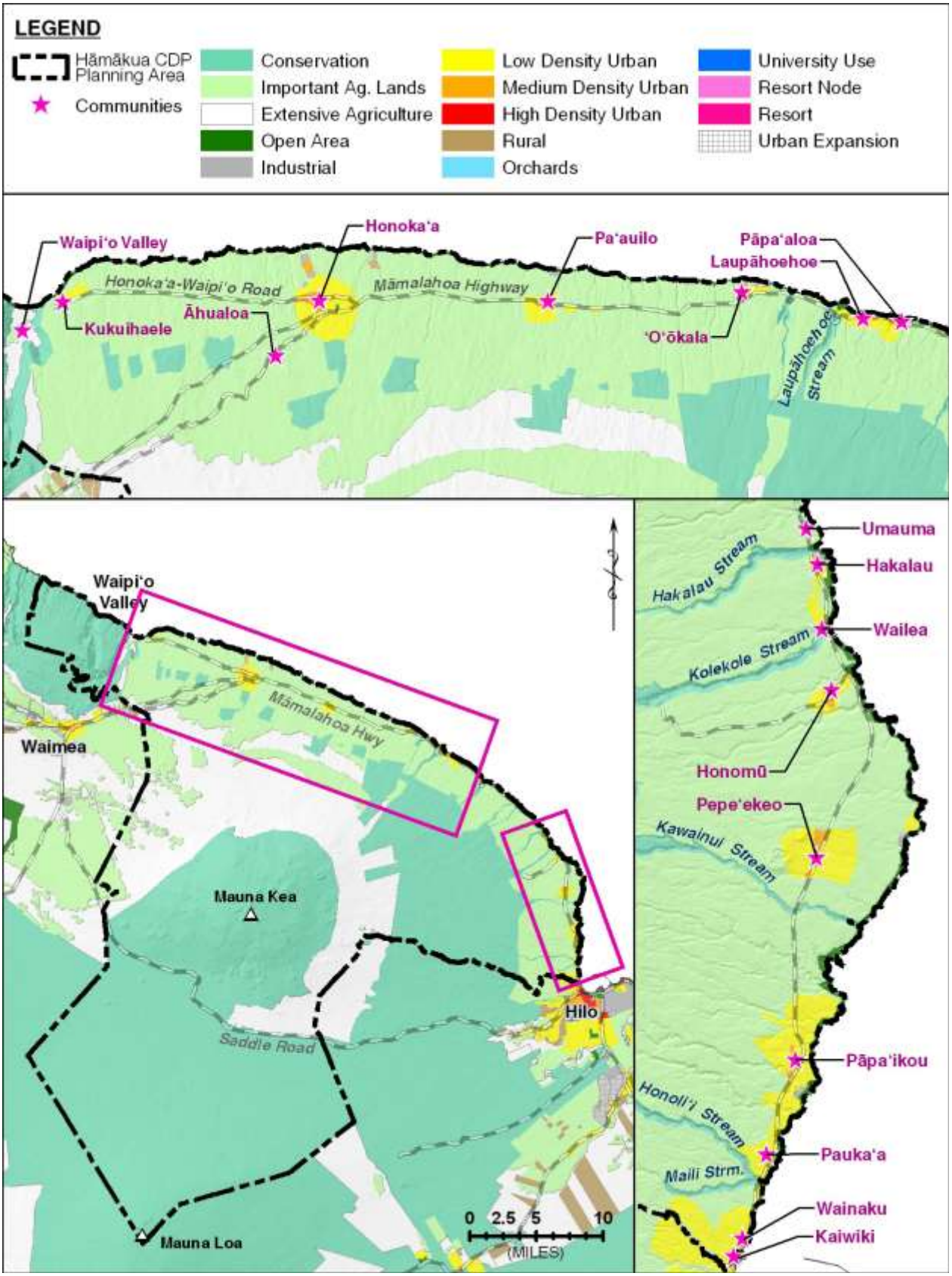
**General Plan Land Use Pattern Allocation Guide (LUPAG) Map**: The LUPAG map in the County General Plan includes land use designations that effectively serve as resource protection overlays and establish an UGB between the agricultural designations (orchard, agricultural, and intensive agricultural) and the urban designations (low, medium, and high density urban). The LUPAG map is a broad, flexible design intended to guide the direction and quality of future developments in a coordinated and rational manner. It indicates the general location of various land uses in relation to each other. State land use boundary amendments, changes in zone, project districts, subdivisions, planned unit developments, use permits, variances, and plan approval must be consistent with the General Plan.

The Planning Area's LUPAG Conservation designations generally correspond with State Conservation District lands, mainly consisting of Mauna Kea, Mauna Loa, and protected reserves.

LUPAG urban designations correspond with the State Land Use Urban Districts, but also encompass lands beyond the State Urban District. Locations where the LUPAG envisions significant urban growth beyond the State Land Use Urban District include: Honokaʻa, Paʻauilo, ʻOʻōkala, Pepeʻekeo, Pāpaʻikou, Paukaa, and Kaiwiki. The LUPAG designates the remaining lands within the Planning Area as Important Agricultural Lands and Extensive Agriculture. Important Agricultural Lands are primarily located along the shoreline as a band below the elevation of 2,000 feet from North Hilo to Waipiʻo Valley. Extensive Agriculture is present in middle elevations at the bottom of Mauna Kea (See figure 1 on the next page).

2 http://www.beginningwithhabitat.org/pdf/falmouth_RCZO.pdf
3 http://web.multco.us/land-use-planning/east-sandy-river-rural-area-plan
4 http://www.westminstervt.org/vertical/sites/%7BA171D8D5-AAF9-44F2-8E0E-B30695F0816B%7D/uploads/%7BF75C174A-A6F7-41E5-B032-43C338CA7EF9%7D.PDF

**Figure 1. Planning Area LUPAG Map**



# CORE STRATEGY: COMMUNITY-BASED, COLLABORATIVE MANAGEMENT

One of the strengths of the ahupua'a framework is its comprehensive, interconnected scope. By definition, ahupua'a include a wide range of natural, cultural, and recreational resources across the landscape.

In contemporary Hawai'i, however, those resources typically involve many different owners and fall under several different jurisdictions. Effective natural and cultural resource planning, therefore, requires high levels of collaboration and coordination among a wide range of agencies and organizations.

Likewise, few know the resources like those who use and enjoy them. Local Hawaiian families, cultural practitioners, hunters, fisherpeople, hikers, farmers, and ranchers who know and frequent the forests, agriculture lands, and coastline are well-positioned to play a leadership role in managing them.

Those same people are also concerned about how Hāmākua'a resources are managed, particularly because so many of the resources are outside of direct community control.

Therefore, a community-based, collaborative approach to resource management is a core component of the strategies detailed in this chapter for managing ecological, cultural , and recreational resources in the Wao (Forest), Kula (Agricultural), Kahakai (Shoreline), and Waipi'o Valley regions of the CDP Planning Area.[5]

This section introduces the need, history, policy framework, precedent, tools, and process for re-establishing Community-based, Collaborative resource management systems in Hāmākua.

## Hāmākua's Community-based, Collaborative Resource Management Related Community Objectives

- **Encourage community-based, collaborative management** plans to assure that human activities are in harmony with the quality of Hāmākua's unique natural and cultural landscape.

## State Policy Supporting Community-based, Collaborative Resource Management

Hawai'i Revised Statutes (HRS) Chapter 205A establishes the Hawai'i Coastal Zone Management (CZM) program, which is a federally approved program managed by the State Office of Planning and implemented locally by the County Planning Department.

HRS section 205A-2 establishes the following CZM objectives in support of community-based, collaborative resource management:

- Provide coastal recreational opportunities **accessible** to the public
- **Stimulate public** awareness, education, and **participation in coastal management**
- **Improve** the development review process, communication, and **public participation in the management of coastal resources and hazards.**

Likewise, HRS section 205A-2 also establishes the following supportive CZM policies:

5 Community-based, Collaborative Cultural Resource and Public Access Management tools, strategies, and organizations will be discussed in their own dedicated sections of this analysis.

- Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:
    - **Providing and managing adequate public access**, consistent with conservation of natural resources, to and along shorelines with recreational value;
    - **Encouraging reasonable dedication of shoreline areas** with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities.
- **Improve coordination** and funding **of coastal recreational planning and management**
- Improve the technical basis for natural resource management;
- **Promote public involvement in coastal zone management processes**
- **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
- **Organize workshops, policy dialogues, and site-specific mediations** to respond to coastal issues and conflicts
- **Coordinate the management of marine and coastal resources and activities** to improve effectiveness and efficiency
- Assert and articulate the interests of the State as a **partner with federal agencies** in the sound management of ocean resources within the United States exclusive economic zone
- **Promote research, study, and understanding of ocean processes, marine life, and other ocean resources** to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources
- **Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources**.

## General Plan Support for Community-based, Collaborative Resource Management

The General Plan is clear about the need to collaboratively manage access and use of natural and cultural resources both mauka and makai:

- 8.2(e): Protect and **effectively manage Hawai'i's open space, watersheds, shoreline, and natural areas**.
- 8.3(e): **Coordinate programs to protect natural resources with other government agencies**.
- 8.3(l): **Work with the appropriate State, Federal agencies, and private landowners to establish a program to manage and protect identified watersheds**.
- 4.3(g): **Participate in watershed management projects** to improve stream and coastal water quality and encourage local communities to develop such projects.
- 8.3(q): **Develop policies by which native Hawaiian gathering rights will be protected** as identified under judicial decisions.

- 8.3(r): **Ensure public access** is provided to the shoreline, public trails and hunting areas.
- 7.3(a): **Increase public pedestrian access** opportunities to scenic places and vistas.
- 8.3(c): **Maintain the shoreline for recreational, cultural, education, and/or scientific uses** in a manner that is protective of resources and is of the maximum benefit to the general public.
- 8.3(a): **Require users of natural resources to conduct their activities in a manner that avoids or minimizes adverse effects on the environment**.
- 8.3(b): **Encourage a program of collection and dissemination of basic data concerning natural resources**.
- 6.2(c): **Enhance the understanding of man's place on the landscape by understanding the system of ahupua'a**.

## Plans and Studies Calling for Community-based, Collaborative Resource Management

**Ocean Resources Management Plan (ORMP)**[6]: The ORMP is a statewide plan mandated by HRS Chapter 205A as part of the State's Coastal Zone Management (CZM) program. The ORMP includes the following goals and strategic actions related to community-based, collaborative management:

- **Apply integrated and place-based approaches to the management of natural and cultural resources**
- **Improve interagency coordination**, effectiveness and efficiency in wetlands management through the creation of a watershed coordinating committee to ensure ecological function is maintained to the greatest extent practicable
- **Leverage State, federal, and private sector funding** to implement best management practices
- **Identify priority watersheds**, major land covers, land uses, and polluting activities
- **Implement watershed implementation plans**, total maximum daily load implementation plans, **and local action strategies to address land-based pollution threats**
- **Develop enhancement and restoration plans to increase public access** and restore priority beaches and scenic vistas
- **Implement shoreline enhancement and restoration plans** in priority areas
- **Employ community-based partnership programs**, including the Mauka-Makai Watch Program
- **Expand the Mauka-Makai Watch program** and provide standardized training programs and guidelines for participating community volunteers and organizations
- **Identify existing networks, community groups and organizations to work with** to establish responsible management entities for each ahupua'a and moku to implement the ORMP
- **Build capacity for community participation in natural and cultural resources management**
- **Promote appropriate and responsible ocean recreation and tourism that provide culturally informed and environmentally sustainable uses for visitors and residents**

6 http://hawaii.gov/dbedt/czm/ormp/ormp.php

- **Encourage community-based, culturally informed environmental education and outreach programs** promoting responsible ocean recreation

- **Develop an education program** for land owners, land managers, farmers, and others on the importance of incorporating best management practices to preserve riparian and wetland habitats

- **Improve enforcement capacity and voluntary compliance** with existing rules and regulations for ocean resource protection

- **Develop community-based frameworks and practices** for identifying and mitigating ocean recreational use conflicts.

An update to the ORMP is scheduled to be completed in mid-2013.

**SHPD's Statewide Historic Preservation Plan**[7]: The SHPD plan supports a community-based, collaborative approach with the following actions:

C.4. Improve coordination between government agencies, preservation advocacy groups, Hawaiian organizations, and knowledgeable individuals involved in the multiplicity of aspects of historic preservation.

D.1. Encourage community and private organizations to care for and manage historic properties.

D.8. Encourage and support Federal, State, and County agencies, and private sector owners to maintain and preserve native Hawaiian cultural places and historic properties under their management.

E.2. Encourage and support Federal, State, and County agencies, and private sector owners to maintain and preserve historic buildings and structures under their administration.

**Waipi'o Valley Planning:** Between 1997 and 2003, Waipi'o Valley was the site of extensive natural and cultural resource, and community planning. A team of students and faculty from UH Mānoa's Department of Urban and Regional Planning (DURP) worked with local community, federal, state, county, and other stakeholders to develop three documents, *Waipi'o Valley: Towards Community Planning and Ahupua'a Management*[8], *Waipi'o Valley: Towards Community Planning and Ahupua'a Management Phase II*[9], *and Waipi'o Valley Community Action Plan Draft.* Each of these plans discusses community-based, collaborative management of Natural and Cultural resources, including:

- Develop a community empowerment program to define future actions ("Planters of KALO"), and also serving as fundamental guide for improvement of the valley. The goal of this program is to communicate and consolidate with community partners (i.e. community members, facilitators-support groups, and government representatives)

- Develop a "Natural Resource Management (NRM) Committee" to initiate and lead participation in natural resource management involving interagency collaboration.

- Develop a "Stream Management Committee" supported by the pertinent permitting agencies leading to plan overall stream monitoring and maintenance.

7 http://hawaii.gov/dlnr/hpd/presplan.htm
8 http://scholarspace.manoa.hawaii.edu/handle/10125/7983?show=full
9 http://www.durp.hawaii.edu/Library/Document%20pdf/Waipio%20Report%20Fall%202001%20opt.pdf

**Laupāhoehoe Forest Management Plan**: The US Forest Service is in the process of drafting a management plan for the Laupāhoehoe Experimental Forest unit[10] of the Hawai'i Experimental Tropical Forest with feedback from a 12 community member Laupāhoehoe Advisory Council (LAC)[11]. The LAC's members have expertise in Cultural Resources, Natural Resource Management, Recreation, and Scientific Research. It is expected that there will be a working draft available summer/fall 2013 with a final plan completed sometime in 2014.

# Current Tools and Alternative Strategies for Community-based, Collaborative Resource Management

## Collaborative Management Initiatives in Hāmākua

**Mauna Kea Watershed Management Plan**[12]: Though largely protected from development, Hāmākua's mauka forests still need to be actively managed in order to avoid decline and to protect Hāmākua's watersheds. Because the area has multiple public and private owners (see Figure 4), the Mauna Kea Watershed Alliance[13] (MKWA) was formed as one of Hawai'i's Watershed Partnerships. Partners include Federal agencies (US Fish and Wildlife, US Forest Service), State agencies (Departments of Land and Natural Resources, Department of Hawaiian Homelands), private land owners (Kamehameha Schools, Kuka'iau Ranch), and non-profit management partners (The Nature Conservancy).

The vision of the MKWA is to protect and enhance watershed ecosystems, biodiversity and resources through responsible management, while promoting economic sustainability and providing recreational, subsistence, educational and research opportunities.

To implement its 2010 Management Plan, the MKWA actively coordinates programs in the following areas: Water resource protection, ecosystem protection and enhancement management of invasive plant and animal species, wildfire prevention, watershed protection, economic sustainability, management of human activities, protection of cultural and historical resources, enhancement of community awareness and public outreach, and promote research and monitoring. The MKWA 2010 Management Plan proposes the following objectives and actions related to community-based, collaborative management:

- Create and encourage safe and appropriate patterns of access for hiking and recreation on public lands
    - Develop additional opportunities for recreational activities that have minimal impact on the natural environment.
- Continue support of hunting on appropriate lands, where compatible with watershed protection goals and applicable laws.
    - Develop new accesses for public hunting on public lands. Consult with hunters who frequently use the MKWA area and land managers to determine suitable and appropriate locations for establishment of additional new public hunting access points.
- Maintain and secure Keanakolu-Mānā Road and Mauna Kea Summit Access Road to facilitate managed access.

10 http://www.hetf.us/page/laupahoehoe/
11 https://sites.google.com/site/laupahoehoeac/
12Link to Mauna Kea Watershed Management Plan http://tinyurl.com/q6d3cb9
13 http://hawp.org/partnerships/three-mountain/

- Ensure that archaeological and other cultural sites within the MKWA area are identified and protected.
- Promote awareness of Mauna Kea as an important cultural resource.
    - Collect and disseminate information, as appropriate, on wahi pana, traditions, historical accounts, and Kama'aina recollections of Mauna Kea.
- Provide on-the-ground service learning opportunities for school children and community members.

**County Cooperative Park Management Programs**: The County uses three tools to collaborate with community groups in the management of County parks:

- **Friends of the Park Agreements**: This program enables the community to make improvements, beautify, or assist with maintenance at County parks. The County retains full control and supervision over the work and any ongoing programs, and the community has no exclusive rights to the use of the facility. Basic Image[14], a not-for-profit 501(3)(c) organization, dedicated to preservation of Hawaii's heritage and natural resources, has oversight of four adopted parks through the County of Hawaii's Friends of the Parks program, including two in the Planning Area (Honoli'i Beach Park and Hakalau Beach park).
- **County Cooperative Agreement**: This program enables the community to make improvements as well as manage the facility. The County must still approve the improvements, but the County takes a back seat to the community in the planning and operations. An example is the Cooper Center in Volcano Village.
- **Lease**: This program enables the community to take full control of the facility to the extent of the terms of a lease agreement. Depending on the lease agreement, the County may have minimal funding and liability obligations, with the community assuming those responsibilities.

## Community-based Management Programs and Resources

**Division of State Parks Curator Program**[15]: The DLNR Division of State Parks has a curator program that works with local organizations to assist with the conservation, interpretation, and management of state parks. A Curator or Kōkua Partnership agreement is a formal agreement between the organization and the state to provide services to the parks by the partnering organization.

For example, the Luhiau 'ohana helps maintain the site of the Kukuipahu Heiau at the Kohala Historical Sites State Monument. Likewise, the Nā Pali Coast 'Ohana[16], a 501(c)(3) non-profit corporation comprised entirely of volunteers, is the group curator of Nu'alolo Kai within Na Pali Coast State Wilderness Park. Nā Pali Coast 'Ohana works with the DLNR in maintenance, management, interpretation, documentation, and monitoring of the cultural sites at Nu'alolo Kai. Specific projects include vegetation clearing at archaeological sites, detailed archaeological mapping, stabilization, and restoration of features.

**Hawai'i Community Stewardship Network (HCSN)**[17]: HCSN helps communities that request support improve their quality of life through caring for their environmental heritage. HCSN provides resources and technical assistance in the following areas: community advocacy, natural and sociocultural

14 http://www.pakalove.org
15 http://www.hawaiistateparks.org/partners/index.cfm
16 http://www.napali.org/
17 http://www.hcsnetwork.org

resources management, youth engagement, community-based economic development, capacity-building for community-based organizations, and monitoring and evaluating program impacts. HCSN also convenes the E Alu Pū (move forward together) network consisting of 25 communities statewide, including Ka ʻOhana o Honuʻapo, Ka ʻOhana o Hōnaunau, Kalapana Fishing Council, Kamaʻāina United to Protect the ʻĀina (Hoʻokena), and Paʻa Pono Miloliʻi.

HCSN's vision for community stewardship is that the following four conditions are a broad-based reality in Hawaiʻi:

- Communities are decision-makers. Community members understand the political and legal processes that affect the environment, and they actively participate in those processes and with the responsible agencies. They are proactive, working to put their vision into place, and they remain makaʻala (aware) of proposals that would erode their vision.

- Communities are resource managers. Community members – especially those that understand their environmental heritage through consistent interaction with it – are active participants in the day-to-day, on-the-ground management of a place, and they pass the knowledge, skills, and kuleana ethic to upcoming generations.

- Communities adapt to lessons learned and changing conditions. Community members consistently monitor their management activities and regularly assess how changes to environmental, social, or political conditions may be affecting their efforts. They improve and adapt their activities accordingly.

- Communities sustain their projects for as long as is needed to reach their goals. Community members build economically viable and institutionally strong projects or organizations that are supported by an engaged community that effectively manages conflict.

In 2012, HCSN was establishing itself as an independent 501(c)3, under the name "KUA: Kuaʻāina Ulu ʻAuamo." KUA will continue the work of the Hawaiʻi Community Stewardship Network.

**ʻAha Moku System**: Act 212 took effect in 2007, establishing the ʻAha Kiʻole Advisory Committee[18] charged with recommending to the legislature how to establish an ʻAha Moku Council system in Hawaiʻi based upon the indigenous resource management practices of moku (regional) boundaries that acknowledges the natural contours of the land and ocean, the specific resources located within those areas, and the methodology necessary to sustain resources and the community.

The eight members of the ʻAha Kiʻole Advisory Committee[19] were appointed in November 2007, and their term ended June 30, 2011. Hugh "Buttons" Lovell represented Hawaiʻi Island, and Leimana DaMate of Ocean View served as coordinator. The Committee prepared reports to the legislature for the 2009[20] and 2011[21] legislative sessions. The Committee recommended that the ʻAha Moku system of natural and cultural resource management be integrated into the governance regime of Hawaiʻi through the creation of an ʻAha Kiʻole Commission. The members of the Commission would be selected by local ʻAha Moku Councils, which are composed of persons having traditional Hawaiian cultural and generational knowledge and expertise as mahiʻai (farmers), lawaiʻa (fishermen), and konohiki for each ahupuaʻa. The ʻAha Moku System would involve community consultation, community-based codes of conduct, education, and development of regulations that are responsive to actual environmental conditions and community design.

18 http://www.ahakiole.org/aboutus.html
19 http://www.ahakiole.org/aboutus.html
20 http://www.ahakiole.org/documents/Final%20Report%2012%2018%2008.pdf
21 http://ahamoku.org/wp-content/uploads/2011/09/2011-Aha-Kiole-Legislative-Report-Final.pdf

The ʻAha Kiʻole Commission, through the ʻAha Moku System, would provide consultation and recommendations to state, county and federal agencies, boards and organizations that have responsibilities and authority for the creation and implementation of regulations and policies for natural and cultural resources management. The ʻAha Moku System would also be integrated into all County General Plans and Community Development Plans through consultation and the creation of policies, rules, regulations and ordinances.

In 2012, Act 288 established the ʻAha Moku Advisory Committee in the Department of Land and Natural Resources, pursuant HRS Chapter 171. The Committee may provide advice to the chairperson of the Board of Land and Natural Resources on:

- Integrating indigenous resource management practices with western management practices in each moku;
- Identifying a comprehensive set of indigenous practices for natural resource management;
- Fostering the understanding and practical use of native Hawaiian resource knowledge, methodology, and expertise;
- Sustaining the State's marine, land, cultural, agricultural, and natural resources;
- Providing community education and fostering cultural awareness on the benefits of the aha moku system;
- Fostering protection and conservation of the State's natural resources; and
- Developing an administrative structure that oversees the ʻAha Moku system.

It is anticipated that the governor will select Advisory Committee representatives from each island by the end of 2012.

**Hawaiʻi County Game Management Advisory Commission**: In November 2012, voters amended the County Charter to establish a Game Management Advisory Commission. The 9-member commission will advise County, State, and Federal agencies on matters related to the preservation of subsistence fishing and hunting, protecting natural and cultural gathering rights, and any matter affecting the taking and conservation of aquatic life and wildlife.

**Big Island Resource Conservation and Development**[22]: The Resource Conservation and Development Program (RC&D) was created to establish a partnership between the Federal government and a local nonprofit organization. The purpose of the RC&D program is to accelerate the conservation, development and utilization of natural resources, improve the general level of economic activity, and to enhance the environment and standard of living in designated areas. Through April 2011, RC&Ds were a USDA NRCS program. Now all RC&Ds are independent. The Big Island RC&D is one of four in Hawaiʻi that are part of a nationwide network of similar volunteer programs installed by the US Secretary of Agriculture.

The RC&D belongs to the National Association of RC&D Councils and the Pacific Rim RC&D Association. The Resource Conservation & Development process encourages local people to: identify a concern, organize, develop a plan of action, and seek a funding source. The process usually produces partnerships being formed with communities, government agencies, foundations, and corporations.

22 http://www.bigislandrcd.org/home.html

Projects sponsored by the Big Island RC&D include the Hilo Inter-Tribal Powwow, World Heritage Festivals, Hilo Bay Watershed Advisory Group, and Earth Day Celebrations.

**Ka Mauli Hou – Hawai'i Restoration and Conservation Initiative (HRCI)**[23]: The Hawai'i Restoration and Conservation Initiative (HRCI) advances large scale ecosystem restoration in Hawai'i that is rooted in native Hawaiian cultural beliefs and knowledge. HRCI is a diverse partnership of 25 organizations and over 80 individuals committed to western conservation practices and traditional cultural knowledge, including Kamehameha Schools, the USDA Forest Service and NRCS, USFWS, National Park Service, DAR, DOFAW, DHHL, The Nature Conservancy, and the Hawai'i Association of Watershed Partnerships.

The HRCI envisions a future for Hawai'i where the relationships that define and link her people and ecological resources are honored as sacred and whole; where Hawaiian nature and culture flourish through enhanced stewardship of traditional practices and beliefs; where all of Hawai'i 's people and visitors join together to protect, restore, and sustain her native ecosystems and species; and where Hawai'i 's own people fill meaningful and fulfilling leadership, career, and educational positions. The five pillars of this "restoration economy" are: Hawaiian Culture, Biodiversity & Ecological Function, Economic Development & Ecosystem Services, Quality of Life & Recreation, and Education.

The HRCI is currently seeking funding for eight pilot projects across the state that will demonstrate the value of the HRCI approach to large-scale conservation.

**Community-Based Coastal Zone Management**[24]: The Hawai'i CZM Program's Community-Based Resource Management (CBRM) program facilitates the integrated implementation of the ORMP. In 2008, the CBRM program published "Toward the Development of an Integrated Planning Framework for Natural and Cultural Resources Management in Hawai'i: Place-Based, Culture-Based, and Community-Based Approaches."[25] Based on a survey of community stewardship groups, the report identifies several types of activities and services provided:

- **Community development and ahupua'a/watershed management planning**: Community-based planning efforts like watershed master plans and CDPs developed and implemented in collaboration with state and county agencies.

- **Place-based regulations and management measures:** Regulations to manage fisheries and protect coral reefs are being established based on community values and the unique characteristics of an area. Fisheries management is conducted using a blend of traditional ecological knowledge and practices, as well as Western scientific methods. Community stewardship groups and organizations also provide support for establishing and monitoring Marine Life Conservation Districts and special ocean use areas.

- **Natural and cultural resource restoration:** Community stewardship groups and organizations for natural and cultural resources are implementing many restoration activities. Cultural resource restoration includes activities in ancient Hawaiian salt ponds, heiau, and fish ponds. Natural resource restoration activities are occurring in forests, streams, and wetlands.

- **Education and outreach:** Education and outreach is a regular component of most stewardship activities. Over one-third of all projects depend on education and outreach to achieve successful outcomes. In fact, education and outreach were cited as important factors to success more often than financial or technical assistance, volunteer support, or partnering with other entities.

23 http://restorehawaii.net/index.php
24 http://hawaii.gov/dbedt/czm/initiative/community_based.php
25 http://hawaii.gov/dbedt/czm/initiative/community_based/CommunityStewardshipReport2008.pdf

- **Collaboration and partnerships:** Collaboration and partnerships are essential for sharing resources and conducting priority activities. The establishment of watershed partnerships represents one form of public-private collaboration for managing natural resources among private land owners, the State, and nongovernmental organizations.

- **Volunteerism:** Community-based volunteer efforts are being organized to support beach cleanups, endangered species recovery and emergency response, coral reef monitoring, and surveillance programs such as Makai Watch.

Based on lessons learned from community stewardship efforts and natural resource management practices in Hawai'i, the report identified five principles to serve as an integrated planning framework for natural and cultural resource management in Hawai'i. For each principle, the report also identified implementation options:

Principle 1 (Community-Based): Support community-based management of natural and cultural resources and build community capacity to engage in stewardship activities and network with other community groups. Implementation options include:

- Develop stewardship leaders with values that echo community values.

- Support a community stewardship program based on each island, and establish new ones where needed.

- Staff communities with ombudsmen/liaisons to help communities understand government processes and advocate on their behalf with government agencies.

- Help groups come together as a network to submit group applications for funds (e.g., NOAA coral grant) so they can work together on an island level with an increased program budget.

- Development a "Volunteer Opportunities" website where community groups can advertise the need for volunteers by island.

- Prepare working draft management plan (streamlined, with community and agency plans) that looks at all the issues and outlines the steps to implement the plan. Those steps will form the bases of projects to meet the goals.

- Develop a Memorandum of Understanding (MOU) to clearly define the role of government, describing its roles and responsibilities in the support for community-based projects. Use the MOU to establish shared goals and objectives for the project. This would be nonbinding, but would drive the agencies to help the project.

Principle 2 (Collaborative): Develop long-term collaborative relationships between government and communities to learn from local knowledge to more effectively manage natural and cultural resources. Implementation options include:

- Develop a common understanding of traditional and contemporary practices.

- Provide champions on each island, determined by each island (preferably by each moku), to serve as a liaison between community groups and government agencies (this should not be another layer of bureaucracy).

- Local knowledge should be accessible to communities with the original source made known to ensure a transparent process.

- Develop a process where local knowledge, such as community mapping, can be treated as trusted data.

- Support community mapping for identifying resources, potentially using county funds and/or university students.

Principle 3 (Place-Based): Design management strategies and programs to consider the unique characteristics (resources, weather, demographics, etc.) of each place and in terms flexible enough for management to quickly adapt to changing conditions. Implementation options include:

- Allow for flexibility in rules and regulations to accommodate "tailor-made" rules and regulations for special areas rather than imposing standardized statewide rules and regulations. Communities must be supported by government in the development and implementation of these rules.
- Employ an ombudsman with expertise in the State's regulatory process on each island to serve as a community advocate to government.
- Develop MOUs between partners.
- Develop and support a mediation process for settling intra-community disputes.
- Support demonstration projects to test place-based management strategies.

Principle 4 (Culture-Based): Incorporate consideration of the host culture's (Native Hawaiian) traditional practices and knowledge in management strategies and programs. Implementation options include:

- Provide for more means to solicit input from cultural practitioners in natural and cultural resources management.
- Apply a traditional approach to stewardship, with a mauka-to-makai ahupua'a model as the framework to acknowledge the importance of connectivity.

Principle 5 (Watershed/Ahupua'a-Based): Design management strategies and programs to recognize and incorporate the connection of land and sea. Implementation options include:

- Develop criteria for the prioritization of watershed/water quality plans.
- Establish a "Code of Conduct," or pono practices and principles, to which major water users would agree.

The CBRM program also maintains the Hawai'i Community Stewardship Directory[26], which included 114 groups in the 2010 edition – over 70 of which operate in the Planning Area. Examples include:

- Friends of Hakalau Forest National Wildlife Refuge: Fosters understanding, enjoyment, and conservation of the natural and cultural resources of Hakalau Forest National Wildlife Refuge (NWR) and its surrounding ecosystems and raises funds to help support the purposes, goals, and mission of Hakalau Forest NWR.
- Laupāhoehoe Train Museum: Preserves, promotes and protects the historic, cultural, educational, social, civic and economic interests of the Hilo and Hāmākua districts while highlighting the history of railroads on the island of Hawai'i .
- Hawai'i Forest Industry Association (HFIA): Promotes healthy and productive forests and a sustainable forest products industry through responsible forest management, education, planning, information exchange, and advocacy.

26 http://files.hawaii.gov/dbedt/op/czm/initiative/community_based/May2010_HawaiiCommunityStewardshipDirectory.pdf

**NPS Heritage Area program**[27]: National Park Service National Heritage Areas are places where natural, cultural, historic, and scenic resources combine to form a cohesive, nationally important landscape. Continued use of National Heritage Areas by people whose traditions helped to shape the landscape enhances their significance.

National Heritage Areas support large-scale, community centered initiatives that connect local citizens to the preservation and planning process. National Heritage Areas include 40 areas, ranging from factory towns and city neighborhoods to farmland and battlefields. In National Heritage Areas, residents, businesses, governments, and non-profit organizations collaborate to promote conservation, community revitalization, and economic development projects that typically include education, recreation, heritage tourism, and historic preservation.

National Heritage Areas use a cooperative approach facilitated by a local coordinating entity, such as a private non-profit corporation or a public commission. Participation in projects and programs is always voluntary with zoning and land-use decisions remaining under the jurisdiction of local governments.

The NPS provides technical, planning, and limited financial assistance to National Heritage Areas. The NPS is a partner and advisor, leaving decision-making authority in the hands of local people and organizations. While a National Heritage Area designation is permanent, the role of the NPS can vary over time in response to the needs of the region and its residents.

National Heritage Areas are designated by Congress. For an area to be considered for designation, certain key elements must be present. First and foremost, the landscape must have nationally distinctive natural, cultural, historic, and scenic resources that, when linked together, tell a unique story about. A strong base of local, grassroots support is also essential, with the visible involvement and commitment of residents, government, community groups, non-profits, and businesses.

Newly designated National Heritage Areas have three years to develop a management plan, which, upon completion, must be approved by the Secretary of the Interior. The plan defines the mission, vision and goals of the National Heritage Area and outlines the strategies that the coordinating entity, partners and residents will use to achieve these objectives. Implementation of the plan rests in the hands of local citizens, officials, organizations and businesses – not the federal government.

In 2012, the Director of the National Park Service reaffirmed the NPS' support for National Heritage Areas and encouraged NPS managers to help National Heritage Areas succeed.

**Getting Involved in Caring for Hawai'i's Coastal Resources: A Community Guidebook**[28]: The DLNR Division of Aquatic Resources published this guide in 2006 to help communities assist in the protection of natural and cultural resources. It includes a detailed description of how to organize and implement a community-based management project, types of activities to consider, and detailed guides to how to organize each activity and what resources are available to help. The appendix includes case studies, sources of additional information and support, funding options, and a guide to regulations.

Basic organizing steps described in the guide include:

- Assemble Your Team, including a core group and a larger group of supporters
- Identify Stakeholders
- Secure Assistance if needed

27 www.nps.gov/history/heritageareas
28 http://coralreef.noaa.gov/education/educators/resourcecd/guides/resources/hi_resources_g.pdf

- Review Your Options
- Prepare a Conceptual Model of Concerns and Possible Solutions, including vision, goals, threats, obstacles, current activities, opportunities, community resources, objectives, and activities
- Develop Your Community Program by understanding the options, prioritizing, crafting a work plan, securing financial and other resources, and addressing liability and safety issues.

The guide provides detailed guidance on how to implement 30 different activities grouped into five types:

- Documenting Traditional Knowledge
- Awareness/Outreach
- Observation and Voluntary Compliance
- Monitoring (biological, human use, marine animals, water quality)
- Other ways to get involved (alien algae cleanups, beach cleanups, etc.).

**Information and Education (I/E)**: The most successful I/E activities are organized as a cohesive campaign with identified target audiences (people who need to be educated, adopt new behaviors, or install practices to help meet plan goals). The messages and formats should address the target audience's knowledge level and methods of receiving information. The EPA's Getting in Step Outreach Guide provides further detail for I/E campaigns and their evaluation[29].

**Hawai'i Watchable Wildlife[30]**: One example of a statewide I/E project is Hawai'i Watchable Wildlife (HWW). HWW is a statewide network of 31 viewing sites, a road signing program to direct travelers to the viewing locations, and a viewing guide and website to enhance the visitor experience and encourage responsible and sustainable viewing behavior. This project helps both residents and visitors learn about and experience Hawai'i's native flora, fauna and habitats in a manner that will be ecologically responsible, economically sustainable, and supported by local communities, the tourism industry and the visitors. HWW has two viewing sites in the Planning Area:

- Kalōpā State Park
- Kipuka Pu'u Huluhulu off of Saddle Road.

**Respected Access[31]**: This national, public/private initiative was designed to protect and enhance access and opportunities by fostering a stronger sense of individual stewardship throughout the recreation community. The goals are to maintain and enhance access to public and private lands for expanded opportunities to enjoy all type of outdoor recreation. The campaign, officially launched in September 2009, is built around a central slogan, "Respected Access is Open Access." Initiatives include:

- Education and training with a growing library of campaign materials
- Communications and outreach using PSAs, posters, brochures, advertisements, and other materials
- Grants to support local access stewardship projects.

29 http://www.epa.gov/owow/watershed/wacademy/acad2000/gettinginstep/
30 http://hawaiiwildlife.us/
31 http://www.respectedaccess.org/

Official partners include the US Forest Service, the National Shooting Sports Foundation, the Bureau of Land Management, Yamaha, the Dallas Safari Club, the Boone and Crockett Club, and the National Wild Turkey Federation.

**Lessons Learned**: Dr. Luciano Minerbi studied Hawaiian contemporary management models based on the ahupua'a concept[32]. He considered community-based subsistence fishing and fishpond restoration on Moloka'i as well as subsistence homesteads on Hawai'i Island and Maui. He concluded that more protection can be achieved with Hawaiian conservation values and planning ideas based on the integration of traditional ahupua'a district planning with modern watershed and ecological planning.

The National Park Service's Rivers, Trails and Conservation Assistance (RTCA) program identified the following recommendations based on locally-led resource management efforts:

- Locally-led conservation and management strategies must be led by community members who:
    - Understand the resources they are protecting
    - Are able to work with the diversity of people who wish to be engaged in the process
    - Appreciate the role of local, state, and federal government agencies
    - Have the commitment to develop and implement resource management strategies.
- A neutral third party who can bring the different groups through the planning and implementation process can help build trust and lead to long term sustainability of the program.
- The process must be open, transparent, and inclusive of a range of different perspectives.
- A long term vision and clear goals must been articulated.
- A clear understanding of the root causes of threats to resources is needed, including socio-economic factors.
- Flexibility is important to allow for improvements in techniques and to shift approaches as conditions and threats change.

**Ecological Society of America Guidelines for Land Use**[33]: The Ecological Society of America recommends considering the following factors when making land use decisions:

- Examine the impacts of local decisions in a regional context
- Plan for long-term change and unexpected events
- Preserve rare landscape elements, critical habitats, and associated species
- Avoid land uses that deplete natural resources over a broad area
- Retain large contiguous or connected areas that contain critical habitats
- Minimize the introduction and spread of nonnative species
- Avoid or compensate for effects of development on ecological processes

32 http://www2.hawaii.edu/~aoude/pdf/16Minerbi.pdf
33 http://www.esa.org/science_resources/publications/landUse.php

- Implement land-use and -management practices that are compatible with the natural potential of the area.

**Green Infrastructure Plans**: An increasing number of communities are adopting green infrastructure plans[34]. They typically integrate components of conservation, watershed, and open space plans and focus on maintaining ecological, cultural, and recreational integrity and interconnectivity to maximize ecosystem and community benefits[35].

Starting in 2000, Maryland was one of the first states to apply green infrastructure planning[36]. Nine counties in Maryland have launched their own green infrastructure planning efforts, which are able to be refined and detailed, accommodating microhabitats and addressing the connection with local land use planning and zoning. In Prince George's County, the county green infrastructure plan serves as a functional master plan, a policy guide for development and planning decisions.

Several green infrastructure case studies on a variety of scales in both urban and rural areas are available at http://www.greeninfrastructure.net/gi_case_studies.

**The Conservation Fund[37]**: The Conservation Fund supplies conservation strategy and tools to save land and sustain communities, including bridge financing for land conservation, customized strategic conservation guidance using a green infrastructure planning approach, leadership development, workshops, and other supports.

**Maikaʻi Kamakani o Kohala, Inc.[38]** is a community nonprofit made up of native Hawaiian cultural practitioners, community leaders and kupuna (elders) who are deeply rooted through ancestral ties and present-day commitments in the Kohala community. The group purchased more than 27.5 acres of undeveloped shoreline at Kauhola Point, located in Halaʻula, North Kohala. The $1.3 million purchase was made possible through a public-private partnership of the state Legacy Land Conservation Program under the State Department of Land and Natural Resources, The Trust for Public Land, and other donors.

Kauhola Point has been used as a community-gathering place from ancient times to present day. King Kamehameha I rested here after warfare and focus on peacetime activities—recreation, marriage and agriculture. The remains of Mulei'ula heiau, possibly Ohau heiau, and another unmarked sacred site, are thought to be places of worship of Kamehameha and other chiefly lines that existed prior to the Kamehameha dynasty.

Maikaʻi Kamakani 'O Kohala, Inc. is in the process of developing specific resource management plans through a stewardship planning process that will include the current active users. These plans will help ensure native landscape that protects the watershed, provides habitat for native species (especially shorebirds), preserves existing open view planes, cares appropriately for the heiau remnants, prevents coastal erosion by replanting native ground cover of naupaka and hala trees, makes efforts to research and revive Kamehameha I's taro patches, and maintain community access for recreational, cultural and agricultural purposes - remaining undeveloped and a community resource in perpetuity.

**North Kohala Access Group**: A group focusing on establishing greater public access in North Kohala formed while the North Kohala CDP was being developed and later became a subcommittee of the CDP's Action Committee[39].

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34 http://www.planning.org/pas/memo/2009/may/
35 "Conservation With a Purpose: A step by step guide to protecting land for nature and people." NPS RTCA
36 http://www.greenprint.maryland.gov/
37 http://www.conservationfund.org
38 http://www.mkoki.org
39 http://www.hawaiicountycdp.info/north-kohala-cdp/action-committee-materials/north-kohala-cdp-subcommittees/public-access

**Limahuli Garden and Preserve in Hā'ena**[40]: The goal for Limahuli Garden and Preserve on Kaua'i is the ecological and cultural restoration of Limahuli Valley, using the ahupua'a system of resource management as a template. The result is that past and present converge, where native plants as well as ancient and contemporary Hawaiian culture are being actively preserved, nurtured, and perpetuated.

**Maui Hunters Cooperative**[41]: Maui hunters have formed the Maui Axis Deer Harvesting Cooperative to kill axis deer that are overrunning farms and ranches. The hunters and property owners keep the venison. In addition, USDA inspectors will accompany some of the hunts, allowing some of the meat to be inspected and sold commercially to restaurants and farmers markets. The cooperative is funded by the Hawai'i Invasive Species Committee and the Mayor's Office of Economic Development and is covered by the cooperative's liability insurance.

**Traditional Management**: Traditional management practices have been shown to be effective in communities worldwide. Govan, Tawake, and Tabunakawai[42] found that successful community initiatives, such as those found in Fiji, Samoa, and Vanuatu, are not based solely on traditional mechanisms, as communities find ways of adapting traditional practices to modern times and integrating community governance in wider national contexts. They will often, though not always, seek to complement their existing knowledge and skills by asking government and/or non-government organizations (NGOs) for advice and assistance in interpreting scientific knowledge and implementing planning processes.

For example, Fijian communities have shown significant progress through a national network of NGO and government organizations. Over 177 villages have established some form of community-based management measures with others showing interest. Samoa has shown strong government investment with NGO support in their community-based fisheries management. Communities in Vanuatu have preserved traditional management in the form of "tabu" areas, and in some areas this tradition has been revived with the support of fisheries officers, government organizations, and NGOs. Approximately 80 villages are reported to be actively managing their marine resources in this manner. Papua New Guinea, Solomon Islands, Tuvalu, and Palau have also demonstrated successful community-based management that is supported by NGO and government partnerships.

### Enforcement

**DLNR Division of Conservation and Resource Enforcement (DOCARE)**: The DOCARE is responsible for enforcement activities of the Department of Land and Natural Resources. With full police powers, DOCARE enforces all State laws and rules involving State lands, State Parks, historical sites, forest reserves, aquatic life and wildlife areas, coastal zones, Conservation districts, State shores, as well as County ordinances involving County parks. In 2010, the DOCARE had 22 Conservation and Resource Enforcement Officers (CREO) on Hawai'i Island. Due to shortages, patrols have been reduced, and CREO typically only respond to calls. They also rely on County police, on occasion.

NOAA's Office of Law Enforcement also enforces laws that conserve and protect living marine resources and their natural habitat.

## Best Practices for Community-based, Collaborative Resource Management

40 http://ntbg.org/gardens/limahuli.php
41 "Maui hunters form cooperative to help control Axis deer." October 3, 2012. StarAdvertiser.com.
42 Community-based Marine Resource Management in the South Pacific. Huigh Govan, Alifereti Tawake, Kesaia Tabunakawai, PARKS. 1. 16. 63-67pp. 2006.

Based on the information above, below is a summary of "best practices" for community-based, collaborative management of natural and cultural resources. These can be applied by any group interested in managing important resources in partnership with others. They are summarized here as a guide to initiatives inspired by the CDP or coordinated by the CDP Action Committee. Though some steps naturally come before others, many can be pursued simultaneously.

1. Establish a Prioritized, Place-based Focus
    a. In collaboration with the CDP Action Committee and other stakeholders, clarify the site(s) that will be the focus, relative to regional priorities for protecting and/or managing specific resources and areas
    b. Choose an appropriate scale – watershed, forest, forest/agriculture interface, riparian corridor, trail corridor, section of coastline, parcels, sites (cultural, recreational), etc.
    c. Maintain an ahupua'a-based perspective and focus, as appropriate
2. Get Organized
    a. Establish a small, core group of people who
        i. Understand the resources they want to protect
        ii. Are able to work with the diversity of people who want to be involved
        iii. Appreciate the role of local, state, and federal government agencies
        iv. Have the commitment to develop and implement strategies that will likely take years to succeed
    b. Engage a larger group of supporters
        i. Maintain up-to-date contact information
        ii. Frequently communicate updates and opportunities to help
    c. Identify your group's place and role within existing community-based, collaborative management initiatives in Hāmākua, as described above
    d. Consider enlisting a neutral third party who can guide the core group, supporters, and other interested parties through the planning and implementation process and can help build trust that leads to long term program sustainability
3. Firmly Ground the Effort in the Community
    a. Ground the program in the cultural context of your area of focus
    b. Be open, transparent, and inclusive of a range of different perspectives
    c. Consistently seek greater public involvement
    d. Cultivate community ownership
4. Strengthen Collaboration and Coordination
    a. Identify the full range of stakeholders – those individuals, families, groups, organizations, and agencies who have a "stake" in your program, whether you agree with them about everything or not

b. Invite stakeholders to get involved or collaborate

i. Start with local groups

ii. Engage other partners, like nonprofits

iii. Embrace agency support

iv. Identify a community ombudsman or liaison to government

c. Coordinate with the CDP Action Committee and other community networks

5. Build a Solid Understanding of Historical and Current Conditions

a. Establish a baseline of current conditions to evaluate management strategies and to effectively monitor change over time

b. Start with local knowledge and expertise from kupuna, lineal descendants, cultural practitioners, hunters, fishermen, hikers, surfers, etc.

c. Embrace the best science available.

d. Chronicle historical trends

e. Inventory, prioritize, and map natural/cultural resources and threats. Importantly, take great care to keep information about sensitive resources unpublished and not public in order to minimize impacts, theft, vandalism, and other breaches in protocol.

f. Prioritize threats. Hāmākua's natural and cultural resources face a range of challenges across the region..

g. Summarize organizational, financial, and other resources available

6. Craft a Strategic, Achievable Plan

a. Establish a clear vision

b. Review historical and current conditions, including current activities, threats, obstacles, available resources, and opportunities

c. Establish a clear understanding of the root causes of the threats to resources, including socio-economic factors

d. Set goals and objectives to achieve the vision, possibly including

i. Document, preserve, and perpetuate traditional management knowledge and practice

ii. Advance knowledge and understanding of natural and cultural resources, supporting and supplementing scientific research with traditional knowledge

iii. Promote inter-generational exchange, providing opportunities for kupuna to share their knowledge and wisdom with younger generations and for youth to get involved in resource management

iv. Invest in the education of keiki through schools, internships, and job opportunities

v. Protect, restore, and maintain cultural, historic, ecological, trail, and recreational resources

vi. Identify preferred access trail/road corridors and alignments

vii. Determine appropriate access and use thresholds and protocols, recognizing that not all areas should have unrestricted public access (e.g., forest reserves, sacred sites)

viii. Increase local access to cultural, natural, scenic, subsistence, and recreational resources

ix. Manage access and use to benefit residents, visitors, and landowners

x. Expand trail, recreation, and camping facilities

xi. Promote public awareness and education about resource management

xii. Create job opportunities for local residents

e. Identify the range of strategies that could be pursued to achieve objectives, goals, and the vision (draw on the guidebooks summarized in this Appendix and other communities' successes), possibly including

i. Make resource preservation recommendations to other community-based resource management groups as well as to Federal, State and local decision-makers

ii. Organize oral history or videography projects

iii. Seek formal designations for appropriate sites, including registration on the state or federal historic register or designation as an official State or Federal trail

iv. Acquire high-value sites that are privately-owned, either fee simple or by easement

v. Establish pono practices, protocols, or codes of conduct. Both modern and traditional knowledge systems have established "best practices" for managing important resources. Kupuna and others are good sources of Hawaiian management principles, including lokahi, haʻa haʻa, ʻimi ʻike, malama ʻāina, pono, kapu, laulima, and kuleana. Similarly, modern science has identified principles that should guide forest, watershed, coastal, and cultural resource management. Insights from both systems of knowledge can be integrated to inform local management practices.

vi. Identify appropriate uses of natural and cultural resources and sites to perpetuate Hawaiian and local culture

vii. Determine appropriate thresholds for access and use

viii. Address liability and safety concerns, possibly through umbrella insurance policies, to which land owners who provide access are named as additional insured's and indemnified, as well as user liability waivers

ix. Establish other rules, protocols, and prerequisites for site access and use, as necessary

x. Establish more legal accesses on public and private lands, ensuring access to traditional areas for cultural practices, hunting, fishing, and gathering

    1. Identify public rights-of-way
    2. Add access via permit conditions
    3. Purchase fee simple or easement
    4. Negotiate legal access, right-of-way, use, and management agreements with willing private landowners

xi. Install fencing as necessary to segregate agricultural areas from managed shoreline and mauka forest areas.

xii. Identify preferred points of access.

xiii. Install orientation signage at all points of access – preferred and otherwise – explaining access rights and protocols

xiv. Install access control systems, as necessary, to limit unauthorized use and to document entries

xv. Install restrooms in high-traffic areas

xvi. Establish, train, and support caretakers/curators/stewards at sites that are of high value, threatened, and/or receive considerable public use. As appropriate, local steward with ahupua'a-specific knowledge, experience, and values could be given the responsibility to educate the public, monitor activity, and steward natural and cultural resources at key sites.

xvii. Add signage and other interpretation

xviii. Raise awareness through information, education, and outreach activities, targeting residents, land managers, and visitors

xix. Organize monitoring activities (biological, human use, marine animals, water quality)

xx. Encourage voluntary compliance with regulations and guidelines

xxi. Establish clear enforcement protocols in instances of unauthorized access and abuse

xxii. Establish community-based frameworks and practices for identifying and mitigating conflicts

xxiii. Host volunteer projects (e.g., maintenance, restoration, cleanups, etc.).

xxiv. Host cultural and educational events

xxv. Establish demonstration projects

xxvi. Hold fundraisers

f. Identify and prioritize preferred strategies

g. Develop a detailed work plan of activities, including action steps, timeline, responsible party, and resources needed and available

h. Develop a project budget, possibly including insurance, access control systems, administration, etc.

i. Identify funding and other resources to support plan implementation

7. Establish a Structure Tailored to the Partners and the Goals (i.e., form follows function)

   a. Clearly define roles, responsibilities, and accountability among partners and supporters, taking care to align strengths and roles

   b. Consider established collaborative community-based programs as options, including County Cooperative Park Management programs

   c. Work through existing organizations when appropriate to avoid the administrative burden that comes with formalized organization

   d. Formalize partnerships and accountability in Memoranda of Understanding/Agreement, as appropriate

8. Build Capacity

   a. Secure assistance and resources

      i. Leverage partnerships, affiliations, and funding

      ii. Secure financial and other resources

   b. Create sustainable organizational and leadership systems

   c. Plan for long-term organizational and financial viability, including leadership transitions, sustainable revenue sources, etc.

9. Implement the Plan

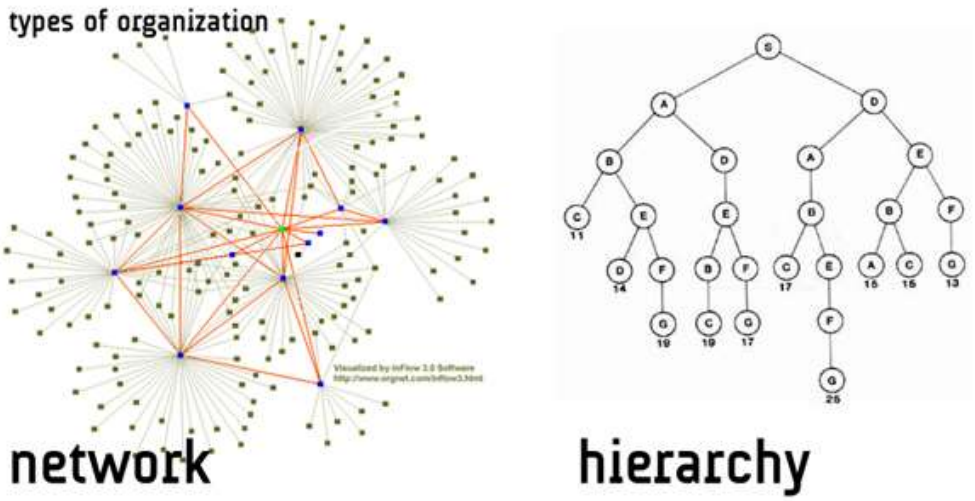
   a. Remain flexible, allowing for improvements in techniques and for shifts in approaches as conditions change

   b. Periodically revise plans and the supporting structure

**Network Approach**: It is important to keep in mind that, particularly as it relates to steps 2, 3, 4, and 7 above, a networked approach to community-based, collaborative resource management can be most effective and efficient.

In contrast to centralized, hierarchical, bureaucratic organization, networks are more informal, flexible, and decentralized. Efficiency is enhanced through distributed power and problem-solving, and effectiveness is improved through autonomous but coordinated action. Networks are not about control – they are about value-added coordination and communication.

**Figure 2. Network and Hierarchical Organizations**




Networks are nothing new in Hāmākua, they are a well-established and in many cases, they are the default approach to organizing people. ʻOhana, friends, farmers, hunters, churches, and many other groups of people who share common interests have extensive, inter-connected networks. They are typically established and grown through talk story – informal conversations that illuminate connections, strengthen relationships, and highlight opportunities for action.

Given the scope of challenges and activity in Hāmākua related to natural and cultural resource management, it would be nearly impossible to "manage" it all in a conventional, structured way. Instead, the CDP Action Committee can recognize the networks that already exist, help new ones form when needed, and facilitate connections within and among networks to advance resource management.

Each network and sub-network would operate in an independent but connected way, providing leadership, organizing key stakeholders and existing partnerships, and solving problems. With the help of the Action Committee, networks would collaborate when appropriate to address policy change, secure financial and other resources, and pursue other shared goals.

As demonstrated in the table below, Hāmākua's cultural and natural resource management network is extensive. Using a networked approach, existing activity can continue but be enhanced through better communication and collaboration among the many network members.

**Network Leadership**[43]: Leadership within a network often looks different than within conventional, hierarchical organizations. In Palau, communities were able to balance a range of competing interests through the power of networks and the capacities of community members who know how to lead them. In the 1980s, Noah Idechong was an officer of Fisheries Management in the Palau Natural Resources Division. In the face of conflict between native fishermen and tourist divers, Idechong used network leadership to broker a win-win solution that accommodated eco-conscious tourism in exchange for a tourist tax that benefited local Palauans who stewarded the natural resources.

Idechong was able negotiate this arrangement through "network weaving," a term coined by social network analysts Valdis Krebs and June Holley, based on their extensive work exploring how to build

43 http://www.fastcompany.com/1842367/tropical-tale-tourists-networks-and-new-kind-leadership

**Table 1: Hāmākua's Community-based, Collaborative Network Members**[44]

| | Cultural | Wao | Kahakai | Kula | Public Access |
|---|---|---|---|---|---|
| **Community** | | | | | |
| Kupuna | x | x | x | x | x |
| Native Hawaiians, kamaʻaina, or others with historic kinship with or knowledge of the land | x | x | x | x | x |
| Landowners & Managers | x | x | x | x | x |
| Hawaiian Civic Clubs | x | x | x | | |
| Hunters | | x | | | x |
| Farmers & Ranchers | | x | x | x | x |
| Fishermen | | | x | | x |
| Hāmākua & Mauna Kea Soil & Water Conservation Districts | | | | x | |
| Hui Mālama I Ke Ala ʻŪlili | x | x | | | x |
| Other community organizations | x | x | x | x | x |
| **Other Nonprofit/University Organizations** | | | | | |
| The Nature Conservancy | x | x | x | x | x |
| Land Trusts | x | x | x | x | x |
| Kamehameha Schools | x | x | x | x | x |
| Peoples Advocacy for Trails Hawaiʻi (PATH) | x | x | x | x | x |
| The Kohala Center | x | x | x | x | x |
| Hawaiʻi Community Stewardship Network | x | x | x | | |
| Ka Mauli Hou – Hawaiʻi Restoration and Conservation Initiative | x | x | x | | |

44 Continue to fill in table as more information is made available

| | Cultural | Wao | Kahakai | Kula | Public Access |
|---|---|---|---|---|---|
| Historic Hawai'i Foundation | x | | | | |
| UH Center for Oral History | x | | | | |
| Hamakua Heritage Center (NHERC) | x | | | | |
| Mauna Kea Watershed Alliance | | x | | | |
| Hawai'i Wildlife Fund | | | x | | |
| UH Sea Grant | | | x | | |
| Big Island RC&D | | | | x | |
| Big Island Invasive Species Council | | x | | x | |
| UH CTAHR | | | | x | |
| Respected Access | x | x | x | | x |
| **County** | | | | | |
| Planning | x | x | x | x | x |
| Cultural Resources Commission | x | | | | x |
| PONC | x | x | x | x | x |
| Parks & Recreation | x | | x | | x |
| Research & Development | | | | x | |
| Public Works | | | | x | |
| Game Management Advisory Commision | | x | x | | x |
| **State** | | | | | |
| DOCARE | x | x | x | | |
| Nā Ala Hele | x | x | x | | x |
| State Parks | x | x | x | | |
| DHHL | x | | x | x | x |
| SHPD | x | | x | | x |

| | Cultural | Wao | Kahakai | Kula | Public Access |
|---|---|---|---|---|---|
| DOFAW | | x | x | x | x |
| DAR | | | x | | |
| OCCL | | | x | | x |
| DOBOR | | | x | | |
| DOH Clean Water Branch | | | x | x | |
| DOH Polluted Runoff Control (PRC) program | | | x | x | |
| Office of Planning | | | x | | |
| Department of Agriculture | | | | x | |
| ‘Aha Moku Advisory Committee | x | x | x | x | |
| **Federal** | | | | | |
| US Fish and Wildlife | | x | x | x | |
| NOAA | | | x | x | |
| NRCS | | x | | x | |
| Farm Service Agency | | | | x | |
| US Forest Service | | x | | | |

resilience in rural communities in Appalachian Ohio. Krebs and Holley describe how a resilient community network emerges through four stages:

First, small, autonomous clusters emerge, often without any guidance, among individuals and organizations with shared interests, values, and goals. In Hāmākua, many of these clusters already exist, both formally and informally.

In the second and more intentional stage of network weaving, “translational” leaders like Idechong create a hub and spoke model, with themselves as the initial hub, connecting many different kinds of constituencies. In Hāmākua, such leaders actively make connections among environment, social, and other community-minded groups.

In the third phase, translational leaders begin to extend connections among different constituencies for whom they are the sole bridge. This starts to create a multihub social network. Due to the number of relationships involved at this point, the best network weavers don’t just connect – they teach those they connect how to become connectors themselves and begin to assume a role as facilitator of network building. There are many examples of the multihub network in Hāmākua, as well, best exemplified by

the series of annual celebrations that bring diverse groups together for parades, cultural/music festivals, and the like.

The final stage of Krebs and Holley's model, and its ultimate aim, is called a core/periphery social network. In this highly stable yet resilient social arrangement, which usually emerges after years of effort, a core of strongly affiliated hubs at the center of the social system is connected to a constellation of people and resources on the periphery. This allows for an efficient and natural division of labor: The periphery monitors the environment, while the core implements what is discovered and deemed useful.

**Resources for Strengthening Collaboration and Networks**

Collaborative, networked leadership and organization are challenging but doable. Leaders in Hawai'i with extensive experience in community-based work have developed a website – the Collaborative Leaders Network – to capture some of the most valuable lessons learned.[45] Examples of resources that might support community-based, collaborative, networked approaches to achieving community objectives in Hāmākua include:

- A Collaborative Strategy Grounded in Polynesian Values, which is designed to develop a spirit of collaboration[46]
- Community Transformation, which enables groups to meet their stated objectives in a way that also strengthens the people in them, so they can build on the collaborative experience and bring about lasting change in their communities[47]
- Collaborative Problem Solving, which systematically builds toward consensus by having participants analyze the issue, hear from experts, generate and evaluate options, review draft documents, and revisit group agreements at every stage[48]
- A Collaboration Incubator, which is designed to launch collaborative initiatives that will help communities resolve challenges and find a permanent home for each of the projects that is incubated.[49]

The Collaborative Leaders Network is just one of many sets of available resources to support community-based collaborative and networks.

45 http://collaborativeleadersnetwork.org/
46 http://collaborativeleadersnetwork.org/strategies/polynesian-values/
47 http://collaborativeleadersnetwork.org/strategies/community-transformation/
48 http://collaborativeleadersnetwork.org/strategies/collaborative-problem-solving/
49 http://collaborativeleadersnetwork.org/strategies/collaboration-incubator/

# CORE STRATEGY: EASEMENTS AND ACQUISITIONS

Certain resources are valuable and vulnerable enough to merit acquisition, possibly including: mauka forests, stream/watershed corridors, unique geological features, heritage resources, ecological resources, mauka or makai access, trail corridors, park space, buffers, open space and viewscapes, and agricultural lands that are prone to runoff, could be converted to affordable agriculture parks, or are under threat of non-agricultural development. This strategy is considered a core, overarching strategy because it applies across various focus areas of the CDP.

There are two methods to achieve land protections discussed in this section:

- Land Acquisition: acquiring of land by government or by some government agency, as authorized by the law for a public purpose from the individual landowner(s) after paying compensation, as fixed by government, in lieu of losses that may be suffered by the land owner(s) due to surrendering of his/their land to the concerned government/government agency. Other non-governmental agencies/organizations and non-profits also acquire land in a similar manner generally for conservation and or public access purposes.

- Easements Over Private Lands: An easement is a certain right to use the real property of another without possessing it. Easements can be acquired for various purposes including: conservation, public access, utility, right-of-way, and agricultural. Easement rights can be either purchased or acquired through the development entitlement process, such as the Special Management Area (SMA) or subdivision approval.

## Current Land Acquisition Policy

The Board of Land and Natural Resources classifies State lands following HRS section 171-10, and DLNR's Land Division uses State land use district definitions in HRS section 205-2 to determine appropriate uses on leased land. Pursuant HRS section 171-64.7, any sale of State land would have to be authorized by the State Legislature.

HRS section 115-2 mandates that the counties acquire access "for public rights-of-way to the shorelines, the sea, and inland recreational areas." In addition, HRS section 115-7 allows for State and County "co-sponsorship" of acquisitions for public access.

County Charter section 10-15 specifies that the County Council shall appropriate a minimum of two percent of the certified real property tax revenues to the Public Access, Open Space, and Natural Resources Preservation Fund.

The County General Plan also directs the County to acquire public access to significant historic sites and objects, where appropriate (6.3(d)).

## Examples of Previous Land Acquisition in the Planning Area

- Waipiʻo Valley Lookout Parcel – County of Hawaiʻi acquired this property through PONC in 2012[50]

- Hakalau Bay beach parcel (3.2 acres on South side of river) was donated to the County of Hawaiʻi in 2006. County Council adopted acceptance Resolution 512-06 on Nov. 15, 2006.

50 For more on the County of Hawai'I PONC fund, see http://records.co.hawaii.hi.us/WebLink8/DocView.aspx?id=39747&dbid=1

- Kalōpa State Park - in 1967 the State Parks Division set aside 100 acres of native forest at Kalōpa to form the Kalōpa Native Forest State Park and Recreation Area.

### Examples of Previous Land Easements in the Planning Area

**Conservation Easements:** Kūkaʻiau Ranch – a conservation easement was attained by the landowners partnering with The Nature Conservancy and the Hawaiʻi Island Land Trust, to set aside the mauka 4,500 acres of the ranch in a conservation easement. The land in the easement will be preserved strictly for conservation, while the remainder of the ranch will be available for limited forestry and sustainable agriculture.

**Public Access Pedestrian Easements:** Onomea Trail was preserved by establishing a public right-of-way easement when it was proven to be an historic trail. The trail starts at the Old Hawaii Belt Road (4 mile scenic route between Pāpaikou and Pepeʼekeō off Highway 19) about 0.5 mile on the Hilo side of the Hawaiʻi Tropical Botanical Garden Office. It is now a Nā Ala Hele Trail, managed by the Division of Forestry and Wildlife, Department of Land and Natural Resources.

**Public Access: Pedestrian, Vehicular, and Parking Easements:** The County of Hawaiʻi negotiated various Public Access easements with the landowners during Reconsolidated Subdivision processes along the coast in Pepeʼekeo. The agreement established parking easements and pedestrian access points along the coast near the Pepeʼekeo Mill.

## Current Tools and Alternative Strategies for Land Acquisition

### County Park Dedication

**Park Dedication**: Pursuant HCC Chapter 8, in districts where there are less than five acres of non-federal parks per thousand residents, subdivisions shall provide land, any required improvements, and/or a fee for the purpose of providing park and playground facilities.

**Parkland Reservation During Subdivision**: Pursuant HCC section 23-26, subdivisions capable of supporting two hundred dwelling units shall reserve suitable areas for parks, playgrounds, schools, and other public building sites that will be required for the use of its residents. Five to ten percent of the land area shall be reserved for acquisition by a public agency for recreational and public use. Moreover, outstanding natural or cultural features such as scenic spots, water courses, fine groves of trees, heiau, historical sites and structures shall be preserved as provided by the director.

### Conservation Easements, Trusts, and Funding

**Conservation Easements**: Conservations easements are voluntary legal agreements between a landowner and a land trust or government agency that permanently limits uses of the land in order to protect its conservation values. The agreements typically allow landowners to continue to own and use their land, and they can also sell it or pass it on to heirs. Easements are a viable alternative to development because they can provide cash flow, reduce property and estate taxes, and qualify the owner for tax deductions.

Conservation values can include open space, scenic views, agriculture, natural habitats, ecosystem services, historic and cultural resources, or other characteristics valued by the community. Though land conservation easements are most common in Hawaiʻi, easements can also be used to preserve the interior and exterior character of historic buildings.

Conservations easements can be a “win-win” for the landowner and the community, but up-front costs can be high, and the easements typically take considerable time to prepare and finalize. As a result, landowners who pursue easements often have non-financial motivations, like multi-generational ties to the land.

Each easement is tailored to the unique characteristics of the land and circumstances of the owner, and there is considerable flexibility in how easements are crafted. For example, the legal metes and bounds of the easement can be drawn creatively to accommodate a diversity of uses, and some development is allowed as long as it is consistent with the goals of the community and the trust or agency that holds the easement. Easements have been executed that allow home sites, farm infrastructure, recreation, tourism, and other components that increase the land's long-term financial viability. The most effective easements also clearly outline management responsibilities.

The O'ahu Resource Conservation and Development Council (RC&D)[51] has a useful online directory of land preservation tools[52], including presentations from land preservation workshops[53].

**Land Trusts:** There are several organizations in Hawai'i that help landowners prepare conservation easements and hold the easements in trust:

- Trust for Public Land (TPL)[54]: TPL is a 40-year-old national organization that has had an active office in Hawai'i, where it has helped conserve more than 36,000 acres, including coastal, heritage, and agricultural lands at Honu'apo, Kāwā, Lapakahi, Wao Kele o Puna, Waianae, and Turtle Bay.
- Hawaiian Islands Land Trust (HILT)[55]: In 2011, the Kaua'i Public Land Trust, O'ahu Land Trust, Maui Coastal Land Trust, and Hawai'i Island Land Trust joined forces to form the HILT.
- Land Trust Alliance[56]: The Land Trust Alliance is a national network of conservation professionals and organizations.

**Hawai'i County Public Access, Open Space, and Natural Resources Preservation Commission** (PONC)[57]: HCC section 2-214 establishes the Public Access, Open Space, and Natural Resources Preservation Fund and the PONC. In addition to a percentage of real property taxes, grants, private foundation funds, and proceeds from the sale of general obligation bonds may also be deposited into the Fund. In November 2012, voters amended the County Charter to require that a minimum of 2.0% of real property tax revenue be contributed to the Fund.

The Fund shall be used to purchase (or finance the purchase of) lands or property entitlements for public outdoor recreation, education, access to beaches and mountains, historic or culturally important areas and sites, significant habitat or ecosystems, forests, beaches, coastal areas, natural beauty, agricultural lands, and watershed lands.

Annually, the PONC updates a prioritized list of lands worthy of preservation. The public is invited to nominate properties for acquisition. Waipi'o Lookout (Rice Property) was successfully purchased in 2006 through PONC, and two other parcels were prioritized by the PONC list in 2010:

- Hāmākua Springs Agricultural Conservation Easement in Pepe'ekeo
- Maulua Gulch in North Hilo

Based on recommendations from the PONC via the Mayor, and with approval of the County Council, the Finance Department seeks to acquire property for preservation with these funds.

51 http://www.oahurcd.org/
52 http://www.oahurcd.org/land-preservation-2/
53 http://www.oahurcd.org/Presentations-and-Materials/
54 www.tpl.org
55 http://www.hilt.org/
56 http://www.landtrustalliance.org/
57 http://records.co.hawaii.hi.us/Weblink8/browse.aspx?startid=13770&dbid=1

Newly acquired lands require plans for managing natural, cultural, trail, recreation, and other resources on site. Based on experience to date, County lands used for active recreation (e.g., established parks and facilities) are managed by the Department of Parks and Recreation, and other lands are managed by community-based organizations. The Finance Department's division of Property Management focuses solely on acquiring property and does not have the capacity to manage newly acquired land. In November 2012, voters amended the County Charter, setting aside .25% of real property tax income (capped at $3 million) for maintenance of protected land.

**DLNR DOFAW Legacy Lands Conservation Program** (LLCP)[58]: The LLCP provides grants to local organizations and agencies seeking to acquire land and easements for Hawai'i 's unique and valuable resources, including watersheds, parks, coastal areas and access, natural areas, habitat, agricultural production, cultural and historical sites, open spaces, and scenic, recreational, and public hunting resources. The LLCP has invested $21.5 million in protecting 7,966 acres in Hawai'i.

**Other Funding Sources**: There are also other funds available to secure easements for coastal, agricultural, and forest lands, including the Coastal and Estuarine Land Conservation Program, the Farm and Ranchland Protection Program, and the Forest Legacy Program. The sections specific to those resources below introduce those funds.

## Acquisition Resources[59]

In addition to the PONC and LLCP programs described above, these programs fund the acquisition of land for conservation:

**The Nature Conservancy**[60]: The Nature Conservancy (TNC) protects ecologically important lands and waters for nature and people. TNC is an active member of the Mauna Kea Watershed Alliance.

**The Conservation Fund**[61]: When requested by local partners, The Conservation Fund uses its "Revolving Fund" to acquire high priority conservation lands and hold it until the public agency or nonprofit can buy it back. Upon repayment, the money is returned to the Fund and is used for another land conservation project. The Conservation Fund also has a Land Trust Loan Program to provide bridge financing and short term loans to land trusts.

The Conservation Fund helped Haleakala National Park acquire the 3,900-acre Nu'u Ranch, the largest undeveloped parcel in private ownership within Haleakala National Park. The property has frontage on the Pacific Ocean and rises more than 6,000 feet to the rim of the Haleakala Crater.

**USFWS Recovery Land Acquisition** (RLA) program[62]: RLA grants provide funds to states for the acquisition of habitat from willing sellers, in support of approved recovery goals or objectives for federally listed threatened or endangered species. Proposals are submitted to the USFWS by the State (DOFAW). Proposals can be developed by third parties in conjunction with those agencies. The grant covers 25% of the estimated project cost. Over 10,000 acres in Hawai'i have been purchased using RLA funds. Most recently, $1.2 million in RLA funds were awarded to purchase the coastal Road to the Sea parcel in Ocean View.

58 http://hawaii.gov/dlnr/dofaw/llcp
59 More information about the conservation easement and acquisition programs is available at http://www.state.hi.us/dlnr/dofaw/lap/landowner%20assist%20table.pdf and http://www.privatelandownernetwork.org
60 http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/hawaii/index.htm
61 www.conservationfund.org
62 http://www.fws.gov/pacificislands/Publications/RLA%20Fact%20Sheet%20May%202010.pdf

**USFWS Habitat Conservation Plan Land Acquisition program**: The HCP Land Acquisition program has three primary purposes: 1) to fund land acquisitions that complement, but do not replace, private mitigation responsibilities contained in approved Habitat Conservation Plans (HCPs) for federally listed threatened or endangered species, unlisted (including State-listed species), and proposed and candidate species, 2) to fund land acquisitions that have important benefits for listed, proposed, and candidate species, and 3) to fund land acquisitions that have important benefits for ecosystems that support listed, proposed and candidate species. Grants are awarded to States (DOFAW) that have entered into cooperative agreements with the Service for endangered and threatened species conservation. The grant covers 25% of the estimated project cost.

**Eminent Domain**: Eminent domain is an action of the state to seize a citizen's private property with due monetary compensation but without the owner's consent. The property is taken either for government use or by delegation to third parties who will devote it to public or civic use or, in some cases, economic development.

HRS section 101-2 permits the taking of private property for public use, and HRS section 46-61 specifically gives Counties the following power: To take private property for public highways and roads, water systems, police and fire stations, public buildings, cemeteries, parks, public squares, off-street parking, sewers, flood control, and other public uses.

**Other Funds**: There are also other funds available to purchase coastal, agricultural, and forest lands, including the National Coastal Wetlands Conservation Grant, the Forest Legacy Program and the Community Forest Program. The sections specific to those resources below introduce those funds.

## Establishing Easement or Acquisition Priorities

Resources for acquiring easements and land are limited, and Hāmākua must compete with other communities locally, statewide, nationally, and globally, so it is important to establish priorities. At a minimum, any land considered for acquisition should serve the achievement of one or more of Hāmākua's community objectives. More specifically, it should protect cultural assets and/or mauka or shoreline ecosystems, assure access, and/or preserve viable agriculture lands or viewscapes.

Relative priorities should then be established using criteria similar to those used by the PONC:

- Level of community support
- Identified management /maintenance partners
- Benefit to the general public
- Urgency
- Special opportunity for acquisition exists (e.g., special funding is available, landowner willing, etc.)
- Resources can be leveraged through partnerships with other government, private, or nonprofit entities
- Land or property entitlements are available for acquisition.

The DLNR maintains a summary of land acquisition plans and priorities from a range of organizations and plans statewide[63].

63 http://hawaii.gov/dlnr/dofaw/llcp/resource-land-acquisition-planning

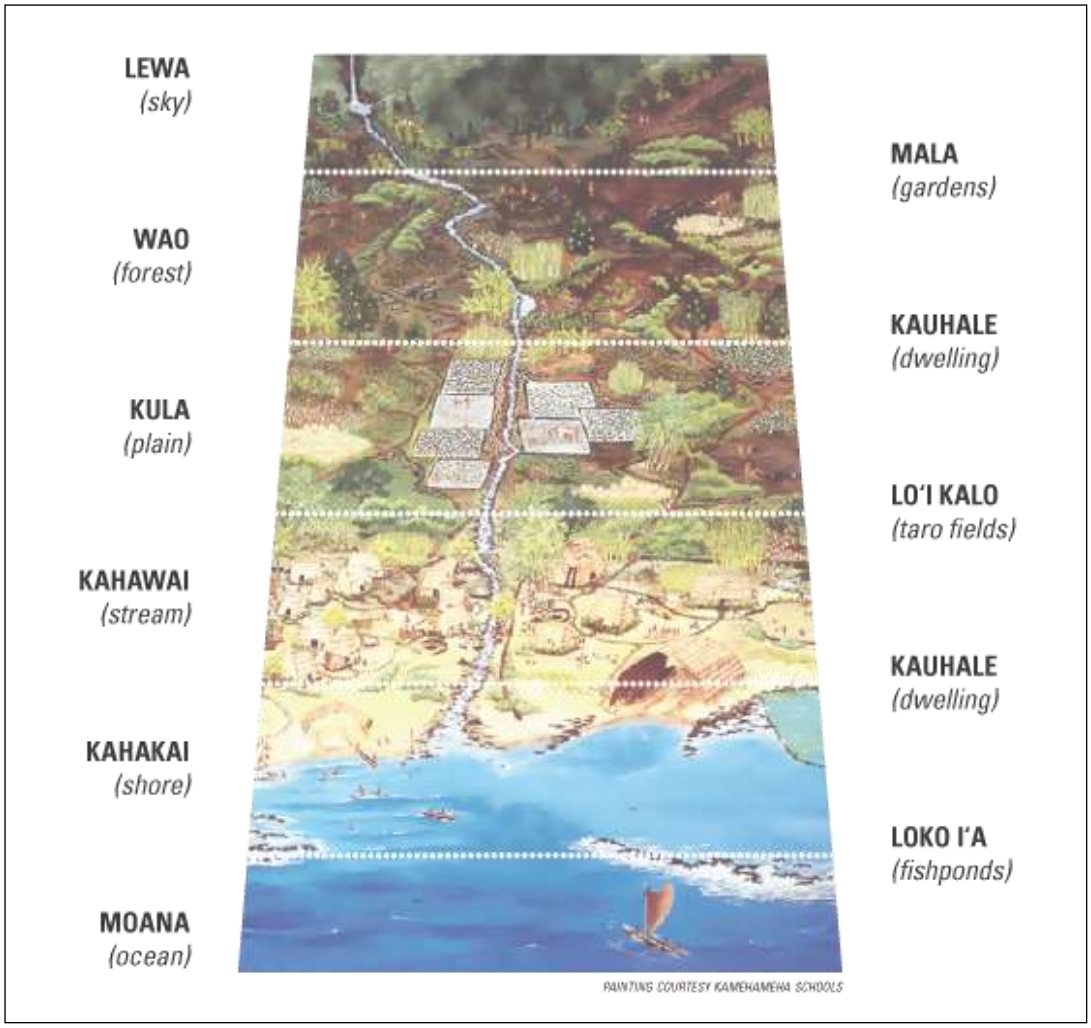
# FOCUS AREA: AHUPUA'A / WATERSHED MANAGEMENT

## The Ahupua‘a Framework

For at least a millennium the ahupua‘a system of resource management sustainably provided for the needs of the inhabitants of the Hawaiian Islands while maintaining the integrity of watersheds and ecosystems. The ahupua‘a was a traditional land and sea tenure system where local communities and resource systems were organized.

Different uses of land and sea occurred in different areas of the ahupua'a. The summit areas of Mauna Kea were the most sacred, where access was limited to high chiefs and priests, and where prayers could be offered to the gods, or akua. The upland forest was reserved for gathering wood and hunting, the fertile valley floor was used to grow taro in irrigated pond-fields called lo'i, rivermouths were encircled by walls for fishpond aquaculture, and expert fishermen, po'o lawai'a, oversaw offshore fishing.

**Figure 3. Ahupua‘a Zones**




Importantly, the ahupua‘a system is as much a social and economic system as it is an ecological framework. This reflects Hawaiians' integrated worldview and culture, which doesn't draw stark distinctions between natural and cultural resources.

Borrowing from the wisdom of the Hawaiian ahupua‘a system that generally follows a mauka to makai orientation, it is useful for our purposes to consider Hāmākua as three main interdependent zones: Wao (mauka and forest lands); Kula (middle ranch and farm lands); and Kahakai (lower shoreline and sea). Ahupua‘a typically encompassed an entire watershed, and each of the interdependent ecological zones mentioned above rely on and are impacted by the mauka to makai flow of water.

The remainder of this section will explore the challenges facing Hāmākua’s watersheds as well as identify tools and strategies to address them. The following three sections will more specifically address the Wao, Kula, and Kahakai ahupua‘a zones respectively.

## Watershed Management

A watershed is an area of land, such as a mountain or valley, which collects rainwater into a common outlet. In Hawai‘i, the common outlet is ultimately the ocean. Some of the rain is absorbed by plants, some of it is absorbed underground, and the rest flows into surface rivers and streams.

We all live in a watershed and our daily lives rely on the services provided healthy watersheds, such as:

- Recharge of water supply
- Protection of stream and near shore water quality
- Flood management
- Provision and protection of habitat for culturally /ecologically important plants and animals
- Serve as educational & recreational places; and
- Provision of open space and significant viewsheds

The protection and management of watersheds is particularly important to Hāmākua because the Planning Area is home to 73% of the watersheds on the Island (107 out of 146)[64]. Moreover, the Planning Area is unique in the State for its density of relatively pristine streams, especially the Maulua Gulch to Wailuku River area.

## Hāmākua’s Watershed Management Assets and Challenges

**ASSETS**

- Highest concentration of watersheds and streams in the State
- Significant fresh water resources
- “Outstanding” streams in terms of aquatic resources (i.e. native fish/biota populations) and cultural/recreational resources;
- Sweeping views and exceptional scenic resources (views of the ocean, mountains, waterfalls, streams, etc.).

**CHALLENGES**

- Invasive Species including
    - Feral ungulates
    - Invasive plant & weed species

64 http://www.hawaiiwatershedatlas.com/Hawaii_regions.html

- Threats to native fish and biota

- Inadequate Stream Management
- The County and community are not actively involved in watershed planning in Hāmākua
- Nonpoint-source pollution during storm events results in nearshore sedimentation.
- Open space and view planes interrupted by development, agroforestry, and invasive vegetation coverage.

## Hāmākua's Watershed Related Community Objectives

- **Protect, restore, and enhance watershed ecosystems**, sweeping views, and open spaces **from mauka forests to makai shorelines**, while assuring responsible public access for recreational, spiritual, cultural, and sustenance practices
- Protect and restore viable agricultural lands and resources. **Protect and enhance viewscapes and open spaces that exemplify Hāmākua's rural character.**
- **Encourage community-based collaborative management plans** to assure that human activities are in harmony with the quality of Hāmākua's unique natural and cultural landscape.

## Alignment With County Policy

- 4.3(g): **Participate in watershed management projects** to improve stream and coastal water quality **and encourage local communities to develop such projects**.
- 5.2(e): **Reduce surface water and sediment runoff**.
- 5.2(f): **Maximize soil and water conservation**.
- 5.5.9.2(b): **Continue proper soil conservation measures** to complement the existing systems.
- 5.3(n): **Develop drainage master plans form a watershed perspective** that considers non-structural alternatives, minimizes channelization, protects wetlands that serve drainage functions, coordinates the regulation of construction and agricultural operation, and encourages the establishment of floodplains as public green ways.
- 8.2(e): **Protect and effectively manage Hawai'i's open space, watersheds**, shoreline, and natural areas.
- 8.3(j): **Encourage the protection of watersheds**, forest, brush and grassland from destructive agents and uses.
- 8.3(l): Work with the appropriate State, Federal agencies, and private landowners to **establish a program to manage and protect identified watersheds**.
- 8.3(m): Encourage appropriate **State agencies to review and designate forest and watershed areas into the conservation district during State land use boundary comprehensive reviews.**

**Viewplane Protection**

- 7.3(b) **Develop and establish view plane regulations** to preserve and enhance views of scenic or prominent landscapes from specific locations, and coastal aesthetic values.
- 7.3(c) Maintain a continuing **program to identify, acquire and develop viewing sites on the island**.

- 7.3(e) **Develop standard criteria for natural and scenic beauty as part of design plans.**
- 7.3(f) **Consider structural setback** from major thoroughfares and highways and **establish development and design guidelines to protect important viewplanes.**
- 7.3(h) **Protect the views of areas endowed with natural beauty** by carefully considering the effects of proposed construction during all land use reviews.
- 7.3(i) **Do not allow incompatible construction in areas of natural beauty**.

## Previous Watershed Planning/Studies

**Hawai'i Stream Assessment**[65]: Enactment of the State Water Code in 1987 led to the State of Hawai'i Commission on Water Resource Management to develop the Hawai'i Stream Assessment (HSA), the first comprehensive effort to compile existing information about Hawaiian stream biota, published in 1990. The HSA was intended to serve as an accessible source of information that would evaluate relative stream quality and serve to rationalize management actions by the State Water Commission. Of particular importance were their decisions affecting water flows including proposed water withdrawals, damming, channelization, or other actions that could modify existing instream habitat.

The HSA identified 149 perennial streams in the Planning Area[66] (not counting their many tributaries), and ranked streams according to the following categories:

- Aquatic Resources. This category includes fish, mollusks, and crustaceans that rely on freshwater streams for habitat. The presence of certain native species served as indicators of the aquatic resource value and overall health of the stream system.
- Riparian Resources. This category includes those streamside or terrestrial natural resources that may affect or be affected by the quality of stream ecosystems. Riparian resources include native plant species, native forests, wetlands and waterbird habitat within the stream corridor, as indicators of the quality of the stream watershed.
- Cultural Resources. This category includes stream-related cultural sites from prehistory to historic times, and sites where taro still grows today. Resources include heiau, habitation complexes, irrigations systems and lo'i, bridges and mills.
- Recreational Resources. This category includes stream pools, waterfalls, and banks that provide places for people to swim, fish, boat, hike and enjoy scenic vistas.

For each of these four categories, the HSA ranked the streams as Outstanding, Substantial, Moderate, Limited, or Unknown. Those streams that ranked high for each of the aquatic, cultural, recreational and riparian categories or exhibited unusually outstanding characteristics in any one category, the Assessment identified as "candidate streams for protection." The HSA identified ten candidate streams for protection on the Island of Hawai'i, seven of which are located in whole or in part within the Planning Area:

- Wailuku (tributary streams to Wailuku River are located within the Planning Area),
- Honoli'i

65 http://hawaii.gov/dlnr/cwrm/publishedreports/R84_HSA.pdf

66 This study has little information on the streams along the Hāmākua Coast due to difficulty of access. For this reason the level of confidence regarding perennial status and other attributes for most of the streams in the Planning Area is low.

- Kolekole
- Lālākea
- Wailoa/Waipiʻo
- Waimanu
- Honokāne Nui (upper reaches are located within the Planning Area).

**2006 State of Hawaiʻi Water Quality Monitoring and Assessment Report[67]:** The 2006 Integrated Report is the first effort by the Hawaiʻi State Department of Health (HIDOH) to integrate both reporting requirements of the Clean Water Act (CWA) section (§) 305(b) and §303(d). The CWA §305(b) requires states to describe the overall status of water quality statewide and the extent to which water quality provides for the protection and propagation of a balanced population of shellfish, fish, and wildlife and allows recreational activities in and on the water.

The CWA §303(d) requires States to submit a list of Water Quality-Limited Segments, waters that do not meet state water quality standards, plus a priority ranking of listed waters, based on the severity of pollution and the uses of the waters. The §303(d) list leads to action. Total Maximum Daily Loads (TMDLs) are pollution budgets to bring §303(d)-listed pollutant/water body combinations into compliance with water quality standards. Computation of TMDLs for all 303(d) listed pollutant water body combinations, prepared in accordance with the priority rankings, must follow EPA approval of each state's list.

The 303(d) List of Impaired Waters, identifies water bodies that are not expected to meet state water quality standards, even after application of technology-based effluent limitations. States are required to obtain and review all existing and readily available surface water quality data and related information to compare against the state's Water Quality Standards, and after applying listing criteria, determines the level of impairment for that water body. The list requirements apply to water bodies impaired by point and/or non-point sources of pollution and include a requirement for listing of those pollutants for which applicable water quality standards are exceeded. Impaired Streams in the CDP Planning Area as identified on the 303(d) list include:

- Hakalau
- Honoliʻi
- Kaʻieʻie
- Kapehu
- Kapue
- Kolekole
- Maili
- Wailoa/Lalakea

67 http://health.hawaii.gov/cwb/files/2013/05/Integrated_2006_StateOfHawaii.pdf

**Atlas of Hawaiian Watersheds and Their Aquatic Resources**[68]**:** Developed in 2008 by DLNR's Division of Aquatic Resources and Bishop Museum, the Atlas provides an accounting of the existing information available about watersheds, streams and the animals that inhabit the streams. The Atlas reviews stream surveys dating from the 1960's to the present and provides stream data available to resource managers and the general public; it provides comparative information about what is known of each stream and provides a platform to link other data sources to better inform ahupua'a management.

The Atlas includes a watershed summary for each watershed that includes a map, information about land management status and land use as well as stream features and aquatic life. Each watershed summary includes a total watershed rating which evaluates physical characteristics (e.g., land cover, wetness), total biological rating which evaluates habitat quality (e,g., native species, introduced aquatic animals), and an "Overall Rating" that integrates the watershed and biological ratings. The overall rating ranks watersheds from 0-10 range. Watersheds without survey efforts are unranked and listed as "NR"

The Atlas includes information on 107 watersheds in the Planning Area. By comparison, there are only 39 watersheds on the rest of the island. Based on the Atlas' Overall Ranking, the Planning Area's watersheds with the highest scores (8-9) are:

- Waimanu
- Honoli'i
- Kaiwilahilahi
- Hakalau
- Kolekole
- Kawainui
- Hanawi
- Pahoehoe

Many watersheds in North Hilo and Hāmākua were not rated due to insufficient numbers of studies to support a ranking.

**Hawaiian High Islands Ecoregion Plan**[69]: In 1998, The Nature Conservancy (TNC) completed a Hawaiian High Islands Ecoregion Plan. In a subsequent related planning process, TNC developed a set of conservation targets (10 ecological systems, perennial stream community, rare bird concentrations, and forest and waterbird concentrations), identified ecosystem integrity (by factoring size, condition, and landscape context), and established conservation goals. From this, TNC identified a portfolio of sixteen conservation areas that represent the primary arena for TNC's Hawaiian High Islands ecoregional efforts.

The portfolio of conservation areas selected comprises the largest and most viable set of areas for establishing effective conservation (legal protection + abatement of critical threats, and maintenance of ecological processes supporting native biodiversity). It reflects the highest priority areas for the work of The Nature Conservancy, focused on maintaining high-viability native ecological systems and species within them.

The alpine and montane wet forest ecosystems on Mauna Kea have been identified as a priority conservation area, as have the native ecosystems within the saddle area between Mauna Kea and

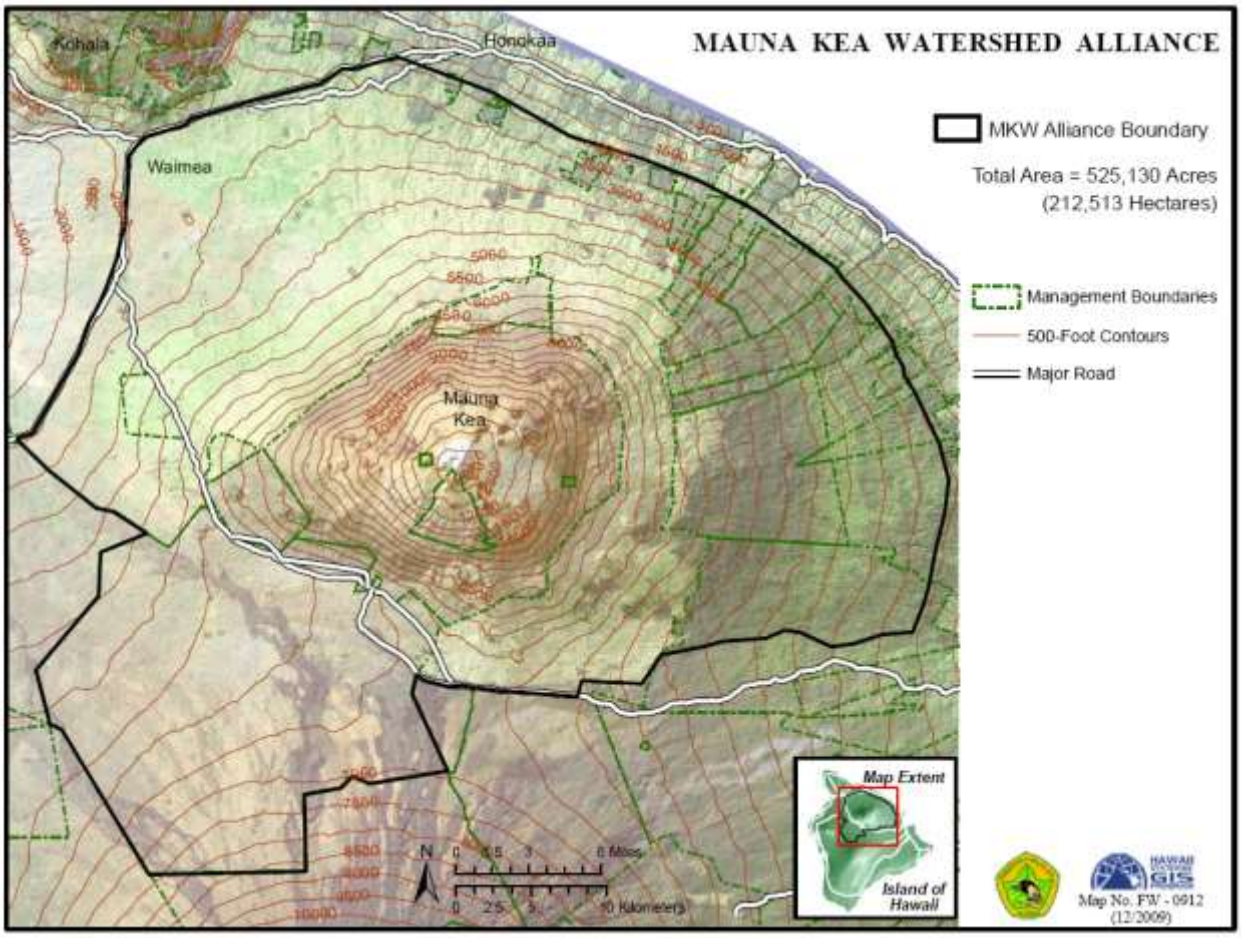
68 http://www.hawaiiwatershedatlas.com/
69 http://www.hawaiiecoregionplan.info/introduction.html

Mauna Loa. In addition, two streams on Mauna Kea, Hanawi and Honoli'i, were selected as among the highest quality streams on the island because of their rich complement of native macrofauna and high volume, high quality water in a channel with high structural complexity.

**Mauna Kea Watershed Management Plan**[70]: In 2008 DLNR drafted a Mauna Kea Watershed Partnership Scoping Study to assess the feasibility of forming a Mauna Kea Watershed Alliance, focusing on the area from Hilo to just south of Waipi'o Valley, which is the boundary of the Kohala Watershed Partnership.

Mauna Kea provides the primary water source for Hawai'i Island residents and its forests are home to rare and increasingly threatened native species and ecosystems. The area encompasses numerous aquifer systems and is also the food and fiber basket of the Hawai'i Island, making it essential to the island's water, food, and fiber security. The study identified key threats to these important resources, including invasive species, feral ungulates, wildlife, aquatic pollutants, and human activities.

**Figure 4. Mauna Kea Watershed Alliance Boundary**




In 2008, the Department of Land and Natural Resources (DLNR) began contemplating a watershed alliance for Mauna Kea on Hawai'i Island. It drafted a *Mauna Kea Watershed Partnership Scoping Study* to assess the feasibility of forming a Mauna Kea Watershed Alliance, focusing on the area from Hilo to just south of Waipi'o Valley, which is the boundary of the Kohala Watershed Partnership. This boundary encompasses over 500,000 acres on Mauna Kea.

70 Link to Mauna Kea Watershed Management Plan http://tinyurl.com/q6d3cb9

Through resource analysis, interviews with owners and managers, and discussions with community stakeholders, the study concluded that there was sufficient confluence of interest, need, and opportunity to merit establishment of an alliance for Mauna Kea. The study recommended establishing a watershed alliance for Mauna Kea, focusing on large landowners (> 1,000 acres) above the 2,000-ft. elevation.

A Memorandum of Understanding (MOU) was drafted for the Mauna Kea Watershed Alliance (See and it is being signed by the following landowners and resource management organizations:

- Federal agencies
    - US Fish and Wildlife,
    - US Forest Service
- State agencies
    - Departments of Land and Natural Resources,
    - Department of Hawaiian Homelands
- Private land owners
    - Kamehameha Schools
    - Kuka‘iau Ranch
- Non-profit management partners (The Nature Conservancy).

The MOU for the newly-formed Mauna Kea Watershed Alliance (MKWA) calls on members to:

- Identify important watershed areas that would benefit from coordinated management;
- Develop plans to document resources, identify priority management objectives/ strategies;
- Meet to determine programs and projects;
- Obtain funds for projects to the extent that each member agrees;
- Develop specific agreements and plans for projects involving all or some members;
- Enter into agreements to hire personnel, use equipment, and purchase supplies;
- Employ a consensus-based approach to decision-making; and
- Allow additional members by amendment, by consensus of current members.

The vision of the MKWA is to protect and enhance watershed ecosystems, biodiversity and resources through responsible management, while promoting economic sustainability and providing recreational, subsistence, educational and research opportunities.

The plan identified the following 10 Management Goals with associated objectives and actions, to protect, conserve and sustainably use the resources of the Mauna Kea Watershed Alliance:

- Management Goal 1: Protect ground and surface water resources.
    - Objective 1A: Protect, enhance, and monitor high-yield watershed areas to maintain water quantity and quality.
    - Objective 1B: Support appropriate water development to meet the needs of future water demand.

- Management Goal 2: Protect and enhance native terrestrial and aquatic ecosystems and their biodiversity and species.
    - Objective 2A: Maintain and/or restore native forest cover.
    - Objective 2B: Protect and recover rare species.
    - Objective 2C: Protect and enhance riparian buffers to protect stream corridors.
- Management Goal 3: Manage non-native plant and animal species within appropriate areas to reduce the impacts to native ecosystems and species.
    - Objective 3A: Strategically manage feral ungulate damage in high priority native ecosystems and watersheds while providing for increased hunting opportunities in designated areas.
    - Objective 3B: Strategically manage other pest species that threaten native ecosystems.
    - Objective 3C: Strategically control invasive plants to protect high quality native ecosystems and endangered species.
    - Objective 3D: Control priority invasive aquatic species in windward streams on Mauna Kea.
- Management Goal 4: Prevent and minimize wildfires on Mauna Kea.
    - Objective 4A: Install on-the-ground fuel management measures intended to reduce the number and/or severity of fires.
    - Objective 4B: Reduce fuel loads in fire-prone areas, ensuring compatibility with other habitat and watershed protection goals.
    - Objective 4C: Develop water sources for fire-fighting purposes in fire-prone areas.
    - Objective 4D: Coordinate pre-suppression planning and fire response protocols among landowners.
    - Objective 4E: Promote effective communication and public safety during extreme fire weather and during fire-response events.
    - Objective 4F: Manage access to fire-prone areas during extreme fire danger weather.
    - Objective 4G: Promote post-fire assessment and restoration of burned areas.
- Management Goal 5: Promote and encourage economic sustainability in balance with habitat and watershed protection goals.
    - Objective 5A: Encourage permitted ecotourism, well-managed wilderness experiences, and other forms of managed access, as appropriate and permissible, on public and private lands.
    - Objective 5B: Manage future development to ensure it will not have a detrimental impact on the ecosystems of Mauna Kea.
    - Objective 5C: Support sustainable uses of the land in balance with habitat and watershed protection goals.
- Management Goal 6: Manage human activities in the watershed to promote recreational and subsistence opportunities that are compatible with habitat and watershed protection goals.

- Objective 6A: Create and encourage safe and appropriate patterns of access for hiking and recreation on public lands.
- Objective 6B: Continue support of hunting on appropriate lands, where compatible with watershed protection goals and applicable laws.
- Objective 6C: Maintain and secure Keanakolu-Mānā Road and Mauna Kea Summit Access Road to facilitate managed access.

- Management Goal 7: Protect the cultural landscape and historical resources of Mauna Kea.
  - Objective 7A: Ensure that archaeological and other cultural sites within the MKWA area are identified and protected.
  - Objective 7B: Provide opportunities for cultural practices that are compatible with habitat and watershed protection goals.
  - Objective 7C: Promote awareness of Mauna Kea as an important cultural resource.
- Management Goal 8: Enhance community awareness and support of watershed values, resources, and management activities on Mauna Kea.
  - Objective 8A: Develop and implement education and outreach programs for community members, landowners, and other stakeholders.
  - Objective 8B: Provide on-the-ground service learning opportunities for school children and community members.
- Management Goal 9: Promote and facilitate research opportunities that will enhance the management of Mauna Kea's resources.
  - Objective 9A: Monitor long-term trends in watershed health and water quality.
  - Objective 9B: Assess the success of management actions to accomplish habitat and watershed management goals and provide direction for future actions.
  - Objective 9C: Support research to help guide new and innovative uses of the land that will sustain economic activities while protecting habitat and watershed values.

**The Rain Follows the Forest**[71]: The DLNR seeks to protect watersheds by improving management of Hawai'i's mauka forests. The Rain Follows the Forest plan identifies priority watershed areas based on potential changes in recharge based on land cover changes. Much of the priority areas in the Planning Area are already protected either by public ownership or other means.

Specific strategies to protect watersheds include:

- Remove all invasive hooved animals from priority I and II areas using fencing and public hunting
- Remove or contain damaging invasive weeds that threaten priority I and II areas using fencing and mechanical, chemical, and biological controls
- Monitor and control other forest threats including fires, predators, and plant diseases
- Restore and plant native species in priority areas and buffer areas

71 http://hawaii.gov/dlnr

- Educate Hawai'i's residents and visitors about the cultural, economic, and environmental importance of conserving native forests using teacher training, educational programming, and an expanded Youth Conservation Corps

- Promote consistent and informed land use decision-making that protects watersheds.

The plan identifies the following priority project for funding in the Planning Area to be carried out by the Mauna Kea Watershed Alliance:

- Restore 512 acres of fenced, ungulate free mesic/montane forests by controlling invasive grasses and outplanting native high elevation trees to re-establish forest connectivity at Kanakaleonui. Mauna Kea is very significant culturally and provides water that supports coastal ecosystems and productivity, as well as fresh clean water for use in urban areas. A watershed coordinator has just been hired and the watershed management program is being developed, requiring an annual budget of $300,000-$400,000.

## Current Watershed Management Tools and Alternative Strategies

### Federal Watershed Management Policies

**Coastal Zone Management Act:** The Coastal Zone Management (CZM) Act is administered by the National Oceanic and Atmospheric Administration and provides for management of the nation's coastal resources and balances economic development with environmental conservation. The Federal CZM delegates authority for administering the program to the States, and Hawaii adopted the State CZM in 1977.

**Federal Clean Water Act:** The objective of the Federal Water Pollution Control Act, commonly referred to as the Clean Water Act (CWA), is to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands. The act established the goals of eliminating releases of high amounts of toxic substances into water, eliminating additional water pollution by 1985, and ensuring that surface waters would meet standards necessary for human sports and recreation by 1983.

**Watershed and Flood Prevention Act:** Under this Act, the Soil Conservation Service at the Department of Agriculture provides planning assistance and construction funding for projects constructed by local sponsors, often in the form of flood control districts. Restrictions on projects include: the size of the watershed must be 250,000 acres or less; no single structure may provide more than 12,500 acre feet of flood water retention; no single dam may provide more than 25,000 acre feet of total capacity; and projects with costs greater than $5 million or with structures with total capacities greater than 25,000 acre feet must be approved by Congress.

### State Watershed Management Policies

**Conservation District:** Several stream corridors in the Planning Area are located in the State land use Conservation District including:

- Kaawalii Gulch
- Laupāhoehoe Gulch
- Maulua Gulch (Por.)
- Waiakaumalo Stream
- Nanue Stream

- Hakalau Stream
- Kolekole Stream
- Kawainui Stream
- Honoli‘i Stream
- Malii Steam (Por.)

Pursuant HRS section 205-2(e), the conservation district includes areas necessary for

- Protecting watersheds and water sources
- Preserving scenic and historic areas
- Providing park lands, wilderness, and beach reserves

Coonserving indigenous or endemic plants, fish, and wildlife, including those that are threatened or endangered

- Preventing floods and soil erosion
- Open space areas whose existing openness, natural condition, or present state of use, if retained, would enhance the present or potential value of abutting or surrounding communities, or would maintain or enhance the conservation of natural or scenic resources areas of value for recreational purposes.

The DLNR has direct jurisdiction on uses and activities within the SLU Conservation District, which require a conservation district use permit from the Board of Land and Natural Resources or other written approval from the Department of Land and Natural Resources Office of Conservation and Coastal Lands, pursuant HAR section 13-5.

Hawai‘i Administrative Rules (HAR) section 13-5 establishes the following subzones within the Conservation district:

- Protective: to protect valuable resources in designated areas such as restricted watersheds, marine, plant, and wildlife sanctuaries, significant historic, archaeological, geological, and volcanological features and sites, and other designated unique areas. The Protective subzone includes lands necessary to protect watersheds, preserve historic sites, and preserve natural ecosystems, particularly those with endangered species.
- Limited: to limit uses where natural conditions suggest constraints on human activities. The Limited subzone includes land susceptible to hazards.
- Resource: to develop, with proper management, areas to ensure sustained use of the natural resources of those areas. The Resource subzone includes parkland, forestry, and recreational uses.
- General: to designate open space where specific conservation uses may not be defined, but where urban use would be premature. The General subzone includes lands not needed for urban, rural, or agricultural use and lands suitable for agriculture.
- Special: to provide for areas possessing unique developmental qualities which complement the natural resources of the area.

The rules in HAR 13-5 may be amended to change a subzone boundary.

HAR 13-5 also details permitted uses in each subzone. Depending on the subzone and proposed land use, either no permit will be required, site plan approval from the DLNR is required, a permit approved by the Chair of the DLNR is required, or a permit from the Board of Land and Natural Resources is required.

State land use district boundary amendments involving lands in the conservation district, land areas greater than fifteen acres, or lands delineated as important agricultural lands are processed by the Land Use Commission, but following HAR section 13-5-40(b), public hearings do not have to be held in the judicial district in which the land is located. State land use district boundary amendments involving other lands are processed by the Planning Department, Planning Commission, and County Council, pursuant Planning Commission Rule 13.

**State Water Code Instream Flow Standards (IFS):** The State Water Code (Chapter 174C, HRS) establishes the State's responsibility to set Instream Flow Standards on a stream-by-stream basis whenever necessary to protect the public interest in the waters of the State.

The agency charged with setting Instream Flow Standards is the Commission on Water Resource Management. The Commission recognized the complexity of setting standards for the State's estimated 376 perennial streams and established an Instream Flow Standard for all perennial streams at, "status quo". Known as "Interim Instream Flow Standards", the standard is defined as the amount of water flowing in each stream at the time the administrative rules were adopted in 1988 and 1989. Status quo Interim Instream Flow Standards were determined to be insufficient through the courts in 2000 (Waiahole Ditch Contested Case and Order).

Permanent Instream Flow Standards can be initiated by the Commission, however, the majority of the Commission's actions since Waiahole have been in response to petitions to amend interim instream flow standards on the Island of Maui. However, in an effort to collect the best available data to establish permanent Instream Flow Standards, the Commission has initiated a Statewide Stream Channel Inventory as well as a Statewide Stream Diversion Study. At this time in the Planning Area, standards have not changed beyond "status quo".

**DLNR Commission on Water Resource Management, Stream Protection and Management (SPAM) Branch:**[72] The Stream Protection and Management Branch is comprised of the Instream Use Protection Section and the Surface Water Regulation Section. The Branch's overall responsibilities include the following:

- Implement Commission policies, procedures, and rules on stream protection and instream flow standards, water development and usage established in conformance with the State Water Code.
- Establish minimum standards for the construction of stream diversion works.
- Administer the designation of surface-water management areas and the processing of applications for water use permits.
- Process the filing of objections to applications for surface water use permits.
- Administer a permit system for the alteration of stream channels.
- Administer a statewide instream use protection program, including the establishment of flow standards.

72 http://www.state.hi.us/dlnr/cwrm/aboutus_programs.htm

- Administer the investigation and enforcement actions necessary for permit conformance, citizen complaints and in the resolution of water related disputes.

Of particular interest in Hāmākua is the diversion of stream water for agricultural purposes. The SPAM branch administers Stream Diversion Works Permits (SDWP)[73] which are required for the removal of water from a stream into a channel, ditch, tunnel, pipeline, or other conduit for offstream purposes including, but not limited to, domestic, agricultural, and industrial uses. Construction of a new stream diversion structure or alteration of an existing structure requires an SDWP. Routine maintenance activities are exempt from SDWP requirements.

**Coastal Zone Management:** HRS section 205A-2 establishes the following CZM policies related to Watershed management:

- Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:
    - Adopting water quality standards and **regulating point and nonpoint sources of pollution** to protect, and where feasible, restore the recreational value of coastal waters
- Minimize disruption or degradation of coastal water ecosystems by **effective regulation of stream diversions, channelization, and similar land and water uses**, recognizing competing water needs
- Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and **enhance water quality through the development and implementation of point and nonpoint source water pollution control measures**
- **Prevent coastal flooding from inland projects.**

## Watershed Management Guidance and Resources

**Watershed Management Plans:** In Hawaiian watersheds are areas of land that drain downslope to a common point. The water moves through a network of drainage pathways, both underground and on the surface, eventually reaching the ocean. There is a strong link between the health of a watershed and the health of coastal ecosystems.

Watershed management plans are data-driven strategies for managing specific watersheds. Analysis that drives the planning includes community goals; hazards risks; unique social, cultural, economic, and environmental characteristics; mauka-makai connections; and stakeholder interests and potential for collaboration.[74] Watershed management plans typically identify the sources of pollution and the recommended management strategies. For example, Hui Koʻolaupoko developed a Watershed Restoration Action Strategy for windward Oʻahu.[75] Three watershed plans have been prepared in Hawaiʻi County: for the Kawaihae area draining into Pelekane Bay, the Waiʻulaʻula watershed near Waimea[76], and selected Hilo Bay watersheds[77].

Both *Hawaiʻi Watershed Guidance* and the EPA's *Handbook for Developing Watershed Plans to Restore and Protect our Waters*[78] provide detailed guidance on developing watershed plans. The EPA also offers a Watershed Plan Builder[79] and a Watershed Academy.[80]

73 http://www.state.hi.us/dlnr/cwrm/sw_permits.htm
74 Hawaiʻi Watershed Guidance; Adapted from the Hawai'i Community Stewardship Report (2008)
75 http://www.huihawaii.org/index.html
76 http://www.maunakeaswcd.org/Projects.html
77 http://www.hilobaywatershed.org/research
78 http://water.epa.gov/polwaste/nps/handbook_index.cfm
79 http://java.epa.gov/wsplanner/

**Green Infrastructure Planning:** Green infrastructure is "an interconnected network of a wide range of landscape elements that support native species, maintain natural ecological processes, sustain air and water resources, and contribute to the health and quality of life for communities and people."[81]

Green infrastructure is a system of natural areas and features, public and private conservation lands, protected open spaces, and working lands with values that provide the ecological services necessary to sustain life. Green Infrastructure planning is a strategic, proactive approach to conserving that which supports the ecological, social and economic values and needs of all life through an ecosystem-based process of community involvement and science. Green infrastructure is also a process which identifies the most ecologically significant lands to protect while coordinating with the planning of gray infrastructure to support communities providing predictability and certainty for both conservation and growth.[82]

Green infrastructure systems typically include core areas, hubs, and corridors. "Core areas" provide essential ecological functions and critical watershed components to protect the water supply. "Hubs" in and outside the core areas include critical natural, cultural sites, and other community-valued areas, like geological features, wetlands, archeological sites, and parks. "Corridors" maintain connectivity in the landscape via streams, trails, access points, and scenic roads.[83]

**U.S. Environmental Protection Agency (EPA) Watershed Central**[84]**:** is designed to assist users to develop and implement effective watershed management programs. The site includes guidance, tools, case studies, funding opportunities, and data sets to help you share information, analyze data, and identify opportunities to initiate or strengthen your watershed efforts.

**Coastal Nonpoint Pollution Control Program (CNPCP)**[85]: The CNPCP was established by Congress in 1990 and is jointly administered by the National Oceanic and Atmospheric Administration (NOAA) and the US Environmental Protection Agency (EPA). Hawai'i's CNPCP, developed jointly by the Hawai'i CZM Program and the Department of Health (HDOH), is responsible for ensuring that the management measures are implemented. The primary focus is on pollution prevention, minimizing creation of polluted runoff. To this end, the CNPCP establishes management measures, published by the EPA and incorporated into the *Hawai'i Watershed Guidance*, to address coastal nonpoint source pollution from a variety of sources.

**Hawai'i Watershed Guidance**[86]: The CZM Program and HDOH have developed the *Hawai'i Watershed Guidance* to assist those involved in managing Hawai'i 's watersheds to develop and implement watershed plans that have the greatest potential for achieving water quality goals. It outlines steps for developing and implementing watershed plans, including the selection and implementation of appropriate management measures. Management measures are the best available, economically achievable practices or combinations of practices that can be used to address nonpoint source pollution. The management measures in the *Guidance* are those developed by the EPA and are designed to control runoff from six main sources: forestry, agriculture, urban areas, marinas and recreational boating, hydromodification, and wetlands, riparian areas, and vegetated treatment systems. The Hāmākua CDP

80 http://water.epa.gov/learn/training/wacademy/index.cfm
81 Benedict and McMahon. Green Infrastructure: Linking Landscapes and Communities. (2006). See also www.greeninfrastructure.net and www.gicinc.org.
82 https://www.dropbox.com/s/p9i0bbtbtuztflr/GreenInfraRTCAHandout.pdf
83 APA GI PAS memo; "Conservation With a Purpose: A step by step guide to protecting land for nature and people." NPS RTCA; "Green Infrastructure: Linking Landscapes and Communities." NPS RTCA
84 http://www.epa.gov/watershedcentral/index.html
85 http://hawaii.gov/dbedt/czm/initiative/nonpoint.php
86 http://hawaii.gov/dbedt/czm/initiative/nonpoint/HI%20Watershed%20Guidance%20Final.pdf

team adapted the forest and agriculture management measures to a Hāmākua specific context, see footnote below for the link.[87]

**DLNR** DOFAW **Watershed Partnership Program**[88]: The Watershed Partnership Program funds cooperative projects that benefit on-the-ground activities protecting land for watershed conservation and implementing existing management plans.

**DOH Polluted Runoff Control (PRC) program**[89]: The PRC program receives funding from the Environmental Protection Agency (EPA) through Section 319(h) of the Clean Water Act to address nonpoint source pollution. Since 2004, the focus of Hawai'i's PRC program has been on development and implementation of watershed plans to reduce nonpoint source pollution in priority watersheds. The PRC Program provides 50% cost share funding through an annual competitive process to address watershed priorities. The O'ahu Resource Conservation and Development Council (RC&D) used PRC funding to support farmer's implementation of best management practices in Waimānalo.[90]

**The Hawai'i Association of Watershed Partnerships (HAWP)** [91]**:** is comprised of nine Watershed Partnerships on six islands. Watershed Partnerships are voluntary alliances of landowners and other partners working collaboratively to protect forested watersheds for water recharge, conservation, and other ecosystem services. HAWP seeks to increase the management and protection of such areas by raising the capacity of Watershed Partnerships, facilitating the sharing of watershed management knowledge, building public support and awareness of watershed values, and developing sustainable funding sources.

## Best Management Practices (BMPs)

The following resources provide guidance on how best to manage land in Hawai'i. Among the many possible methods, land managers should choose those best suited to site-specific conditions:

**USDA NRCS Field Office Technical Guides (FOTG)**[92]: These technical guides are the primary scientific references for NRCS. They contain technical information about the conservation of soil, water, air, and related plant and animal resources. Technical guides used in each state are localized so that they apply specifically to the geographic area for which they are prepared.

**CTAHR Non-point Pollution Prevention BMPs**[93]: The University of Hawai'i at Mānoa summarized BMPs in a short Soil and Crop Management bulletin. Topics covered include field crop production, soil management, water management, irrigation management, nutrient management; integrate pest management, pesticide handling, woodland and habitat management, and air quality.

**DLNR DOFAW Watershed Protection and Management Program BMPs**[94]: DOFAW summarized land management BMPs into a single web site. Topics covered include forest roads, timber harvesting, silviculture chemical management, streamside management, fencing, fire management and reclamation, and reforestation.

87 http://preview.tinyurl.com/kj3wjul
88 http://www.state.hi.us/dlnr/dofaw/wpp/index.html
89 http://hawaii.gov/health/environmental/water/cleanwater/prc/index.html
90 http://www.ctahr.hawaii.edu/sustainag/news/articles/V12-Brokish-BMPs.pdf
91 http:www.hawp.org
92 http://efotg.sc.egov.usda.gov/treemenuFS.aspx, http://www.pia.nrcs.usda.gov/technical/
93 http://www.ctahr.hawaii.edu/oc/freepubs/pdf/SCM-26.pdf
94 http://www.state.hi.us/dlnr/dofaw/wmp/bmps.htm

**Hawai'i's Pollution Prevention Information project (HAPPI)**[95]: HAPPI produced 10 information and assessment bulletins addressing different water pollution issues faced by agricultural operations. Each provides information on a specific topic, helps managers assess risks for water pollution, and help develop an Action Plan to reduce those risks. Management topics covered include: land, nutrients, pests, irrigation, livestock, pasture, chemicals, forest, and riparian.

**Riparian Buffers:** Riparian Buffers are areas of permanent vegetation adjacent to water bodies, serve as critical drainage ways connecting mauka forests with the coastal zone and serves several important functions in protecting stream water quality and other watershed values:

- Stabilizes stream banks from erosion
- Provides shade, leaf litter and woody debris to the aquatic ecosystem
- Slows floodwaters when stream banks are overtopped in flood events
- Connects terrestrial wildlife habitats that may be fragmented in different parts of the watershed;
- Serves as a sanctuary for native plants where the land is too steep for cultivation or grazing.
- Can serve recreational and aesthetic purposes

Riparian Buffers were introduced in the 1960s as a practical conservation management practice to mitigate the impact of human activities (i.e. forestry, agriculture, development, etc.) on the riparian environment.

Per HCC 23-30, where a subdivision is traversed by a natural water course, drainage way, channel, or stream, **the Director of Planning shall require a drainage easement or drainage right-of-way as well as parkways parallel to water courses**. When possible, the easement and parkway shall be designed to connect to existing and potential future riparian and trail corridors.

Best Management Practices for Riparian buffers can be found in the following guides:

- DOFAW's Best Management Practices for forestry
- NRCS's Conservation Practice Standard (393) Filter Strip and Conservation Practice Standard (393): Filter Strip and Conservation Practice Standard (391): Riparian Forest Buffer.

## Tools and Resources for Protecting Viewsheds

Natural scenic beauty supports a number of important community elements, including the natural environment, community quality of life and character, and local economies. Viewsheds often contain relatively large natural areas and provide the benefits associated with the included ecosystems, such as watersheds and unfragmented habitat. The beauty of these areas contributes to the short-tem and long-term quality of life for the people and communities who experience them.

A variety of regulatory and non-regulatory strategies are available to address the protection of scenic viewsheds, including the protection of open space, farmland, and scenic road corridors, managing the amount and character of development. More specifically, scenic view protection strategies can include regulating the type and intensity of development, design requirements, tree planting, location standards for telecommunication towers, scenic conservation easements, sign standards, and specific transportation design.

95 http://www.ctahr.hawaii.edu/oc/freepubs/pdf/HF-1.pdf

## Regulatory Tools

**Chapter 343, Hawai'i Revised Statutes:** Also known as the Hawai'i Environmental Policy Act (HEPA), Chapter 343 established a system of environmental review to ensure that environmental concerns are given appropriate consideration in decision making along with economic and technical factors. If any proposed project or activity meets one or more of the nine conditions, known as "triggers", then the requirements of Chapter 343 must be addressed. The accepting agency then reviews the EA/EIS for significant impact on the environment. One of the thirteen significant impact criteria used by the accepting agency is if a project **substantially affects scenic vistas and view planes identified in county or state plans.**

**Coastal Zone Management (CZM)/Special Management Area (SMA)**: HRS Chapter 205A establishes the Hawai'i Coastal Zone Management (CZM) program, which is a Federally approved program managed by the State Office of Planning and implemented locally by the County Planning Department. HRS section 205A-2 also establishes the following CZM policies related to Scenic and Open Space Resources:

- **Identify valued scenic resources** in the coastal zone management area;
- 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**;
- **Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources**; and
- **Encourage those developments that are not coastal dependent to locate in inland areas**

HRS section 205A-26 establishes the following guidelines for the review of developments proposed in the Special Management Area (SMA):

- All development in the special management area shall be subject to reasonable terms and conditions set by the authority in order to ensure:
    - **Adequate access**, by dedication or other means, **to publicly owned or used beaches, recreation areas, and natural reserves is provided** to the extent consistent with sound conservation principles;
    - **Adequate and properly located public recreation areas and wildlife preserves are reserved**;
    - **Alterations to existing land forms and vegetation**, except crops, **and construction of structures shall cause minimum adverse effect to water resources and scenic** and recreational amenities and minimum danger of floods, wind damage, storm surge, landslides, erosion, siltation, or failure in the event of earthquake.
- The authority shall seek to minimize, where reasonable:
    - **Any development which would substantially interfere with or detract from the line of sight toward the sea from the state highway nearest the coast**; and

**Establish design guidelines and design review that limit the impact of development on scenic vistas and viewsheds:** Some communities develop clear design guidelines and design review gives communities a chance to decide how development will affect their neighborhoods and countryside. Responsible control of elements such as height, bulk, design, materials, color, landscaping, and siting helps a project blend with its surroundings.

**Implement zoning and land use ordinances for view protection:** Zoning laws that limit the height of buildings based on their proximity to a designated viewshed are an effective way of preserving scenic vistas. Other types of legislative protection include overlay zoning and the creation of view corridors. Overlay zoning places additional restrictions on zoned areas and is often used to control density, grading, ridgeline development, and vegetation. View corridors are planned openings in the built environment that allow views of scenic vistas and viewsheds.

**Pass legislation to establish a greenbelt:** Greenbelts are open tracts of land that create a scenic buffer between developed areas and the surrounding countryside. Most greenbelt ordinances allow only agricultural activities on designated lands - eliminating land speculation and development pressure.

## Inventory and Planning

**Scenic Resource Inventory:** The development of effective protections strategies requires the specific identification of the resources to be protected. Such an inventory might reasonably include written descriptions and photos of the views or open space of concern. The inventory may also include site information regarding distinguishing characteristics, parcel size, ownership, access points for best view, and potential threats to preservation.

**Maui County General Plan 2030 Scenic Resources Inventory & Mapping Methodology**:[96] In 2006, the County of Maui hired Chris Hart and Partners to Conduct a Scenic Resources Inventory for the Maui County General Plan Update. The objective of the inventory was to:

1. Identify and inventory Maui's inland and coastal scenic and open space resources using digital photography and Geographic Positioning Systems (GPS);
2. Describe and rank the scenic resources using prescribed standards and practices;
3. Map the scenic resources using Geographic Information Systems (GIS);
4. Identify and map the island's Scenic Roadway Corridors; and
5. Develop policies to be incorporated into the General Plan that will better protect scenic resources for future generations.

**Comprehensive Planning**: The incorporation of viewshed or conservation considerations in comprehensive plans can be used very effectively to protect these important community assets. Comprehensive plans (like the General Plan) address areas of special community value directly by:

- Identifying the areas
- Identifying compatible land use activities
- Establishing standards for development;
- Developing policies for addressing current, inappropriate land uses; and
- Identifying areas where development/redevelopment should be encouraged

The Hawai'i County General Plan identifies Natural Beauty Sites in the Planning Area. The list includes natural park areas, scenic roads, waterfalls, lush gulches, streams, embayments, and vantage points.

96http://www.co.maui.hi.us/documents/17/69/71/332/Scenic%20and%20Historic%20Resources%20Methodology%20Report.pdf

**Table 2. GP Natural Beauty Sites in the Planning Area**

| Site | Tax Map Key (TMK) | Ahupuaʻa or Region |
|---|---|---|
| Kalōpā State Park | 4-4-14:1 | Kalōpā, Hāmākua |
| Mauna Kea State Park areas | 4-4-16:3 | Kaʻohe, Hāmākua |
| Āhualoa Road | 4-5-10 | Kaʻao-Nienie, Hāmākua |
| Nienie Native Forest | 4-6-12:25 | Nienie, Hāmākua |
| Waipiʻo Valley Lookout | 4-8-04:17 | Lālākea, Hāmākua |
| Windward Valley System | 4-9-01 to 15 | Waipiʻo, Muliwai-ʻĀwini, Waimanu, Hāmākua |
| Hiʻilawe Falls | 4-9-09 | Waipiʻo, Hāmākua |
| Kaʻawaliʻi Gulch | 3-6-05, 3-9-01 | Waipunalei-Humuʻula, N. Hilo |
| Laupāhoehoe Gulch | 3-6-4 | Laupāhoehoe, N. Hilo |
| Scenic Lookout – Laupāhoehoe Point | 3-6-01:9 | Alaea, N. Hilo |
| Kilau Gulch | 3-6-01 | Laupāhoehoe, N. Hilo |
| Kuwaikahi Gulch | 3-5-04 | Kihalani, N. Hilo |
| Kihalani Gulch | 3-5-04 | Kihalani, N. Hilo |
| Manawaiopae Gulch | 3-5-03 | Manawaiopae, N. Hilo |
| Kaiwilahilahi Gulch | 3-5-03 | Kaiwilahilahi, N. Hilo |
| Maulua Gulch | 3-4-04:9, 11, 12 | Maulua Iki, N. Hilo |
| Honohina Falls | 3-2-01:11 | Nanue, N. Hilo |
| Viewpoint of Falls in Umauma Gulch (mauka) | 3-1-01:23, 30 | Wailua, N. Hilo |
| Viewpoint of Falls in Umauma Gulch (makai) | 3-1-01:24 | Wailua, N. Hilo |
| Hakalau Bay/Gulch | 2-9-02, 3-1-01 | Hakalaunui-Kamae, S. Hilo |
| Kolekole Gulch | 2-8-15, 2-9-03 | Kuhua-Kaiwiki, S. Hilo |
| Akaka and Kahuna Falls | 2-8-10:34 | Honomū, S. Hilo |
| Onomea Arch (fallen) | 2-7-10:1 | Onomea, S. Hilo |
| Onomea Bay Area | 2-7-09:1,2, 26; 2-7-10:1 | Kahaliʻi-Onomea, S. Hilo |
| Honoliʻi Beach and Stream | 2-6-24:1-4 | ʻAlae , S. Hilo |

**Corridor Management Planning:** Corridor management plans are required for designation as a national (and state) scenic byway. The planning process and typical planning elements are a good guide for thinking though the protection and promotion of significant community assets that are embodied in such a corridor. Plans typically address the collective community vision for the byway and surrounding area, an inventory of the characteristics, features, and resources associated with the byway, a plan for

interpretive activities along the corridor, and a summary of the goals and implementation strategies that will be used to preserve, enhance, and promote the corridor.

**Hawai'i Scenic Byways Program[97]:** The State of Hawai'i Department of Transportation (HDOT) administers the Hawai'i Scenic Byways Program which designates transportation corridors as scenic byways. The Scenic Byway process is community driven, facilitated by a community sponsor that wishes to lead the preservation, protection and/or promotion of the byway with a Local Advisory Committee and Corridor Management Plan and benefits the community in the following ways:

- Awareness and appreciation of historic, archaeological, natural, scenic, cultural and/or recreational sites and stories along the byway; you can't protect, preserve or enhance what you don't know you have.
- Collaboration and working together with different generations and different organizations – community "stakeholders."
- Insight into the community planning process.
- Creating a community vision for the byway that can be shared with organizations and/or government agencies having jurisdiction over the road or byway areas.
- Ability to let new residents, developers, and visitors know about the community's priorities and concerns.
- The information gathering process creates a prioritized list of action items to share and implement as resources are available.

A road is designated a scenic byway through an annual three step process:

1. Nomination - This step is intended to determine if the byway is eligible for the program.
2. Designation - This step is intended to demonstrate that the well-organized Local Byway Committee understands the level of commitment required, and is ready to begin preparing a Corridor Management Plan (required in Hawai'i to keep State Designation).
3. Corridor Management Plan - The CMP tells the story of the byway and provides a vision to guide future actions to ensure that the desired qualities of the byway are protected or enhanced.

There are three designated Scenic Byways in the County of Hawai'i:

- Māmalahoa Kona Heritage Corridor, Sponsored by Pulama ia Kona Heritage Preservation Council[98]
- Royal Footsteps Along the Kona Coast, Sponsored by the Kailua Village Business Improvement District (KVBID)[99]
- Ka'ū Scenic Byway- the Slopes of Mauna Loa, Sponsored by Ka'ū Chamber of Commerce

**Capital Improvements Planning (CIP):** The location of public infrastructure oftend drives development. Capital improvement plans typically include a prioritized schedule of future capital improvements (roads, sewer, and water lines) over a multi-year period. Each proposed project typically includes cost estimates and a proposed source of funding. Some communities develop CIPs strategically to steer

97 http://www.hawaiiscenicbyways.org/index.php/program
98 http://www.pulamaiakona.org/
99 http://historickailuavillage.com/

development away from sensitive environmental area, such as viewsheds and conservation areas, towards less sensitive areas. In some cases, rtoads can be designed to limit access and the protential accompanying growth in sensitive areas.

### Incentive-Based

Incentives can provide significant motivation for preserving scenic vistas and viewsheds. Grants to community groups to conduct education programs for local landowners on the benefits of viewshed protection or to establish a local land trust, can help preserve scenic quality. Other strategies include providing tax breaks for property owners who donate land or easements, and establishing an awards program to honor successful scenic conservation efforts.

### Land Acquisition

Although purchasing parcels of land or easements is among the most expensive options, outright purchase is sometimes the only way to permanently protect scenic vistas and viewsheds from development. One method of accomplishing this is to engage a land trust. Land trusts are private organizations at the local, state, or regional level that hold land and partial interests in land for the benefit of the public. Some land trusts use "revolving" funds to purchase threatened land and then resell it at cost to buyers who agree to specific land use restrictions. Land trusts also use their resources to educate property owners on the benefits of voluntary land or easement donations.

## Watershed Resource Management Analysis Table

The following Table shows the process used in evaluating the findings from the research and consultations throughout the analysis process up to this point. The Table clearly identifies:

- **Challenges** (1st column) identified in the analysis.
- **Support/Rationale** (2nd column) lists Policy Support (applicable governmental policies) and Plan Support (how the issue relates to researched plans/studies). This column will generally link back to the associated sections of the analysis document where that strategy support is located.
- **Possible CDP Strategy Direction** (3rd column) – the general strategy direction the CDP will likely be taking in addressing the challenge in order to meet the community's objectives.

The Strategy Directions are categorized into one of the four following CDP Strategy Types:

  - **Policy**: establish policy with policy maps (Official Land Use Map) and policy statements related to land use, watersheds and natural features, public improvement priorities, government services, and public re/development;
  - **Advocacy:** recommend advocacy with federal and state policy makers and agencies for policies, regulations, incentives, programs, and action;
  - **Community-based, Collaborative Resource Management (CBCM)**: including research, place-based planning and program design, and program implementation;
  - **Easement and Acquisition (E&A):** identify easement and acquisition priorities by fee simple ownership or through conservation easements;

At times, the CDP Strategy Direction will relate to other Analysis sections not yet complete (Community and Economy). In those cases, the table may refer to the appropriate section still under development, but will not contain a link to that section until that section is complete.

This is a working document, and the **Possible CDP Strategy Directions** are intended to be preliminary. We expect community feedback that may provide additional information that could further inform our analysis.

**Table 3. Watershed Resource Management Analysis Table**

| Challenges | Support/Rationale | Possible CDP Strategy Direction |
|---|---|---|
| **The County and community are not actively involved in watershed planning in the Planning Area** | **Plan Support:**<br>▪ Mauna Kea Watershed Management Plan;<br>▪ The Rain Follows the Forest;<br>▪ Ocean Resources Management Plan<br>**Policy Support:**<br>▪ General Plan: 4.3(g), 5.3(n), 8.2(e), 8.3(I), 8.3(m)<br>▪ State: CZM – HRS 205a | **Policy**: County to build internal capacity to support development of watershed and stream management plans<br>**Policy**: County to enter into partnership with the Mauna Kea Watershed Alliance via MOU Process<br>**Policy/Advocacy:** County to work with the private landowners and appropriate State and Federal agencies in developing and implementing watershed management plans and projects |
| **Invasive Species**<br>▪ Feral ungulates<br>▪ Plant & weed species<br>▪ Fish and biota | **Plan Support:**<br>▪ Mauna Kea Watershed Management Plan;<br>▪ The Rain Follows the Forest;<br>▪ Hawaiian High Islands Ecoregion Plan<br>**Policy Support:**<br>▪ General Plan: 8.3(j) | **CBCM:** Form a Wao/Watershed Subcommittee of the CDP Action Committee to strenghthen collaboration with existing invasive species organizations(Coordinating Group on Alien Pest Species, Big Island Invasive Species Committee) |
| **Inadequate Stream Management** | **Plan Support:**<br>▪ Hawai'i Stream Assessment; State of Hawai'i Water Quality Monitoring and Assessment Report;<br>▪ Atlas of Hawaiian Watersheds and Their Aquatic Resources; Hawaiian High Islands Ecoregion Plan;<br>▪ Mauna Kea Watershed Management Plan | **Policy:** Identify streams and stream corridors as candidates for further protection<br>**Policy**: Develop County Riparian Area Code, Rules, Policies<br>**Advocacy**: Encourage appropriate State agencies to review and designate forest and watershed areas into the conservation district during State Land Use boundary comprehensive reviews |

| | | |
|---|---|---|
| | **Policy Support:**<br>▪ General Plan: 4.3(g)<br>▪ County: HCC 23-30<br>▪ State: Conservation District - 205-2(e); HAR 13-5 | **E&A**: Once streams and stream cooridors are identified for further protection, prioritize and seek to acquire cooridors for further management |
| **Interrupted open space and view planes to the ocean and mountain** | **Plan Support**:<br>▪ North East Hawai'i CDP (1979)<br>▪ Ocean Resources Management Plan<br>**Policy Support:**<br>▪ General Plan: View Plane Protection - 7.3 (b), 7.3(c), 7.3(e); 7.3(f); 7.3(h); 7.3(i)<br>▪ State: Chapter 343; Chapter 205a (CZM/SMA); | **Policy**: Conduct a scenic resources inventory and map for the Planning Area<br>**Policy**: Develop and establish view plane regulations to preserve and enhance views of scenic or prominent landscapes from specific locations, and coastal aesthetic values.<br>**Policy**: Strengthen viewshed protections along the coast through the SMA<br>**CBCM**: Nominate the Hilo-Hāmākua Heritage Corridor for recognition as a Hawai'i Scenic Byway<br>**CBCM**: Create Watershed/Wao Action Committee Subcommittee to help identify important lands for potential easement and acquisition for their scenic beauty or scenic viewing resources<br>**Advocacy**: Encourage DLNR to consider views of the mountain and ocean while negotiating timber leases along the highway |

# FOCUS AREA: WAO (MAUKA AND FOREST LANDS)

For the purposes of the Hāmākua CDP, the upland forest regions of the Planning area will be referred to as the wao region. This term will be used inclusively and pertains to the various elevation levels of the wao regions in the Hawaiian Ahupua'a system, including the *wao nahele*, *the wao akua*, and the *wao ma'ukele*; generally the mauka region above the 'tree line' that is not extensively developed and either is wilderness or used agriculturally for timber or ranchland. This section will also include the areas known as the Kualono and the Kuahiwi, the near-summit lands of Mauna Kea and the summit of itself.

The books, *Polynesian Family System in Ka'ū (Handy and Pukui 1998) and Native Planters (Handy and Pukui 1991)* define the Wao region (or upland forest) and explain its traditional significance as follows:

> *"Wao means the wild – a place distant and not often penetrated by man. The Wao la'au is the inland forested region, often a veritable jungle, which surmounts the upland Kula slopes on every major island of the chain, reaching up to very high elevations…"*

> *"The Hawaiians recognized and named many divisions or aspects of the Wao: first, the Wao kanaka, the reaches most accessible, and most valuable, to man (kanaka); and above that, denser and at higher elevations, the Wao akua, forest of the gods, remote, awesome, seldom penetrated, source of supernatural influences, both evil and beneficent. The Wao kele, or Wao ma'u kele, was the rainforest. Here grew giant trees and tree ferns ('ama'u) under almost perpetual cloud and rain."*

> *"The Wao kanaka and the Wao la'au provided man with the hard wood of the koa for spears, utensils, and logs for boat hulls; pandanus leaves (lau hala) for thatch and mats; bark of the mamaki tree for making tapa cloth; candlenuts (kukui) for oil and light; wild yams and roots for famine time; sandalwood, prized when shaved or ground as a sweet scent for bedding and stored garments. These and innumerable other materials were sought and found and worked by man in and from the Wao…."*

> As noted above, the wao region is extremely important in Hawaiian history and culture. The report, *The Rain Follows the Forest: Hahai no ka ua i ka ululā`au*[100] explains the significance of the wao to Hawaiian spirituality this way:

> *"Since the first Hawaiians encountered these islands, the forests have been the wellspring of physical and spiritual nourishment. The misty uplands are the wao akua, realm of the gods, believed to be occupied by spirits. Within these forests, the plants and animals have their own significance, individually revered as manifestations of gods, or used for medicines, offerings, or other material needs. The plants and animals, regarded as elders and ancestors, evolved unique identities when they arrived and intertwined with the landscape and life forms of Hawai`i. The extinction of the unique inhabitants of the wao akua unravels the spiritual, as well as material vitality of Hawai`i. Like water, they are irreplaceable."*

From an ecological perspective, these mauka forests are also vital to protect due to the crucial role they play in the water cycle of the island. The report, *Why Forests Provide the Best Protection for Water Resources*[101], explains it this way:

100 http://hawaii.gov/dlnr/chair/pio/nr/2011/The-Rain-Follows-the-Forest.pdf
101 http://www.forest-to-faucet.org/pdf/Whyforestsprovidethebestprotectionofwaterresources.pdf

*In forests, rain tumbles through the mature tree canopy, understory trees and shrubs, and herbaceous plants such as ferns before reaching the litter layer. Renewed by annual additions of leaves, twigs, and branches, the litter layer is: a natural mulch that limits evaporation, a shock absorber that protects soil pores, an insulator that inhibits soil freezing, and a slow-release source of nutrients to foster more plant growth and site protection. The underlying organic, mixed, and mineral layers (horizons) in forest soils can store and transmit large quantities of water. This water storage capacity and permeability — exceeded only by some hurricanes and rain-on-snow events — is developed over centuries by microbes, insects, earthworms, burrowing animals, and the extensive, deep, and perennial root systems of trees and shrubs. As a result of these ecological characteristics, overland flow and soil erosion are rarely, if ever, observed in forests.*

Included in the aforementioned wao are the dryland forests on the flank of Mauna Kea. Dry forests annually receive less than 50 inches of rainfall and can be found at high elevations, as with the palila habitat and māmane forests of Mauna Kea. Native plants, insects, and birds once lived in prolific dryland forests, thriving in a dynamic, rich biodiverse environment that offered balance and bountiful treasures to be cared for and used by Hawaiians.[102]

The zones near the summit of Mauna Kea[103] are known as Kualono (directly below the summit), and Kuahiwi (the summit). Historically, the Kuahiwi was the most sacred, where access was limited to high chiefs and priests, and where prayers could be offered to their gods, or akua. The summit is also referred to as the piko, or navel, of the island. A common cultural ritual still practiced is the ceremonial deposit of the umbilical cord of their child on the summit to connect the child's life to the past. Pualani Kanaka'ole Kanahele describes the significance of the practice: "it not only gives mana or life to that piko and that child, but life again to the whole family." [104]

The Kualono region was known for its adze quarry, and many craftsmen erected shrines for worship in this region. Both the Kuahiwi and the Kualono were used for burials in the pu'u. The highest areas of the summits were not used, suggesting that those areas were avoided because of their degree of sacredness.

## Wao Assets and Challenges

**ASSETS**

- The abundant rainfall within the wao region is a major water source for the island. The wao region supplies lower elevations with groundwater, and the forest serves as a crucial natural sequestration device for water storage.
- A healthy forest anchors the soil and tempers erosion from heavy rainfall, thereby preventing large amounts of sediment from polluting waterways and coastal waters, and damaging coral reefs and degrading beaches.
- Forests absorb large amounts of carbon dioxide, reducing Hawai'i's greenhouse gas emissions. On Hawai'i Island, some of the highest standing densities of carbon can be found in old-growth `ōhi`a forests.

102 http://www.drylandforest.org/what-dryland-forest-1

103 While it is noted that Mauna Kea as a proper noun may have originally been one word, Maunakea, in the Hawaiian language, this document will use the common, contemporary form of it as two words to maintain consistency with other cited sources. For more information, please see Ka Wai Ola, Vos. 25, No.11

104 as quoted in Kumu Pono, 1999:A-376.

- The forest is rich in biodiversity and critical habitat for a number of native, endemic, and endangered species.

- The forest provides invaluable cultural, subsistence, and recreational activities such as hunting, gathering, collecting, and hiking. For example, the forest is used for gathering plants, such as maile, māmaki, palapalai, ʻaʻaliʻi, and ʻolonā. Wai (water) is also collected from springs and used for ceremonial purposes. Streams are used for collecting native crustaceans such as 'opae kuahiwi, or mountain opae, which prefer the higher sections of the streams where there is abundant cool, clear and fast-flowing water.

- Hunters continue to use this area as both a deep-rooted cultural practice and a means of subsistence. For many, hunting and fishing are essential elements of being kama'aina of Hāmākua. Hunting is often seen as a rite of passage, a bonding time among friends and family, and a tradition that the community values and desires to protect for coming generations.

- The scenic vistas of Mauna Kea from various vantage points throughout the Planning Area are an invaluable resource in terms of scenic beauty and cultural sacredness.

**CHALLENGES**

- Hawaiʻi has the largest number of federally listed and candidate species under the Endangered Species Act. Native species sacred to the Hawaiian culture are disappearing at the highest extinction rate in the nation because of development, introductions of invasive species, and other threats.

- Native forests sometimes compete with agricultural interests (ranching, forestry, etc.). Native trees often grow much slower than introduced species – thereby making reforestation efforts costly and time-consuming, and creating additional challenges to silvopasturing efforts.

- Alien species, particularly ungulates such as feral pigs and goats, trample and devour vegetation, leaving bare ground or openings for alien plants that consume more water and increase runoff.

- Invasive floras are changing not only the 'face' of the forest but also how it functions. An example is that in East Hawaiʻi, invasive plants have already reduced estimated groundwater recharge by 85 million gallons a day.

- Cultural and recreational accesses are becoming increasingly difficult to physically and legally access due to residential and agricultural uses, and 'land-locked' public lands that lack access points.

- Due to the fact that the majority of the lands in the wao region are State or Federally owned, the CDP, as a County of Hawaiʻi plan, has very limited jurisdiction over land use issues in this region.

- A century-long trend of declining rainfall has accelerated, with a 12% decline in the last 20 years alone (note: this is a Hawaiʻi State average, not Hāmākua-specific) is impacting the mauka forests ability to serve as reliable water storage for lower elevations. Persistent droughts conditions have impacted ranchers on the island, particularly in Kōhala and Ka'ū, and it is unknown to what extent declining rainfall trends will impact the Hāmākua's wao region and its downstream ecosystems.

## Hāmākua CDP Community Objectives Relative to Wao

- **Protect, restore, and enchance** watershed ecosuystems, sweeping views, and open spaces from **mauka forests** to makai shorelines, **while assuring responsible public access for recreational, spiritual, cultural, and sustenance practices.**

- …**Protect and enhance viewscapes** and open spaces that exemplify Hāmākua's rural character.

- **Preserve traditional subsistence practice**s and encourage a reciprocity (i.e. bartering) economy as a sustainable compliment to Hāmākua's resource-based economy.

## General Plan Policies Related to Wao

The County General Plan is clear about the need to protect Hāmākua's Wao resources:

- 7.2(a): Protect, preserve and enhance the quality of areas endowed with natural beauty.
- 7.2(c): Maximize opportunities for present and future generations to appreciate and enjoy **natural and scenic beauty**.
- 7.2(b): **Protect scenic vistas and view planes** from becoming obstructed.
- 7.3(a): **Increase public pedestrian access** opportunities to scenic places and vistas.
- 7.3(b): Develop and establish view plane regulations to preserve and enhance views of scenic or prominent landscapes from specific locations, and coastal aesthetic values.
- 7.3(d): **Access easement to public or private lands that have natural or scenic value shall be provided or acquired for the public**.
- 8.2(d): **Protect rare or endangered species and habitats** native to Hawai'i.
- 8.2(e): Protect and effectively manage Hawai'i's open space, watersheds, shoreline, and natural areas.
- 8.3(j): **Encourage the protection of watersheds, forest**, brush and grassland from destructive agents and uses.
- 8.3(k): **An identification and inventory of forest land** suitable for watershed purposes should be conducted jointly by County, appropriate State and Federal agencies, and private landowners
- 8.3(m): **Encourage appropriate State agencies to review and designate forest and watershed areas into the Conservation District during State Land Use Boundary comprehensive reviews**
- 8.3(o): Encourage the continued identification and inclusion of unique wildlife habitat areas of native Hawaiian flora and fauna within the Natural Area Reserve System.
- 8.3(r): **Ensure public access** is provided to the shoreline, public trails and hunting areas.
- 8.3(x): Create incentives for landowners to retain and re-establish forest cover in upland watershed areas with emphasis on native forest species.
- 8.4: **The following shall be considered for the protection and conservation of natural resources**.
    - (a) Areas necessary for the protection and propagation of specified **endangered native wildlife**, and conservation for **natural ecosystems** of endemic plants, fish and wildlife.
    - (b) Lands necessary for the preservation of **forests**, park lands, wilderness and beach areas.
    - (c) Lands with a general slope of 20 percent or more that provide open space amenities or possess unusual scenic qualities.
    - (d) **Lands necessary for the protection of watersheds**, water sources and water supplies.
    - (e) Lands with topographic, locational, soils, climate or other environmental factors that may not be normally adaptable or required for urban, rural, agricultural or public use.

- 14.1.2(c): **Protect and preserve forest, water, natural and scientific reserves and open areas**.
- 14.8.2(a): **Provide and protect open space** for the social, environmental, and economic wellbeing of the County of Hawai'i and its residents.
- 14.8.2(b): Protect designated natural areas.

The General Plan also identifies the following **Natural Beauty** sites in the Planning Area's Wao region:

- Kalōpā State Park
- Mauna Kea State Park areas
- Āhualoa Road
- Nienie Native Forest

## Previous Wao Planning and Studies

**Ocean Resources Management Plan (ORMP)** [105]**:** The ORMP includes the following goals and strategic actions related to mauka forest management:

- Improve coastal water quality by reducing land-based sources of pollution and restoring natural habitats
- Reduce soil erosion from upland forest ecosystems and conservation lands.
- Implement and monitor best management practices to reduce upland soil erosion caused by feral animals, loss of native forest species, and other anthropogenic factors.
- Expand watershed partnerships and similar public-private partnerships to improve management of upland forest ecosystems and conservation lands.
- Leverage State, federal and private sector funding to implement best management practices.

Many of this plan's other actions relate to protecting the watershed and coastal regions, which will be referenced under those sections of the Analysis.

**Hawai'i Statewide Assessment of Forest Conditions: Hawaii's Forest Action Plan (SWARS)**[106]:

The purpose of this plan is to:

- Identify and provide an analysis of present and future forest conditions, trends, and threats on all land ownerships.
- Identify any areas or regions of that state that are a priority.
- Identify any multi-state areas or issues that are a regional priority.
- Incorporate existing forest management plans including state wildlife action plans and community wildfire protection plans.

105 http://files.hawaii.gov/dbedt/op/czm/ormp/reports/ormp_consolidated_work_plan.pdf
106 http://www.hawaiistateassessment.info/SWARS/Hawaii_Statewide_Forest_Assessment_and_Strategies_2010_Entire-Document.pdf

Some of the main issues this plan addresses (including strategy matrixes for each) in relation to protecting wao regions are:

- Invasive Species, Insects & Disease
    - One issue identified as a data gap: lacking extensive maps of the areas, lacking the data/technology to attain maps, maps that do exist are not public (watershed groups, etc.)
    - Conservation of Native Biodiversity
    - Wildfires
    - Climate Change
    - Hunting and Nature-Based Recreation and Tourism
    - Forest Products and Carbon Sequestration

**The Rain Follows The Forest: Hahai no ka ua i ka ululāʻau. A Plan to replenish Hawaiʻi's Source of Water[107]:** The DLNR seeks to protect watersheds by improving management of Hawaiʻi's mauka forests. The Rain Follows the Forest plan identifies priority watershed areas based on potential changes in recharge based on land cover changes. Specific strategies to protect watersheds and that relate to wao include:

- Remove all invasive hooved animals from priority I and II areas using fencing and public hunting [note: the majority of Hāmākua's forested wao region is identified in this plan as Priority I]
- Remove or contain damaging invasive weeds that threaten priority I and II areas using fencing and mechanical, chemical, and biological controls
- Monitor and control other forest threats including fires, predators, and plant diseases
- Restore and plant native species in priority areas and buffer areas
- Educate Hawaiʻi's residents and visitors about the cultural, economic, and environmental importance of conserving native forests using teacher training, educational programming, and an expanded Youth Conservation Corps
- Promote consistent and informed land use decision-making that protects watersheds.

**The Hawaiian Ahupuaʻa Land Use System: Its Biological Resource Zones and the Challenge for Silvicultural Restoration[108]:** This plan discusses the different biological zones of the Hawaiian ahupuaʻa system and recommends eight silvicultural restoration tasks for Hawaiian rainforests (including: delimbing, fencing, reintroduction, weed control, inoculation, monitoring, soil scarification, and the removal of woody debris from streams).

**Hawaiʻi Invasive Species Council, Strategy 2008-2013[109]:** This plan sets out objectives for:

- HISC Resources Working group tasks
- Prevention, response & control of established pests
- Research and technology goals

107 http://hawaii.gov/dlnr/chair/pio/nr/2011/The-Rain-Follows-the-Forest.pdf
108 http://hbs.bishopmuseum.org/pubs-online/strm/04-Mueller-Domboisr.pdf
109 http://www.hawaiiinvasivespecies.org/hisc/pdfs/20080809hiscstrategicplan.pdf

- Public outreach

**Mauna Kea Watershed Management Plan[110]:** The Mauna Kea Watershed Alliance (MKWA) encompasses approximately 484,000 acres above the 2000' elevation on the mountain of Mauna Kea. More information on the Mauna Kea Watershed Alliance can be found here and here .

This management plan describes Mauna Kea's watershed resources and associated values, identifies the threats to those resources, and directs the activities of the Mauna Kea Watershed Alliance.

Objectives specifically referencing wao resources are as follows:

- Management Goal 2: Protect and enhance native terrestrial and aquatic ecosystems and their biodiversity and species.
    - Objective 2A: Maintain and/or restore native forest cover.
    - Objective 2B: Protect and recover rare species.
    - Objective 2C: Protect and enhance riparian buffers to protect stream corridors.
- Management Goal 3: Manage non-native plant and animal species within appropriate areas to reduce the impacts to native ecosystems and species.
    - Objective 3A: Strategically manage feral ungulate damage in high priority native ecosystems and watersheds while providing for increased hunting opportunities in designated areas.
    - Objective 3B: Strategically manage other pest species that threaten native ecosystems.
    - Objective 3C: Strategically control invasive plants to protect high quality native ecosystems and endangered species.
    - Objective 3D: Control priority invasive aquatic species in windward streams on Mauna Kea.
- Management Goal 4: Prevent and minimize wildfires on Mauna Kea.
    - Objective 4A: Install on-the-ground fuel management measures intended to reduce the number and/or severity of fires.
    - Objective 4B: Reduce fuel loads in fire-prone areas, ensuring compatibility with other habitat and watershed protection goals.
    - Objective 4C: Develop water sources for fire-fighting purposes in fire-prone areas.
    - Objective 4D: Coordinate pre-suppression planning and fire response protocols among landowners.
    - Objective 4E: Promote effective communication and public safety during extreme fire weather and during fire-response events.
    - Objective 4F: Manage access to fire-prone areas during extreme fire danger weather.
    - Objective 4G: Promote post-fire assessment and restoration of burned areas.

110 Link to Mauna Kea Watershed Management Plan http://tinyurl.com/q6d3cb9

- Management Goal 5: Promote and encourage economic sustainability in balance with habitat and watershed protection goals.
    - Objective 5A: Encourage permitted ecotourism, well-managed wilderness experiences, and other forms of managed access, as appropriate and permissible, on public and private lands.
    - Objective 5B: Manage future development to ensure it will not have a detrimental impact on the ecosystems of Mauna Kea.
    - Objective 5C: Support sustainable uses of the land in balance with habitat and watershed protection goals.

**Mauna Kea Comprehensive Management Plan**[111]**:** Prepared for the University of Hawai'i Office of Mauna Kea Management (OMKM), this plan was commissioned due to the Hawai'i Supreme Court's decision in *Ka Pa'akai* to provide government agencies an analytical framework to ensure the protection and preservation of valued cultural, historical and natural resources. The plan's creation was also a stipulation and of the Conservation District Use Permit (CDUP) for the Thirty Meter Telescope (TMT) Project, and the content of the plan, along with the TMT Project group's compliance with the stipulations of the plan, were pivotal in the Board of Land and Natural Resource's decision to grant a CDUP for TMT in April 2013. See below for links regarding the CDUP, and the TMT project.

Executive Summary Info: The University recognizes that Mauna Kea is a living resource where Native Hawaiians exercise traditional and customary practices either within the UH Management Areas or access through Mauna Kea's trail system to gather and hunt on surrounding lands. With this recognition comes the obligation to preserve and protect those constitutionally guaranteed rights. The CMP addresses this requirement through the following process:

- (1) The CMP identifies the valued cultural, historical and natural resources, including traditional and customary practices exercised within the UH Management Areas. These include both traditional and customary practices, i.e. gathering of cultural resources, family burials, prayers, ceremonial rituals, using the water of Lake Waiau to the more contemporary practices of accessing Mauna Kea trails system for subsistence hunting and gathering. Chapter 5 provides a comprehensive identification of these valued resources.

- (2) The CMP describes the threats or impacts to these valued resources by uses and activities within the UH Management Areas. Many of the human use impacts are unintentional, caused by uneducated visitors and facilitated by loose regulation and minimally managed access. Threats from various user groups vary in type and intensity and are factors that are being considered in the management recommendations. Other threats, such as climate change, act over a longer time frame and are more difficult to quantify and correlate with specific impacts. Chapter 6 provides a description of the threats to the valued resources.

- (3) The third step of the *Ka Pa'akai* analysis is the "feasible actions" or in this case the management actions to be taken by the stewards of the land to reasonably protect these valued resources. Management actions being considered have been grouped into a series of specific management actions. The management actions consistently recommend an approach that emphasizes education and orientation as cost effective tools, as well as information gathering, management measures, and regulations and enforcement. Many of the management actions can be implemented as conditions on a Department of Land and Natural Resources (DLNR) Conservation District Use Permit (CDUP) or on an OMKM permit. However other actions will require the adoption of administrative rules to

111 http://hawaii.gov/dlnr/occl/mauna-kea-management-plan/comprehensive-management-plan

implement and enforce. Section 7 contains the detailed summary of each of the recommended management actions to ensure that the valued cultural and natural resources are protected to the extent feasible. All authorizations to permit uses and activities, including but not limited to CDUP or other permits, shall include as a condition on their permits the specific recommendations noted in Section 7 that address the *Ka Pa'akai* requirements to preserve and protect cultural, historical and natural resources, traditional and customary practices

CMP Management Objectives, Component Plans, and Desired Outcomes:

**7.1 Understanding and Protecting Mauna Kea's Cultural and Natural Resources**

- 7.1.1 Native Hawaiian Culture and History: Increase understanding and appreciation of Native Hawaiian history and cultural practices related to Mauna Kea to ensure that these practices are protected and respected. Identify, document the condition of, and protect historic properties in the UH Management Areas.

- 7.1.2 Natural Resources: Increase understanding of the status of natural resources (biotic and abiotic), and identify threats to these resources in order to better protect and preserve unique geological features, ecosystem functions, subalpine and alpine habitats, and biological communities through adaptive management of stressors and threats.

- 7.1.3 Education and Outreach: Build and maintain a constituency to engage in active and meaningful stewardship of Mauna Kea, through education and involvement of the public, to support and enhance conservation of the natural, cultural, and astronomical resources of Mauna Kea.

- 7.1.4 Astronomy Resources: Astronomical resources must also be protected. The University's lease of the Summit Area provides that the scientific reserve shall be operated as a buffer zone to prevent intrusion of activities incompatible with the use of the land as a scientific complex or observatory. The lease recognizes light and dust interference as well as certain types of electronic installation as incompatible.

**7.2 Managing Access, Activities and Uses**

- 7.2.1 Activities and Uses: To retain and enhance recreational and cultural activities, ensure regulation of commercial activities, and support scientific studies while maintaining adequate protection of resources, educating users regarding resource sensitivity, and ensuring the health and safety of those visiting or working at Mauna Kea.

- 7.2.2 Permitting and Enforcement: Achieve compliance with existing and any new policies and regulations designed to manage and minimize human impacts, to preserve and protect Mauna Kea's resources.

**7.3 Managing the Built Environment**

- 7.3.1 Infrastructure and Maintenance: Manage the built environment by implementing an Operations, Monitoring and Maintenance Plan (OMMP) containing specific maintenance strategies and protocols that will result in minimal disruptions to activities and uses, minimize impacts to the resources, and ensure that permittees remain compliant with their CDUP requirements.

- 7.3.2 Construction Guidelines: Minimize adverse impacts to resources during all phases of construction, through use of innovative best management practices.

- 7.3.3 Site Recycling, Decommissioning, Demolition, and Restoration: To the extent possible, reduce the area disturbed by physical structures within UH Management Areas by upgrading and reusing

buildings and equipment at existing locations, decommissioning, and removing obsolete facilities, and restoring impacted sites.

- 7.3.4 Considering Future Land Use: To protect cultural and natural resources in the assessment of future projects.

**7.4 Managing Operations**

- 7.4.1 Operations and Implementation: Conduct effective operations to support management that is focused on resource protection, education, and public safety.

- 7.4.2 Monitoring, Evaluation, and Updates: Determine whether management actions are achieving the goals of the CMP and provide a process for improving and updating management strategies through evaluation and revisions of the CMP.

**Related Subplans:**

- Cultural Resources Management Plan (October 2009)
- Natural Resources Management Plan (September 2009)
- Public Access Plan (January 2010)
- Decommissioning Plan (January 2010)
- Project Submittal Timeline (January 2008)
- Major Project Sequence of Steps (October 2009)
- Implementing and Evaluating the Comprehensive Management Plan for UH Managed Lands on Mauna Kea (draft, February 2010)

**Thirty Meter Telescope Project (TMT):** the project consists of the construction and operation of the entire facility, including the 98-foot (30 meter) diameter optical/infrared telescope and the associated ancillary facilities below the summit of Mauna Kea. The TMT will couple unprecedented light collection area (almost 10 times more than one of the Keck telescopes) with diffraction-limited spatial resolution that exceeds Keck by a factor of 3. Relative to the Hubble Space Telescope, TMT will have 144 times the collecting area and more than a factor of 10 better spatial resolution at near-infrared and longer wavelengths. TMT is an international partnership among the California Institute of Technology, the University of California, and the Association of Canadian Universities for Research in Astronomy, joined by the National Astronomical Observatory of Japan, the National Astronomical Observatories of the Chinese Academy of Sciences, and the Department of Science and Technology of India.

According to the EIS[112] for TMT, the project's primary purposes and objectives are to:

- Provide powerful and precise scientific tool capable of exploring almost every aspect of the Universe
- Locate the TMT in Hawai'i to help the U.S. maintain its leadership position in astronomy research, discovery, and innovation
- Leverage the capacity and abilities of the TMT partners' existing astronomy facilities on Mauna Kea
- Utilize the project as an important educational tool to attract students to the science and technology fields.

112 http://www.malamamaunakea.org/site/news/Final%20EIS%20-%20TMT%20Project%20Volume%201.pdf

- Integrate science, culture, sustainability, and education
- The EIS notes that, from a cumulative perspective, the impact on cultural resources has been, and would continue to be, substantial, adverse, and significant. The cumulative impact to geological resources in the Astronomy Precinct has been substantial, adverse, and significant. The cumulative impact to the alpine shrublands and grasslands and māmane subalpine woodlands has also been substantial, adverse, and significant – primarily due to grazing by hoofed animals. The magnitude of significance of cumulative impact to the alpine stone desert ecosystem is not fully determined. (The EIS notes that the benefits of the project include socioeconomic and educational benefits to the community.)

Permits Required for the TMT Project:

- Complete the State Historic Preservation, HRS Chapter 6E Consultation process
- Complete the Office of Mauna Kea Management (OMKM) Project Review/Approval Process
- Conservation District Use Permit (CDUP)
- National Pollutant Discharge Elimination System Permit (NPDES)
- A variety of State and County permits would be required for the Headquarters and the Satellite Office, but OMKM review and CDUP would not be required.

**Voices and Visions of Mauna Kea - Mauna Kea Science Reserve Master Plan[113]:** Introduction to the plan:

> *"The Mauna Kea Science Reserve is an 11,288 acre area of land leased by the University of Hawai'i from the State of Hawai'i for use as a scientific complex. Facility development in the Science Reserve has focused predominantly on the summit area above 13,200 feet. Support facilities have been developed at Hale Pōhaku (elevation 9,200 feet) outside the Science Reserve. The Reserve was established in 1968 when the Board of Land and Natural Resources approved a 65-year lease (Lease No. S-4191). Two parcels in the summit region excluded from the Science Reserve belong to the Mauna Kea Ice Age Natural Area Reserve (NAR). The University of Hawai'i adopted the Mauna Kea Science Reserve Complex Development Plan (CDP) in 1983 which has guided development up to the present time. The CDP [Complex Development Plan] projected development up to the year 2000 and has been largely implemented.*
>
> *The 1983 Plan and the State of Hawai'i's efforts to develop astronomy as an academic discipline and an industry have been largely successful. Today, Mauna Kea is known as the premier location for astronomy in the Northern hemisphere and has a significant positive economic impact on the State of Hawai'i and the Big Island. This report is an update of the 1983 Plan and extends the planning horizon to the year 2020.*
>
> *The Plan also addresses issues and concerns that have arisen in 30 years of development on the mountain. It specifically addresses comments and recommendations included in the 1998 Legislative Auditor's report on the management of Mauna Kea. The Plan integrates future uses (education, research, culture and recreation) with a deeper awareness of the natural and cultural resources and significance of Mauna Kea. In particular, the Plan lays the groundwork for implementation of educational outreach to the native Hawaiian community at primary, secondary, and post-secondary levels. New ethnographic, archaeological and biological studies*

113 http://www.hawaii.edu/maunakea/newsletter.pdf

*of the mountain have expanded knowledge and increased sensitivity to the special qualities that make Mauna Kea a unique place on the planet."*

The principal objective of the physical plan is to promote the sustainable use, enhancement and development of the resources of The Mauna Kea Science Reserve including:

- Protect natural resources (e.g., Wekiu bug habitat, alpine ecosystems)
- Protect historic and Hawaiian cultural resources and practices (e.g., archaeological sites, cultural landforms)
- Protect and enhance education and research (e.g., astronomy, ecology, geology)
- Protect and enhance recreational opportunities (e.g., skiing, hiking)

The purpose of the management plan is to:

- Promote community input
- Establish local management
- Establish a focal point for management responsibility
- Establish clear lines of decision making and accountability
- Establish economic and structural feasibility
- Provide a base for future expansion beyond astronomy that includes cultural, educational and community programs

Some of the recommendations of the plan are as follows:

- Natural Resources: Natural resources are protected in the following way:
    - Identification and GIS mapping of resources.
    - The bulk of the Science Reserve (10,760 acres) is designated as a natural and cultural preservation area.
    - Future facilities will be designed and sited to avoid and minimize impacts to sensitive habitat and rare or fragile geological features. Additionally, development approvals would contain conditions for the protection of natural resources.
    - Registration procedures and signage plans would be geared to educate visitors about the value and fragility of these resources.
    - Volunteer groups would be encouraged to adopt the mountain and support activities that sustain the mountain.

Archaeology and Culture: The cultural resources component includes the following:

- GIS mapping of known features.
- Designation of 10,760 acres as a Natural and Cultural Preservation Area. This designation highlights the cultural values of Mauna Kea.
- The importance of geo-physical forms such as Pu'u Poli'ahu, Pu'u Līlīnoe, other summit pu'u and Wai'au is recognized and protected in the Plan. All undeveloped pu'u are preserved.
- A view corridor to the west is preserved based on a common cultural practice with a potential for future interpretation.

- Modern cultural practitioners would have unrestricted access.
- The formation of a Kahu Kupūna Council to provide advice and facilitation in cultural matters is recommended.
- Photographic monitoring of historic sites is suggested.
- Registration procedures, signage and docent programs are recommended to educate the public on the value of cultural resources and the appropriate protocol for movement in sensitive areas.
- Special development protocols are recommended to avoid inadvertent impacts on cultural properties.

**Pohakuloa Training Area (PTA):** A US military installation is located in the high plateau between Mauna Loa, Mauna Kea and the Hualālai volcanic mountains. It includes a small military airstrip known as Bradshaw Army Airfield. It consists of 108,863 acres and is the largest United States Department of Defense installation in the state of Hawaii, and anywhere in the Pacific. The region was used for live fire exercises in 1943 during World War II when Camp Tarawa temporarily held troops on Parker Ranch. In September 1946 the land used for the old maneuver area and camp was returned to the ranch, and a smaller Lalamilo Firing Range used until 1953. Since coastal areas were developed into tourist resorts, military areas were moved inland to more remote locations. The only road access is via the narrow Saddle Road (Hawaii Route 200), which is paralleled by a tank trail. Heavy equipment is either flown into Hilo, or else shipped via barge to Kawaihae Harbor, about 40 miles away on the Saddle Road. Because of this remoteness, the area is used mostly for short training sessions.

- **PTA Facilities:** The barracks for about 2,000 troops were constructed in April 1955 from prefabricated buildings used in World War II. The support area includes 600 acres of logistic and administrative facilities. In July 2006 an additional 24,000 acres were purchased from Parker Ranch in an area known as Keʻāmuku. The realignment of the Saddle Road is planned to bypass the Keʻāmuku addition. PTA has a 51,000-acre impact area used for bombing and gunnery practice, refurbished in March 2009 to allow helicopter training. There are approximately 32,000 acres of land level enough for large maneuvers, more than twice the area available on Oʻahu. Its remoteness allows a wide range of weapons to be used. The 25th Infantry Division and 3rd Marine Regiment often use the base for four to six-week training periods.

  Weapons such as the Davy Crockett nuclear rifle (with dummy warheads) and depleted Uranium have been used at PTA. After initial denials, an investigation concluded the spotting rounds used in the 1960s. Measurements detected radiation, but reportedly not above life-threatening levels.

- **Environment:** Vegetation varies from sparse grassland and low shrubs to open māmane forest. Despite the volcanic terrain, some of the areas contain protected wildlife. Within the borders of the training area, ten different endangered species can be found. These include the native Hawaiian mint honohono (*Haplostachys haplostachya*) and the shrub 'kio'ele (*Kadua coriacea*). This area has more endangered species than any other US Army installation. The northeastern portion of the site near Mauna Kea provides habitat for the endangered bird Palila (*Loxioides bailleui*).

  Several archaeological sites have been found in the training area, including the Bobcat Trail Habitation Cave, listed in the National Register of Historic Places. To reduce fire danger and damage from feral goats, areas were fenced.

- **Plans relating to PTA:**

**Pōhakuloa Training Area Army Defense Environmental Restoration Program Installation Action Plan**[114]**:** The plan identifies environmental cleanup requirements at each site or area of concern (AOC), and proposes a comprehensive, installation-wide approach, along with the costs and schedules associated with conducting investigations and long-term management (LTM), and taking the necessary remedial actions (RA). The installation consists of 108,800 acres and is located 32 miles west of Hilo and 27 miles southeast of Waimea, which is the closest city to PTA. The installation extends 6,800 feet up Mauna Kea and 9,000 feet up Mauna Loa. Elements of this plan consider:

- Installation Site Types with Future and/or Underway Phase. 1. Fire/Crash Training Area, 2. Landfill, 3. Maintenance Yard, 4. Spill Site Area.
- The most widespread contaminants of concern: Petroleum, Oil and Lubricants (POL)
- Community interest was solicited in 2009 for anyone interested in being part of a Restoration Advisory Board (RAB) for these restoration projects; however it was determined by the lack of response that the community expressed no sufficient, sustained interest in a RAB.

**Final Pōhakuloa Training Area Firing Range Baseline Human Health Risk Assessment for Residual Depleted Uranium**[115]: The Baseline Human Health Risk Assessment (BHHRA) presents an evaluation of the potential health impacts to persons from exposure to depleted uranium (DU) resulting from the presence of Davy Crockett spotter round bodies (SRB) found on the Pōhakuloa Training Area (PTA). The result of this evaluation is that all potential upper bound risks to hypothetically exposed people are well below US Environmental Protection Agency (USEPA) acceptable risks. No significantly increased risks for the human receptors considered in this document exist at PTA. As a result, no adverse human health impacts are likely to occur as a result of exposure to the uranium present in the soil at PTA.

**Analysis of Fire History and Management Concerns At Pohakuloa Training Area**[116]: This plan discusses the history of fires in the area, their causes and damaging effects to native flora and fauna, and the effect of climate change on future fire risks. The plan concludes that the Army's primary fire management objective for the near future should be the completion of a large-scale firebreak that extends completely across Pu'u Anahulu between the Keamuku and the 1859 lava flows.

**Rare Plants of Pohakuloa Training Area, Hawai'i:** This report introduces the physical features of PTA, summarizes major threats to plant species of the installation, outline and illustrate information concerning each taxa, and provide an updated list of species inhabiting the installation.

**Plant Communities of Pohakuloa Training Area, Hawai'i:** The report briefly introduces the physical features of the PTA, describe the ecological characteristics of each of the plant communities delineated on the vegetation map, and provide an ecological checklist for the various communities.

# Current Tools and Alternative Strategies for Managing Wao Resources

## Public Lands and Acquisitions

**Public Lands**

114 http://aec.army.mil/usaec/cleanup/HI-Pohakuloa.pdf
115 http://www.garrison.hawaii.army.mil/du/reports/PTA%20BHHRA%20Report%20Rev%202.pdf
116 http://www.cemml.colostate.edu/assets/pdf/tps02-02.pdf

Most of the Hāmākua Planning Area's sensitive mauka lands are protected either by State or Federal ownership or by regulation (e.g., privately owned lands in the State land use conservation district).

**Acquisition Resources:** Options for acquiring fee simple or conservation easements to protect Wao resources include:

**DLNR DOFAW Legacy Lands Conservation Program (LLCP)[117]:** The LLCP provides grants to local organizations and agencies seeking to acquire land and easements for Hawai'i's unique and valuable resources, including watersheds, natural areas, habitat, open spaces, and scenic, recreational, and public hunting resources.

**USFWS Recovery Land Acquisition (RLA) Program[118]**: RLA grants provide funds to states for the acquisition of habitat in support of approved recovery goals or objectives for federally listed threatened or endangered species.

**USFWS Habitat Conservation Plan Land Acquisition Program:** The HCP Land Acquisition program funds land acquisitions that support recovery of threatened and endangered species

**DLNR DOFAW Forest Legacy Program (FLP)[119]:** The Hawai'i Forest Legacy Program is a federal USDA Forest Service program that identifies important private forest lands that are threatened by development or fragmentation and purchases or secures conservation easements from interested landowners. Since 1994, the FLP has protected over 46,000 acres in Hawai'i (20,000 via easements).

**Public Access, Open Space, and Natural Resource Preservation Fund (PONC)[120]: County Charter section 10-15** specifies that the County Council shall appropriate a minimum of two percent of the certified real property tax revenues to the PONC fund.

## Federal Management

**Hakalau Natural Wildlife Refuge**: was established in 1985 by the US fish and Wildlife Service to protect and manage endangered Hawaiian forest birds and their rain forest habitat. It consists of 32,733-acres and supports a diversity of native birds and plants. Eight of the 14 native bird species occurring at Hakalau are endangered. Thirteen migratory bird species and 20 introduced species, including eight game birds, as well as the endangered 'ope'ape'a (Hawaiian hoary bat) frequent the refuge. Twenty-nine rare plant species are known from the refuge and adjacent lands. Twelve are currently listed as endangered. Two endangered lobelias have fewer than five plants known to exist in the wild.

Hakalau Forest NWR contains some of the finest remaining stands of native montane rain forest in Hawai'i. The slopes below 4,000 feet receive very high rainfall - 250 inches annually. Bogs, fern patches, and scrubby forest dominate this area which is dissected by numerous deep gulches. Rainfall decreases to about 150 inches at elevations above 4,500 feet, where majestic koa and red-blossomed 'ōhi'a trees form a closed-canopy forest. Further upslope, above 6,000 feet, rainfall decreases to 100 inches or less and native forest merges into abandoned pastureland where alien grasses and weeds, introduced as forage for cattle, are the dominant vegetation. Since 1989, over 400,000 koa, 'ōhi'a, and other native plants have been planted in this area as part of the refuge's reforestation program.

**Proposed Hakalau Natural Wildlife Refuge Expansion**[121]: The Service is proposing to protect additional habitat for endangered forest birds, waterbirds, plants, and other native species and special habitats by

117 http://hawaii.gov/dlnr/dofaw/llcp
118 http://www.fws.gov/pacificislands/Publications/RLA%20Fact%20Sheet%20May%202010.pdf
119 http://www.state.hi.us/dlnr/dofaw/Legacy and http://www.fs.fed.us/spf/coop/programs/loa/flp.shtml
120 http://records.co.hawaii.hi.us/Weblink8/browse.aspx?dbid=1&startid=13770

expanding the Refuge acquisition boundary by up to 29,973 acres of land to the Hakalau Forest Unit and Kona Forest Unit.

Lands under consideration for addition to the Hakalau Forest Unit include a 13,130-acre Koa Forest property, the 2,230-acre Maulua Gulch property, and the 4,469-acre Kūkaʻiau Ranch property. According to the Environmental Impact Statement for the project:

- The purposes of the proposed Hakalau Forest NWR additions reflect the core mission of the Service to protect wildlife resources of national importance and the purposes for which the units of the existing Refuge were established.

- Under National Wildlife Refuge System (Refuge System) policy, lands acquired for an existing refuge must incorporate the primary purposes for which the existing refuge was established. Thus, the primary purposes for the Hakalau Forest NWR would also apply to the proposed additions, if they are acquired by the Service. The purposes of Hakalau Forest NWR, established on October 29, 1985, are ". . . to conserve (A) fish or wildlife which are listed as endangered species or threatened species . . . or (B) plants . . ." (Endangered Species Act of 1973, as amended, 16 U.S.C. 1534).

Acquisition of the currently proposed lands would have additional benefits including:

- Conservation, enhancement, and restoration of aquatic resources, including streams and bogs;

- Protection, enhancement, and restoration of other native habitats, including lava tubes and lava tube skylights; and

- Potential enhancement of opportunities for compatible wildlife-dependent visitor uses.

- Conservation of lowland coastal habitats would also help maintain the rural character of Hawaii's north shore by precluding subdivision and development of the lands that are ultimately purchased for inclusion in the Refuge.

- The Refuge expansion would protect, enhance, and restore native montane forests, bogs, streams, lava tubes, and lava tube skylights in perpetuity. Protection and management of these areas would allow the Service to contribute to the recovery of endangered and threatened species and to support other native plants and animals.

## State Management

**DLNR Division of Forestry and Wildlife (DOFAW)[122]:** DOFAW manages watersheds, native ecosystems, forestry, and recreation in Hawaiʻi's forests. Responsibilities include permitting, trails (Nā Ala Hele), hunting, camping, forest reserves, natural area reserves, fire management, and conservation and stewardship programs.

Pursuant HRS Chapter 183 and HAR Chapter 104, in the Forest Reserves, DOFAW provides recreational and hunting opportunities; watershed restoration; native, threatened, and endangered species habitat protection and management; and fire protection among many other things. The public is generally welcome into any forest reserve provided it is not dangerous or detrimental to human life or sensitive resources. State Game Management areas are managed by DOFAW for game production. Hunting seasons and bag limits provide maximal sustained public hunting opportunities and benefits.

121 http://www.fws.gov/hakalauforest/Hakalau%20Forest%20NWR%20FInal%20LPP-EA.pdf
122 http://hawaii.gov/dlnr/dofaw

**Hawai'i Forest Reserve System[123]:** Management of the Hawai'i Forest Reserve System is guided by the Hawai'i State Constitution, Hawai'i Revised Statutes Chapter 183, and Hawai'i Administrative Rules Chapter 104. Through these directives DOFAW focuses its resources to protect, manage, restore, and monitor the natural resources of the FRS. Keeping with the original intention of the FRS, DOFAW provides recreational and hunting opportunities; aesthetical benefits; watershed restoration; native, threatened, and endangered species habitat protection and management; cultural resources; and fire protection among many other things.

**DLNR Division of Conservation and Resource Enforcement (DOCARE)[124]:** DOCARE is responsible for enforcement activities of the Department of Land and Natural Resources, including State lands, State Parks, forest reserves, and Conservation districts. The division also enforces hunting regulations. All hunters are required to have a valid Hawai'i hunting license on their person to hunt or have a bagged game mammal in their possession. Hunting licenses may be purchased online, from any DOFAW office, or from any registered hunting license vendor. All hunting license applicants must show proof of having successfully completed a hunter education course that is recognized by the National Hunter Education Association.

**Natural Area Reserves (NARs)[125]:** The statewide Natural Area Reserves system was established by the legislature to preserve in perpetuity specific land and water areas that support communities of natural flora and fauna as well as geological sites in Hawai'i . The system consists of twenty reserves on five islands, encompassing 123,431 acres of the State's most unique ecosystems. The diverse areas found in the NARS range from marine and coastal environments to lava flows, tropical rainforests, and even an alpine desert. The reserves also protect some of the major watershed areas which provide our vital sources of fresh water. The Natural Area Reserves System is administered by the Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW). Currently, management teams are working to control the encroachment of non-native plants and animals that threaten the existence of the natural biota on the reserves. There are eight reserves on Hawai'i Island.

- **Kipuka 'Ainahou Nene Sanctuary:** the sanctuary was officially established in 1974. The Kipuka 'Ainahou State Nene Sanctuary has about 38,000 acres and extends from Saddle Road to the flank of Mauna Loa on State owned land. Elevation is between 6,000 and 9,000 feet above sea level.

- **Mauna Kea Ice Age Natural Area Reserve[126]:** consists of 3,894 acres and was established in 1981. It consists of sparsely vegetated cinder and lava deserts on the southern summit flank of Mauna Kea, and includes two rare communities: an invertebrate-dominated aeolian desert and the state's only alpine lake. Important archeological and geological features are also present.

- **Laupāhoehoe Natural Area Reserve[127]:** consists or 7,894 acres and was established in 1983. The Reserve includes examples of wet montane forests of 'ohi'a and koa. The poorly drained portions contain wet grasslands and small montane lakes. Numerous streams run through the Reserve. Hakalau National Wildlife Refuge is adjacent to Laupāhoehoe Reserve, and protects habitat for several endangered forest birds known to occur in Laupāhoehoe as well. Five native natural communities can be observed in the Laupāhoehoe Reserve, including a tall-stature koa/`ohia forest in both montane and lowland zones, `ohi'a/hapu`u (Cibotium spp.) forest, Carex alligata wet grassland, and non-native dominated patches.

123 http://www.state.hi.us/dlnr/dofaw/frs/index.htm
124 http://hawaii.gov/dlnr/docare/index.html
125 http://hawaii.gov/dlnr/dofaw/nars
126 www.hawaii.gov/dlnr/dofaw/nars/reserves/big-island/maunakeaiceage/
127 www.hetf.us/page/laupahoehoe/

**Kalōpā State Recreation Area & Forest Reserve**[128]: This 100-acre State park adjoins an additional 500 acres (200 ha) in the Kalopa Forest Reserve. The park is at an elevation of 2,000 feet and includes a 0.7 mi. walking loop through a forest of native ʻōhiʻa lehua trees. A number of rare plants can be found in the arboretum area, including endangered loulu palms, as well as a number of rare native hibiscus.

**Department of Hawaiian Homelands (DHHL), ʻĀina Mauna Legacy Program**[129]: The ʻĀina Mauna Legacy Program serves as a guide as DHHL moves forward in managing the Humuʻula/Piʻihonua area to conserve its legacy for future generations while also serving as an economic resource. The lands of Humuʻula and Piʻihonua represent the most important native forest areas remaining in the DHHL trust. The area serves as valuable habitat to many native and endemic species. The area's proximity to Mauna Kea also makes it a valuable cultural resource. These lands have the potential for serving as a sustainable native forest and land unit by simultaneously providing environmental, economic and social benefits to the trust and its beneficiaries in perpetuity.

The mission of the ʻĀina Mauna Legacy Program and its implementation is to protect approximately 56,000-acres of native Hawaiian forest that is ecologically, culturally and economically self-sustaining for the Hawaiian Home Lands Trust, its beneficiaries and the community. The ultimate long-term goal for DHHL is an economically-sustainable, healthy native forest ecosystem at Humuʻula/Piʻihonua.

- Goal 1: Develop an economically self‐sustaining improvement and preservation program for the natural and cultural resources (invasive species eradication and native ecosystem restoration) and implementation strategy.
    - The focus of the `Āina Mauna Legacy Program is on:
        - Restoration and enhancement of DHHL trust resources;
        - Identify immediate and future opportunities for DHHL beneficiaries;
        - Removal of invasive species ‐ gorse, etc.;
        - Conserve natural and cultural resources and endangered species;
        - Address reforestation and restoration of the ecosystem;
        - Develop revenue generation, reinvestment in land to sustain activities;
        - Provide educational and cultural opportunities;
        - Identify and secure partners to sustain activities;
        - Identify opportunities for alternative/renewable energy projects; and
        - Be a lead and/or model for others to engage in ecosystem restoration in a culturally sensitive manner based on partnerships to develop a self‐sustaining model
- Goal 2: Develop an outreach program to gain interest, participation, and support from the Hawaiian Homes Commission, DHHL Staff, beneficiaries groups, cultural practitioners, natural resource scientists, and the broader community for the Legacy Program and its implementation.

128 http://www.hawaiistateparks.org/parks/hawaii/index.cfm?park_id=45
129 http://dhhl.hawaii.gov/wp-content/uploads/2011/05/Aina-Mauna-Legacy-Program-Pre-Final-Executive-Summary.pdf

Various specific actions are listed in this project that relate to protecting and enhancing natural resources, including eradicating invasive species (e.g., gorse and ungulates) and native forest restoration.

- **Humu'ula Game Management Pilot Project**[130] (currently soliciting DHHL beneficiary input): The purpose of this demonstration game management pilot project is to manage feral (wild) sheep on DHHL lands bordering the Saddle Road, restore native vegetation on nearby pu'u, and conduct research that will help direct future decisions about managing feral sheep and other game animals on DHHL lands.

### State Conservation District

The majority of mauka conservation lands are publicly owned and protected, apart from some lands owned by Kamehameha Schools and the Bishop Estate. The parcels in the Protective and Resource conservation subzones of the State Conservation District, includes areas for:

- Protecting watersheds and water sources
- Providing wilderness
- Conserving indigenous or endemic plants, fish, and wildlife, including those that are threatened or endangered
- Preventing floods and soil erosion
- Forestry
- Open space areas whose existing openness, natural condition, or present state of use, if retained, would enhance the present or potential value of abutting or surrounding communities, or would maintain or enhance the conservation of natural or scenic resources
- Areas of value for recreational purposes.

Uses other than those associated with managing natural resources are prohibited in the Protective subzone. In the Resource subzone, a single-family residence on each legal lot of record is permitted with approval of the Board of Land and Natural Resources.

In the State conservation district, there is no County zoning, per se, so the DLNR has jurisdiction on uses and activities, which require a conservation district use permit from the Board of Land and Natural Resources or other written approval from the Department of Land and Natural Resources Office of Conservation and Coastal Lands, pursuant HAR section 13-5.

State land use district boundary amendments involving lands in the conservation district, land areas greater than fifteen acres, or lands delineated as important agricultural lands are processed by the Land Use Commission, but following HAR section 13-5-40(b), public hearings do not have to be held in the judicial district in which the land is located. State land use district boundary amendments involving other lands are processed by the Planning Department, Planning Commission, and County Council, pursuant to Planning Commission Rule 13.

### Collaborative Partnerships

130 http://dhhl.hawaii.gov/po/beneficiary-consultation/2013-beneficiary-consultations/humuula-hunting/

**Mauna Kea Watershed Alliance[131]:** The Mauna Kea Watershed Alliance (MKWA) encompasses approximately 484,000 acres above the 2000' elevation on the mountain of Mauna Kea. The MKWA seeks to manage critical watersheds on a landscape-level by initiating planning for priority areas with the goal of implementing management actions for threats such as feral ungulates, fire, and invasive alien weeds. Coordinated management of these watershed lands is critical to sustain adequate quality and quantity of water and provide important habitat for a wide diversity of native plants and animals, including many that are endangered.

**Laupāhoehoe Experimental Tropical Forest (Hawai'i Experimental Tropical Forest, HETF)[132]:** The Hawai'i Experimental Tropical Forest was established in 2007 to serve as a center for long-term research and a focal point for developing and transferring knowledge and expertise for the management of tropical forests. The HETF is located on the Island of Hawai'i and is divided into two units: the Laupāhoehoe Wet Forest Unit and the Pu'u Wa'awa'a Dry Forest Unit.[133]

- **The Laupāhoehoe Wet Forest Unit** totals 12,387 acres (5,134 ha). The HETF overlays existing Hawai'i State land designations. The Pacific Southwest Research Station in Hilo, Institute of Pacific Islands Forestry works with the State of Hawaii, Department of Land and Natural Resources in the management of the experimental forest.

**Three Mountain Alliance:** is a public and private partnership working together to protect and restore more than 1 million acres of Hawaii's best remaining native ecosystems. This partnership was formed in 2008 to protect watersheds and natural resources across the slopes of Mauna Loa, Kīlauea and Hualalai volcanoes. The partners collaborate closely across ownership boundaries to achieve landscape-scale protection of native habitat and rare and endangered species, forest restoration, weed control, and to conduct education and outreach.

Three Mountain Alliance partners include:

- Kamehameha Schools
- National Park Service (Hawai'i Volcanoes National Park)
- US Fish & Wildlife Service
- US Forest Service
- US Geological Survey, Pacific Island Ecosystems Research Center
- USDA Natural Resources Conservation Service
- State Department of Land and Natural Resources
- State Department of Public Safety
- The Nature Conservancy of Hawai'i
- Other contributors include the Hawaiian Silversword Foundation, and the University of Hawai'i Pacific Cooperative Studies Unit.

131 http://hawp.org/partnerships/mauna-kea-watershed/
132 http://www.hetf.us/page/home/
133 www.puuwaawaa.org

## Financial Support for Private Wao Management

In addition to public initiatives, there are opportunities for private owners of forested areas to improve resource management:

- **US FWS Partners for Fish and Wildlife**[134]: The Partners for Fish and Wildlife program provides technical and cost share funding for the voluntary restoration of native habitats on private lands and Hawaiian Homelands to achieve long term benefits to threatened and endangered species. Projects can include, but are not limited to, construction of fences to exclude feral ungulates; control of alien plants, mammalian predators, and feral ungulates; out-planting of native plants; and restoration of native ecosystem elements, such as hydrology and micro-habitat conditions.

- **Wildlife Habitat Incentives Program (WHIP)**[135]: This USDA NRCS program funds the restoration of unique native habitats, especially for Hawai'i's native forests and threatened and endangered plant and animal species.

- **DLNR DOFAW Natural Area Partnership Program (NAPP)**[136]**:** The NAPP provides matching funds for the management of private lands and waters that are dedicated to conservation, including areas with intact native Hawaiian ecosystems, essential habitat for endangered species, and areas within the protective (P) subzone of the Conservation District. NAPP can support a full range of management activities to protect, restore or enhance significant native resources or geological features, including the development of longrange management plans.

- **Hawai'i Forest Stewardship Program (FSP)**[137]: Hawai'i's **Forest Stewardship Program** (FSP), administered by the Department of Land and Natural Resources, Division of Forestry and Wildlife (DNLR-DOFAW), provides technical and financial assistance to owners of nonindustrial private forest land that are interested in conservation, restoration, and/or timber production. The State also developed a *Forest Stewardship Handbook*[138] to provide more detailed information about how landowners can access the program. Below are some examples for FSP participants in the Planning Area:

    - **Hāmākua Hardwoods**: This project is a stand of mixed forest of high-value tropical hardwoods to supply local markets and woodworkers. Enrolled 2001.

    - **H&G Koa Enterprises**: This project is a 10-acre plantation of acacia koa trees in mauka Pa'auilo. The project's primary objectives are: to produce quality koa timber for local industry consumption; to establish superior seed sources for future koa production; and to research various silvicultural treatments of koa. Enrolled 1998.

    - **Kapulena Orchards**: The owner is replacing his declining macadamia orchard with a productive agroforestry system that integrates high-value timber species, improved mac nut trees, a productive silvopastural area for horses, a native 'ohia forest, and a wildlife habitat corridor. The 42-acre property is located west of Honoka'a in the ahupua'a of Malanahae. This project's intent is to achieve sustainability objectives without the use of inorganic fertilizers and herbicides. Enrolled 1996.

134 http://www.fws.gov/pacificislands/partners.html
135 http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/whip
136 http://hawaii.gov/dlnr/dofaw/napp
137 http://hawaii.gov/dlnr/dofaw/forestry/fsp
138 http://hawaii.gov/dlnr/dofaw/forestry/fsp/Final%20FSP%20handbook%203%206%2007.pdf

- **'O'ōkala Community Forest**: in July 2000, BLNR approved a cooperative agreement involving the Department, the Laupāhoehoe Train Museum, the North Hilo Community Council, and the Laupāhoehoe High School to establish a demonstration forest for the community. Approximately 13 acres have been planted with high-value tropical hardwoods and the project is intended to serve as a "living laboratory" for Laupāhoehoe High School students. Enrolled 2002.

- **Umikoa Ranch**: This project is reforesting 850 acres of former pastureland at the elevation of 4,000-5,000 feet at the northeast slope of Mauna Kea. The intent is to create a large, concentrated tract of healthy koa. Enrolled 1996.

- **County Agricultural/Ranching Land Dedication Program[139]:** The agricultural or ranching land dedication program, referred to as the agricultural dedication program, was designed to encourage the agricultural use of land on a long term basis by offering "tax breaks" in the form of lower assessments or valuations to persons engaged in agricultural activities. A lower assessment usually means a lower real property tax bill for the property owner.

  Dedications are provided by Section 19-55, Article 7, Chapter 19, of the Hawaii County Code, as amended. A special land reserve is established to enable the owner of land within an agricultural district, a rural district, a conservation district, or an urban district to dedicate the land to a specific ranching or other agricultural use, such as truck crops, orchards, forestry, or aquaculture and to have the land assessed or taxed at its value in such use. The minimum term for any dedication is ten years, except that land that is located within an agricultural district may be dedicated for a twenty-year period and be subject to an even lower assessment or valuation.

- **County Native Forest Dedication[140]:** Pursuant HCC section 19-59, property owners (or lessees with 20 year or longer leases) who preserve native forest for 20 years or longer are eligible for significant property tax savings. To be eligible, parcels must be three acres or larger, covered with 60% or greater native species forest cover, and include at least 2.75 intact and contiguous acres of native forest. The owner shall be assessed at the value of the lowest agricultural use category that the land could qualify for if it were to be put into agricultural use.

## Other Groups, Programs, and Projects

**Ka'ahahui 'O Ka Nāhelehele[141]** is a non-profit 501(c)3 affiliate of the volunteer Dryland Forest Working Group (DFWG) dedicated to supporting the precious few remaining remnant dryland forest habitats. Their mission is to advocate for the perpetuation of Hawaii's dryland ecosystems, and the many often endangered plants, birds and insects that live within these communities.

**'Ahahui Mālama I Ka Lōkahi[142]** is a nonprofit coalition of Hawaiians and non-Hawaiians devoted to the preservation of native species and ecosystems, and the importance of their relationship to Hawaiian culture. The organization was founded in 1994 to provide a Hawaiian voice in favor of conservation at a time when scientists and hunters were in conflict over forest management. They serve the Hawaiian community and also offer a voice that reflects the scientific basis and resource management practices of the greater conservation community in the Hawaiian Islands.

**Kamehameha Schools**: The Mālama 'Āina Program (Natural Resource Management Program): The Kamehameha Schools Mālama 'Āina Program is currently conducting vegetation surveys of the mauka parcels to inform future natural resource management efforts on Kamehameha Schools lands located in

139 http://www.hawaiipropertytax.com/pdffiles/agriculture_program.pdf
140 http://www.hawaiipropertytax.com/forms/pdffiles/NATIVE%20FOREST%20DEDICATION%20REQUIREMENTS.pdf
141 http://www.drylandforest.org/
142 http://www.ahahui.net/

mauka Hāmākua. Kamehameha Schools is presently involved in current and future regional planning and management efforts being engaged in by the Mauna Kea Watershed Alliance.

**The Nature Conservancy**[143] is a global, nonprofit conservation organization working to protect ecologically important lands and waters for nature and people.

**Mauna Kea Forest Restoration Project, Adopt an Acre on Mauna Kea**[144]**:** The Mauna Kea Forest Restoration Project (MKFRP) is a DLNR program actively restoring the high-elevation mamane-naio dry forest of Mauna Kea, and expanding bird habitat for the critically endangered Palila. Volunteers are vital to the effort through seed collection, propagation, out planting, and seedling maintenance. MKFRP offers various volunteer opportunities from day trips, to weekend or even week-long camping trips.

**Hawai'i Forest Institute**[145] is a nonprofit incorporation organized by the Hawai'i Forestry Industry Association. The mission of the Hawai`i Forest Institute is to promote the health and productivity of Hawaii's forests through forest restoration, educational programs, information dissemination, and support for scientific research.

**Hawai'i Conservation Alliance (HCA)**[146] is a cooperative collaboration of conservation leaders representing nineteen government, education, and non-profit organizations. They are responsible for managing the biodiversity of Hawai'i's lands and waters. They also represent people who work and use the land and water for social, cultural, and agricultural purposes.

**Hawai'i Invasive Species Council (HISC)**[147] was established for the special purpose of providing policy level direction, coordination, and planning among state departments, federal agencies, and international and local initiatives for the control and eradication of harmful invasive species infestations throughout the State of Hawai'i and for preventing the introduction of other invasive species that may be potentially harmful. (HRS 194-2). This council is under the jurisdiction of the State of Hawai'i Department of Land and Natural Resources.

**Big Island Invasive Species Committee (BIISC)**[148] is a voluntary partnership of private citizens, community organizations, businesses, landowners, and government agencies to address invasive species issues on the island of Hawaii. BIISC's mission includes education, early detection, rapid response, control and eradication of invasive pests threatening agriculture, native ecosystems, industry, human health or the quality of life within Hawai'i County.

BIISC partners: Hawai'i County, Hawai'i Department of Agriculture, Hawai'i Department of Land and Natural Resources: Division of Forestry and Wildlife, Hawai'i Volcanoes National Park, Kamehameha Schools, Kohala Watershed Partnership, Malama O Puna, Office of Hawaiian Affairs, The Nature Conservancy of Hawai'i, Three Mountain Alliance, U.S. Fish and Wildlife Service, U.S. Geological Survey, U.S.D.A. Forest Service, University of Hawai'i College of Tropical Agriculture & Human Resources

**Coordinating Group on Alien Pest Species (CGAPS)**[149] is a voluntary group including state, federal, and county agency directors and managers, nonprofit directors, and chairs and managers of island-based

143 www.nature.org
144 http://hawaii.gov/dlnr/rain/Volunteer-at-Mauna-Kea-Forest-Restoration-Project and http://heea.org/core/item/page.aspx?s=106957.0.0.89929
145 http://www.hawaiiforestinstitute.org/
146 http://hawaiiconservation.org/
147 http://www.hawaiiinvasivespecies.org/hisc/
148 http://www.hawaiiinvasivespecies.org/iscs/biisc/
149 http://www.hawaiiinvasivespecies.org/cgaps/pdfs/cgapsvisionactionplan200912.pdf

invasive species committees. CGAPS benefits from the knowledge and guidance of world-renowned scientists who are dedicated to protecting Hawai'i from invasive species. Since its formation in 1995, CGAPS has met quarterly and has published strategic plans identifying priority invasive species needs.

**The Hawaiian Bat Research Cooperative** is a partnership composed of government agencies, nonprofit organizations, and private landowners, was formed to prioritize and fund needed bat research.

**The Hawaiian Forest Bird Recovery Team** is a cooperative effort involving multiple government agencies and nonprofit organizations that guide forest bird conservation work, including the development of the Draft Revised Recovery Plan for Hawaiian Forest Birds and five-year implementation plans for identified critical species, captive propagation, annual forest bird surveys, as well as other identified research and management projects.

## Wao Resources Analysis Table

The following Table shows the process used in evaluating the findings from the research and consultations throughout the analysis process up to this point. The Table clearly identifies:

- **Challenges** (1st column) identified in the analysis.
- **Support/Rationale** (2nd column) lists Policy Support (applicable governmental policies) and Plan Support (how the issue relates to researched plans/studies). This column will generally link back to the associated sections of the analysis document where that strategy support is located.
- **Possible CDP Strategy Direction** (3rd column) – the general strategy direction the CDP will likely be taking in addressing the challenge in order to meet the community's objectives.

The Strategy Directions are categorized into one of the four following CDP Strategy Types:

  - **Policy**: establish policy with policy maps (Official Land Use Map) and policy statements related to land use, watersheds and natural features, public improvement priorities, government services, and public re/development;
  - **Advocacy:** recommend advocacy with federal and state policy makers and agencies for policies, regulations, incentives, programs, and action;
  - **Community-based, Collaborative Resource Management (CBCM)**: including research, place-based planning and program design, and program implementation;
  - **Easement and Acquisition (E&A):** identify easement and acquisition priorities by fee simple ownership or through conservation easements;

At times, the CDP Strategy Direction will relate to other Analysis sections not yet complete (Community and Economy). In those cases, the table may refer to the appropriate section still under development, but will not contain a link to that section until that section is complete.

This is a working document, and the **Possible CDP Strategy Directions** are intended to be preliminary. We expect community feedback that may provide additional information that could further inform our analysis.

**Table 4. Wao Resources Analysis Table**

| Challenges | Support/Rationale | Possible CDP Strategy Direction |
|---|---|---|
| **Native Species, Biodiversity, & Critical Habitat Protection** | **Plan Support:** The majority of wao plans and studies reviewed | **Land Use Policy Map**: Support existing protections by designating Hāmākua's Wao |

| | | |
|---|---|---|
| | call for:<br>▪ Protecting and enhancing native ecosystems<br>▪ Restoring and plant native species in priority areas and buffer areas<br>**Policy Support:**<br>▪ General Plan: Native Species Protection: 8.2(d), 8.3(o), 8.4(a) ; Native forest reestablishment incentives: 8.3(x) | sector as open space to be preserved and protected.<br>**Policy**: County/State/Federal partners should develop educational information about landowner incentives (see also Financial Support for Private Wao Management)<br>**Policy:** County should enter into partnership with the Mauna Kea Watershed Alliance via MOU Process<br>**CBCM**: Form a Subcommittee of the CDP Action Committee dedicated to managing watershed/wao resources<br>▪ The Subcommittee will work with wao management partners to l identify appropriate critical habitat areas needing further protection as priority areas to protect through easement or acquisition mechanisms<br>**Advocacy:** Support the proposed Hakalau NWR Expansion Project<br>**E&A:** Once critical habitat areas are identified as priorities to protect, seek to use conservation easements or acquisition opportunities through funding sources such as PONC, etc. |
| **Invasive Species: Flora and Fauna** | **Plan Support:** Most plans reviewed identify invasive species as a major threat to wao resources<br>**Policy Support:**<br>▪ General Plan: 8.2 (d)<br>▪ State Policies: HRS 183-104 | **CBCM:** Form a CDP Action Committee Subcommittee or Community Hui for managing invasive species issues, partnering with Coordinating Group on Alien Pest Species, Big Island Invasive Species Committee |

Notes:

- Lands within the wao are primarily out of Hawai‘i County jurisdiction, and due to the fact that actions are outlined in several existing management plans to either eradicate invasive species in certain areas or manage their populations in order to minimize impacts, the CDP will likely only be able to provide partnership support in aiding in the eradication or management of invasive species.
- See the Public Access Section for more information on public access management in the Wao Region

# FOCUS AREA: KULA (AGRICULTURAL LAND) RESOURCE MANAGEMENT

This section of the analysis focuses on the management of the natural resources in Hāmākua's kula lands, including soil, watershed, and open space. **The Economy analysis focuses on the economic dimensions of Hāmākua's agricultural industry.**

## Hāmākua's Kula Assets and Challenges

**ASSETS**:

- There are approximately 348,384 acres of agriculturally zoned land in the district.
- Sugar, which once dominated the agricultural industry within the district, saw its end with the closing of the Hāmākua Sugar Company in 1994.
- Agriculture remains the economic mainstay and the regional cultural identity of the Planning Area's communities.
- Crops grown in the district include taro, flowers, ornamentals, vegetables, tropical fruit, cattle, dairy, macadamia nuts, bananas, coffee, tropical forestry, and specialty crops (i.e. 'awa, cacao).
- Cattle ranching utilizes vast acreage of grazing lands
- Significant State, County, and privately-owned lands available for agricultural leases.
- Agricultural Infrastructure (Lower Hāmākua Ditch, Hawai'i Beef Producers Slaughterhouse, Processing Capacity)
- Most agricultural water needs are met from rainfall or from a variety of potable and non-potable water systems, including the Lower Hāmākua Ditch. DWS charges a reduced rate for agricultural use, but non-potable agricultural use is one of the first uses to be restricted in times of shortage, when the irrigation needs are usually the highest.

Agricultural lands also provide important ecosystem and community services. Those in Hāmākua include:

- Fresh water supply, hydrological regulation, groundwater recharge, and water quality improvement
- Soil conservation
- Near shore water protection (e.g., reduced sedimentation and nonpoint source pollution)
- Hazard mitigation (e.g., less flooding through increased mauka recharge and slower downslope flow)
- Food (e.g., crops, pollination)
- Energy (e.g., hydroelectric, biomass, and biofuel)
- Lumber and wood for artisans
- Carbon sequestration by the soil and vegetation
- Aesthetics (e.g., open space, natural beauty, view planes).

**CHALLENGES**

- Idle Land: Over 60 percent of the land zoned for agriculture in Hāmākua is not being utilized for agricultural purposes.
- Approximately 76% of residential building permits issued since 2008 are located on Agriculturally-Zoned Land
- Unsustainable agricultural practices can create a negative impact on watersheds and downstream ecosystems.

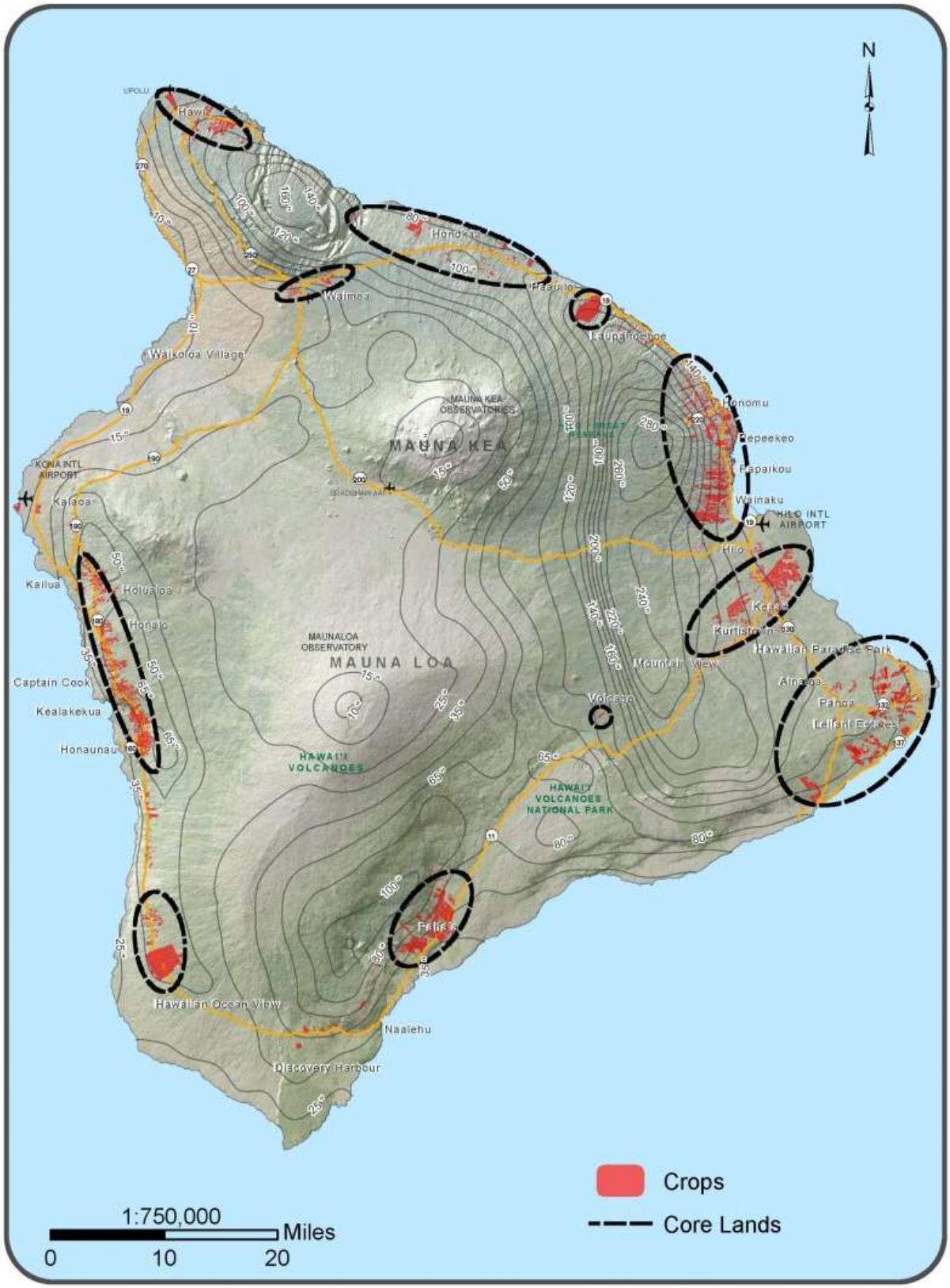
**2012 Hawai'i County Food Self-Sufficiency Baseline**[150]: The Hawai'i County Food Self-Sufficiency Baseline study was commissioned by the County of Hawai'i Research and Development Department to help inform the public and policy makers about the current status of food production on the island of Hawai'i in order to set a baseline from which to measure change in the islands local food system. It was prepared by the University of Hawai'i at Hilo's Geography and Environmental Studies Department in partnership with Island Planning.

Key findings related to management of agricultural lands in the Hāmākua CDP Planning Area include:

- The Planning Area's Kula region was an intensive agriculture area pre-contact.
- Today, the lands between Wainaku and Wailea-Hakalau, Around the Dairy in 'O'ōkala, and lands between Pa'auilo and Waipi'o Valley three (3) of Hawai'i Island's ten "core crop lands." Core crop lands are the lands from which additional food self-sufficiency is most likely to emerge because it is where the conditions that support sustained agriculture already exist.
- The Planning Area close to 30,000 acres in Eucalyptus, about 4,000 acres in macadamia nuts, over 2,500 acres in truck crops, over 2,500 acres in dairy, nearly 2,000 acres in tropical fruits, 851 acres in flowers, foliage, and specialty crops and 237 acres of bananas.
- Waipi'o Valley continues to be the center of Hawai'i Island's wetland taro with 51 acres in production.
- Many small farm opportunities (i.e., agricultural-zoned lots 20 acres or smaller) are scattered throughout the entire Planning Area.
- Approximately 31% of Hawai'i Island's pasture area is in the CDP Planning Area, totaling close to 198,000 acres.
- Big Island Dairy in 'O'ōkala is one of two remaining dairies in the State.
- County of Hawai'i acquired 4,400 acres in Hāmākua (the majority of which are in Pa'auilo and Kapulena) in payment of roll-back tax liabilities from the Hāmākua Sugar Company.
- Hāmākua's core agricultural lands have good access to water, including rainfall between Wainaku and Wailea-Hakalau, and the Lower Hāmākua Ditch system serving areas between Kukuihaele and Pa'auilo.

150 http://geodata.sdal.hilo.hawaii.edu/GEODATA/COH_Ag_Project.html

**Figure 5. Hawai'i County Core Crop Lands**



## Hāmākua CDP Community Objectives Relative to Kula

- **Protect, restore, and enhance watershed ecosystems**, sweeping views, and open spaces from mauka forests to makai shorelines, while assuring responsible public access for recreational, spiritual, cultural, and sustenance practices.

- **Protect and restore viable agricultural lands and resources. Protect and enhance viewscapes and open spaces that exemplify Hāmākua's rural character.**

## General Plan Kula Management Policies

The County General Plan is clear about the need to protect Hāmākua's agricultural lands and related resources:

**Preserve and Protect Agricultural Land and Open Spaces**

- 14.2.2(b): Preserve the agricultural character of the island.

- 14.2.2(a): **Identify, protect and maintain important agriculture lands** on the island of Hawaii.

- 2.3(a): Assist in the expansion of the agricultural industry through the **protection of important agricultural lands**….

- 2.3(s): Assist the further development of agriculture through the protection of important agricultural lands.

- 14.2.3(i): **Designate, protect and maintain important agricultural lands from urban encroachment**.

- 14.1.2(b): **Protect and encourage the intensive and extensive utilization of the County's important agricultural lands**.

- 14.2.3(a): Implement new approaches to preserve important agriculture land.

- 14.2.3(j): **Ensure that development of important agricultural land be primarily for agricultural use**.

- 14.2.3(s): **Important agricultural lands shall not be rezoned to parcels too small to support economically viable farming units.**

- 14.2.3(t): **Discourage speculative residential development on agricultural lands**.

- 9.3(x): **Vacant lands in urban areas** and urban expansion areas **should be made available for residential uses before additional agricultural lands are converted into residential uses.**

- 8.2(e): **Protect and effectively manage Hawai'i's open space**, watersheds, shoreline, and natural areas.

- 14.2.3(d): Agricultural land may be used as one form of open space or as green belt.

- 14.8.3(d): Zoning, subdivision and other applicable ordinances shall provide for and **protect open space areas**.

**Manage Watersheds for Flood Control and Soil Conservation**

- 5.2(e): **Reduce surface water and sediment runoff**.

- 5.2(f): **Maximize soil and water conservation**.

- 5.5.9.2(a): Improve and upgrade existing flood control measures as necessary.

- 5.5.9.2(b): **Continue proper soil conservation measures** to complement the existing systems.

- 5.3(e): Promote and provide incentives for participation in the Soil and Water Conservation Districts' conservation programs for developments on agricultural and conservation lands.
- 5.3(o): **Encourage and provide incentives for agricultural operators to participate in Soil and Water Conservation District Programs.**
- 5.3(n): Develop drainage master plans form a watershed perspective that considers non-structural alternatives, minimizes channelization, protects wetlands that serve drainage functions, coordinates the regulation of construction and agricultural operation, and encourages the establishment of floodplains as public green ways.
- 4.3(g): **Participate in watershed management projects** to improve stream and coastal water quality **and encourage local communities to develop such projects**.
- 8.3(l): Work with the appropriate State, Federal agencies, and private landowners to **establish a program to manage and protect identified watersheds**.
- 8.3(j): Encourage the protection of watersheds, forest, brush and grassland from destructive agents and uses.

## Previous Kula Planning for Hāmākua

### Planning Area Specific Plans/Studies

**Hāmākua Agriculture Plan: Sustaining Rural Hāmākua Through Agriculture**[151]**:** This 2006 community-based plan covers the area from the Maulua Gulch in North Hilo, to Waipi'o Valley in Hāmākua, and was developed as a pre-cursor to the CDP for the area. The plan makes the following recommendations relative to natural and cultural resources in the Kula (Agricultural Lands) zone:

*Land Use Goal 1: Identify and protect important agricultural lands and their buffer zones.*

- Urge Hawai'i County to identify and take steps to protect important agricultural lands in Hāmākua and their buffer zones.
- Create buffer zones between important agricultural lands and other land uses.

*Land Use Goal 2: Preserve agricultural lands for agricultural use.*

- Limit the non-agricultural use of agricultural land.
- Preserve Hāmākua's agricultural land for diversified agriculture.

*Environmental Goal 1: Address agriculture-related environmental concerns.*

- Protect Hāmākua's soil and water resources from chemical and other contamination.
- Encourage environmental protective practices in the selection and application of chemical pesticides, herbicides, and fertilizers.
- Identify soil and water contamination on former sugar lands and pursue bioremediation when found.
- Provide educational opportunities to agricultural producers regarding prevention and control of alien species.

151 Hāmākua Agriculture Plan can be found on the CDP website at: http://tinyurl.com/l5vznrj

- Provide education and informational resources to agricultural producers regarding County, State and Federal environmental regulations.
- Encourage environmental protective and responsible stewardship practices.

*Goal 2: Promote organic, healthy, and sustainable agricultural practices.*

- Encourage farmers and ranchers to use organic and sustainable agricultural practices.
- Encourage agricultural producers to take advantage of the market-driven opportunity to produce crops and livestock with organic and natural added value
- Raise school children's awareness of sustainable agriculture production in Hāmākua.

*Goal 3: Determine whether Genetically Modified Organisms (GMOs) have a place in Hāmākua agriculture.*

- Consider the potential risks and benefits of GMO crops before planting them in Hāmākua.
- Avoid contamination of crops, seed supplies, public lands, and native ecosystems by GMOs.
- Create opportunities for education in the Hāmākua community on the pros and cons of GMOs.
- Raise agricultural producers' awareness of their potential legal liability relating to GMOs.

**A Note on GMOs and the Hāmākua CDP*:*** The issue of GMO use in agriculture is complex, highly controversial, and extremely divisive nationally and locally. There is precedent for addressing GMO crops at the Hawai'i County Council Level, with bans on the use of GMO Kalo (Taro) and Coffee in Hawai'i County (Bill 361/Ordinance 08 154)[1] and a current attempt to prevent the introduction of any n ew transgenic, genetically modified crops, plants, seed, trees, fish, livestock, and other organisms into the County (Bill 79).[1] The County Council, and not the Hāmākua CDP, is the appropriate avenue to address issues of GMO in the CDP Planning Area.

**Hāmākua Farmer Bureau and Hāmākua Livestock Producer's Agriculture Plan:** This plan was developed in 2006 by the Hāmākua Farm Bureau and Livestock producers in response to the Hāmākua Agriculture Plan (above). Feeling that their input and feedback to the Hāmākua Agriculture Plan was not incorporated throughout the process, the Hāmākua Farm bureau and Livestock producers drafted their own plan to ensure that the collective recommendations of Hāmākua farmers and ranchers were heard.

This plan borrowed heavily from structure and content of the Hāmākua Agriculture Plan, and focused more on addressing land use policies, economic development and other pertinent areas and resources required to develop, promote, protect, and sustain agricultural in Hāmākua. The plan makes the following recommendations relative to natural and cultural resources in the Kula (Agricultural Lands) zone:

*Land Use Goal 1: Identify and protect important agricultural lands.*

- Work with Hawai'i County to identify and take steps to protect important Hāmākua Agricultural lands.

*Land Use Goal 2: Reserve Agricultural lands for agricultural use.*

- Allow agricultural related industries on agricultural land.
- Promote Hāmākua's agricultural land for farming, livestock production and aquaculture.

*Land Use Goal 3: Direct and manage growth.*

- Allow for the partition of existing agriculture lands to allow immediate family members to own the property and build homes dedicated for their ownership only; for a period of ten years, thereby leaving the balance of the land for continued sustainable agricultural production for multigenerational family farmers and ranchers.

- Recognize that farming and ranching routinely use family members to assist in farming and ranching practices, therefore provide zoning which encourage family members to live on or near the farm or ranch.

*Environmental Goal 1: Address agriculture-related environmental concerns.*

- Protect Hāmākua's soil and water resources.

- Encourage responsible stewardship practices

    - Promote the use of ongoing conservation programs with National Resources Conservation Service ("NRCS") and Hāmākua and Mauna Kea Soil & Water Conservation District for soil and water conservation.

    - Promote enrollment in the Soil and water conservation programs.

- Encourage composting and green waste processing.

    - Add large green waste container at Honoka'a transfer station to allow community members to recycle garden cuttings and other green waste.

    - Offer composting workshops to encourage farm and backyard composting.

*Environmental Goal 2: Promote market driven, natural & organic agricultural practices.*

- Increase the number of agricultural producers and ranchers who use sustainable agricultural practices.

- Support market driven agricultural producers who seek the opportunity to produce crops & livestock with organic and natural added value.

- Raise school children's awareness of sustainable agriculture production in Hāmākua.

Other environmental issues identified by this plan include:

- Farms and ranches are continuously faced with threats of new alien species and the control of alien species introductions.

- Overlapping governmental regulations (federal vs. state vs. county) without coordinated and accessible guidance between agencies is problematic.

- Farmers and ranchers will be increasingly vulnerable to other government regulations (i.e., Endangered Species Act, Right to Know laws, Clean Air Act, Clean Water Act, etc.) that may impact current practices.

**Kamehameha Schools Strategic Agricultural Plan (2009)**[152]: Kamehameha Schools owns approximately 36,235 acres of land in the Planning Area, about 8,955 acres of which are designated in the State Land Use Conservation District and approximately 27,280 acres in the State Land Use Agricultural District.

152 http://www.ksbe.edu/land/pdf/LAD_StrategicPlanWeb.pdf

The State Land Use Agriculture designated lands are leased for agricultural purposes, mostly for pasture, forest, truck crops, and orchards. Most of the lease agreements expire within the next 10 years. Kamehameha School's long-term agricultural goals include:

- Increase agricultural production for the local market
- Restore and revitalize traditional agricultural systems (loʻi, loko, iʻa, and dryland field systems)
- Explore agriculture research and development opportunities
- Contribute to a sustainable clean energy future for Hawaiʻi through education, energy efficiency gains and renewable energy initiatives
- Steward forestlands in consideration of the full range of ecosystem services and resource extraction activities – including native reforestation, traditional forest products, and energy production.

**Biofuels in Hawaiʻi: A Case Study of Hāmākua[153]:** This 2009 case study, sponsored by the Kōhala Center, and conducted through the Department of Urban and Regional Planning at the University of Hawaiʻi at Mānoa investigated the issues surrounding competing biofuel/biomass proposals involving the use of the approximately 30,000 acres of planted eucalyptus forest in the Planning Area. Hāmākua is of particular interest to biofuel businesses because of its topography, rich soil, abundant rainfall, land availability, and agricultural heritage.

The study team utilized an interdisciplinary approach, combining expertise in urban and regional planning, community development, and natural resource management. Methodology for the study involved three steps. First, the team conducted a review of existing literature on the relevant issues. Second, the study team interviewed 54 people organized into the following categories: 1) experts in energy, forestry, agriculture, and environmental management; 2) business leaders in forestry and energy; 3) proprietors of diversified agriculture, cattle ranching, and dairy farming operations; and 4) public and private sector professionals in the areas of energy, water, and community planning. Finally, the study team conducted a site visit of the Hāmākua region to gain firsthand experience of the issues and meet with local stakeholders in the community, business, and government.

The study identified the following key findings related the impacts of a biofuel industry to natural resource management in the Planning Area:

- It is undesirable, and also seemingly unlikely, for biofuel crops to be grown on prime agricultural lands. More upland areas, particularly those that have already been degraded by large-scale agriculture such as former sugar cane lands, may be a good complement to limit competition with niche crops.
- Best management practices (BMPs) influence the degree of environmental impacts. Best practices should be used to mitigate negative impacts such as soil erosion. However, many BMPs are situation specific, thus requiring research of the site and crop. Existing eucalyptus trees have been well researched and current proposals attempt to incorporate many BMPs. Nonetheless, most species of Eucalyptus trees have been found to be highly invasive and thus any proposal to expand the acreage of trees should also provide a long-term management plan.
- To preserve the ranching industry, which has been a driving force on Hawaiʻi Island for over 160 years, the Hawaiʻi Cattlemen's Council (HCC) has identified a number of ways to promote the industry's well being. One of the most important policies is "no net loss" of grazing capacity, particularly on State land. The specification of "State land" here is important because many ranches

153 http://www.durp.hawaii.edu/Library/Document%20pdf/Final_Draft_Biofuels_11_15_09.pdf

already depend on leased State land to maintain their current grazing capacity. Transfer of these leases from current ranching lessees to biofuel production firms could be devastating to the ranches losing land.

- Silvopastoral use, co-production of biofuel tree crops on grazing land. This may provide an opportunity to increase grazing capacity. For example, if areas that currently are not being grazed are slated for production of tree crops, and the understory is suitable for grazing, that would be a net increase in grazing capacity, which HCC might support. Parker Ranch is currently running Silvopastoral trials, which are relatively long-term endeavors that involve evaluating various types of trees, their spacing and corresponding fodder production, and grazing opportunities.

- Biofuel production and consumption is accompanied by significant environmental and social concerns. These concerns include potential competition between food and fuel crop production, environmental concerns related to agricultural production, and the concerns surrounding conversion processes and end uses.

- The main suggestions given for the best use of fallow land in Hāmākua were:
    - Agriculture–diversified or ranching
    - Forestry or silvopasture
    - Conservation or fallow
    - Limited development

## County and State Level Plans

**County of Hawai'i Agriculture Plan[154]:** Developed by The Kōhala Center for the County of Hawai'i Department of Research and Development, this Plan outlines a number of recommendations to help the County achieve the goals established in the County's 1992 agriculture plan. Recommendations that apply to natural and cultural resources in the Kula zone include:

- Complete the designation of Important Agricultural Lands (IAL)

- Work with U.S. federal and State regulatory agencies, industry stakeholders, and other groups to create and implement a comprehensive strategy to eliminate the introduction of invasive species and safely eradicate existing invasive species.

- County to re-establish and maintain its levels of funding to the Soil and Water Conservation Districts to allow for appropriate staffing. This will allow for real-time solutions for landowners, farmers and ranchers. In order to maintain this level of funding, the County is encouraged to dedicate a percentage of real property taxes collected from Agricultural lands for this purpose.

- Support efforts by the agricultural industry to define and require that buffers between existing agricultural lands and proposed rural or urban development be the responsibility of the land developer.

**A Strategic Plan for Hawai'i's Agriculture[155]:** Drafted by the Hawai'i Farm Bureau Federation in 2006, this plans purpose was to evaluate problems facing Hawai'i's agriculture industry from an agricultural producer/private sector lens and provide a strategies to address those issues. The plan makes the

154 http://www.kohalacenter.org/pdf/AG%20PLAN_Final_Oct2010.pdf
155 http://hfbf.org/PDF/Strategic%20Plan%2005.16.04.pdf

following recommendations relative to natural and cultural resources in the Kula (Agricultural Lands) zone:

**Land**

- Dialogue with government agencies to encourage financial and regulatory incentives to landowners and farmers for maintaining lands in agriculture.
- Work closely with the county government to develop their county development plans, tax codes, and ordinances. State and county policies should complement or parallel each other.
- Refine the agricultural industry's position on the best methods of protect important agricultural lands (IAL). Focus on an incentive-based approach to keeping lands in agricultural use while directing development away from productive lands.

**Water**

- Establish a water quantity credits system to provide adequate water for agriculture similar to those that are being developed and used by the EPA for Air Quality credits on emissions from California's industrial firms. This will become effective when farmers transition from flood irrigation to drip, sprinkler to drip, or reservoir to recycle, etc.
- Encourage the efficiency and conservation of agricultural water resources including the development and use of drought resistant crops especially in areas with surface water resources and prone low rainfall regions. Work with CTAHR, HARC, and Soil and Water Conservation Districts to develop educational programs on conserving irrigation water for the crops being produced in these target areas and promote the benefits for installing such water conservation measures on individual farms.
- Address the liability issues of using recycled water.

**Environment and Food Safety**

- Participate in all levels of regulatory development to ensure laws are applicable to Hawai'i (a state made up of islands) and minimize regulatory impacts on the farm.
- Promote and implement consumer and producer educational programs on agricultural stewardship and food safety.

**Department of Hawaiian Home Lands (DHHL) Hawai'i Island Plan**[156]: DHHL owns approximately 64,829 acres of land in the Planning Area. Pursuant the 2002 Memorandum of Agreement between the County and DHHL, DHHL is responsible for determining land use on Hawaiian Home Lands.

DHHL's 2002 Hawai'i Island Plan[157] provides a baseline analysis of DHHL's land holdings on Hawai'i Island. This analysis inventories current land uses and suggests the most appropriate land uses for selected tracts based on significant constraints and opportunities. Finally, the plan identifies "Priority Tracts" most suitable for development given environment factors, appropriate uses, and the DHHL mission to address beneficiary needs as carefully and expeditiously as possible.

The plan identifies seven (7) tracts that fall within the CDP Planning Area, 5 of which were examined in greater detail in the document. Table 5 below lists the place name, acreage, and current and proposed

156 http://dhhl.hawaii.gov/wp-content/uploads/2012/05/Island_Plan_Hawaii_2002.pdf
157 http://dhhl.hawaii.gov/wp-content/uploads/2012/05/Island_Plan_Hawaii_2002.pdf

land use categories designated for those lands. Tracts in the Planning Area that the DHHL Plan examined more closely are indicated by an asterisk.

**Table 5. Proposed Land Use Categories for DHHL Lands in the Planning Area**

| Place Name | Acreage | Land use categories |
|---|---|---|
| Waimanu* | 200.00 | Conservation |
| Waikoloa-Waiʻaleʻale | 1,205.98 | **Pastoral** |
| Kamoku-Kapulena | 3,529.12 | **Pastoral** |
| Honokāia* (Priority Tract) | 3,243.04 | **Pastoral (2,336 acres), Subsistence Agriculture (538 acres),** Residential, Commercial, Community Use |
| Niʻeniʻe* | 7,134.94 | **Pastoral (6,523 acres) and General Agriculture (612 acres - including timber harvesting)** |
| Humuʻula* | 48,750.00 | **Pastoral, General Agriculture**, Commercial, Conservation, and Special Districts |
| Honomū-Kuhua* | 765.93 | **Supplemental Agriculture** and Special District |

- Pastoral areas are considered large lot agriculture specifically for pastoral uses, including homesteading and some commercial uses. Ranch plans and fencing are required if used for homesteading.
- General Agriculture areas are prime agricultural areas for intensive or extensive homesteading or commercial level farming or ranching. These lands may also serve as an interim use until opportunities for higher and better uses become available.
- Subsistence Agriculture areas are considered small lots (under 5 acres), with marginal to good soil intended for home use of crops grown on the property. These areas are close to existing infrastructure and residential occupancy of the lot is required.
- Supplemental Agriculture areas are considered large lot agriculture on marginal to good lands where the location is not dependent on existing infrastructure. These lands are intended to provide for supplemental income and home use of crops. Occupancy is optional and a farm plan is required.

**Ocean Resources Management Plan (ORMP)**[158]: The ORMP includes the following goals and strategic actions related to agricultural land management:

- **Improve coastal water quality by reducing land-based sources of pollution** and restoring natural habitats

158 http://planning.hawaii.gov/czm/ocean-resources-management-plan-ormp/

- **Reduce pollutant loads from residential, agricultural, and commercial land uses in priority watersheds**
    - Identify priority watersheds, major land covers, land uses, and polluting activities
    - Implement watershed implementation plans, total maximum daily load implementation plans, and local action strategies to address land-based pollution threats
    - Implement best practices to reduce pollutant loads
- Restore and protect wetlands, streams and estuaries
    - **Develop an education program for land owners, land managers, farmers, and others on the importance of incorporating best management practices** to preserve riparian and wetland habitats
    - Improve interagency coordination, effectiveness and efficiency in wetlands management through the creation of a watershed coordinating committee to ensure ecological function is maintained to the greatest extent practicable
    - Identify channelized streams in priority watersheds for restoration and revitalization of wetland and estuarine habitats.

**Rangeland Management:** According to 2012 Hawai'i County Food Self-Sufficiency Baseline, approximately 31% of Hawai'i Island's pasture Area is in the CDP Planning Area, totaling close to 198,000 acres running from coastal cliffs to over 6,000' elevation.

Rangelands are a type of land, not a use of land. They are not urban land and they are not agricultural cropland. They include some forests, some woodlands and other vegetation types not usually associated with range, but primarily, rangelands are grasslands, shrublands and savannas, and grasslands with scattered trees and shrubs.

Rangelands are used for many purposes. They provide wildlife habitat, forage for livestock, recreational opportunities, open space, scenic beauty, and they serve as watersheds. Rangelands offer a variety of products and values. Usually these uses are mixed and sometimes they are competing.

In *Rangeland Ecology and Management*, (Boulder, Colorado: Westview Press, 1994), H.F. Heady and D. Child define range management as:

"Range management is a discipline and an art that skillfully applies an organized body of knowledge accumulated by range science and practical experience for two purposes: (1) protection, improvement, and continued welfare of the basic resources, which in many situations include soils, vegetation, endangered plants and animals, wilderness, water, and historical sites; and (2) optimum production of goods and services in combinations needed by society...Management of rangeland requires selection of alternative techniques for optimum production of goods and services with no resource damage...While emphasis is often placed on effects and management of domestic animals, the overriding goal is rangeland resource rehabilitation, protection, and management for multiple objectives including biological diversity, preservation, and sustainable development for people."

Rangeland managers usually focus on the soils and vegetation and the impact of animals, including man, on these. Within rangeland management, however, people can also specialize in plant ecology, plant physiology, wildlife habitat, animal science, economics, even sociology and political science.[159]

159 http://globalrangelands.org/hawaii

There are several different resources available to landowners, ranchers, and rangeland managers to manage this natural resource these include:

- **Hawai'i Grazing Lands Conservation Initiative (GLCI)**[160]: The GLCI is a partnership of graziers from Hawai'i's beef, dairy, sheep, and goat industries committed to furthering the grazing industry's contribution to natural resource and ecosystem conservation. Partners include the Hawai'i Cattlemen's Association[161], Hawai'i Sheep and Goat Association[162], National GLCI Coalition[163], Natural Capital Project[164], UH-CTHAR Cooperative Extension[165], USDA-NRCS Pacific Islands Area.[166] (Note: Rangeland management resources available from GLCI partners can be found through the partner websites below).

  GLCI is part of a national initiative to assure the sustainability of private grazing lands by focusing on the environmental, cultural, and economic ecosystem services they provide. These include:

  - Carbon Sequestration.
  - Open, scenic space.
  - The recharge of aquifers.
  - Soil health.
  - Erosion and sedimentation control.
  - Habitat and wildlife conservation.
  - Invasive species control.
  - Reduction of the risk of wildfires.
  - Food safety and security.
  - Flavorful, healthful food.
  - Community participation.
  - Agritourism and ecotourism.
  - Preservation of historical and cultural heritage values.
  - Economic, educational, and cultural resources for future generations.
  - Scientific Research.

## Current Tools and Alternative Strategies for Managing Kula Resources

### State Regulations and Tools for Agricultural Land Management

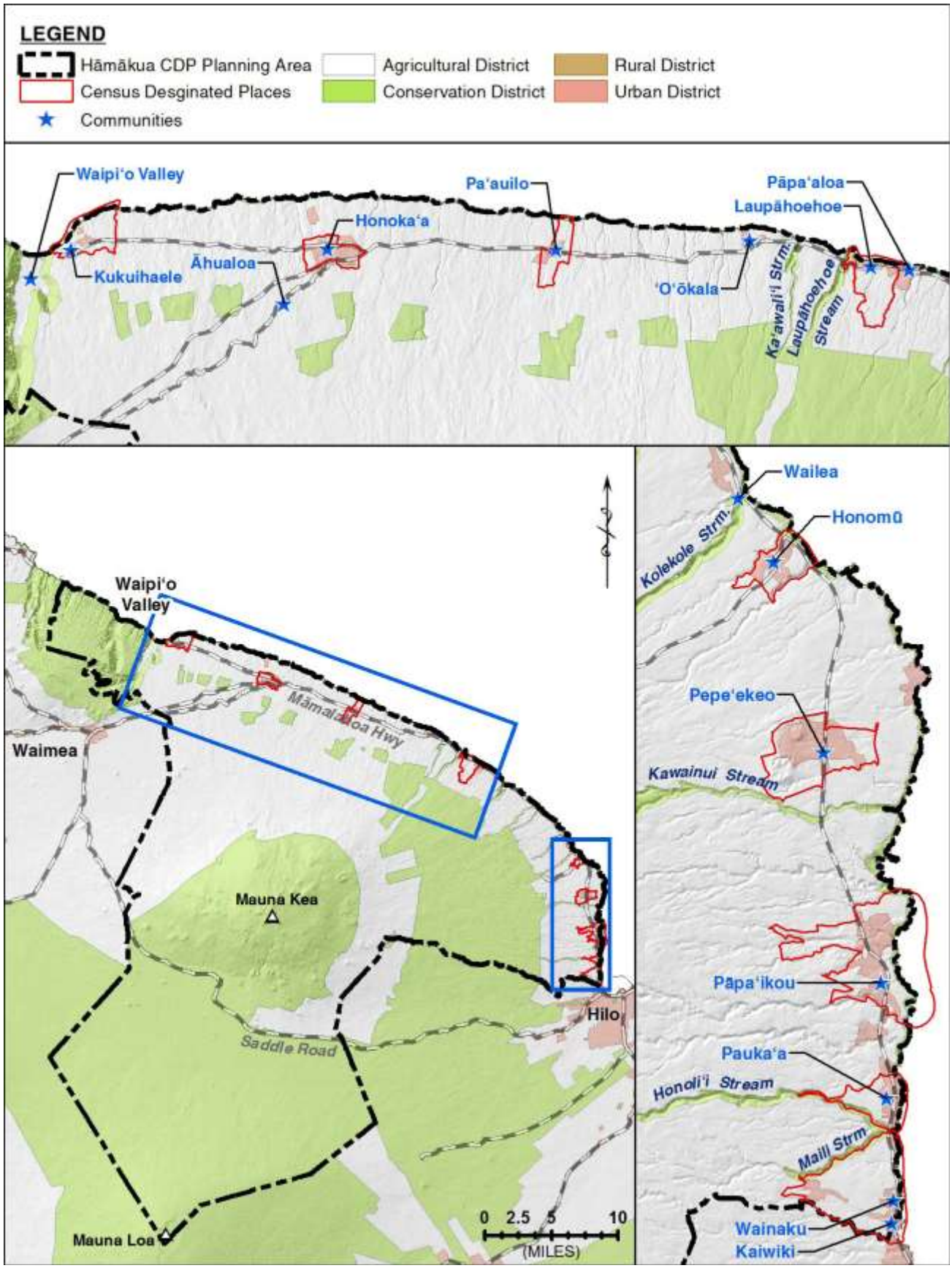
160 http://www.grazinglandshawaii.org/
161 http://www.hicattle.org/
162 https://sites.google.com/site/hawaiisheepandgoatassociation/
163 http://glci.org/
164 http://www.naturalcapitalproject.org/
165 http://www.ctahr.hawaii.edu/site/extprograms.aspx
166 http://www.pia.nrcs.usda.gov/

**Hawai‘i State Constitution:** The Hawaii State Constitution, Article XI, Section 1 and 3, states: *"For the benefit of present and future generations, the State and its political subdivisions shall conserve and protect Hawaii's natural beauty and all natural resources, including land, water, air, minerals and energy sources, and shall promote the development and utilization of these resources in a manner consistent with their conservation and in furtherance of the self-sufficiency of the State....". Section 3 further states that "the State shall conserve and protect agricultural lands, promote diversified agriculture, increase agricultural self-sufficiency and assure the availability of agriculturally suitable lands."*

**State of Hawai‘i Agricultural Land Use District:** Agricultural land in the Planning Area is generally in the State Land Use (SLU) Agricultural District. Pursuant HRS section 205-5(b), the minimum lot size in the Agricultural District is one acre. Pursuant HRS sections 205-2 and 205-4.5, the following uses are permitted in the Agricultural District:

- The cultivation of crops for bioenergy, flowers, vegetables, foliage, fruits, orchards, forage, timber, and forestry.
- Raising of livestock, animal husbandry, and game and fish propagation, including poultry, bees, fish, or other animal or aquatic life.
- Aquaculture.
- Agricultural parks.
- Agricultural tourism conducted on a working farm, or a farming operation, for the enjoyment, education, or involvement of visitors, provided that the agricultural tourism activity is accessory and secondary to the principal agricultural use and does not interfere with surrounding farm operations.
- Bona fide agricultural services and uses that support the agricultural activities of the fee or leasehold owner of the property and accessory to any of the above activities, regardless of whether conducted on the same premises as the agricultural activities to which they are accessory, including
    - farm dwellings, which is defined as a single-family dwelling located on and used in connection with a farm, including clusters of single-family farm dwellings permitted within agricultural parks developed by the State, or where agricultural activity provides income to the family occupying the dwelling
    - employee housing
    - farm buildings
    - mills
    - storage facilities
    - processing facilities
    - agricultural-energy facilities
    - vehicle and equipment storage areas
    - maintenance facilities
    - roadside stands for the sale of products grown on the premises.

**Figure 6. State Land Use Districts in the Planning Area**



- Wind generated energy production and wind machines and wind farms, including the appurtenances associated with the production and transmission of wind generated energy, provided that the wind energy facilities and appurtenances are compatible with agriculture uses and cause minimal adverse impact on agricultural land.

- Solar energy facilities on land with soil classified by the land study bureau's (LSB) detailed land classification as overall (master) productivity rating class B, C, D or E (Hawai'i County has no LSB A land). Energy facilities placed within land with soil classified as overall productivity rating class B or C shall not occupy more than ten percent of the acreage of the parcel, or twenty acres of land, whichever is lesser.

- Biofuel production.

- Biofuel processing facilities, which are defined as facilities that produce liquid or gaseous fuels from organic sources such as biomass crops, agricultural residues, and oil crops, including palm, canola, soybean, and waste cooking oils, grease, food wastes, and animal residues and wastes that can be used to generate energy, including the appurtenances associated with the production and refining of biofuels that is normally considered directly accessory and secondary to the growing of the energy feedstock, provided that biofuels processing facilities and appurtenances do not adversely impact agricultural land and other agricultural uses in the vicinity. "Appurtenances" means operational infrastructure of the appropriate type and scale for economic commercial storage and distribution, and other similar handling of feedstock, fuels, and other products of biofuels processing facilities.

- Agricultural-energy facilities, including appurtenances necessary for an agricultural-energy enterprise, provided that the primary activity of the agricultural-energy enterprise is agricultural activity. To be considered the primary activity of an agricultural-energy enterprise, the total acreage devoted to agricultural activity shall be not less than ninety percent of the total acreage of the agricultural-energy enterprise. The agricultural-energy facility shall be limited to lands owned, leased, licensed, or operated by the entity conducting the agricultural activity.

- Public institutions and buildings necessary for agricultural practices.

- Open area recreational facilities, including day camps, picnic grounds, parks, and riding stables, but not including dragstrips, airports, drive-in theaters, golf courses, golf driving ranges, country clubs, and overnight camps.

**Boundary Amendments and Special Permits**: SLU district boundaries may be amended by the State Land Use Commission (LUC), or, if the property is 15 acres or less in size, by the County Council.

Rather than amend district boundaries, landowners often apply for a special permit, as permitted by HRS section 205-6. The LUC (or, for parcels 15 acres in size or smaller, the County Planning Commissions) may permit certain unusual and reasonable uses within agricultural district other than those for which the district is classified and may impose restrictions as may be necessary or appropriate in granting the approval, including the adherence to representations made by the applicant.

### State Important Agriculture Lands[167]

The identification and designation of State Important Agricultural Lands (State IAL) was first proposed at the 1978 Constitutional Convention and subsequently approved by voters in the same year. Enacted as Article XI, Section 3, of the Constitution of the State of Hawai'i , the State is required to conserve and

167 http://hawaii.gov/hdoa/Info/ial/important-agricultural-lands-update

protect agricultural lands, promote diversified agriculture, increase agricultural self-sufficiency and assure the availability of agriculturally suitable lands.

Act 233, SLH 2008 (HRS sections 205-41 thru 52), which provides incentives for designation of State IAL, became effective on July 1, 2008, and triggered the commencement of the process to identify, map, and designate important agricultural lands throughout Hawai'i .

By definition, State IAL are capable of sustaining high yields, for export or local consumption, and needed for future self-sufficiency even if currently not in production. The criteria to identify State IAL, listed in HRS section 205-44, include: suitable soil qualities, availability of infrastructure, existing or traditional agricultural use, and lands identified under productivity rating systems.

Designated Important Agriculture Lands benefit from the following incentives:

- Incentive 1: Farm Dwellings and employee housing. Allows landowners to develop farm dwellings and employee housing for their immediate family members and their employees. Limit of 5% of total IAL or 50 acres, whichever is less.

- Incentive 2: Refundable qualified agricultural cost tax credit. DOA is to certify credits up to $7,500,000 annually. Credit can be claimed for costs such as roads or utilities, agricultural processing facilities, water wells, reservoirs, dams, pipelines, agricultural housing, feasibility studies, legal and accounting services, and equipment.

- Incentive 3: Loan guaranty. Chairperson of the Board of Agriculture may provide an 85% loan guaranty to commercial lenders, which should result in a lower interest rate for agricultural borrowers on IAL. Interest rate on guaranteed loans will be 1% below the lender's prime rate.

- Incentive 4. State Agricultural Water Use and Development plan. Modifies the scope of the plan to include public and private systems, sources of water and current and future need for water for lands designated as IAL.

- Incentive 5. Agricultural Processing facilities permitting priority. DOH staff give priority to permit applications for agriculture processing facilities in designated IAL lands.

- Incentive 7. Land reclassification. Landowners may submit a petition to the Land Use Commission (LUC) to reclassify up to 15% of the IAL area into a rural, urban, or conservation district anywhere in the same County. That reclassification must be consistent with County General and Community Development plans.

State IAL may be designated by the State Land Use Commission (LUC) in two ways: a farmer or landowner may file a petition with LUC to designate State IAL, or Counties can recommend State IAL for the LUC to consider. The State Land Use Commission makes the final decision by a 2/3 vote and transmits the adopted map to the County.

Within 60 months of when they receive funds from the State for this purpose, each County is to recommend lands to be designated State IAL through a collaborative, participatory process. The Planning Department is to lead the process, and the County Council is to adopt the maps of recommendations by resolution.

A 2/3 super-majority of the legislature is required to change the classification of lands designated as State IAL.

In 2011, Parker Ranch was the first Hawai‘i Island landowner to petition for and be granted IAL designation on 56,772 acres of ranch lands[168]. The three contiguous parcels extend from Saddle Road along the Mauna Kea side of Waimea nearly all the way to Honoka‘a.

**Land Study Bureau (LSB) Detailed Land Classification:** The Detailed Land Classification classifies non-urban areas based on a five-class rating system for agricultural productivity using the letters A, B, C, D and E, with A representing the highest class of productivity and E the lowest (there are no LSB A rated lands on the Island of Hawai‘i ). There are 29,000 acres of LSB B rated soil (the highest ranked lands in the Planning Area) located along the North Hilo and Hāmākua coast, as well as upland areas such as Pa‘auilo Mauka**.**

**Agricultural Lands of Importance to the State of Hawai‘i (ALISH):** Agricultural Lands of Importance to the State of Hawai‘i (ALISH) classification provide a more accurate depiction of the classified lands’ potential for agricultural production. ALISH classification considers a broad range of factors, including soil type, climate, and moisture supply. The ALISH system classifies three types of land suitable for agriculture: Prime Lands, Unique Lands, and Other Lands (unsuitable lands are designated Unclassified).

- **Prime Agricultural Land** is land best suited for the production of food, feed, forage, and fiber crops. When treated and managed, including water management, and according to modern farming methods, the land has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops.

- **Unique Agricultural Land** is land other than Prime Agricultural Land and is used for the production of specific high-value food crops. The land has the 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. In Hawai‘i, some examples of such crops are coffee, taro, rice, watercress and non-irrigated pineapple. Land that qualifies as Prime Agricultural Land and is used for a specific high-value crop is classified as Prime rather than as Unique.

- **Other Agriculture Land** is 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 Hawai‘i yet exhibit properties, such as seasonal wetness, erosion, limited rooting zone, slope, flooding, or drought, which exclude the lands from the Prime or Unique Agricultural Land classifications. By applying greater inputs of fertilizer and other soil amendments, providing drainage improvements, implementing erosion control practices, and providing flood protection, these lands can be farmed satisfactorily and produce fair to good crop yields.

A band of Prime agricultural lands extends across the lower elevations of the Planning Area occupying much of the kula region (roughly, from the shoreline to the forest line). Interspersed through the lower elevations, and in Waipi‘o Valley, are lands that are classified by this system as Unique. The “Other” designation is applied to much of the mauka lands in the Planning Area. Land classified as ALISH is one criterion for being eligible to be declared IAL.

**Coastal Zone Management**

HRS section 205A-2 establishes the following CZM policies related to Kula management:

- Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:

168 http://files.hawaii.gov/luc/dockets/dr1145parker_ranch/dr1145docket_pg.htm

- Adopting water quality standards and **regulating point and nonpoint sources of pollution** to protect, and where feasible, restore the recreational value of coastal waters

- Minimize disruption or degradation of coastal water ecosystems by **effective regulation of stream diversions, channelization, and similar land and water uses**, recognizing competing water needs

- Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and **enhance water quality through the development and implementation of point and nonpoint source water pollution control measures**

- **Prevent coastal flooding from inland projects**.

**Hawai'i Department of Agriculture (DOA) Agricultural Resource Management Division**:[169] The Agricultural Resource Management Division administers the development and management of key agricultural resources (land and water). This division operates the State's Agricultural Park Program. The program is composed of three separate sub-programs:

- Agricultural Parks

  - Hāmākua Ag Park is composed of 509 acres subdivided into 11 lots. (No available lots at this time)

  - Hāmākua North Hilo Agricultural Cooperative (HNAC)[170] - was originally formed in 1994 to create opportunities for the displaced sugar workers when the Hāmākua Sugar plantation closed its operations. The HNAC holds the master lease of 1,000 acres of land and continues to serve the local residents of Hāmākua offering affordable, long-term leases of agricultural land.

    HNAC lands are located between Pa'auilo and Honoka'a, sit at a low-elevation with irrigation water available from the Lower Hāmākua Ditch and have been divided into 100 farm lots that range in size from 5 to 10 acres.

- Irrigation Systems – Honoka'a-Pa'auilo Irrigation System (Lower Hāmākua Ditch), 26 miles from an intake at Waipi'o to Pa'auilo Makai serving acres 4,755 acres of land

- Agricultural Produce Processing and Marshalling Facilities

  - Hāmākua Slaughterhouse in Pa'auilo Makai is operated by Hawaii Beef Producers LLC. The facility currently processes over 1.2 million pounds of beef annually.

  - HāmākuaLivestock Marshalling/Feedlot provides consolidating, inoculating/branding, transshipping, and transportation services for cattle.

**Soil and Water Conservation District (SWCD)**

HRS Chapter 180 establishes Soil and Water Conservation Districts as State agencies with the following powers:

- Provide for and encourage surveys, investigations, and research relating to soil and water conservation

169 http://hdoa.hawaii.gov/arm/
170 http://www.hamakuaagcoop.org/index.html

- Provide for and encourage demonstrations relative to control and prevention of erosion and conservation of soil and water resources, and carry out preventive and control measures on publicly owned lands

- Cooperate or enter into agreements with, and furnish financial or other aid, including machinery, equipment, fertilizer, seeds, and other material, to any agency or any occupier of lands within the district for carrying on soil and water control conservation and operations

- Acquire property, real or personal, or rights or interest therein; maintain, administer, and improve the property, receive income from it, and expend the income in carrying out the purposes of this chapter; and sell, lease, or otherwise dispose of any of such property

- Construct, improve, and maintain any structures necessary for carrying out the purposes of this chapter;

- Develop plans for conservation of soil and water resources and control and prevention of erosion within the district

- Accept contributions in money, services, materials or otherwise from any source, and use or expend them in carrying out its operations;

- As a condition to the extending of benefits, or the performance of work upon lands under this chapter, require land occupiers to contribute money, services, materials, or otherwise

- Form associations to coordinate their policies, objectives, and actions, with power to create staffs, set policies, obtain and administer soil and water conservation district program funds, provide surety bonds, coordinate soil and water conservation district projects, and conduct director training.

The Planning Area includes a portion of the Mauna Kea SWCD[171] and the Hāmākua SWCD, and the Hawai‘i Association of Conservation Districts (HACD) includes sixteen SWCDs throughout the State. HACD works to coordinate and facilitate local partners and governmental agencies in identifying and implementing projects and practices.

**Historic Property Review and Public Notice**

Pursuant HRS section 6E-42, prior to approval of any project involving a permit, license, certificate, land use change, subdivision, or other entitlement for use that may affect historic property, SHPD is to be advised by Hawai‘i County of the project and allowed an opportunity for review and comment on the effect of the proposed project on historic properties. Moreover, SHPD is to inform the public of any project proposals submitted to it under this section that are not otherwise subject to the requirement of a public hearing or other public notification.

## County Regulations for Agricultural Land Management

**Zoning:** Hāmākua's agricultural land is zoned Agricultural, and the vast majority of it has minimum lots sizes of 40 acres from Waipi‘o Valley to ‘O‘ōkala and Agricultural 20 acres from ‘O‘ōkala to Rural South Hilo. The minimum building site area in the County Agricultural district is five acres. Pursuant HCC section 25-5-72, the following uses are permitted in the agricultural district:

- Crop production.

- Agricultural parks.

171 http://www.maunakeaswcd.org/

- Forestry.
- Livestock production, provided that piggeries, apiaries, and pen feeding of livestock shall only be located on sites approved by the State Department of Health and the Planning Director, and must be located no closer than one thousand feet away from any major public street or from any other zoning district.
- Game and fish propagation.
- Aquaculture.
- Animal hospitals.
- Veterinary establishments.
- Kennels.
- Riding academies, and rental or boarding stables.
- Agricultural products processing, major and minor.
- Botanical gardens, nurseries and greenhouses, seed farms, plant experimental stations, arboretums, floriculture, and similar uses dealing with the growing of plants.
- Fertilizer yards utilizing only manure and soil, for commercial use.
- Vehicle and equipment storage areas directly accessory to aquaculture, crop production, game and fish propagation, livestock grazing and livestock production.
- Roadside stands for the sale of agricultural products grown on the premises.
- Public uses and structures that are necessary for agricultural practices.
- One single-family dwelling or one farm dwelling. A farm dwelling is a single-family dwelling that is located on or used in connection with a farm or if the agricultural activity provides income to the family occupying the dwelling.
- Additional farm dwellings may be permitted only upon the following conditions: (1) A farm dwelling agreement for each additional farm dwelling, on a form prepared by the director, shall be executed between the owner of the building site, any lessee having a lease on the building site with a term exceeding one year from the date of the farm dwelling agreement, and the County. The agreement shall require the dwelling to be used for farm-related purposes. (2) The applicant shall submit an agricultural development and use program, farm plan or other evidence of the applicant's continual agricultural productivity or farming operation within the County to the director. Such plan shall also show how the farm dwelling will be utilized for farm-related purposes.
- Group living facilities.
- Campgrounds, parks, playgrounds, tennis courts, swimming pools, and other similar open area recreational facilities, where none of the recreational features are entirely enclosed in a building.
- Cemeteries and mausoleums, as permitted under Chapter 6, article 1 of the County Code.
- Telecommunication antennas, as permitted under HCC 25-4-12.
- Utility substations, as permitted under HCC 25-4-11.

- Wind energy facilities.

The following uses may be permitted in the Agricultural district, provided that a special permit is obtained for such use if the building site is located within the State land use agricultural district:

- Home occupations, as permitted under section 25-4-13.
- Guest ranches.
- Lodges.
- Adult day care homes.
- Family childcare homes.
- Trailer parks with density of three thousand five hundred square feet of land area per trailer, provided that plan approval is secured prior to commencing such use.
- Model homes and temporary real estate offices, as permitted under HCC 25-4-8.
- Meeting facilities.
- Community buildings and public uses and structures, as permitted under HCC 25-4-11.
- Airfields, heliports, and private landing strips.
- Excavation or removal of natural building material or minerals, for commercial use.

The following uses may be permitted in the Agricultural district, provided that a use permit is issued for each use if the building site is outside of the State land use agricultural district or a special permit is issued for each use if the building site is within the State land use agricultural district:

- Bed and breakfast establishments, as permitted under section 25-4-7.
- Schools.
- Churches, temples and synagogues.
- Day care centers.
- Hospitals, sanitariums, old age, convalescent, nursing, and rest homes.
- Crematoriums.
- Mortuaries.
- Major outdoor amusement and recreation facilities.

**Change of Zone**: Pursuant HCC section 25-2-42, a property owner or any other person with the property owner's consent may apply for a change of zoning district (i.e., change of zone or rezoning).

A County environmental report[172] is required as part of a change of zone application. This report is an informational document that contains a description of the physical, social, historical, economic, and natural resource consequences of a proposed action, including but not limited to a discussion of alternatives to the proposed action, any environmental effects which cannot be avoided should the proposal be implemented, the relationship between local short-term uses of the environment and the

172 http://records.co.hawaii.hi.us/Weblink8/1/doc/55614/Page1.aspx

maintenance and enhancement of long term productivity, any irreversible and irretrievable commitments of natural resources which would be involved in the proposed action, and an analysis of the proposed action. Copies of the County environmental report shall be available to the public for inspection and written comment. Public comments on the document shall be made a part of the record of the application under consideration by the director, and made available to the council.

Pursuant HCC section 25-2-46(d)(1), a Traffic Impact Analysis Report (TIAR) shall be included with the application for any change of zone that can generate fifty or more peak hour trips. If the level of service for any transportation facility in the project area is (A) currently worse than the acceptable level of service, or (B) projected to become worse than the acceptable level of service during the five year period of the TIAR, any rezoning of the property, if approved, shall contain conditions that require mitigation of adverse traffic effects before occupancy of the project is permitted.

Likewise, pursuant HCC section 25-2-46(m), a change of zone application shall not be granted unless: (1) the department of water supply has determined that it can meet the water requirements of the project and issue water commitments using its existing system; or (2) specific improvements to the existing public water system, or a private water system equivalent to the requirements of the department of water supply will be provided to meet the water needs of the project and conditions of zoning delay occupancy until the necessary improvements are actually constructed.

In considering a proposed amendment, the director shall consider the purposes of the existing and proposed district and the purposes of the County's zoning code and shall recommend a change in a district boundary only where it would result in a more appropriate land use pattern that will further the public necessity and convenience and the general welfare and be consistent with the goals, policies and standards of the general plan. The director shall recommend either the approval or denial of the proposed amendment to the commission subject to conditions which would further the intent of this chapter [HCC-25] and the general plan and other related ordinances.

The County Council must approve a change of zone and may impose conditions on the applicant's use of the property provided that the council finds that the conditions are: (1) Necessary to prevent circumstances which may be adverse to the public health, safety and welfare; or (2) Reasonably conceived to fulfill needs directly emanating from the land use proposed with respect to: A) Protection of the public from the potentially deleterious effects of the proposed use, or (B) Fulfillment of the need for public service demands created by the proposed use.

**Agricultural Project Districts (APD)**

Project Districts provide flexibility in the mix of uses – in other words, they are a package of rezonings. Pursuant HCC section 25-6-50, APDs are a provision intended to satisfy the demand for a rural lifestyle on marginal agricultural land while decreasing the pressure to develop important agricultural land. APDs allow for a mix of small scale agricultural activities and associated residential uses as well as larger agricultural projects. APDs are a comprehensive planning approach that maintain continuity in land uses, and allow for flexibility in the location of specific types of agricultural uses and variations in lot sizes while providing the required infrastructural facilities and systems.

The minimum land area required for an agricultural project district is five acres, and the overall density in an APD shall not be greater than one acre per building site. A County environmental report is required as part of an APD application.

An APD is an amendment to the Zoning Code, so approval by the County Council is required. The County Council shall include the following conditions in any agricultural project district ordinance:

- A description of each of the uses proposed in the agricultural project district

- The overall and average densities for dwelling uses established in the agricultural project district
- Any infrastructure requirements for the agricultural project district
- Any open space requirements for the agricultural project district.

In addition, the County Council may impose conditions on the APD to prevent circumstances that may be adverse to the public health, safety and welfare; to protect the public from the potentially deleterious effects of the proposed uses; or to fulfill the need for public service demands created by the proposed uses.

**Special Permits**

Pursuant Planning Commission Rule 6-7 and 6-3(a)(5)(G), the County Planning Commission considers applications for special permits for uses that are unusual and reasonable use of land, would promote the effectiveness and objectives of state land use law, and meet the following criteria:

- The desired use shall not adversely affect surrounding properties;
- Such use shall not unreasonably burden public agencies to provide roads and streets, sewers, water, drainage, school improvements, and police and fire protection;
- Unusual conditions, trends, and needs have arisen since the district boundaries and regulations were established;
- The land upon which the proposed use is sought is unsuited for the uses permitted within the district;
- The proposed use will not substantially alter or change the essential character of the land and the present use; and
- The request will not be contrary to the General Plan and official Community Development Plan and other documents such as Design Plans.

The Commission shall:

- For a Special Permit involving fifteen acres of land or less, approve it by stating the reasons and attaching appropriate performance conditions; or
- For a Special Permit involving greater than fifteen acres of land, recommend approval to the State Land Use Commission by stating the reasons and attaching appropriate performance conditions; or
- Deny it by stating the reasons. If a Special Permit involving larger than fifteen acres is denied at the Commission level, it does not proceed on for consideration at the State LUC level; otherwise the LUC considers special permit applications for parcels larger than 15 acres

**Use Permits**

Use permits are for certain permitted uses in zoning districts which require special attention to ensure that the uses will neither unduly burden public agencies to provide public services, nor cause substantial adverse impacts upon the surrounding community. The zoning code specifies the proposed uses that require use permits in each district, and it also requires permits for “other unusual and reasonable uses which are not specifically permitted in any zoning district with the approval of the director and the concurrence of the council by resolution.”

A use permit may be granted by the Planning Commission if the granting of the proposed use shall be consistent with the general purpose of the zoning district, the intent and purpose of the zoning code, and the general plan; the granting of the proposed use shall not be materially detrimental to the public

welfare nor cause substantial, adverse impact to the community's character, to surrounding properties; and the granting of the proposed use shall not unreasonably burden public agencies to provide roads and streets, sewer, water, drainage, schools, police and fire protection and other related infrastructure.

The commission's decision shall be accompanied by a statement of factual findings supporting the decision, together with any conditions imposed upon a use permit approval, including hours of daily operation and terms of the use permit. The conditions imposed by the commission shall bear a reasonable relationship to the use permit granted.

**Subdivisions**

Pursuant HCC section 23-6, the Subdivision Code shall be applied and administered within the framework of the County General Plan, including comprehensive or general plans for sections of the County that may be adopted as amendments to or portions of the County general plan.

Pursuant HCC sections 23-84 and following, subdivision of large parcels into smaller parcels requires the following improvements:

- A water system meeting the minimum requirements of the County Department of Water Supply. Prior to subdivision approval, the Department of Water Supply must confirm water availability, considering the capacity of its system's sources, storage, transmission, and pressure service zone. If the DWS system cannot accommodate the proposed number of lots and units, the landowner is responsible for the improvements.
- Meet the minimum requirements of the State Department of Health relating to sewage disposal.
- Streets constructed in accordance with the subdivision code specifications and those on file with the Department of Public Works.
- Land surface drainage.
- Streetlights.

Moreover, pursuant HCC section 23-26, the subdivider of a parcel of land capable of supporting two hundred dwelling units shall reserve suitable areas for parks, playgrounds, schools, and other public building sites that will be required for the use of its residents.

In addition, outstanding natural or cultural features such as scenic spots, water courses, fine groves of trees, heiau, historical sites and structures shall be preserved as provided by the director.

**Farm Subdivisions**

Pursuant HRS section 205-4.5(f), agricultural lands may be subdivided and leased for agricultural uses provided that: (1) The principal use of the leased land is agriculture; (2) No permanent or temporary dwellings or farm dwellings, including trailers and campers, are constructed on the leased area. (3) The lease term for a subdivided lot shall be for at least as long as the greater of: (A) The minimum real property tax agricultural dedication period of the county in which the subdivided lot is located; or (B) Five years. Lots created and leased pursuant to this section shall be legal lots of record for mortgage lending purposes and shall be exempt from county subdivision standards.

Pursuant HCC section 23-112, in addition to the conditions outlined above, the Planning Director may approve farm subdivisions under the following conditions:

- The minimum leasable area within a farm subdivision shall be five (5) acres.

- Farm subdivision provisions shall be applicable only to leasehold lands located within an agricultural zoned district and shall be a lease term of no less than ten (10) years and a maximum of thirty (30) years. The terms of the lease shall be clearly defined in the lease agreement.

- The owner of the parcel and lessees shall submit a soil conservation plan approved by the United States Department of Natural Resources Conservation Service.

- Each lease shall: (1) Restrict uses to agriculture, (2) Provide a roadway maintenance agreement for all roadways within the farm subdivision, and (3) Assure implementation of the soil conservation plan.

- The following infrastructure standards shall apply: (1) A water system for a farm subdivision shall not be required. (2) Roadway improvements within a farm subdivision that are less than those required under the County of Hawaii Subdivision Code may be approved. Adequate access from a government road shall be provided to a farm subdivision meeting the requirements of the Department of Public Works for the purpose of access to a farm subdivision.

**Variances**

Pursuant HCC sections 23-15 and 25-2-51, a variance from the provisions of the zoning or subdivision codes may only be granted by the Planning Director if the following is found:

- There are special or unusual circumstances applying to the subject real property which exist either to a degree which deprives the owner or applicant of substantial property rights that would otherwise be available, or to a degree which obviously interferes with the best use or manner of development of that property; and

- There are no other reasonable alternatives that would resolve the difficulty; and

- The variance is consistent with the general purpose of the district, the intent and purpose of the code, and the general plan, and will not be materially detrimental to the public welfare or cause substantial, adverse impact to an area's character or to adjoining properties.

Conditions imposed by the director shall bear a reasonable relationship to the variance granted. All actions shall contain a statement of the factual findings supporting the decision.

**Catchment Water Variances**: Planning Department Rule 22 addresses requests for water variances through the Subdivision process to rely on catchment water on agriculturally-zoned properties. Properties are not eligible for variances if they are subject to a rezoning ordinance that requires a water system, if there is a public water system in the vicinity with available capacity, if the Department of Water Supply has definite plans to extend the public water system or increase capacity in a way that will allow subdivision with County water, or if the proposed lots have an average annual rainfall less than 60 inches. No more than 6 lots are allowed with a catchment water variance.

Subdivisions resulting in lots at least 20 acres in size and averaging four times the minimum lots size allowed by zoning may be granted exceptions to the minimum rainfall requirement and the 6 lot limit (up to a maximum of 20 lots).

Rainfall in the Planning Area ranges from 60 inches annually at the lowest coastal elevations to over 240 inches at the Makahanaloa rain gauge located on the southeast flank of Mauna Kea, therefore catchment water variances are a possibility in the majority of the Planning Area.

**Planned Unit Developments (PUD)**

Pursuant HCC section 25-6-1, the purpose PUDs is to encourage comprehensive site planning that adapts the design of development to the land, by allowing diversification in the relationships of various

uses, buildings, structures, open spaces, setbacks, building heights, and lot sizes. The minimum land area required for a PUD is two acres.

A PUD permit may be granted by the Planning Director if:

- The proposed development substantially conforms to the General Plan
- Any residential or agricultural development shall constitute an environment of sustained desirability and stability for the district that is in harmony with the character of the surrounding area
- Any commercial development shall
    - Not create traffic congestion
    - Provide for proper entrances and exits along with proper provisions for internal traffic and parking
    - Be an attractive center which does not adversely impact upon adjacent and surrounding existing or prospective developments
- Any industrial development shall
    - Be in conformity with desirable performance standards and shall constitute an efficient and well organized development with adequate provisions for freight service and necessary storage
    - Not adversely impact upon adjacent and surrounding existing or prospective development
- The intensity of land use is no higher than that otherwise specified for the zoning district
- At least as much open space remains as otherwise specified for that zoning district
- The development of a harmonious, integrated whole justifies exceptions, if required, to the normal requirements of the Zoning Code and the contemplated arrangements or use make it desirable to apply regulations and requirements differing from those ordinarily applicable under the district regulations.

The director shall deny the application or approve it subject to conditions. The conditions imposed by the director shall bear a reasonable relationship to the PUD permit issued and to the approved uses, plans, and variances of district standards. The conditions may include, but not be limited to the following:

- Boundary and density changes approved
- Uses that are prohibited or limited
- Specifications for the minimum development standards
- Specifications for street improvement and dedication
- Utilities to be furnished
- The extent and limitations upon the variances permitted.

**Pre-Existing Lots of Record (PLOR)**

Pursuant HCC section 23-118, landowners may request that the Planning Director make an official determination of pre-existing lots of record. The lots must meet one of the following criteria based on reasonable evidence provided by the owner:

- The lot was created and recorded prior to November 22, 1944 or the lot was created through court order (e.g. partition) prior to July 1, 1973, and the lot had never been legally consolidated.
- The lot was created prior to December 21, 1966, as an agricultural lot in excess of twenty acres pursuant to county ordinance.

Within the Planning Area, there are 157 parcels where the Planning Department has determined pre-existing lots with a resulting total of 609 pre-existing lots. Most of these determinations are located on agricultural lands zoned A-40a or A-20a, which means that subdivision of these lots into smaller lots will be possible without having to rezone. Several other parcels in Planning Area likely have PLOR potential.

**Parcel Consolidation and Resubdivision (PCRs)**

Landowners with PLORs may reconfigure the lots to suit their plans for the property without having to conform to the Subdivision Code, subject to improvements required by the Planning Director. Specifically:

- Pursuant HRS section 205-5(b), the minimum lot size for any agricultural use shall not be less than one acre. However, for lots created by a consolidation and resubdivision of existing lots, if the County finds that unreasonable economic hardship to the owner or lessee of land cannot otherwise be prevented or where land utilization is improved, the county may allow lot sizes of less than one acre, provided that the consolidation and resubdivision does not result in an increase in the number of lots over the number existing prior to consolidation and that a lot that is equal to or exceeds one acre be less than one acre after the consolidation and resubdivision.
- Pursuant HCC section 23-7, the requirements and standards of the Subdivision Code shall not apply to consolidation and resubdivision action resulting in the creation of the same or fewer number of lots than that which existed prior to the consolidation/resubdivision action, provided that the Planning Director, upon conferring with the Director of Public Works and Manager of the Department of Water Supply, may require necessary improvements to further the public welfare and safety.

  When commenting on PCRs, the Department of Water Supply confirms water availability, considering the capacity of its system's sources, storage, transmission, and pressure service zone. If the DWS system cannot accommodate the proposed number of lots and units, it identifies the number of lots and units allowed.
- In addition, pursuant HCC section 25-2-11, if the Planning Director finds that the public welfare and safety will not be violated, the director may waive portions or all of the requirements and standards of the Zoning Code for consolidation and resubdivision action resulting in the creation of the same or less number of lots than that which existed prior to the consolidation or resubdivision action, provided, that prior to the granting of any waiver, the Director shall confer with the Director of Public Works and Manager of the Department of Water Supply and other applicable government agencies.

**Plan Approval**

Plan approval allows closer inspection of development in order to ensure conformance with the General Plan, the Zoning Code, and conditions of previous approvals related to the development. Plan approval is required in the Agricultural district prior to the development of any trailer park or major agricultural products processing facility.

Upon receipt of a detailed site plan, the Planning Director may issue plan approval subject to conditions or changes in the proposal that, in the director's opinion, are necessary to carry out and further the purposes of the Zoning Code. In addition, the Director considers the proposed structure, development or use in relation to the surrounding property, improvements, streets, traffic, community characteristics, and natural features and may require conditions or changes to assure:

- Adequate light and air, and proper siting and arrangements are provided for
- Existing and prospective traffic movements will not be hindered
- Proper landscaping is provided that is commensurate with the structure, development or use and its surroundings
- Unsightly areas are properly screened or eliminated
- Adequate off-street parking is provided
- Within reasonable limits, any natural and man-made features of community value are preserved
- Dust, noise, and odor impacts are mitigated.

**Grading and Grubbing**

The Erosion and Sedimentation Control provisions in HCC Chapter 10 are to safeguard the public, property, and the environment by regulating drainage, erosion, and sediment, and to assure the safety of the work. A permit is not required 1) if the excavation (cut) or the embankment (fill) is less than 100 cubic yards in volume and less than 5-ft. in vertical height and that does not alter the general drainage pattern with respect to abutting properties or 2) for agricultural operations approved by one of the Soil and Water Conservation District directors under a conservation plan.

**General Plan Land Use Pattern Allocation Guide (LUPAG)**

The land use pattern in the General Plan is a broad, flexible design intended to guide the direction and quality of future developments in a coordinated and rational manner. The General Plan Land Use Pattern Allocation Guide (LUPAG) Map indicates the general location of various land uses in relation to each other. Any changes in zone have to be consistent with the General Plan LUPAG Map.

**Important Agricultural Land**: Important agricultural lands (not to be confused with State IAL) are those with better potential for sustained high agricultural yields because of soil type, climate, topography, or other factors. Important agricultural lands were determined by including the following lands:

- Lands identified as "Intensive Agriculture" on the 1989 General Plan Land Use Pattern Allocation Guide maps.
- Lands identified in the Agricultural Lands of Importance to the State of Hawai'i (ALISH) classification system as "Prime" or "Unique".
- Lands classified by the Land Study Bureau's Soil Survey Report as Class B "Good" soils. There are no Class A lands on the island of Hawai'i.
- Lands classified as at least "fair" for two or more crops, on an irrigated basis, by the USDA Natural Resource Conservation Service's study of suitability for various crops.
- In North and South Kona, the "coffee belt", a continuous band defined by elevation, according to input from area farmers.
- State agricultural parks.

In the Planning Area, there are 171,600 acres of land designated IAL by the LUPAG Map. Because of the scale of the Land use Pattern Allocation Guide maps used to designate Important Agricultural Land, the location of these lands should be verified by more detailed mapping when considering specific land use decisions.

**Extensive Agriculture**: This designation includes lands that are not capable of producing sustained, high agricultural yields without the intensive application of modern farming methods and technologies due to certain physical constraints such as soil composition, slope, machine tillability, and climate. Other less intensive agricultural uses such as grazing and pasture may be included in the Extensive Agriculture category.

## Strategies for Agricultural Land Protection

The American Planning Association identifies several strategies for protecting farmland, reducing conflict between farmers and non-farming neighbors, and keeping farmland affordable[173]:

### Urban Growth Boundaries (UGB)

As noted in the discussion of Land Use Policy Maps above, UGBs identify areas to be protected for agriculture and areas where growth will be encouraged. Urban Growth Boundaries (UGBs) are intended to accommodate anticipated growth and to separate areas appropriate for future growth from areas intended for agricultural use. This is sometimes referred to as "Town and Country" zoning, which requires that development occur only in densely populated hamlets and villages, with the surrounding rural areas remaining undeveloped and available for farming, forestry, natural area preservation, and recreation.

Most comprehensive plans include an open space element and resource protection overlay districts, which can incorporate agricultural land. The County of Hawai'i's LUPAG map effectively establishes an UGB between the agricultural designations (orchard, agricultural, and intensive agricultural) and the urban designations (low, medium, and high density urban).

### Zoning Ordinances

Like the State Land Use statutes and the County Zoning Code, such ordinances designate areas where farming, ranching, or forestry is the primary land use and discourage other land uses in those areas.

### Large-lot Agricultural Residential Zoning

Such zoning creates lots between .5 and 10 acres in size, but an unintended consequence of this type of zoning is sprawling residential development, as has been the case in Puna, Florida, and elsewhere (see Figure 7. Large-lot Agricultural Residential Zoning).

173 APA Quicknotes: The Farmland Protection Toolbox and APA PAS Memo — March/April 2011. Local Agricultural Preservation: Making the Food System Connection By Joel Russell.

**Figure 7. Large-lot Agricultural Residential Zoning**



**Rural Cluster Development**

Cluster development is intended to preserve open space by concentrating residential development in clusters (see Figure 8. Rural Cluster vs. Large-lot Patterns). This can become a form of modified sprawl where homes are scattered through the countryside in a more clustered configuration, often using views of farmland as an "amenity" to promote sales.

**Figure 8. Rural Cluster vs. Large-lot Patterns**

**Large-lot Pattern** **Rural Cluster**

### Subdivision Ordinances

The County's Subdivision Code governs the division of larger parcels of land and gives local officials the authority to review potential impacts on agricultural resources; establish design standards, including setbacks and buffers; and authorize local officials to suggest alternatives or mitigation measures or to deny projects based on the impact to agriculture.

### Right-to-Farm Laws

Right-to-Farm laws protect producers from private nuisance suits and overly restrictive local regulations that may impact agricultural activities. Local governments enact right-to-farm laws to strengthen and clarify language in state laws and to educate residents about normal agricultural activities. A local right-to-farm ordinance can serve as a formal policy statement that agriculture is a valuable part of the local economy and culture.

### Local Property Tax Reduction Programs

Property tax reduction programs provide a reduction in taxes and reduce operating costs for farm operations and rural landowners who rent their land to farmers.

In Hawai'i County, owners of agricultural land have two tax reduction options:

- Dedicated: Pursuant HCC section 19-60, landowners may dedicate their land to commercial agricultural use for 10 years and be taxed at a reduced "agricultural use value" rate. The land in dedicated agricultural use must be used on a continuous and regular basis for agriculture on lands zoned by the County to be in the districts of agricultural (A), residential and agricultural (RA), family agricultural (FA), intensive agricultural (IA), and agricultural project district (APD). Farm dwellings are assessed at the highest commercial agriculture use value, and all portions of land that are not dedicated for commercial agricultural use are assessed based on the proportional market value of the total property. If there is a breach of the terms of the dedication, the owner must pay up to 10 years in deferred taxes and a 10% penalty.

- Nondedicated: Pursuant HCC section 19-57, lands classified and used for agriculture and that are not dedicated are assessed at two times the dedicated rate. If the property is rezoned for non-agricultural use and subdivided into parcels of less than five acres in size, the owner must pay up to 3 years in deferred taxes and a 10% penalty.

According to the Hawai'i County Food Self-Sufficiency Baseline 2012, as currently implemented, these programs have no mechanisms requiring landowners to submit periodic evidence that productive agricultural activity is still occurring. The current systems also assign the lowest assessment rates to landowners who do the least amount of regular farm work on their property by installing exterior fencing and stock water for pasture use. Landowners who work to produce commercial food products for the local market are taxed at a higher rate.

It might be appropriate to update these programs so that they incentivize landowners to seek qualified farmers and ranchers to increase local food production on their property. Another option would be to consider ways that landowners could report farm revenue annually by providing evidence of General Excise taxes paid from agricultural activities or to provide receipts of food donations to the Hawai'i Island Food Basket, or other safety net programs.

**'Save Land for the Future' Mitigation Ordinances and Policies**

Such policies require developers to permanently protect an equivalent or greater amount of farmland in the event that agricultural land is converted to other uses.

**Purchase of Agricultural Conservation Easements (PACE)**

PACE are voluntary legal agreements between a landowner and a land trust or government agency that permanently preserves the land for agricultural uses. The agreements typically allow landowners to continue to own and use their land, and they can also sell it or pass it on to heirs. Easements are a viable alternative to development because they can reduce property and estate taxes and qualify the owner for tax deductions.

David and Josephine DeLuz put 4,500 mauka acres of the Kuka'iau Ranch in agricultural and conservation easements in 2009, the first time a Hawai'i Island rancher donated an easement of such size. There are several programs available in Hawai'i to establish agricultural conservation easements:

- **Hawai'i County Public Access, Open Space, and Natural Resources Preservation Commission (PONC)**: The County of Hawai'i 's public access, open space, and natural resources preservation fund is used for acquiring lands or property entitlements in the County of Hawai'i for, among other things, preservation of agricultural lands and protection of watershed lands. Based on recommendations from the Public Access, Open Space, and Natural Resources Preservation Commission (PONC), the Finance Department seeks to acquire property for preservation with these funds.

- **USDA NRCS Farm and Ranchland Protection Program (FRPP)**[174]: The FRPP is a voluntary conservation program that provides up to 50% matching funds to help purchase development rights to keep productive farm and ranchland in agricultural uses in perpetuity.

- **USDA NRCS Grassland Reserve Program (GRP)**[175]: The GRP is a voluntary conservation program that emphasizes support for working grazing operations, enhancement of plant and animal biodiversity, and protection of grassland under threat of conversion to other uses. Participants voluntarily limit future development and cropping uses of the land for 5, 10, or 15 years or in perpetuity, while retaining the right to conduct common grazing practices and operations. A grazing management plan is required for participants.

174 http://www.pia.nrcs.usda.gov/programs/frpp/frpp.html and http://www.privatelandownernetwork.org/yellowpages/resource.aspx?id=1661
175 http://www.nrcs.usda.gov/programs/grp/

- **DLNR** DOFAW **Legacy Lands Conservation Program (LLCP)**: The LLCP provides grants to local organizations and agencies seeking to acquire land and easements for Hawai'i 's unique and valuable resources, including watersheds, parks, natural areas, habitat, agricultural production, historical sites, open spaces, and scenic, recreational, and public hunting resources.

- **DLNR** DOFAW **Forest Legacy Program (FLP)**[176]: The State of Hawai'i Forest Legacy Program is a federal USDA Forest Service program that identifies important private forest lands that are threatened by development or fragmentation and purchases or secures conservation easements from interested landowners. The vast majority of the Planning Area's privately owned conservation and prime agriculture land is eligible for the FLP.

- **USFWS Recovery Land Acquisition (RLA) program**[177]: RLA grants provide funds to states for the acquisition of habitat in support of approved recovery goals or objectives for federally listed threatened or endangered species.

- **USFWS Habitat Conservation Plan Land Acquisition program**: The HCP Land Acquisition program funds land acquisitions that support recovery of threatened and endangered species.

#### Transfer of Development Rights (TDR)

TDR programs enable the transfer of development potential from one parcel of land to another and are typically established by local zoning ordinances. Localities often use market-driven TDR to shift development from agricultural land (sending areas) to designated growth zones (receiving areas) located closer to municipal services. Successful TDR programs have been in place throughout the country since 1980, and have protected tens of thousands of acres of farmland and open space. TDR is most suitable in places where large blocks of land remain in agricultural use. TDR has been adapted by some communities into Density Transfer Charge (DTC) or Residential Density Transfer (RDT) programs[178].

Analysis completed for the Kona CDP suggests that for a TDR program to be successful, sufficient demand for development rights needs to be stimulated, opportunities to circumvent the market by seeking variances and zoning changes need to be limited, and an efficient and transparent market structure needs to be established.

HRS section 514B-136 is the enabling State legislation for TDR programs. The County of Hawai'i must adopt enabling legislation for the option to be available locally. Some communities defer to nonprofit organizations to manage their TDR programs.

#### View Shed Siting Guidelines

Some municipalities establish specific landscaping, screening, setback, building height, and lighting guidance within protected view sheds.

## Watershed Management

#### Watershed Management Plans

In Hawai'i, watersheds are areas of land that drain downslope to a common point. The water moves through a network of drainage pathways, both underground and on the surface, eventually reaching the ocean. There is a strong link between the health of a watershed and the health of coastal ecosystems.

176 http://www.state.hi.us/dlnr/dofaw/Legacy/ and http://www.fs.fed.us/spf/coop/programs/loa/flp.shtml
177 http://www.fws.gov/pacificislands/Publications/RLA%20Fact%20Sheet%20May%202010.pdf
178 APA PAS Memo — May/June 2010. "TDR-Less TDR Revisited: Transfer of Development Rights Innovations and Gunnison County's Residential Density Transfer Program." By Mike Pelletier, Rick Pruetz, FAICP, and Christopher Duerksen.

Watershed management plans are data-driven strategies for managing specific watersheds. Analysis that drives the planning includes community goals; hazards risks; unique social, cultural, economic, and environmental characteristics; mauka-makai connections; and stakeholder interests and potential for collaboration.[179] Watershed management plans typically identify the sources of pollution and the recommended management strategies. For example, Hui Koʻolaupoko developed a Watershed Restoration Action Strategy for windward Oʻahu.[180] Three watershed plans have been prepared in Hawaiʻi County: for the Kawaihae area draining into Pelekane Bay, the Waiʻulaʻula watershed near Waimea[181], and selected Hilo Bay watersheds[182].

Both *Hawaiʻi Watershed Guidance* and the EPA's *Handbook for Developing Watershed Plans to Restore and Protect our Waters*[183] provide detailed guidance on developing watershed plans. The EPA also offers a Watershed Plan Builder[184] and a Watershed Academy[185].

**Watershed Management Guidance and Resources**

**Coastal Nonpoint Pollution Control Program (CNPCP)**[186]: The CNPCP was established by Congress in 1990 and is jointly administered by the National Oceanic and Atmospheric Administration (NOAA) and the US Environmental Protection Agency (EPA). Hawaiʻi's CNPCP, developed jointly by the Hawaiʻi CZM Program and the Department of Health (HDOH), is responsible for ensuring that the management measures are implemented. The primary focus is on pollution prevention, minimizing creation of polluted runoff. To this end, the CNPCP establishes management measures, published by the EPA and incorporated into the *Hawaiʻi Watershed Guidance*, to address coastal nonpoint source pollution from a variety of sources.

**Hawaiʻi Watershed Guidance**[187]: The CZM Program and HDOH have developed the *Hawaiʻi Watershed Guidance* to assist those involved in managing Hawaiʻi 's watersheds to develop and implement watershed plans that have the greatest potential for achieving water quality goals. It outlines steps for developing and implementing watershed plans, including the selection and implementation of appropriate management measures. Management measures are the best available, economically achievable practices or combinations of practices that can be used to address nonpoint source pollution. The management measures in the *Guidance* are those developed by the EPA and are designed to control runoff from six main sources: forestry, agriculture, urban areas, marinas and recreational boating, hydromodification, and wetlands, riparian areas, and vegetated treatment systems.

**DOH Polluted Runoff Control (PRC) program**[188]: The PRC program receives funding from the Environmental Protection Agency (EPA) through Section 319(h) of the Clean Water Act to address nonpoint source pollution. Since 2004, the focus of Hawaiʻi's PRC program has been on development and implementation of watershed plans to reduce nonpoint source pollution in priority watersheds. The PRC Program provides 50% cost share funding through an annual competitive process to address

179 Hawaiʻi Watershed Guidance; Adapted from the Hawai'i Community Stewardship Report (2008)
180 http://www.huihawaii.org/index.html
181 http://www.maunakeaswcd.org/Projects.html
182 http://www.hilobaywatershed.org/research
183 http://water.epa.gov/polwaste/nps/handbook_index.cfm
184 http://java.epa.gov/wsplanner/
185 http://water.epa.gov/learn/training/wacademy/index.cfm
186 http://hawaii.gov/dbedt/czm/initiative/nonpoint.php
187 http://hawaii.gov/dbedt/czm/initiative/nonpoint/HI%20Watershed%20Guidance%20Final.pdf
188 http://hawaii.gov/health/environmental/water/cleanwater/prc/index.html

watershed priorities. The O'ahu Resource Conservation and Development Council (RC&D) used PRC funding to support farmer's implementation of best management practices in Waimānalo[189].

**DLNR DOFAW Watershed Partnership Program**[190]: The Watershed Partnership Program funds cooperative projects that benefit on-the-ground activities protecting land for watershed conservation and implementing existing management plans.

**Best Management Practices (BMPs)**

The following resources provide guidance on how best to manage land in Hawai'i. Among the many possible methods, land managers should choose those best suited to site-specific conditions:

**USDA NRCS Field Office Technical Guides (FOTG)**[191]: These technical guides are the primary scientific references for NRCS. They contain technical information about the conservation of soil, water, air, and related plant and animal resources. Technical guides used in each state are localized so that they apply specifically to the geographic area for which they are prepared.

**CTAHR Non-point Pollution Prevention BMPs**[192]: The University of Hawai'i at Mānoa summarized BMPs in a short Soil and Crop Management bulletin. Topics covered include field crop production, soil management, water management, irrigation, nutrient, and pest management, pesticide handling, woodland and habitat management, and air quality.

**DLNR DOFAW Watershed Protection and Management Program BMPs**[193]: DOFAW summarized land management BMPs into a single web site. Topics covered include forest roads, timber harvesting, silviculture chemical management, streamside management, fencing, fire management and reclamation, and reforestation.

**Hawai'i's Pollution Prevention Information project (HAPPI)**[194]: HAPPI produced 10 information and assessment bulletins addressing different water pollution issues faced by agricultural operations. Each provides information on a specific topic, helps managers assess risks for water pollution, and help develop an Action Plan to reduce those risks. Management topics covered include: land, nutrients, pests, irrigation, livestock, pasture, chemicals, forest, and riparian.

## Programs and Funding for Agricultural Land Management

**Private Landowner Network**[195]: The Private Landowner Network (PLN) helps farmers and ranchers navigate local land conservation resources and programs.

**United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Pacific Islands Area (PIA) programs**: The Natural Resources Conservation Service (NRCS) is a principal agent of the US Department of Agriculture providing conservation technical assistance to private landowners, soil and water conservation districts, and other organizations. Hawai'i is within the NRCS' Pacific Islands Area (PIA), which has service centers in Hilo, Kealakekua, and Waimea.

- **Conservation Technical Assistance (CTA)**[196]: NRCS delivers conservation technical assistance through its voluntary Conservation Technical Assistance Program (CTA) program. Through the NRCS field offices, the programs are available to farmers, ranchers, governments, and groups interested in

189 http://www.ctahr.hawaii.edu/sustainag/news/articles/V12-Brokish-BMPs.pdf
190 http://www.state.hi.us/dlnr/dofaw/wpp/index.html
191 http://efotg.sc.egov.usda.gov/treemenuFS.aspx, http://www.pia.nrcs.usda.gov/technical/
192 http://www.ctahr.hawaii.edu/oc/freepubs/pdf/SCM-26.pdf
193 http://www.state.hi.us/dlnr/dofaw/wmp/bmps.htm
194 http://www.ctahr.hawaii.edu/oc/freepubs/pdf/HF-1.pdf
195 http://www.privatelandownernetwork.org/
196 http://www.privatelandownernetwork.org/yellowpages/resource.aspx?id=21039

conserving our natural resources and sustaining agricultural production. This assistance can help land users: maintain and improve lands and their management, protect and improve water quality, enhance recreational opportunities on their land, maintain and improve the aesthetic character of private land, explore opportunities to diversify agricultural operations, and develop and apply sustainable agricultural systems.

- **Conservation Plans**: Although the CTA program does not include financial or cost-share assistance, clients may develop conservation plans, which may serve as a springboard to financial assistance and easement conservation programs provided by other Federal, State, and local programs. Conservation Plans, which address structural and/or management practices specific to an agricultural operation, are one means to implement management measures applicable to agriculture and forestry.

- **Environmental Quality Incentives Program (EQIP)**[197]: EQIP provides technical and financial assistance to agricultural producers to voluntarily address issues such as water management, water quality, and erosion control by incorporating conservation into their farming operations. Producers may construct or improve water, soil, plant, or animal resources on their properties with such practices as irrigation structures, windbreaks, brush removal, and pasture plantings. Applicants may request EQIP assistance at any time by submitting an application to the local NRCS office. A conservation plan is required, which can be developed with NRCS support. The federal cost share is 75% to farmers, ranchers, and foresters for implementing land and watershed conservation practices.

- **EQIP - Organic Initiative**[198]**, Seasonal High Tunnel Initiative**[199]**, and Water Quality Initiative**[200]: These initiatives provide contracts to producers to plan and implement conservation practices that address natural resource concerns in ways that are consistent with organic production, lengthen the growing season for crops that are shortened due to environmental constraints, and positively benefit watershed health.

- **USDA NRCS Agricultural Management Assistance (AMA)**[201]: Agricultural Management Assistance provides financial assistance payments to agricultural producers to voluntarily address issues such as water management, water quality, and erosion control by incorporating conservation into their farming operations. Producers may construct or improve water management structures or irrigation structures; plant trees for windbreaks or to improve water quality; and mitigate risk through production diversification or resource conservation practices, including soil erosion control, integrated pest management, or transition to organic farming. Applicants may request AMA assistance at any time by submitting an application to the local NRCS office. A conservation plan is required, which can be developed with NRCS support. The federal cost share is 75%, up to $50,000 per year, for three to ten years.

- **Conservation Resource Enhancement Program (CREP)**[202]: The Conservation Reserve Enhancement Program (CREP) provides landowners financial incentives to voluntarily convert previously forested, degraded lands to native trees, shrubs, and grasses. The goal is to improve water quality and

197 http://www.nrcs.usda.gov/programs/eqip/,
http://www.privatelandownernetwork.org/yellowpages/resource.aspx?id=1669
198 http://www.privatelandownernetwork.org/yellowpages/resource.aspx?id=20458
199 http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/?&cid=stelprdb1046250
200 http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/financial/eqip/?cid=STELPRDB1047761
201 http://www.pia.nrcs.usda.gov/programs/ama/ama.html,
http://www.privatelandownernetwork.org/yellowpages/resource.aspx?id=1649
202 http://hawaii.gov/dlnr/dofaw/forestry/crep

quantity, manage invasive species, enhance wildlife habitat, and improve near shore coral reef health with riparian forest buffers, wetland buffers, and other reforestation. CREP is a federal-state natural resources conservation program that is implemented jointly in Hawai'i by SDA Farm Service Agency, NRCS, and DLNR DOFAW with support from Hawai'i DOA, Watershed Partnerships, and the University of Hawai'i Mānoa. Participants are eligible for a $100/acre signing incentive, per acre rental and incentive payments, 50% cost-share payments for establishing conservation practices, a one-time additional payment equal to 40% of the cost of establishing conservation practices, and management payments of up to $450/acre for invasive species control. Interested producers should contact their local FSA Service Center for more information and to determine eligibility.

- **Conservation Stewardship Program (CSP)**[203]: CSP provides technical and financial assistance voluntary conservation program that encourages producers to undertake additional conservation activities and improve, maintain, and manage existing conservation activities.

- **Conservation of Private Grazing Land (CPGL)**[204]: CPGL provides technical, educational, and related assistance to those who own and manage private grazing lands. This technical assistance, which is is not a cost share program, will offer opportunities for:

    - better grazing land management;
    - protecting soil from erosive wind and water;
    - using more energy-efficient ways to produce food and fiber;
    - conserving water;
    - providing habitat for wildlife;
    - sustaining forage and grazing plants;
    - using plants to sequester greenhouse gases and increase soil organic matter; and
    - using grazing lands as a source of biomass energy and raw materials for industrial products.

Currently, funds have not been appropriated for this program.

**USDA Farm Service Agency Conservation Loan Program (CLP)**[205]: Through the CLP, the FSA makes and guarantees loans to promote NRCS-approved conservation practices on farms and ranches. The goal is to provide access to credit for farmers who need and want to implement conservation measures on their land but do not have the "up front" funds available to implement these practices.

**US Fish and Wildlife Service (FWS) Landowner Incentive Program (LIP)**[206]: LIP provides funding and technical assistance to enhance, protect, or restore habitats that benefit federally listed, proposed, or candidate species, or other at-risk species on private lands.

**US FWS Partners for Fish and Wildlife**[207]: The Partners for Fish and Wildlife program provides technical and cost-share funding for the voluntary restoration of native habitats on private lands and Hawaiian Homelands to achieve long-term benefits to threatened and endangered species. Projects can include, but are not limited to, construction of fences to exclude feral ungulates; control of alien plants,

203 http://www.pia.nrcs.usda.gov/programs/new_csp/csp.html, http://www.privatelandownernetwork.org/yellowpages/resource.aspx?id=12597
204 http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/technical/cpgl/
205 http://www.privatelandownernetwork.org/yellowpages/resource.aspx?id=20886
206 http://wsfrprograms.fws.gov/Subpages/GrantPrograms/LIP/LIP.htm
207 http://www.fws.gov/pacificislands/partners.html

mammalian predators, and feral ungulates; out-planting of native plants; and restoration of native ecosystem elements, such as hydrology and microhabitat conditions.

**DLNR DOFAW Forest Stewardship Program**[208]: FSP provides technical and financial assistance to private landowners actively managing their land for forestry.

**County of Hawai'i Department of Research and Development**: The County of Hawai'i 's Department of Research and Development has an agriculture program consisting of an Agriculture Specialist and a small grants program for: financial support and coordination of agricultural resources, education and marketing programs; data collection, compilation and dissemination; management of collaborative Research and Development (R&D) projects; advocacy of local farmers and commodity groups to State and Federal agencies; and provision of background data and analyses to County policy-makers.

### Community-Based, Collaborative Kula Management in Other Communities

**Hui o Ko'olaupoko**[209]**:** The mission of Hui o Ko'olaupoko on O'ahu's windward coast is to protect ocean health by restoring the **'**āina: mauka to makai. This is done in partnership with stakeholders, including interested citizens, non-governmental organizations, government, educational institutions and businesses while using and focusing on sound ecological principles, community input, and cultural heritage. Hui o Ko'olaupoko focuses organizational efforts in three main program areas:

1. watershed/ahupua'a restoration and monitoring,
2. natural resource coordination/stakeholder involvement,
3. scientific data and information dissemination.

The Watershed Restoration Action Strategy serves as the master plan for Hui o Ko'olaupoko. Project examples include riparian restoration, rain gardens, and fish passage projects.

## Kula Resources Analysis Table

The following Table shows the process used in evaluating the findings from the research and consultations throughout the analysis process up to this point. The Table clearly identifies:

- **Challenges** (1st column) identified in the analysis.
- **Support/Rationale** (2nd column) lists Policy Support (applicable governmental policies) and Plan Support (how the issue relates to researched plans/studies). This column will generally link back to the associated sections of the analysis document where that strategy support is located.
- **Possible CDP Strategy Direction** (3rd column) – the general strategy direction the CDP will likely be taking in addressing the challenge in order to meet the community's objectives.

The Strategy Directions are categorized into one of the four following CDP Strategy Types:

- **Policy**: establish policy with policy maps (Official Land Use Map) and policy statements related to land use, watersheds and natural features, public improvement priorities, government services, and public re/development;
- **Advocacy:** recommend advocacy with federal and state policy makers and agencies for policies, regulations, incentives, programs, and action;

208 http://hawaii.gov/dlnr/dofaw/forestry/fsp
209 http://www.huihawaii.org/index.html

- **Community-based, Collaborative Resource Management (CBCM)**: including research, place-based planning and program design, and program implementation;

- **Easement and Acquisition (E&A):** identify easement and acquisition priorities by fee simple ownership or through conservation easements;

At times, the CDP Strategy Direction will relate to other Analysis sections not yet complete (Community and Economy). In those cases, the table may refer to the appropriate section still under development, but will not contain a link to that section until that section is complete.

This is a working document, and the **Possible CDP Strategy Directions** are intended to be preliminary. We expect community feedback that may provide additional information that could further inform our analysis.

**Table 6. Kula Resources Analysis Table**

| Challenges | Support/Rationale | Possible CDP Strategy Direction |
|---|---|---|
| **Preservation and Protection of Productive Agricultural Lands and Open Spaces** | **Plan Support:**<br>▪ Hāmākua Agriculture Plan: Sustaining Rural Hāmākua Through Agriculture,<br>▪ Hāmākua Farmer Bureau and Hāmākua Livestock Producer's Agriculture Plan,<br>▪ County of Hawai'i Agriculture Plan,<br>▪ A Strategic Plan for Hawai'i's Agriculture<br>**Policy Support:**<br>▪ General Plan:<br>o Important Agricultural Lands - 2.3(a), 2.3(s), 14.1.2(b), 14.2.2(a), 14.2.3(i)<br>o Encourage Ag Uses on Ag Lands – 9.3(x), 14.2.3(j), 14.2.3(s), 14.2.3(t)<br>▪ State Policies:<br>o Hawai'i State Constitution<br>o State Land Use: HRS 205<br>o Coastal Zone Management: HRS 205a | **Land Use Policy Map:** Designate Hāmākua's Kula (Agricultural Land) Sector to be preserved for agriculture and open space<br>**Policy**: Guidance to Planning Department on Land Use Applications in the Kula Sector<br>▪ SLU Boundary Amendment/Rezone<br>▪ Special Permit including types of special permits to allow<br>▪ Use Permit<br>▪ Subdivision<br>▪ Variance<br>▪ Additional Farm Dwelling and Ohana<br>▪ Plan Approval<br>**CBCM:** Create a Kula (Agricultural Land) Resource Subcommittee of the CDP Action Committee<br>**Advocacy:** Encourage the State Legislature to appropriate funds to the County of Hawai'i to develop recommendations of lands to be designated Important Agricultural Lands. |

| | | |
|---|---|---|
| | | **Advocacy:** Encourage the State Legislature to Provide DLNR resources to support Soil and Water Conservation Districts |
| **Unsustainable agricultural practices create a negative impact on soils, watershed resources, and downstream ecosystems including nearshore waters.** | **Plan Support**:<br>▪ Ocean Resources Management Plan,<br>▪ Hāmākua Agriculture Plan: Sustaining Rural Hāmākua Through Agriculture,<br>▪ Hāmākua Farmer Bureau and Hāmākua Livestock Producer's Agriculture Plan,<br>▪ County of Hawai'i Agriculture Plan,<br>▪ A Strategic Plan for Hawai'i's Agriculture<br>**Policy Support:**<br>▪ General Plan: 4.3(g), 5.2(e), 5.2(f), 5.5.9.2(a), 5.5.9.2(b), 5.3(e), 5.3(n), 5.3(o), 8.3(l), 8.3(j)<br>▪ State Policies:<br>o Hawai'i State Constitution<br>o State Land Use: HRS 205<br>o Coastal Zone Management: HRS 205a | **Policy**: Guidance to DPW on Grading and Grubbing Permits<br>**Policy**: Guidance to Planning Department on land use permits in the Kula District to develop and implement NRCS Conservation Plans<br>**CBCM:** The County to work with the private landowners and appropriate State and Federal agencies in developing and implementing watershed management plans and projects<br>**CBCM:** Create a Kula (Agricultural Land) Resource Subcommittee of the CDP Action Committee<br>**Advocacy:** Encourage Congress to provide sufficient funding to the Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Pacific Islands Area (PIA), the Farm Service Agency, and the Fish and Wildlife Service (FWS) to adequately implement landowner incentive programs. |

# KAHAKAI (COASTAL LAND) RESOURCE MANAGEMENT

The area of Kahakai referred to in this section refers to near-shore waters and the land mauka of the shoreline that has direct influences on near-shore waters. It is understood that all the lands mauka of the coast influence coastal waters, and so land issues that influence kahakai resources will also be addressed in the kula (agricultural) and in the wao (forest) sections of the Analysis.

The Hāmākua Planning Area's shoreline is approximately 70 miles in length and the majority of it consists of high, rocky cliffs. Its unique topography creates dramatic sweeping viewplanes from the summit of Mauna Kea to the coastline. The coastline is rugged, and the predominance of high bluffs makes safe ocean access largely impossible or precarious. Punctuating the sea cliffs are stream outlets, either along valley floors where cobble beaches have formed, or along hanging valleys where streams spill into the ocean in picturesque waterfalls. The Planning Area has several beach parks, most of which are located along/near a stream's ocean entry, and these form the primary public access points to the ocean throughout the region.

## Hāmākua CDP Objectives Relative to Kahakai

- **Protect, restore, and enhance** watershed ecosystems, **sweeping views, and open spaces** from mauka forests to **makai shorelines**, while assuring **responsible public access** for recreational, spiritual, cultural, and sustenance practices.
- Protect and restore viable agricultural lands and resources. **Protect and enhance viewscapes and open spaces that exemplify Hāmākua's rural character**.
- Encourage community-based collaborative management plans to assure that human activities are in harmony with the quality of Hāmākua's unique natural and cultural landscape.

## Kahakai Assets and Challenges

**ASSETS**

- Dramatic natural scenic beauty, including viewplanes from the ocean to the summit of Mauna Kea, rocky shoreline and bluffs, and picturesque pali
- Unique natural resources, including springs, pristine coastal and near shore ecosystems
- Valuable recreational and subsistence resources, including beach parks, boat ramps, and fishing grounds.

**CHALLENGES**

- Limited management of natural, scenic, cultural, subsistence, trail, and recreational resources along the coastline;
- Development and agricultural impacts on coastal waters
- History of coastal hazards including:
    - Local and distant tsunami
    - Coastal bluff erosion
    - Cataclysmic slope failures
- Limited knowledge base of:

- Coastal Bluff conditions
- Shoreline movement projections
- Coastal water quality

- Forecasts of climate change impacts, including one-meter sea level rise this century and higher winds and storm surge levels due to climate change, which have not yet been incorporated into FEMA's Flood Insurance Rate Maps (FIRM). Overall, on a scale of 1 (least intense) to 4 (most intense), USGS rated most of the Planning Area as 3. The pockets of most intense sea level rise hazards included (from north to south) Waimanu Valley, Waipi'o Valley, Ka'awali'i Gulch, Laupāhoehoe Point, Maulua Bay, Hakalau Bay, Wailea Bay (Kolekole Park).
- Safe access to ocean resources is rare in the Planning Area; the only boat ramp within the Planning Area has been closed since 2009 due to storm damage (there is no set date to reopen the ramp).

## General Plan Kahakai Management Policies

The County General Plan is clear about the need to protect Hāmākua's Kahakai resources:

- 2.3(h): **Protect essential land, water, sea, and people resources** for present and future generations through economic incentives.
- 5.3 (a): **Enact restrictive land use and building structure regulations in areas vulnerable to severe damage due to the impact of wave action**. Only uses that cannot be located elsewhere due to public necessity and character, such as maritime activities and the necessary public facilities and utilities, shall be allowed in these areas.
- 5.3(b): Review land use policy as it relates to flood plain, high surf, and tsunami hazard areas.
- 5.3(k): **Develop an integrated shoreline erosion management plan that ensures** the preservation of sandy beaches and **public access to and along the shoreline**, and the protection of private property from flood hazards and wave damage.
- 7.3(b) **Develop and establish view plane regulations** to preserve and enhance views of scenic or prominent landscapes from specific locations, and **coastal aesthetic values**.
- 7.3 (d) Access easement to public or private lands that have natural or scenic value shall be provided or acquired for the public.
- 7.3 (f) Consider structural setback from major thoroughfares and highways and establish development and design guidelines to protect important viewplanes.
- 7.3 (h) Protect the views of areas endowed with natural beauty by carefully considering the effects of proposed construction during all land use reviews.
- 7.3(i) Do not allow incompatible construction in areas of natural beauty.
- 8.2(e): **Protect and effectively manage Hawai'i's open space**, watersheds, **shoreline**, and natural areas.
- 8.3(c): **Maintain the shoreline for recreational, cultural, education, and/or scientific uses in a manner that is protective of resources and is of the maximum benefit to the general public.**
- 8.3(d): **Protect the shoreline from the encroachment of man-made improvements and structures**
- 8.3(r): **Ensure public access is provided to the shoreline**, public trails and hunting areas.

- 8.4: The following shall be considered for the protection and conservation of natural resources.

  (a) Areas necessary for the protection and propagation of specified endangered native wildlife, and conservation for natural ecosystems of endemic plants, fish and wildlife.

  (b) Lands necessary for the preservation of forests, park lands, wilderness and beach areas.

  (c) Lands with a general slope of 20 per cent or more that provide open space amenities or possess unusual scenic qualities.

  (f) **The Coastal Zone and Special Management Area** as defined by statute and in accordance with the adopted objectives and guidelines**.**

## Previous Related Planning/Studies

**Hawai'i Ocean Resources Management Plan (ORMP)** [210]: The ORMP includes the following goals and strategic actions related to Kahakai management:

- **Protect** beaches, wetlands, **and coastal communities from shoreline erosion and other coastal hazards**
    - Encourage appropriate coastal-dependent development that reduces risks from coastal hazards and protects coastal and cultural resources
        - Require all new coastal development projects and plans as part of permit process to identify specific measures to mitigate risks associated with coastal hazards, protect sensitive coastal and cultural resources, and ensure public access
- **Improve the health of coastal and ocean resources for sustainable traditional, subsistence, recreational, and commercial uses**
    - Strengthen and expand marine protected area management
        - Develop place-based marine protected area plans for priority areas
- Improve enforcement capacity and voluntary compliance with existing rules and regulations for ocean resource protection
    - Employ community-based partnership programs, including the Mauka-Makai Watch Program
- **Enhance public access and appropriate coastal dependent uses of the shoreline**
    - **Enhance and restore existing public shoreline areas and scenic vistas**
        - Develop enhancement and restoration plans to increase public access and restore priority beaches and scenic vistas
        - Implement shoreline enhancement and restoration plans in priority areas
- **Promote appropriate and responsible ocean recreation and tourism that provide culturally informed and environmentally sustainable uses for visitors and residents**

210 http://files.hawaii.gov/dbedt/op/czm/ormp/reports/ormp_consolidated_work_plan.pdf

- **Develop community-based frameworks and practices for identifying and mitigating ocean recreational use conflicts**
    - Encourage community-based, culturally informed environmental education and outreach programs promoting responsible ocean recreation
- Promote responsible and sustainable ocean-based tourism
    - Encourage the integration of best management practices and cultural values and experiences into commercial ocean-based tourism business plans

- Apply integrated and place-based approaches to the management of natural and cultural resources
    - Develop integrated natural and cultural resources planning process and standardized tools
        - Develop integrated natural and cultural resources planning process and standardized tools
    - Build capacity for community participation in natural and cultural resources management
        - Identify existing networks, community groups and organizations to work with to establish responsible management entities for each ahupua'a and moku to implement the ORMP
        - Expand the Mauka-Makai Watch program and provide standardized training programs and guidelines for participating community volunteers and organizations.

**Facing Our Future: Adaptive Planning for Sea-level Rise in Maui and Hawai'i Counties. UH Sea Grant Report to Hawai'i and Maui Counties, 2012:**[211]In July 2012, UH Sea Grant released this report to the Planning Departments of Maui and Hawai'i Counties. The purpose of the report was to provide a foundation for improving shoreline planning for coastal hazards, including sea level rise, at the local level. The recommendations were developed by shoreline planners from the Counties of Maui and Hawai'i and are intentionally focused on issues that can be addressed within the context of the existing County regulatory frameworks. The five main recommendations from this plan are:

- Recommendation 1: **Encourage Setback Determination in Early Planning Stages**
- Recommendation 2: **Strengthen the Shoreline Setback Policy**
- Recommendation 3: Clarify the Purpose and Applicability of Shoreline Rules
- Recommendation 4: Refine Criteria for Minor Structures and Activities
- Recommendation 5: Review Permitting Process for Emergency Repairs to Seawalls

The first recommendation relates to Hāmākua's Community Objectives and it stipulates:

"Require a Hazard Assessment that includes a determination of the shoreline and the shoreline setback area at the earliest stages of the land use planning and development process. Determining hazard buffers that are based on scientific data such as erosion rates early in the land use planning process will result in the least economic impact to the landowner while avoiding dangerous hazard risks to life and property through proper planning."

211 http://seagrant.soest.hawaii.edu/sites/seagrant.soest.hawaii.edu/files/publications/adaptive_planning.pdf

Specific recommended actions include:

- An erosion zone should be determined considering an annual average erosion rate, the life expectancy of a structure, buffers for storm erosion, safety design, errors and sea level rise.
- A multi-hazard analysis is recommended that includes threats from erosion, wave inundation, and flooding, whatever the cause, either working as a sole factor or in combination with other factors.
- Guidance should be provided in the rules, or outside the rules in a policy statement or guidance document, on how long the hazard assessment with shoreline setback determination is valid.

Examples of related policies and programs include:

- The following West Maui Community Plan policy: "Protect the shoreline and beaches by preserving waterfront land as open space wherever possible. This protection should be based on a study and analysis of the rate of shoreline retreat plus a coastal hazard buffer zone. Where new major waterfront structures or developments are to be approved, preservation should be for 50-100 years by employing a shoreline setback based on the rate established by the appropriate study."
- The requirement to do a hazard assessment and determine the setback at the earliest stages of development for community planning changes, zoning amendments and subdivision approvals is required under the Kaua'i Shoreline Setback Rules.

The second recommendation stipulates:

"Methods for determining shoreline setbacks should be reviewed by County regulators to support hazard avoidance and risk reduction for planning and siting of coastal projects. The recommendations described here are intended to strengthen the setback policy by increasing the minimum setback and improving the formula to delineate setbacks."

- Clarify or eliminate references to "fixed shoreline".
- Increase the minimum setback from the shoreline from 25 ft to at least 40 ft.
- **Commission a study to identify areas of historic bluff failure and develop bluff retreat rates.**
- Establish **riparian buffers** (setbacks along streams, ephemeral waterways, gulches).

**County of Hawai'i Multi-Hazard Mitigation Plan**: [212] This plan addresses various natural hazards and recommends mitigating strategies to reduce or eliminate loss of life or property. Strategies Relevant to Hāmākua and in line with Community Objectives:

- Landslides and Rock Falls
    - Improve landslide susceptibility maps
- Tsunami-prone areas are Laupāhoehoe Point and Waipi'o Valley
- Future Mitigation Strategies:
    - Update tsunami evacuation maps
    - Note significant discrepancies with new FIRM maps
    - Tsunami design guidelines for new structures and evaluating existing buildings

212 http://records.co.hawaii.hi.us/Weblink8/1/doc/24623/Page1.aspx

- **Revise the Shoreline Setbacks** – establish a coastal-hazard buffer zone to protect beachfront development from coastal erosion. Adequate setbacks allow the natural erosion and accretion cycles to occur and help maintain lateral beach access. Furthermore, setbacks provide open space for the shoreline for the enjoyment of the natural shoreline environment.

- **Promote Research Projects** – projects that focus on coastal processes can lead to improved erosion management. Further research, along with beach monitoring, is necessary to increase our understanding of coastal and marine science and to insure effective and efficient management of the coastal zone.

**North East Hawai'i Community Development Plan**[213]: This first CDP from the County of Hawai'i lists the following policies for protecting these resources:

- The shoreline of the Island of Hawai'i **shall be maintained for recreational, educational, and/or scientific uses in a manner that is protective of resources** and is of the maximum benefit of the general public.

- The shoreline **shall be protected from the encroachment of man-made improvements and structures**.

- The County shall coordinate programs to protect natural resources with other government agencies.

- Investigate methods of beach replenishment and sand erosion control

## Current Tools and Alternative Strategies for Managing Kahakai Resources:

### Jurisdiction

Coastal waters are managed by the State Department of Land and Natural Resources (DLNR) (for aquatic resources and boating), the State Department of Health (DOH) (for water quality), and the Federal Army Corps of Engineers (COE). The County is responsible for the Special Management Area (SMA), including the shoreline setback area. Other agencies that have jurisdiction in the shoreline area include the DOH (for wastewater and underground injection) and the DLNR for wells. See Figure 9: Shoreline Jurisdiction.

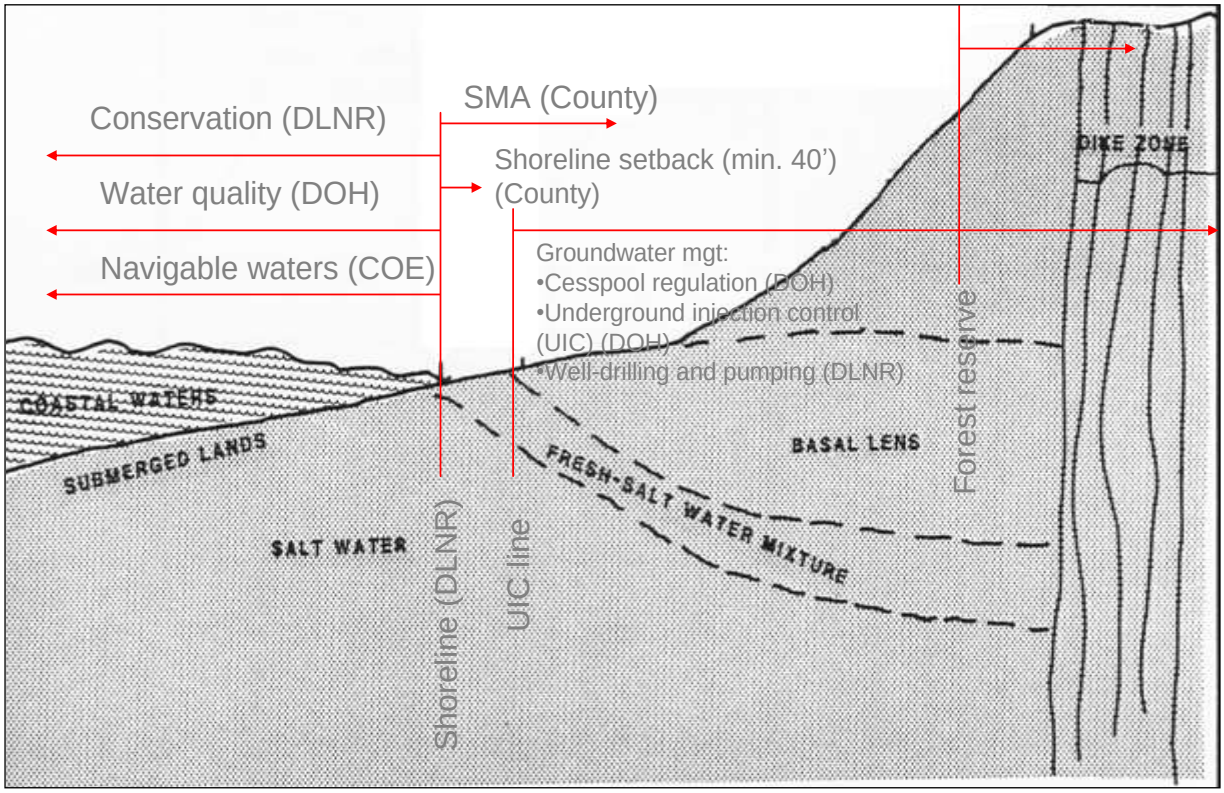
HRS section 205A-1 and HAR section 13-222-2 define the shoreline as "the upper reaches of the wash of the waves, other than storm or seismic waves, at high tide during the season of the year in which the highest was of the waves occurs, usually evidenced by the edge of vegetation growth, or the upper limit of debris left by wash of the waves."

### Federal Marine Management Strategies

**National Marine Sanctuaries**[214]: The National Marine Sanctuary Program (NMSP) is responsible for identifying, designating, and managing ocean areas of national significance as national marine sanctuaries. Sanctuaries are managed to protect and conserve their resources and to allow uses that are compatible with resource protection. Management of sanctuaries is composed of a number of components: authorizing legislation (National Marine Sanctuaries Act), regulations, management plans, management effectiveness programs, permitting, conservation policy, and strategic planning. The Pacific Island Region comprises of three areas: Papahānaumokuākea Marine National Monument, Hawaiian Islands Humpback Whale National Marine Sanctuary, and Fagatele Bay National Marine Sanctuary

213 http://www.hawaiicountycdp.info/hamakua-cdp/about-the-hamakua-cdp-planning-area/past-and-current-planning-activities-in-the-hamakua-cdp-planning-area/1-NEHI%20CDP-1979.pdf/view
214 http://sanctuaries.noaa.gov/about/pacific.html

**Figure 9. Shoreline Jurisdiction**




(American Samoa). While the boundaries of Papahānaumokuākea Marine National Monument and the Hawaiian Islands Humpback Whale National Marine Sanctuary do not fall within the waters surrounding the Hāmākua Planning Area, the Endangered Species Act protects endangered species that are under the protection of the sanctuaries[215]. Enforcement of the regulations is coordinated by the NOAA Office of Law Enforcement (OLE), with the U.S. Coast Guard (USCG), DOCARE, and the NOAA Office of General Counsel.

**NOAA National Estuarine Research Reserve System** (NERR)[216]: The National Estuarine Research Reserve System is a partnership of NOAA and coastal states to study and protect vital coastal and estuarine resources. Waimanu Valley was a NERR between 1978 and 1996:

"The Waimanu Valley NERR, located on the windward side of the Island of Hawai'i, was designated in 1978 as the second NERR in the system. Serious budget cuts within the State have hindered efforts to adequately staff the Waimanu Valley NERR and complete a site management plan, which are required by the National Oceanic and Atmospheric Administration (NOAA) to be in compliance with regulations governing the NERR System. In addition, the remoteness and relative inaccessibility of the Waimanu Valley NERR, and the inability of the State of Hawaii to secure adequate protection of 200 acres of property in the WVNERR due to ownership by the Department of Hawaiian Homelands, renders the Waimanu Valley NERR unable to meet the research, education, and management purposes of the NERR System. After much effort to seek alternatives to withdrawal from the NERR System, both the State of

215 http://hawaiihumpbackwhale.noaa.gov/management/legislation.html
216 http://www.nerrs.noaa.gov/

Hawai'i and NOAA agree that the only feasible solution at this time is to withdraw the Waimanu Valley NERR from the NERR System."[217]

More recently Hawai'i residents are being asked to submit site candidates for future NERR sites:

"In support of the Governor of Hawai'i's interest in establishing a National Estuarine Research Reserve (NERR), Hawai'i's Coastal Zone Management Program's Office of Planning has initiated the site nomination and selection process. The state recently launched their NERR Site Proposal Process website[218] in an effort to engage citizens of Hawaii in the designation process. The website provides citizens with background information on the designation process, answers to questions, and how to submit their choice for a future NERR site. The final designation of a Hawaii NERR will fill an unrepresented bio-geographic region in the NERR system. It will also facilitate new partnerships; initiate new research on estuarine systems in Hawaii; improve coastal management; create new opportunities for citizen and visitor engagement; and leverage resources from partners for long-term research, monitoring, stewardship, and education."[219]

**Endangered Species Protections**: Threatened and endangered species found in Hāmākua's coastal areas include the Hawaiian monk seal (endangered), the hawksbill turtle[220] (endangered), and the green turtle (threatened).

In June 2011, the National Oceanic and Atmospheric Administration (NOAA) proposed expanding federally protected zones — or "critical habitat" — for the endangered Hawaiian monk seal to include parts of the main Hawaiian Islands, including the Hāmākua Coastline. The federal government defines critical habitat to be places that are essential to the conservation of species listed under the Endangered Species Act[221]. Critical habitats are not reserves, refuges, Marine Protected Areas (MPAs) or parks, and they do not impact access to, recreation on, or fishing at public beaches. The only developments that may be affected are those activities requiring Federal funding or authorization, such as filling of a wetland or repair of a seawall.

In May 2012, NOAA awarded a $128,000 grant to establish a Marine Protected Species program for Hawaiian Monk Seals, Hawksbill Turtles, and Green Sea Turtles. A major aim of the program is to reduce the number of incidents in which humans bother and harm theses marine animals and to document the disturbance, as a growing number of people are frequenting the coast. The work will include developing and delivering public education products and activities designed to enhance public knowledge of seal-friendly and turtle-friendly ocean recreation and fishing practices.

**Army Corps of Engineers** (COE)[222]: The 1972 Clean Water Act gave the COE broader authority to regulate dredge and fill activities in "waters of the United States" and their tributaries and adjacent wetlands. In Hawai'i, that includes coastal wetlands, anchialine ponds, and their associated endangered species. Therefore, any activity impacting those waters must be permitted by the COE for compliance with the Clean Water Act, the Coastal Zone Management Act, the Endangered Species Act, the National Historic Preservation Act, and other statutes.

**NOAA Fisheries Office of Habitat Conservation**[223]: This NOAA office protects, restores, and promotes stewardship of coastal and marine habitat to support fisheries. Projects seek to protect and restore fish

217 http://www.gpo.gov/fdsys/pkg/FR-1996-06-25/pdf/96-15960.pdf
218 http://planning.hawaii.gov/czm/initiatives/nerrs-site-proposal-process/
219 http://www.nerrs.noaa.gov/News.aspx?id=404
220 http://scholarspace.manoa.hawaii.edu/bitstream/handle/10125/22767/vol63n3-371-382.pdf?sequence=1
221 http://www.fpir.noaa.gov/PRD/prd_critical_habitat.html
222 www.poh.usace.army.mil
223 www.nmfs.noaa.gov/habitat/restoration

habitat such as wetlands and coral reefs, planning for climate adaptation, and collaborating with partners and federal agencies on regional ecosystem conservation. The office provides technical advice to government agencies and the public on proposed actions that could have a negative effect on living marine resources, including coastal wetlands. It also makes grants in support of its mission, including Community Restoration grants in Hawai'i made through a partnership with the Hawai'i Community Foundation for[224] as well as Marine Debris Removal project grants.

**NOAA Marine Debris Program**[225]: NOAA's Marine Debris Program (MDP) supports national and international efforts to research, prevent, and reduce the impacts of marine debris. Through grants and a range of programs, the MDP coordinates and supports activities with other federal agencies and partners with state and local agencies, tribes, non-governmental organizations, academia, and industry.

**NOAA Marine Education and Training Mini Grant Program**[226]: NOAA's National Marine Fisheries Service offers grants to improve communication, education, and training on marine resource issues and increase scientific education for marine-related professions among coastal community residents, including indigenous Pacific islanders, Native Hawaiians and other underrepresented groups.

**NOAA Community-based Restoration Program**[227]: NOAA's Restoration Center in its Habitat Conservation section of the National Marine Fisheries Service invests funding and technical expertise in high-priority coastal habitat restoration projects that instill conservation values and engage citizens in hands-on activities. In Hawai'i , the program has supported Okelehao Trail Erosion Control Restoration and the Waipa Fishpond and Estuarine Habitat Restoration Project, both located in Hanalei on the island of Kaua'i and both implemented by the Hanalei Watershed Hui.[228]

**U.S. Fish and Wildlife Service Pacific Islands Coastal Program** (PICP)[229]: The USFWS Coastal Program provides financial and technical assistance to partners for the conservation and restoration of high priority coastal ecosystems. The PICP provides project funding and technical support to:

- Restore and conserve coastal and near-shore marine habitats
- Conduct applied research to develop new restoration techniques
- Map and survey coastal species and their habitats
- Offer technical support to non-federal participants to purchase coastal habitat from willing sellers
- Provide environmental education programs
- Assist partners to obtain outside habitat restoration grants, such as National Coastal Wetlands Grants.

**Wetlands Conservation Grants**[230]: The North American Wetlands Conservation Act provides matching grants to organizations and individuals who have developed partnerships to carry out wetlands conservation projects for the benefit of wetlands-associated migratory birds and other wildlife. The grants support projects that involve long-term protection, restoration, and/or enhancement of wetlands and associated uplands habitats.

224 http://www.hawaiicommunityfoundation.org/grants/grants/grant/hcfnoaa-community-restoration-partnership
225 http://marinedebris.noaa.gov/
226 http://www07.grants.gov/search/search.do?&mode=VIEW&oppId=134813
227 http://www.habitat.noaa.gov/restoration/programs/crp.html
228 http://www.hanaleiwatershedhui.org/
229 http://www.fws.gov/pacificislands/coastal.html
230 http://www.fws.gov/birdhabitat/Grants/NAWCA/index.shtm

**National Coastal Wetlands Conservation Grant Program**[231]: The National Coastal Wetlands Conservation Grant Program provides matching grants to States for acquisition, restoration, management or enhancement of coastal wetlands. Are there coastal wetlands in Hāmākua?

**NOAA Office of Law Enforcement** (OLE)[232]: NOAA's Office of Law Enforcement enforces laws that conserve and protect living marine resources and their natural habitat, protecting fish stocks from depletion, marine mammals from extinction, livelihoods of commercial fishers, hobbies of recreational fishers, and the health of seafood consumers. OLE's jurisdiction spans more than 3 million square miles of open ocean, more than 85,000 miles of U.S. coastline, and all National Marine Sanctuaries and Marine National Monuments. OLE's Pacific Island's office is in Honolulu. OLE operates joint enforcement agreements with states and partners with other agencies such as the U.S. Coast Guard.

## State Agencies Focused on Coastal Management

**DLNR Division of Aquatic Resources** (DAR)[233]: The DAR manages the state's aquatic resources and ecosystems through programs in commercial fisheries and resource enhancement; aquatic resources protection, habitat enhancement, and education; and recreational fisheries. Major program areas include projects to manage or enhance fisheries for long-term sustainability of the resources, protect and restore the aquatic environment, protect native and resident aquatic species and their habitat, and provide facilities and opportunities for recreational fishing. Fishing regulations apply only to sport and commercial fisherman; there is no marine recreational fishing license in Hawai'i. Management tools include seasonal restrictions, size limits, and bag limits.

**Department of Health Clean Water Branch Classification**[234]: The Clean Water Branch protects public health and inland and coastal waters for marine life wildlife. Responsibilities include coastal water surveillance and watershed-based environmental management through permitting, monitoring, enforcement, polluted runoff control projects, and public education. The last time a comprehensive water quality test was done for the coastal waters of our Planning Area was in 1987, and the waters were given an "A" water quality rating. However, that testing was during the era of sugar agriculture with its various near-shore impacts, and that rating does not necessarily accurately reflect current conditions. [235]

**DLNR Office of Conservation and Coastal Lands** (OCCL)[236]: The OCCL is responsible for overseeing private and public lands that lie within the State Land Use Conservation District as well as beach and marine lands out to the seaward extent of the State's jurisdiction. The OCCL processes all Conservation District Use Applications (CDUA), conducts certified shoreline surveys, and manages beach restoration projects.

**Marine and Coastal Zone Advocacy Council** (MACZAC)[237]: HRS Chapter 205A-3.5 clarifies the Office of Planning's responsibility to maintain a public advisory body (MACZAC). The body is composed of twelve members recruited from the Islands of Kaua'i, O'ahu, Maui, Moloka'i, Lana'i, and Hawai'i, who have diverse backgrounds in business, environment, native Hawaiian practices, terrestrial and marine commerce, recreation, research, and tourism.

MACZAC's mission statement is: "Advocate for a comprehensive management system which restores, preserves and protects Hawai'i's marine and coastal environment." Since its founding in 2001, MACZAC

231 http://www.fws.gov/coastal/CoastalGrants/
232 http://www.nmfs.noaa.gov/ole/ole_about.html
233 http://hawaii.gov/dlnr/dar/fishing.html
234 http://health.hawaii.gov/cwb/
235 http://health.hawaii.gov/cwb/files/2013/05/IslandHawaii.pdf
236 http://hawaii.gov/dlnr/occl
237 http://www.state.hi.us/dbedt/czm/maczac/maczac.php

has worked on the mapping of coastal parking access and recommendations regarding shoreline certification, commercial boating regulations, harbor facilities, integrated ocean resource management, cultural resources management, coastal water quality, coastal carrying capacity, marine managed areas, regulatory review, legislative advocacy, public education and outreach, as well as many other marine and coastal issues in Hawaii.

**University of Hawai'i Sea Grant College Program** (UH Sea Grant)[238]: UH Sea Grant is part of a national network of programs that promote better understanding, conservation, and use of coastal resources. UH Sea Grant works in partnership with the University of Hawai'i 's School of Ocean and Earth Science and Technology (SOEST) and the National Oceanic and Atmospheric Administration (NOAA) to identify Hawai'i 's critical resource management issues and guide scientific research to address these challenges.

UH Sea Grant supports research, extension, education, and communication services and provides links between academia, federal, state and local government agencies, industries, and local community members. UH Sea Grant has five focus areas:

- Healthy Coastal Ecosystems, including public education programs, the ReefWatchers coral reef monitoring program, and the Center for Marine Science Education
- Sustainable Coastal Development, including the Center for Smart Building and Community Design
- Safe and Sustainable Seafood Supply, including the Center for Sustainable Aquaculture
- Hazard Resilience in Coastal Communities, including erosion mitigation and setbacks, sea level rise, and tsunamis as well as the Center for Island Climate Adaption and Policy
- Sustainable Coastal Tourism.

**Center for Island Climate Adaptation and Policy**[239]: Sea Grant's Center for Island Climate Adaptation and Policy (ICAP) provides interdisciplinary research and solutions to island decision--makers to catalyze climate change adaptation and resiliency.

ICAP's 2011 report*, "Sea-Level Rise and Coastal Land Use in Hawai'i: A Policy Tool Kit for State and Local Governments*[240]*"* was developed because Hawai'i State and local governments are uniquely positioned to implement climate change and sea level rise adaptation policies because they exercise authority over coastal resources through land use planning, zoning, subdivision controls, capital investment programs, building codes, and transportation infrastructure. The report lists three basic approaches to sea-level rise adaptation have been identified:

- Accommodation. Adjustment of an existing system to changing natural conditions (e.g., strengthening flood-proofing regulations or expanding hazard zones).
- Protection. Hardening of a system in its existing location to withstand impacts from changing conditions (e.g., shoreline hardening such as seawalls and revetments).
- Retreat. Relocating existing structures to avoid impacts.

The report identifies these issues that pertain to the Planning Area:

- It identifies wetland taro cultivation as particularly susceptible to rising sea levels due to its general location in low-lying areas

238 http://seagrant.soest.hawaii.edu/
239 http://icap.seagrant.soest.hawaii.edu/
240 http://seagrant.soest.hawaii.edu/sites/seagrant.soest.hawaii.edu/files/publications/icap-sealevelrisetoolkit_web-1_2.pdf

- It points out that the necessity for an erosion-based setback in Hawai'i County is less clear given the island's relatively less erodible basalt rock coastlines.

- It finds that "scientific research must be expanded. Policy tools addressing sea-level rise derive legitimacy from the strength of the supporting science. Funding and support for continued scientific research, ultimately to establish site-specific estimates of sea-level rise impacts, is imperative."

**DLNR Division of Boating and Ocean Recreation** (DOBOR): The DOBOR managers Hawai'i's small boat harbors, boat ramps, offshore moorings, landings, and wharves. Regulatory responsibilities include vessel registration, permits for mooring and ocean water events, and boating safety education. DOBOR is wholly self-supported by user fees, vessel registration fees, marine fuel taxes, and boating property rental income.

Note: There are no DOBOR facilities within the Planning Area – the only boating facility in the Planning Area is at Laupāhoehoe Point, and the County of Hawai'i Parks and Recreation Department manages it. The boat ramp is officially closed due to storm damages. Please see the community facilities section of the "Commuity" Appendix [link] for more information.

**DLNR Division of Conservation and Resource Enforcement** (DOCARE)[241]: DOCARE is responsible for enforcement activities of the Department of Land and Natural Resources, including State Parks, historical sites, aquatic life and wildlife areas, coastal zones, Conservation districts, and State shores.

**State Fisheries Enforcement Units**[242]: In 2011, the DLNR partnered with Conservation International and the Harold K.L. Castle Foundation to improve fisheries enforcement through new Fisheries Enforcement Units.

Each Unit will consist of one supervisory captain, two field officers, one educational specialist and one administrative support position. Each unit will have a boat, boat storage facilities close to ocean entry points, and necessary maintenance and fuel budgets to ensure adequate surveillance time on the water.

## State Regulations and Strategies for Coastal Management

### State Conservation District

Pursuant HRS section 205-2(e), the conservation district includes areas necessary for:

- protecting watersheds and water sources
- preserving scenic and historic areas
- providing park lands, wilderness, and beach reserves
- conserving indigenous or endemic plants, fish, and wildlife, including those that are threatened or endangered
- preventing floods and soil erosion
- open space areas whose existing openness, natural condition, or present state of use, if retained, would enhance the present or potential value of abutting or surrounding communities, or would maintain or enhance the conservation of natural or scenic resources

241 http://dlnr.hawaii.gov/docare/

242 http://hawaii.gov/gov/newsroom/press-releases/state-nonprofits-partner-to-launch-initiative-to-benefit-hawaiis-nearshorefisherie

- areas of value for recreational purposes.

In the State conservation district, there is no county zoning, per se, so the DLNR has jurisdiction on uses and activities, which require a conservation district use permit from the Board of Land and Natural Resources or other written approval from the Department of Land and Natural Resources Office of Conservation and Coastal Lands, pursuant HAR section 13-5.

Hawai‘i Administrative Rules (HAR) section 13-5 establishes the following subzones within the Conservation district:

- Protective: to protect valuable resources in designated areas such as restricted watersheds, marine, plant, and wildlife sanctuaries, significant historic, archaeological, geological, and volcanological features and sites, and other designated unique areas. The Protective subzone includes lands necessary to protect watersheds, preserve historic sites, and preserve natural ecosystems, particularly those with endangered species.
- Limited: to limit uses where natural conditions suggest constraints on human activities. The Limited subzone includes land susceptible to hazards.
- Resource: to develop, with proper management, areas to ensure sustained use of the natural resources of those areas. The Resource subzone includes parkland, forestry, and recreational uses.
- General: to designate open space where specific conservation uses may not be defined, but where urban use would be premature. The General subzone includes lands not needed for urban, rural, or agricultural use and lands suitable for agriculture.
- Special: to provide for areas possessing unique developmental qualities which complement the natural resources of the area.

HAR 13-5 details permitted uses in each subzone. Depending on the subzone and proposed land use, either:

- no permit will be required;
- site plan approval from the DLNR is required;
- a permit approved by the Chair of the DLNR is required, or;
- a permit from the Board of Land and Natural Resources is required.

The rules in HAR 13-5 may be amended to change a subzone boundary.

The Hāmākua coastline is in the Special subzone[243]. However, this is often a very narrow strip of land that sometimes only reflects the bottom of a cliff face, and therefore offers very little development protections beyond the natural topography limitations of the land.

There are also numerous gaps in the conservation zone along the coast, primarily in relation to former Plantation mill and landing sites.

State land use district boundary amendments involving lands in the conservation district, land areas greater than fifteen acres, or lands delineated as important agricultural lands are processed by the Land Use Commission, but following HAR section 13-5-40(b), public hearings do not have to be held in the judicial district in which the land is located. State land use district boundary amendments involving other

243 http://www.state.hi.us/dlnr//occl/files/Subzones/12-05/hawaii_conserv_subz2005.pdf

lands are processed by the Planning Department, Planning Commission, and County Council, pursuant Planning Commission Rule 13.

DLNR Office of Conservation and Coastal Lands is responsible for overseeing private and public lands that lie within the State Land Use Conservation District and processes all Conservation District Use Applications (CDUA). The OCCL typically requests state land use district boundary determination from the Land Use Commission for any proposed use in proximity to the Conservation district.

### Natural Area Reserves (NAR)[244]

Two NARs include coastal areas – the Kaho'olawe Island Reserve and 'Ahihi-Kina'u NAR on Maui. The 'Ahihi-Kina'u NAR was established pursuant HAR sections 13-209 and 13-244-32[245]. Due to damage to sensitive resources and unmanaged recreational practices on the shoreline and within the waters, the 'Ahihi-Kina'u NAR was officially closed to the public in 2008 by DLNR to develop a management plan and address the issues impacting the sensitive resources. A working group, comprised of government, non-profit, and community members, has been working together to develop a plan to protect the resources and allow for use of the area.

### Coral and Live Rock[246]

HAR sections 13-95-70 & 71 prohibit taking, breaking, or damaging any stony coral or any rock or coral to which marine life of any type is visibly attached. Pursuant HRS sections 171-58.5 and 205A-44, the taking of sand, coral rubble or other marine deposits may not exceed one gallon per person per day and may be taken only for personal, noncommercial purposes. HAR section 13-95-70 prohibits the sale of all species of stony corals, which are native to the Hawaiian Islands.

### Marine Protected Areas[247]

Established in 2000 by Executive Order 13158, Marine Protected Areas (MPAs) are marine areas that have been reserved by federal, state, tribal, or local laws or regulations to provide protection to part or all of the natural and cultural resources therein. They may permit some extractive activities, including certain kinds of recreational fishing such as pole-and-line, spear fishing without SCUBA, and certain types of nets. Commercial fishing is generally forbidden.

There are several kinds of MPAs that vary according to limitations, including Fishery Management Areas, Marine Life Conservation Districts, and No-Take Reserves. "No-take" MPAs prohibit access or removal of marine life.

### Marine Life Conservation Districts[248]

MLCDs are designed to conserve and replenish marine resources. They are established by the DNLR as authorized by HRS Chapter 190. Suggestions for areas to be included in the MLCD system may come from the State Legislature or the general public. In addition, the DAR regularly conducts surveys of marine ecosystems throughout the state and may recommend MLCD status for areas that appear particularly promising.

MLCDs allow only limited fishing and other consumptive uses, or prohibit such uses entirely. The taking of any type of living material (fishes, eggs, shells, corals, algae, etc.) and non-living habitat material

244 http://hawaii.gov/dlnr/dofaw/nars/reserves/maui/ahihikinau
245 http://hawaii.gov/dlnr/dar/regulated_areas_other.html#ahihi
246 http://hawaii.gov/dlnr/dar/coral_liverock.html
247 http://hawaii.gov/dlnr/dar/pubs/MPApub.pdf,
248 http://hawaii.gov/dlnr/dar/mlcd.html

(sand, rocks, coral skeletons, etc.) is generally restricted, if it is permitted at all. MLCDs were introduced to Hawai'i in the fall of 1967 with Hana'uma Bay on 'Oahu. MLCDs on Hawai'i Island include Lapakahi, Waialea Bay, Old Kona Airport, and Kealakekua Bay on the Kohala-Kona coast and Waiopae in Puna.

**State Wildlife Sanctuaries**

Hawai'i has two designated marine wildlife sanctuaries – Paiko Lagoon Wildlife Sanctuary and Coconut Island on O'ahu, which is a Hawai'i Marine Laboratory Refuge. Only researchers associated with the University of Hawai'i's Hawai'i Institute of Marine Biology[249] are permitted to collect specimens from the Coconut Island refuge.

The Paiko Lagoon Wildlife Sanctuary[250] was established pursuant HAR section 13-125 and includes all of the State owned land areas adjacent to Paiko Lagoon and water areas within Paiko Lagoon. It is prohibited to remove, disturb, injure, kill or possess any form of plant or wildlife or to introduce any form of plant or wildlife in the lagoon.

**Bottomfish Restricted Fishing Area[251]**

0.5 nautical miles offshore at South Point is a Bottomfish Restricted Fishing Area established in 1998 and regulated pursuant HAR section 13-94 (see Figure 10**Error! Reference source not found.**). Bottomfish species covered by these rules include: a) onaga, b) ehu, c) kalekale, d) 'opakapaka, e) 'ukikiki (or gindai), f) hapu'u, and g) lehi. It is unlawful for any person to take or possess these seven bottomfish species while in a vessel that is drifting or anchored within the South Point Bottomfish Restricted Fishing Area, except in times of emergency.

**Figure 10. Bottomfish Restricted Fishing Area**


249 http://www.hawaii.edu/HIMB/index.html
250 http://hawaii.gov/dlnr/dar/regulated_areas_other.html#paiko
251 http://hawaii.gov/dlnr/dar/fishing_bottom.html and http://www.hawaiibottomfish.info/index.htm

**Community-Based Subsistence Fishing Areas**

Pursuant HRS section 188-22.6, DLNR may designate community based subsistence fishing areas and carry out fishery management strategies for those areas for the purpose of reaffirming and protecting fishing practices customarily and traditionally exercised for purposes of native Hawaiian subsistence, culture, and religion. Pursuant to this law, the Miloli'i Fisheries Management Area and Ha'ena on Kaua'i have been designated as a community-based subsistence fishing areas.

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## County Regulations for Coastal Management

**Zoning**

The majority of the coastline is zoned A-20a or A-40a, with a few village areas with higher density Agriculture zoning. The coastal strip has a few areas that are zoned Industrial and Residential near old Plantation infrastructure and camps. The coastal area of Nīnole is unusual in that it is zoned RA-.5a (Residential Agriculture, half acre), and a few narrow strips of coastal lands are zoned Open (part of Pauka'a south of Honoli'i, and part of Laupāhoehoe, just south of Laupāhoehoe Point.)

Pursuant HCC section 25-5-160, the Open zone "applies to areas that contribute to the general welfare, the full enjoyment, or the economic well-being of open land type use which has been established, or is proposed. The object of this district is to encourage development around it such as a golf course and park, and to protect investments which have been or shall be made in reliance upon the retention of such open type use, to buffer an otherwise incompatible land use or district, to preserve a valuable scenic vista or an area of special historical significance…." In the Open zone, development is strictly controlled.

In the agriculture zone, one single-family dwelling per lot is permitted, though more intensive uses are allowed with a Special Permit (pursuant HCC section 25-5-70).

**Subdivision**

HCC section 23-37 specifies that, "A lot shall be suitable for the purposes for which it is intended to be sold. No area subject to periodic inundation which endangers the health or safety of its occupants may be subdivided for residential purposes." Guidance on designing subdivisions to reduce the threat of erosion impacts can be found in the Federal Emergency Management Agency's Coastal Construction Manual[252] and also in the Hawai'i Coastal Hazard Mitigation Guidebook.[253]

**General Plan Land Use Pattern Allocation Guide (LUPAG)**

The land use pattern in the General Plan is a broad, flexible design intended to guide the direction and quality of future developments in a coordinated and rational manner. The General Plan Land Use Pattern Allocation Guide (LUPAG) Map indicates the general location of various land uses in relation to

252 http://www.fema.gov/residential-coastal-construction
253 http://seagrant.soest.hawaii.edu/hawaii-coastal-hazard-mitigation-guidebook

each other. Any changes in zone have to be consistent with the General Plan, and much of Hāmākua's coastal area is designated Conservation or Open in the General Plan LUPAG

The Open designation limits future uses to "Parks and other recreational areas, historic sites, and open shoreline areas," and the Conservation designation includes "Forest and water reserves, natural and scientific preserves, areas in active management for conservation purposes, areas to be kept in a largely natural state, with minimal facilities consistent with open space uses, such as picnic pavilions and comfort stations, and lands within the State Land Use Conservation District." Other proposed uses would require an amendment to the General Plan, which requires an Environmental Impact Stgastement (EIS) and approval of the County Council.

**Community Development Plans (CDP)**

County CDPs are an opportunity to implement the General Plan on a regional scale. Several adopted CDPs have addressed coastal management, and the Kona CDP included several specific coastal policies.

Policy LU-1.5 in the Kona CDP requires the County to explore alternatives (e.g., density transfer based on gross density) for the applicant of a Special Management Area (SMA) Major Permit to dedicate to the government or land trust or encumber as open space for the purpose of realizing a shoreline linear park along as much of Kona's coastline as possible.

The policy also makes it a priority for the County to maintain a minimum of 1,000-foot open space no-build setback for undeveloped lands adjacent to the shoreline, on parcels which currently exceed 1,000 feet in depth, in discretionary land use approvals such as SMA Major Permits, rezonings, and state land use boundary amendments. Structures makai of this setback should be for public recreation and ocean-dependent facilities such as harbor improvements.

Policy LU-1.6 establishes a 17-mile protected coastline, which is to be implemented via discretionary land use approvals such as SMA Major Permits, rezonings, and state land use boundary amendments. Most of this area is already publicly owned and much of it has already been set aside for park purposes.

**Coastal Zone Management**

HRS Chapter 205A establishes the Hawai'i Coastal Zone Management (CZM) program, which is a Federally approved program managed by the State Office of Planning and implemented locally by the County Planning Department. HRS section 205A-1 defines the coastal zone management area as "all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and management authority, including the United States territorial sea"; in other words, the entire state is in the CZM area, and all County policies and regulations, including CDPs, must be consistent with CZM objectives and policies. HRS section 205A-4 specifies that "The objectives and policies of this chapter and any guidelines enacted by the legislature shall be binding upon actions within the coastal zone management area by all agencies, within the scope of their authority." Such "agencies" include the County of Hawai'i Planning Commissions, which are empowered by the State CZM law to implement the CZM program in Hawai'i County, pursuant HRS section 205A-27.

HRS section 205A-2 establishes the following CZM program objectives related to Kahakai management:

- Promote the protection, use, and development of marine and coastal resources to assure their sustainability
- Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems
- Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources

- Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture
- Provide coastal recreational opportunities accessible to the public
- Protect beaches for public use and recreation
- Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution
- Provide public or private facilities and improvements important to the State's economy in suitable locations
- Stimulate public awareness, education, and participation in coastal management
- Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

HRS section 205A-2 also establishes the following CZM policies:

Recreational Resources:

- Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:
    - Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;
    - Requiring replacement of coastal resources having significant recreational value including, but not limited to surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;
    - Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;
    - Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;
    - Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;
    - Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and
    - Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities.

Scenic and Open Space Resources:

- Identify valued scenic resources in the coastal zone management area;

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

Coastal Ecosystems:

- Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;
- Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;
- Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and
- Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures;

Economic Uses:

- Concentrate coastal dependent development in appropriate areas;
- Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and
- Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:
    - Use of presently designated locations is not feasible;
    - Adverse environmental effects are minimized; and
    - The development is important to the State's economy;

Coastal Hazards:

- Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;
- Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;
- Ensure that developments comply with requirements of the Federal Flood Insurance Program.

Managing Development:

- Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;

- Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and

- Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process;

Beach Protection:

- Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;

- Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities;

- Minimize the construction of public erosion-protection structures seaward of the shoreline;

- Prohibit private property owners from creating a public nuisance by inducing or cultivating the private property owner's vegetation in a beach transit corridor.

Marine Resources:

- Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial.

HRS section 205A-26 also establishes the following guidelines for the review of developments proposed in the Special Management Area (SMA):

- All development in the special management area shall be subject to reasonable terms and conditions set by the authority in order to ensure:

    - **Adequate access**, by dedication or other means, **to publicly owned or used beaches, recreation areas, and natural reserves is provided** to the extent consistent with sound conservation principles;

    - **Adequate and properly located public recreation areas and wildlife preserves are reserved**;

    - Provisions are made for solid and liquid waste treatment, disposition, and management which will minimize adverse effects upon special management area resources; and

    - Alterations to existing land forms and vegetation, except crops, and construction of structures shall cause minimum adverse effect to water resources and scenic and recreational amenities and minimum danger of floods, wind damage, storm surge, landslides, erosion, siltation, or failure in the event of earthquake.

- No development shall be approved unless the authority has first found:

    - **That the development will not have any substantial adverse environmental or ecological effect**, except as such adverse effect is minimized to the extent practicable and clearly outweighed by public health, safety, or compelling public interests. Such adverse effects shall include, but not be limited to, the potential cumulative impact of individual developments, each one of which taken in itself might not have a substantial adverse effect, and the elimination of planning options;

- That the development is consistent with the objectives, policies, and special management area guidelines…; and
- That the development is consistent with the county general plan and zoning. Such a finding of consistency does not preclude concurrent processing where a general plan or zoning amendment may also be required.

- The authority shall seek to minimize, where reasonable:
  - Dredging, filling or otherwise altering any bay, estuary, salt marsh, river mouth, slough or lagoon;
  - Any development which would reduce the size of any beach or other area usable for public recreation;
  - Any development which would reduce or impose restrictions upon public access to tidal and submerged lands, beaches, portions of rivers and streams within the special management areas and the mean high tide line where there is no beach;
  - Any development which would substantially interfere with or detract from the line of sight toward the sea from the state highway nearest the coast; and
  - Any development which would adversely affect water quality, existing areas of open water free of visible structures, existing and potential fisheries and fishing grounds, wildlife habitats, or potential or existing agricultural uses of land.

**Shoreline Determinations and Setbacks**

HRS section 205A-42 empowers the State Board of Land and Naturals Resources to adopt rules for determining the shoreline. Pursuant HAR section 13-222-11, certified shoreline determinations are valid for no longer than one year, except when the shoreline is fixed by an artificial structure that has been approved by appropriate government agencies and for which engineering drawings exist to locate the interface between the shoreline and the structure.

Historically, shorelines setback policies have addressed proper construction and proper siting of structures. Construction standards, which are generally science-based, are established at the Federal level through the National Flood Insurance Program (NFIP) and locally, through Hawai'i County Code Chapters 5 and 27.

Siting standards, on the other hand, have been established in the land use process and historically have not been science-based. These standards have not consistently protected the shoreline or structures and, in some cases, have led to the hardening of the shoreline, the loss of beach systems, and loss of coastal access for the public. HAR section 13-5 establishes shoreline setback requirements in the State Conservation district. It establishes a forty-foot minimum shoreline setback line, but no maximum. As of August 11, 2012, the shoreline setback for single-family residences is based on either the: (1) coastal erosion rate; or (2) average lot depth (ALD). The applicant may choose between the two setback determinations. Under the coastal erosion rate based formula, the shoreline setback is forty feet plus seventy times the annual erosion rate.

Pursuant HRS section 205A-43(a), the shoreline setback is not less than 20 feet and not more than 40 feet inland from the shoreline, but the counties are given the option of establishing setbacks at distances greater than 40 feet (HRS section 205A-45). All four counties have established standard shoreline setbacks of 40 feet or more, and both Maui and Kaua'i Counties have established science-based shoreline setbacks based on site-specific annual coastal erosion rates.

Planning Department Rule 11-5 establishes the minimum shoreline setback at 40 feet for most lots abutting the shoreline. A shoreline setback variance may be applied for from the Planning Commission.

The application requires an environmental assessment (EA) or environmental impact statement (EIS), prepared in accordance with HRS Chapter 343 and HAR chapter 11-200.

There is no standard for coastal setbacks. The Environmental Law Institute reviewed biological conservation thresholds, like percent of suitable habitat and buffers. In its review, the Institute suggests that "Land use planners should realize that, ultimately, there is no replacement for site-specific assessments….It is both difficult and often misleading to develop thresholds that generalize across landscapes and across ecoregions (Monkkonen and Reunanen 1999). Since thresholds will fail to be meaningful when generalized across landscapes, ecosystems, and states, thus unable to capture the unique variation in nature, land use planners and managers need to work in close collaboration with ecologists (Monkkonen and Reunanen 1999)."

However, the Institute also recommends that, "Land use planners should err on the side of caution and adopt the most conservative threshold ranges, particularly since factors, such as global climate change, are likely to intensify land use impacts…, [and] Although land use planners are asked to make local, site specific decisions on a daily basis, it is still vital to maintain a landscape perspective." In short, thresholds (like shoreline setbacks) should be site-specific, science-based, conservative, and made from a regional, landscape perspective.

**Public Access**

HRS section 46-6.5 requires that the counties, in the subdivision process, ensure public access to "land below the high-water mark on any coastal shoreline." When the provisions of HRS section 46-6.5 are not applicable, HRS section 115-2 mandates that the counties acquire such access "for public rights-of-way to the shorelines, the sea, and inland recreational areas." In addition, HRS section 115-7 allows for State and County "co-sponsorship" of acquisitions for public access. Pursuant HCC section 34-4(a), a subdivider or developer of a multiple-family development shall dedicate land by right-of-way in fee or easement for public access from a public highway or public street to public shoreline areas and the land below the shoreline.

**Special Management Area**

The Special Management Area (SMA) permit is a management tool to assure that developments in the SMA are designed and carried out in compliance with the Coastal Zone Management (CZM) objectives, policies, and SMA guidelines.[254]

The SMA permitting system regulates development within SMAs extending from the shoreline inland, as designated on maps filed with the County Planning Commission. Within the Planning Area, the SMA boundary is generally defined by the Hawai'i Belt Road up to Ka'awali Gulch. North of Ka'awali Gulch, the SMA is makai of the Hawai'i Belt Road extending as a band averaging approximately 500-700 feet wide from the shoreline until Waipi'o Valley. At Waipi'o Valley, the SMA extends inland encompassing most of the valley floor to the extent of the Agricultural District.

**SMA Boundaries:** Planning Commission (PC) Rule 9-23 outlines the process for amending the SMA maps. At any time, the Planning Director may initiate amendments to SMA boundaries. By 2/3 vote, the Planning Commission may also direct the Planning Director to initiate SMA boundary amendments. Any person may also apply to the Commission through the Director requesting an SMA boundary amendment.

When an amendment review is initiated, the Planning Director must give notice to the Planning Commission, the general public, and the State Office of Planning. Upon completion of the review, the

254 http://www.state.hi.us/dbedt/czm/program/sma.php

Director shall submit the proposed amendments to the Commission, which will hold public hearings. If the amendments further the Coastal Zone Management objectives and policies and are consistent with the General Plan and other applicable ordinances, the Commission may amend the SMA boundaries.

In 2012, the Planning Department initiated a review of SMA boundaries in Hawai'i County. The preliminary findings may have multiple implications in the Hāmākua Planning Area as follows: [the Planning Team is currently reviewing this analysis and will complete this section once complete.]

Generally, because the CZM objectives and policies are so comprehensive, the SMA is the most resource-protective land use policy overlay. CZM policies address recreational resources, historic resources, scenic and open space resources, coastal ecosystems, coastal hazards, management of development, beach protection, and marine resources. Therefore, SMA review is one of the few opportunities to holistically consider coastal resources and their interrelationships. Moreover, because CZM review requires consideration of the cumulative impacts of proposed development in the SMA, SMA review is thorough, and SMA permits include conditions to protect coastal resources and mitigate impacts.

Therefore, SMA boundary amendments may merit consideration in some of the locations listed above to protect known recreational, historic, open space, ecosystem, beach, and/or marine resources as well as scenic views toward the coastline from the highway.

**SMA Review of Proposed Uses and Activity**: As authorized by HRS sections 205A-26 and 27, PC Rule 9 requires the following:

- A Special Management Area Assessment (SMAA) or an SMA permit for all uses and activity in the SMA[255]. Pursuant PC Rule 9-10(b), information provided in the SMAA shall include but not be limited to:
    - An Environmental Assessment (EA) or Environmental Impact Statement (EIS) if required under Chapter 343, HRS, or when required by the Director
    - A written description of the anticipated impacts of the proposed uses, activities or operations on the Special Management Area including but not limited to: description of environmental setting; the relationship of the proposed action to land use plans, policies, and control of the affected area; the probable impact of the proposed action on the environment; any probable adverse environmental effects which cannot be avoided; alternatives to the proposed action; mitigating measures proposed to minimize impact; and any irreversible and irretrievable commitment of resources
    - A written description of the anticipated impacts of the proposed development on valued cultural, historical or natural resources on or in the vicinity of the property, to include:
        - The identity and scope of valued cultural, historical, or natural resources in the area, including the extent to which traditional and customary native Hawaiian rights are exercised in the area;
        - The extent to which those resources, including traditional and customary native Hawaiian rights, will be affected or impaired by the proposed action; and

255 Planning Commission Rule 9-10(i) also allows for a Short Form Assessment Application in lieu of a full assessment for uses that may result in a determination that the proposed use is exempt (e.g., single family residence, minor grubbing, or accessory structures). The Short Form Assessment Application requires a plot plan, a description of the proposed action, and a description of any known historical sites, anchialine ponds, wetland, or sandy beach. For a single family dwelling, a building permit may be submitted as the short form assessment.

- The feasible action, if any, to be taken to reasonably protect any valued cultural, historical or natural resources, including any existing traditional and customary native Hawaiian rights

- A written statement discussing the proposed use, activity or operation in relation to the objectives and policies in HRS 205A

- Identification and detailed information of existing public access to and along the shoreline and whether the access is being used

- Any other plans or information required by the Director.

- The Planning Director assesses an SMAA and does one of three things:

1. **Exempts the activity from the definition of development, with conditions**, because it is a single-family residence that has less than 7,500 square feet in floor area and is not part of a larger development; repair or maintenance of public roads, utility lines, or existing structures; demolition of non-historic structures; agricultural activity; some other exempt use or activity, as defined in Planning Commission Rule 9-4(e)(2), *and* pursuant PC Rule 9-4(e)(4), it does not have a cumulative impact or a substantial adverse environmental or ecological effect on the Special Management Area, as defined in PC Rule 9-10(h).

   In considering the significance of potential environmental effects, the Director shall consider the sum of those effects that adversely affect the quality of the environment and shall evaluate the overall and cumulative effects of the action. A 'substantial adverse effect' is determined by the specific circumstances of the proposed use, activity or operation. In determining whether a proposal may have a substantial adverse effect on the environment, the Director shall consider every phase of a proposed action and expected consequences, either primary or secondary, or the cumulative as well as the short or long-term effect of the proposal. The Director should bear in mind that in most instances, the following factors of a proposal, although not limited to same, may constitute a substantial adverse effect on the environment when the proposed use, activity or operation:

   - involves an irrevocable commitment to loss or destruction of any natural or cultural resource, including but not limited to, historic sites and view planes outlined in the General Plan or other adopted plans;

   - curtails the range of beneficial uses of the environment;

   - conflicts with the long-term environmental policies or goals of the General Plan or the State Plan;

   - substantially affects the economic or social welfare and activities of the community, County or State;

   - involves substantial secondary impacts, such as population changes and effects on public facilities;

   - in itself has no substantial adverse effect but cumulatively has considerable adverse effect upon the environment or involves a commitment for larger actions;

   - substantially affects a rare, threatened, or endangered species of animal or plant, or its habitat;

   - detrimentally affects air or water quality or ambient noise levels;

- affects an environmentally sensitive area, such as flood plain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water or coastal water; or

- is contrary to the objectives and policies of the Coastal Zone Management Program and the Special Management Area Guidelines of HRS 205A.

2. Finds that the activity does not have a cumulative impact or a substantial adverse environmental or ecological effect on the Special Management Area and **issues an SMA Minor Permit, with conditions.**

3. **Requires an SMA Major Permit**.

- The Planning Commission may approve an SMA Major Permit, with conditions, only if

  - The development will not have any substantial adverse environmental or ecological effect except as such adverse effect is minimized to the extent practicable and is clearly outweighed by public health, safety, or compelling public interest

  - The development is consistent with the objectives and policies and the Special Management Area guidelines as provided by HRS 205A

  - The development is consistent with the General Plan, Zoning Code and other applicable ordinances

  - The development will, to the extent feasible, reasonably protect native Hawaiian rights related to valued cultural, historical or natural resources, including the extent to which traditional and customary native Hawaiian rights are exercised in the petition area.

**Tsunami Evacuation Zone:** The Planning Area has tsunami evacuation zones at Laupāhoehoe Point and Waipi'o Valley. Civil Defense authorities use these zones to facilitate evacuation in the case of tsunami hazards. The low-lying valleys of Waipi'o and Waimanu in particular are vulnerable to inundation and have historically seen wave run-up heights up to 40ft (see Table 3-5 of the Community Profile). Laupāhoehoe Point experienced a 20ft tsunami wave on April1, 1946 that killed twenty-five people, including teachers and students at the elementary school then located at the point. For more information on disaster mitigation strategies, see the Community section [link].

**Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM):** The FIRM is the official map on which FEMA has delineated both the special hazard areas and the risk premium zones. Property owners, insurance brokers, lending institutions, and federal agencies use the FIRM to locate properties and buildings in relation to mapped flood hazards to determine the amount of flood risk and whether flood insurance is required.

The FIRM identifies two types of Special Flood Hazard Area (SFHA) zones: V zones and A zones. The V zone is the Coastal High Hazard Area subject to high-velocity wave action from storms or seismic activity. The coastal A zone are those areas landward of a V zone or an open coast in which the principal sources of flooding are tides, storm surges, and tsunamis. New FIRMs are under development, drafts of which are viewable at the DLNR's Flood Hazard Assessment Tool website114

The County Department of Public Works uses the FIRM to administer floodplain management regulations and to mitigate flood damage, pursuant HCC Chapter 27.

As noted in the Community Profile:

Hawai'i County's Flood Management Code (Hawai'i County Code chapter 27) meets the requirements of the National Flood Insurance Program (NFIP). Under the NFIP, each county has mapped flood hazard

areas and established a permit system to regulate development within these flood hazard areas. The Flood Insurance Rate Maps (FIRMs) include areas prone to riverine flooding (A zones) and coastal flooding (V zones). Although the NFIP has significantly mitigated flood damages, major flood problems exist in older areas developed prior to flood control regulations and building standards, in areas that are subject to flooding but not identified on the FIRMs, and areas with flood control improvements that are inadequate to contain or control larger floods by present standards. Direct economic losses from flooding result from soaking, dislocation and destruction of property as well as erosion and scouring from the velocity of the flow, and deposition of sediment and debris transported by the water. Within the Planning Area, there does not seem to be many areas mapped for riverine flooding except for Honoka'a, Waimanu Valley, and Waipi'o Valley. The mapped areas are primarily coastal hazard areas along the shoreline from Kapulena to Pa'auilo. One of the NFIP mitigation policies is to relocate or acquire repetitive loss properties. Fortunately, there are no repetitive loss properties within the Planning Area (Martin & Chock 2010).[256]

## Public Lands and Acquisition

### Public Lands

Existing Kahakai areas under public ownership are primarily County of Hawai'i Parks, namely at Honoli'i, Kolekole, Hakalau, and Laupāhoehoe Point. The State of Hawai'i also owns several parcels along the Hilo-Hāmākua Coastline.

### Acquisition Resources

**Hawai'i County Public Access, Open Space, and Natural Resources Preservation Commission (PONC)**: The public access, open space, and natural resources preservation fund can be used to acquire lands or property entitlements based on recommendations from the PONC. The public is invited to nominate properties for acquisition, and the Finance Department seeks to acquire property for preservation with these funds based on PONC priorities.

**DLNR DOFAW Legacy Lands Conservation Program (LLCP)**[257]: The LLCP provides grants to local organizations and agencies seeking to acquire land and easements for Hawai'i's unique and valuable resources, include coastal areas and access, natural areas, habitat, cultural and historical sites, open spaces, and scenic and recreational resources.

**NOAA Coastal and Estuarine Land Conservation Program (CELCP)**[258]: The Coastal and Estuarine Land Conservation Program was established to protect coastal and estuarine lands considered important for their ecological, conservation, recreational, historical or aesthetic values. CECLP provides matching grants to eligible state agencies (often in partnership with local governments and nonprofits) to acquire property or conservation easements from willing sellers within a state's coastal zone or coastal watershed boundary. CELCP invested $1.4M into the purchase of Honu'apo.

**USFWS Recovery Land Acquisition (RLA) program**[259]: RLA grants provide funds to states for the acquisition of habitat in support of approved recovery goals or objectives for federally listed threatened or endangered species.

**USFWS Habitat Conservation Plan Land Acquisition program**: The HCP Land Acquisition program funds land acquisitions that support recovery of threatened and endangered species.

256 Hāmākua CDP Community Profile, page 3-13.
257 http://hawaii.gov/dlnr/dofaw/llcp
258 http://coastalmanagement.noaa.gov/land/welcome.html
259 http://www.fws.gov/pacificislands/Publications/RLA%20Fact%20Sheet%20May%202010.pdf

## Programs and Funding for Coastal Management

### Guides

**Making a Difference: An Action Guide to Marine Conservation in Hawai'i**[260]: This guide published in 2011 provides concise, visual guidance on a range of coastal conservation issues, including behavior around wildlife and coral, invasive species, pollution and marine debris, regulations, enforcement, and agency contact information.

### Collaborative Initiatives

**Malama Kai Foundation**[261]: Malama Kai Foundation is a non-profit organization dedicated to ocean stewardship for current and future generations through community service and public education. The Foundation raises funds and implements projects that help conserve Hawai'i's coastal and marine resources and educate people about these resources. Foundation projects include: Community-Based Coastal Stewardship, the Big Island Reef Fund, Reef Talk, Eyes of the Reef, and Citizen Water Quality Monitoring.

**Surfrider Foundation, Hilo Chapter**[262]: Surfrider is an International grass-roots organization with the mission of protection and enjoyment of oceans, waves and beaches through an activist network. The Hilo Chapter:

- Organizes beach cleanups (partnering with Hawai'i Wildlife Fund);
- Supports the *Save Pāpaikou Mill Beach* campaign working for access to that Rural South Hilo beach;
- In partnership with NOAA, Surfrider is beginning a two-year beach cleanup/survey to monitor the impact of Japanese tsunami debris on the eastern most point of Hawai'i. The clean up and surveying will take place every 28 days for 2 years. This project will also begin a project of water quality testing in the same area that has been needed for almost 50 years.

**Pacific Fisheries Coalition**[263]**:** Pacific Fisheries Coalition is a collaboration between conservationists and fishermen to promote the protection and responsible use of marine resources through education and advocacy in Hawai'i and the Pacific. The PFC publishes educational "white papers," develops position papers on pending legislation, and sponsors a range of educational programs, including conferences, informational booklets, posters, Fun Fish Facts kids' brochures, briefing booklets, news articles, and television sessions on marine reserves and on locally managed marine areas.

**Makai Watch**[264]: The Makai Watch program is a coastal education, monitoring, and resource protection initiative that grew from a collaborative effort of community organizations, volunteers, conservation groups, and state agencies. Now officially sanctioned by DLNR, the program consists of the three main components:

- Raising Awareness and Outreach: Makai Watch participants provide ocean users with information about marine ecology, culture, history, regulations, safety, and appropriate behavior. These outreach efforts reduce the misuse of marine resources as resource users become more aware of both the law and local best practices to conserve marine resources.

260 http://www.hawaiicoralreefstrategy.com/PDFs/14_Makai_Watch_On-going/Making_a_Difference_Guide.pdf
261 http://www.malama-kai.org/
262 http://hilo.surfrider.org/
263 http://www.pacfish.org/
264 http://www.hawaiicoralreefstrategy.com/index.php/local-action-strategies/makai-watch

- Biological and Human-Use Monitoring: Makai Watch participants collect information on the human use of marine resources (fishing, kayaking, collecting, etc.) and on the biological condition of those resources.

- Observation and Compliance: Makai Watch participants observe the area, encourage users to learn and obey area regulations, and identity and report illegal activities to state enforcement officers.

Makai Watch partners include The Nature Conservancy, Conservation International, Coral Reef Alliance[265], the Hawai'i Wildlife Fund[266], and the Hawai'i Community Stewardship Network, and funding has been provided by the Harold K.L. Castle Foundation and federal, state, and private sources. Sea Grant and the Malama Kai Foundation may also be able to provide support to local groups. The program now serves communities on four islands. On Hawai'i Island, Makai Watch programs have been established at Wai'opae, Ho'okena, Honaunau, Miloli'i, Puako, and Ka'upulehu and Kukio, often with support from Sea Grant.

Makai Watch is supported by a steering committee of DLNR staff and four Hawai'i non-profit organizations. In 2011, the steering committee evaluated Makai Watch efforts, created standards across all programs, and developed a Makai Watch guide on community engagement. The Division of Aquatic Resources has also initiated a project to update the Makai Watch volunteer training curriculum (including the development of protocols and standardized training for the Makai Watch program observation and compliance component) and clarify the roles and responsibilities of program partners and guidelines for groups wanting to participate in the program.

Recently, the Hawai'i Community Stewardship Network has proposed to scale Makai Watch up to an islands-wide program, including an improved community reporting system that takes advantage of new technologies in web, mobile, and social media.

In 2012, a Makai Watch offshoot was established in Puako through a partnership of the Puako Community Association, The Nature Conservancy, the DLNR, and NOAA[267]. The program gives residents a direct hand in the management of the nearshore marine resources. Volunteer "reef greeters" reach out to visitors and residents by sharing information on current ocean rules, as well as how to best enjoy the area's marine resources, protect its fragile environment, and participate in collaborative stewardship opportunities. The reef greeters serve as "the eyes and ears" for the agencies responsible for enforcing ocean rules, reporting violations when necessary.

**Reef Check Hawai'i[268]**: Reef Check Hawai'i is a volunteer, community-based coral reef monitoring and education program that promotes coral reef conservation and preservation statewide. Reef Check Hawai'i is the Hawai'i-based affiliate of the Reef Check Foundation, which has affiliates worldwide. Its Eyes of the Reef program is a part of a statewide, rapid response network developed by the DLNR's Division of Aquatic Resources. The Eyes of the Reef network is comprised of regular reef users (including recreational users, tourism professionals, researchers, and fishers) who voluntarily monitor and report on conditions at reefs that they visit regularly.

265 http://www.coral.org/where_we_work/asia/pacific/hawaii
266 http://wildhawaii.org/projects.html#makai
267 "Volunteers key to Puako reef protection." West Hawai'i Today. June 19, 2012.
268 http://www.reefcheckhawaii.org/default.htm

**Project S.E.A.-Link**[269]: This nonprofit offers education, mentoring, and community-based coral reef monitoring programs. The coral reef monitoring programs include REEF (Reef Environmental Education Foundation), which trains people to identify and survey fish; Reef Check; and Reef Watchers.

**The Locally-Managed Marine Area (LMMA) Network**[270]: An LMMA is an area of nearshore waters and its associated coastal and marine resources that is largely or wholly managed at a local level by the coastal communities, land-owning groups, partner organizations, and/or collaborative government representatives who reside or are based in the immediate area. An LMMA can vary widely in purpose and design; however, two aspects remain constant: 1) a well-defined or designated area, and 2) substantial involvement of communities and/or local governments in decision-making and implementation. LMMA works with all parts of a community from youth, women, men, elders, and affiliated groups such as government, non-governmental organizations, as well as adjacent communities.

LMMAs rely on community participation and engagement to identify threats, understand and document existing conditions, study socio-economic issues and concerns, and develop an adaptive management program to care for and sustain their natural resources. LMMA also utilizes neutral facilitation to guide the communities in the development of their plan.

The LMMA process starts by identifying the lead agency and introducing the goals to all the stakeholders in the community. Three types of workshops are then developed: action planning, biological monitoring, and socioeconomic monitoring. The action-planning workshops are adapted from Participatory Learning and Action[271] methods and include sessions on mapping the village, understanding historical trends, and analyzing the local stakeholders. These workshops identify the resource use, threats to local resources, and the root causes of these threats. The community then develops a community action plan that includes responsibilities of members of the group.

Each LMMA follows this framework to develop a unique, locally-led plan adapted to current conditions and threats. Some LMMA programs are using traditional management while others take a more modern approach. Many are using a combination of traditional practices and modern methods of management. Most often, the LMMAs involve co-management by the community together with traditional leaders, local or state government agencies, and/or some other body (e.g. non-government organization or a university).

The LMMA model has worked in Samoa, the Philippines, Fiji, Indonesia, Papua New Guinea, Palau, Pohnpei, and the Solomon Islands.

The LMMA Network is a group of practitioners involved in various community-based marine conservation projects around the globe, primarily in the Indo-Pacific, who have joined together to learn how to improve their management efforts. The Network helps communities build capacity to use community-based management approaches and advances policy that supports the adoption of LMMAs.

While LMMA's traditional focus is on marine areas, the concepts could be applied to both marine and upland areas, as some communities have done.

269 http://projectsealink.org/
270 http://www.lmmanetwork.org
271 http://portals.wi.wur.nl/ppme/?Participatory_Learning_and_Action

**Private Funding**

**Harold K.L. Castle Foundation**[272]: One of the Castle Foundation's top priorities is nearshore marine resource conservation. The Foundation's "Marine Resource Conservation Theory of Change"[273] identifies the following vision:

> *Hawaii's near-shore fisheries are sustainable because they are well regulated by strong, responsible, responsive government authorities using an ecosystem approach that benefits from community involvement in determining management priorities. Our community includes fishermen, native Hawaiians, scientists, conservationists and an informed Hawai'i public of all ethnicities, both new and kama'aina, young and old, who desire to leave a better legacy for future generations.*

The Theory of Change also identifies seven investment areas:

- Ho'ōla 'Ike: Restore and evolve traditional practices for effective contemporary marine resource management.
- Real Change in Real Time: Support community-based co-management efforts to affect immediate and real change in Hawai'i's coasts and oceans
- Proof of Concept: Push marine conservation limits; expand the scale of effective management; provide scientific validation; promote new conservation technology; and quantify and characterize impacts of burgeoning approaches.
- Affecting Regulatory Change: Improve enforcement; support effective rule-making; enable all strategies that foster fisheries replenishment, e.g., MLCDs, subsistence fishing zones, etc.
- Local Solutions for Global Challenges: Support invasive species eradication and prevention; reduce market economy pressures; and manage for climate change.
- A Kākou Thing: Promote education and awareness; empower communities; cultivate young leaders with technical expertise; and engage fishers toward the support of improved marine resource management.
- Innovation Toward Durability: Spur new conservation business models toward financial feasibility, promote self-sustainability and food security, support value-added recycling efforts (e.g. algae to fertilizer, bio-char, etc.), and develop new conservation finance opportunities.

The Castle Foundation grants range from $100 to $4 million.

## Community-Based, Collaborative Kahakai Management

### In the Planning Area

**Basic Image/Pakalove**[274]**:** Basic Image's sustainability efforts focus on an enduring connection with the land and ocean. It includes practical solutions: education, awareness, stewardship, land use, water and energy conservation and recycling.

At present, Basic Image has oversight of four adopted parks through the **County of Hawai'i's Friends of the Parks program**. Our adopted park project sites are located in three of Hawai'i County Council

272 http://www.castlefoundation.org/index.htm
273 http://www.castlefoundation.org/marine-conservation.htm
274 http://pakalove.org/Our_Projects.html

Districts. Although located in these different geographic regions, **Honoli'i**, Poho'iki, Wai 'Uli and **Hakalau Bay** draw park visitors from the entire island. These restoration projects have impacted the Big Island of Hawai'i by providing residents and visitors another place to enjoy their natural environment.

Other Basic Image programs through Pakalove include:

- **Pakalove Teach at the Beach:** A Living Classroom offers hands-on learning that combine cultural values, service to the community, education and experience. It is a unique way to teach participants lessons in environmental education, teach and share about the beauty and fragility, the joys and wonders of the outdoors and potential gateway to careers in natural resources.

- **Pakalove Crew Youth Leadership Program:** A program for Hawai'i's youth, ages 10-17 to provide support, relationship experiences, resources and opportunities to develop and enhance leadership skills that are culturally-based.

## In other Communities

**Kaupulehu Marine Life Advisory Committee**[275]: The Kaupulehu Marine Life Advisory Committee (KMLAC) is proposing to create a marine reserve where no taking of any reef-related marine organisms is allowed. The only exceptions would be fishing by trolling, the catching of bottomfish by hook and line, and the catching of permitted species, all of which must be done in depths of 120 feet or more. Taking non-native invasive fish and algae would also be allowed, upon approval of the state Division of Aquatic Resources and KMLAC.

The goal is to replenish marine life and fishing grounds to their former abundance. Fishing grounds were once renowned for amaama, uu, moi, akule, manini, opelu, opihi and octopus. Limu was also gathered in the spring, and sea salt on the northern side was prized for preserving food.

The KMLAC includes ahupua'a descendants, resource managers, scientists, and other stakeholders want to designate the Kaupulehu Fisheries Management Area as a marine reserve to help restore and protect the area.

Under marine reserve status, KMLAC will work with the public and DAR to establish a comprehensive fisheries management plan based on traditional values and practices and the best scientific data available. Scientific and community monitoring, education and outreach programs, cooperative enforcement through the Makai Watch program will also occur.

**Kahalu'u Bay Education Center (KBEC)**[276]: The Kahalu'u Bay Education Center is a collaboration between the County of Hawai'i and the Kohala Center based on a ten-year Beach Park Master Restoration Plan. At the bay, it offers residents and visitors information about bay resources and etiquette and snorkel rentals, and online, the Center sells bay related products. The Center also coordinates ReefTeach, Citizen Science, and KBEC Volunteer programs. KBEC Volunteers welcome guests, inform them about reef etiquette and marine life identification, and help customers with sales and rentals. ReefTeach volunteers patrol the Bay and educate users about corals, the different types of fish and invertebrates in the Bay, and the ecology of the reef. Citizen Science volunteers help collect scientific data used to track the health of the Bay, like salinity, temperature, and turbidity.

An "information cyberinfrastructure" was developed at UH Mānoa for Kahalu'u Bay that serves as a storehouse of and portal to data collected at the Bay[277]. The portal contains Citizen Science data,

275 "Kapu in Kaupulehu: Group proposes marine reserve to replenish fish." West Hawai'i Today. June 22, 2012.
276 http://kohalacenter.org/kahaluubay/home.html
277 To access the portal, go to http://portals.intelesense.net/tkc/. To enter the portal as a visitor, enter: User name: visitor; Password: welcome.

ReefTeach data, species inventories, water data, data from weather stations, cultural resources, and mapping tools

**Friends of Hoʻokena Beach Park**[278]: Friends of Hoʻokena Beach Park (FOHBP) is a non-profit organization that grew out of Kamaʻaina United to Protect the ʻĀina (KUPA), a community organization focused on the preservation of cultural and natural resources and culturally sensitive economic development in Hoʻokena. FOHBP's primary objective was to develop a sustainable microenterprise that would provide employment opportunities for community members and to return management of Hoʻokena Beach Park to the community.

Through the University of Hawaiʻi at Hilo and the Hawaiʻi Small Business Development Network, FOHBP received Department of Housing & Urban Development (HUD) Alaska Native/Native Hawaiian Institutions Serving Communities (AN/NHIAC) funds to develop a community microenterprise.

In May 2007, the County of Hawai'i signed an agreement with FOHBP to transfer management oversight of the park to FOHBP. The agreement required that FOHBP use microenterprise revenues to maintain the park. FOHBP has hired community members to maintain the park and provide park security via the "Aloha Patrol."

The Hoʻokena community is also part of the Hawaiʻi Community Stewardship Network and Makai Watch.

**Hui Aloha Kīholo**[279]: Hui Aloha Kīholo was created as a response to issues and concerns in and around Kīholo Bay, including changes along the greater West Hawaiʻi coastline, the designation of Kīholo Bay as a State Park Reserve, and an expressed desire among the community to work together to care for Kīholo. The Hui is brings together all those who are linked to Kīholo for cultural, community, ecological, sustenance, and spiritual reasons in an effort to steward Kīholo in perpetuity.

Kīholo Bay contains an extensive coastal wildland environment, historic home sites, swimming areas, anchialine ponds, and historic coastal trails with associated archaeological features.

The Hui seeks to facilitate the emergence of Kīholo Bay as a culturally and environmentally thriving part of the ahupuaʻa system of Puʻu Waʻawaʻa. Projects include a cultural and wilderness park at Kīholo Bay, both formal and informal care-taking activities, quarterly cleanup days, and educational information to enhance and encourage daily stewardship by the many Bay users.

**Hui Malama o Moʻomomi**: Hui Malama o Moʻomomi is based in the Hoʻolehua Hawaiian Homestead community on the island of Molokaʻi. It is advancing long-term sustainability of its marine resources through revitalization of local traditions and resource knowledge. The traditional system in Hawaiʻi emphasized social and cultural controls on fishing with a code of conduct that was strictly enforced. Community-sanctioned norms for fishing conduct are being reinforced through continual feedback based on local resource monitoring, education, and peer pressure. The community developed and implements the following code of conduct for resource sustainability that is based on Hawaiian values and community culture:

- Rule 1: Take only what you need. Share the catch with the kūpuna and underprivileged families.
- Rule 2: Reserve inshore areas for children and novice swimmers and fishermen, not for commercial purposes.

278 http://hookena.org/
279 http://www.huialohakiholo.org/

- Rule 3: Utilize traditional practices and science-based methods. Harvest resources in the proper biological and ecological context.
- Rule 4: The community governing board is responsible for creating, implementing, judging, and seeing that guidelines are carried out correctly.
- Rule 5: Malama ka ʻāina; malama na poʻe; malama na mea nai ka ʻāina a me ke kai – "Care for the land; care for the people; care for all things; understand the land with the ocean."

## Kahakai Resources Analysis Table

The following Table shows the process used in evaluating the findings from the research and consultations throughout the analysis process up to this point. The Table clearly identifies:

- **Challenges** (1st column) identified in the analysis.
- **Support/Rationale** (2nd column) lists Policy Support (applicable governmental policies) and Plan Support (how the issue relates to researched plans/studies). This column will generally link back to the associated sections of the analysis document where that strategy support is located.
- **Possible CDP Strategy Direction** (3rd column) – the general strategy direction the CDP will likely be taking in addressing the challenge in order to meet the community's objectives.

The Strategy Directions are categorized into one of the four following CDP Strategy Types:

  - **Policy**: establish policy with policy maps (Official Land Use Map) and policy statements related to land use, watersheds and natural features, public improvement priorities, government services, and public re/development;
  - **Advocacy:** recommend advocacy with federal and state policy makers and agencies for policies, regulations, incentives, programs, and action;
  - **Community-based, Collaborative Resource Management (CBCM)**: including research, place-based planning and program design, and program implementation;
  - **Easement and Acquisition (E&A):** identify easement and acquisition priorities by fee simple ownership or through conservation easements;

At times, the CDP Strategy Direction will relate to other Analysis sections not yet complete (Community and Economy). In those cases, the table may refer to the appropriate section still under development, but will not contain a link to that section until that section is complete.

This is a working document, and the **Possible CDP Strategy Directions** are intended to be preliminary. We expect community feedback that may provide additional information that could further inform our analysis.

**Table 7. Kahakai Resource Analysis Table**

| Challenges | Support/Rationale | CDP Strategy Direction |
|---|---|---|
| **Managing Coastal Ecosystems** | **Plan Support:**<br>▪ Hawaiʻi ORMP;<br>▪ North East Hawai'i Community Development Plan 1979 | **CBCM**: Form a CDP Action Committee Subcommittee, or focused Hui for Kahakai Resource Management |

| | | |
|---|---|---|
| | **Policy Support:**<br>▪ General Plan: 8.2 (e)<br>▪ State: Coastal Zone Management - HRS Chapter 205A, HAR 11-54-3 | |
| **Scenic Beauty** | **Plan Support:**<br>▪ Hawai'i ORMP<br>**Policy Support:**<br>▪ General Plan: 7.3(b) (c) (d) (f) (h) (i); 8.3 (d)<br>▪ State: Coastal Zone Management - HRS Chapter 205A | **Policy:** strengthen view shed protections along the coast through the SMA<br>**CBCM:** coastal resource management using the model of Pakalove; possibly seek support from organizations like the Malama Kai Foundation and the Harold K. L. Castle Foundation<br>**CBCM**: Kahakai Subcommittee or Hui can help identify important lands for potential easement and acquisition for their scenic beauty or scenic viewing resources |
| **Development Pressures on Coastal Resources**<br>▪ Single-family residences are permitted on lots in the vicinity of coastal view planes, natural and cultural resources, and hazards | **Plan Support:** Strenghten and support BMPS for construction, Coastal Setbacks –<br>▪ Hawai'i ORMP<br>▪ Facing Our Future<br>▪ COH Multi-Hazard Mitigation Plan<br>▪ North East Hawai'i CDP 1979<br>**Policy Support:**<br>▪ General Plan : 5.3(a), 5.3(b), 5.3(k), 7.3(b), 8.3(c), 8.3(d), & 8.4,<br>▪ State: Coastal Zone Management - HRS Chapter 205A | **Policy:** Land Use Policy Map<br>**Policy:** County Policies related to Special Management Area Assessment in Planning Area<br>**Policy:** County Policies related to Special Management Area Use Permit in Planning Area<br>**Policy:** Strengthen shoreline setbacks<br>**Policy:** Increase education, provide technical support, and when appropriate, strengthen requirements for:<br>▪ NPDES Permits<br>▪ Soil & Water Conservation Plans<br>▪ Grubbing & Grading Permit |

| | | |
|---|---|---|
| **Agricultural Impacts on Coastal Waters** | **Policy Support:**<br>▪ General Plan: 5.3 (a), (b), (k)<br>▪ State Policies: Coastal Zone Management - HRS Chapter 205A | **Policy:** Strengthen & support enforcement for BMPS for Agriculture (including Forestry)<br>**Policy:** Increase education & when appropriate, strengthen requirements for:<br>▪ Soil & Water Conservation Plans<br>▪ Grubbing & Grading Permit<br>**CBCM:** Government agencies/community groups liase with farming groups to increase understanding of agricultural BMPs |
| **Coastal Hazards** | **Plan Support:**<br>▪ Hawai'i ORMP<br>▪ Facing Our Future<br>▪ COH Multi-Hazard Mitigation Plan<br>**Policy Support:**<br>▪ General Plan: 5.3 (a) (b) (k) Restrictive land use policies in areas vulnerable to natural coastal hazards<br>▪ State : Coastal Zone Management - HRS Chapter 205A<br>Natural Disaster mitigation is discussed further in Community Analysis Section [Link] | **Advocacy:** State DLNR for bluff studies; possible partners are: NOAA, UH Sea Grant<br>**Policy:** Develop more appropriate shoreline development setbacks based on Hāmākua's unique shoreline ans associated hazards |
| **Limited Knowledge Base of Coastal Conditions** | **Plan Support:**<br>▪ Hawai'i ORMP<br>▪ Facing Our Future<br>▪ COH Multi-Hazard Mitgation Plan<br>**Policy Support:**<br>▪ State: Coastal Zone Management - HRS Chapter 205A | **Advocacy**: Promote Research Projects:<br>▪ Bluff Conditions (DLNR, NOAA, UH Sea Grant)<br>▪ Shoreline Movement (DLNR, NOAA, UH Sea Grant)<br>▪ Coastal Water Quality: State DOH Clean Water Branch<br>**CBCM**: Support groups partnering with other agencies |

| | | |
|---|---|---|
| | | (e.g., NOAA) in helping with research projects for above– example is Surfrider water testing |
| **Outdated FEMA (flood) Maps** | **Plan Support:**<br>▪ COH Multi-Hazard Mitigation Plan<br>**Policy Support:**<br>▪ General Plan: 5.3(b) | **Policy:** Prioritize resources to help DPW finalize (update and correct discrepancies) in the FEMA maps |
| **Access to Ocean Resources**<br>• Access to the only boat ramp in the Planning Area is currently restricted due to closure of the Laupahoehoe Boat ramp<br>• Coastal accesses are being lost or are increasingly challenging to maintain as land uses and ownership change | **Plan Support:**<br>▪ Hawai'i ORMP<br>▪ North East Hawai'i CDP 1979<br>**Policy Support:**<br>▪ General Plan: 7.3 (a) 8.3 (b) (c) (r)<br>▪ State Policies: HRS-205A Coastal Zone Management Area Policies<br>▪ Shoreline Easements and Acquisitions | **Policy:** Formalize a Shoreline Public Access Program<br>**Policy:** Shoreline Public Access<br>**Policy:** Special Management Area Assessment<br>**Policy:** Secure access through subdivision process, SMA, and other permitting mechanisms<br>**Policy:** Prioritize CIP Funding for reconstruction of the Laupāhoehoe Boat Ramp to provide safe and adequate access to ocean resources for subsistence fisher-people and recreational users<br>**CBCM:** Support the organization of a nonprofit hui for Laupāhoehoe Point fisher-people; an example is Hui Malama; become part a Locally-Managed Marine Area Network LMMA; enlist help from the Marine and Coastal Zone Advocacy Council<br>**CBCM:** Kahakai Subcommittee or Hui can help identify important lands for potential easement and acquisition for shoreline access<br>**E&A :** Seek to protect with easements or acquire suitable important coastal lands that would protect viewplanes, provide the public with access to |

| | | |
|---|---|---|
| | | scenic viewing areas, or otherwise promote appropriate coastal recreation/subsistence |

# CULTURAL RESOURCES MANAGEMENT

## Cultural Resource Management Introduction and Assets and Challenges

Early Hawaiian settlements in the Planning Area were small villages, and the largest communities are known to have been in Waimanu and Waipiʻo Valleys. Within the Planning Area, Waipiʻo Valley is unique as a highly productive agricultural site as well as a seat of power. Some of the most sacred sites on the Island of Hawaiʻi were located in Waipiʻo, including Pakaʻalana, a temple and Puʻuhonua (place of refuge and asylum). For more information on the historic sites, including heiau within the Planning Area, see the Heritage Resource section of the Community Profile[280].

After Kamehameha's death, the ancient system of kapu was broken and in the years between 1820 and 1854, Hawaiʻi saw the royal court move to Honolulu, rising rates of disease affect population numbers (including bubonic plague which persisted in the Planning Area until 1949), and the strengthening of western religion. From the onset of western interest, the natural resources of the Hawaiian Islands were extracted for markets elsewhere, including the sandalwood and whaling trades.

During this era on Hawaiʻi Island, large-scale ranching began. The new ranch economy saw an influx of Spanish-Mexican cowboys, whose culture evolved to be the Hawaiian cowboy or paniolo. The vast Parker Ranch, located partly within the Planning Area, was born and expanded during this time.

A product important to the local diet throughout the region's history was poi. The Mock Chew poi factory, headquartered in Waipiʻo Valley supplied many Waimea paniolo. Poi was transported to both Waimea and Honokaʻa by mule train. Dairies were also historically important in the Planning Area. The late 1800's saw the first import of Holstein cattle to Kūkaʻiau Ranch. Tomich documents the Gonsalves Dairy, Camara Dairy, Nobriga Dairy, Kūkaʻiau Ranch Dairy, Honokaʻa Dairy Farm and Pāʻauhau Dairy as being located within the Planning Area.

However, the most prominent agricultural crop associated with the Planning Area was sugar. Small, start-up plantations took root in the mid-1830's. During the sugar plantation era, land in the Planning Area was acquired and consolidated by the sugar companies; labor was imported from China, Korea, Japan, the Philippines, Portugal, and Puerto Rico; and plantation villages to house the growing worker population were established. Plantation villages typically included housing, an infirmary, school and recreational facilities. Commercial enterprises and religious facilities grew in association with the villages - including mom and pop stores, theatres, hongwanji missions, and churches. The sugar industry also necessitated infrastructure to transport the raw material from fields to mill and eventually to steam ship. The infrastructure included extensive flume systems, narrow gauge railways, bridge trestles spanning major gulches, and landings for ships at the base of sea cliffs. Sugar was the dominant agricultural crop in the Planning Area until global competition overcame the Hawaiian sugar industry and, in 1994, the last sugar plantation in Hāmākua closed.

After the close of the sugar plantations, the economy and land use of the Planning Area dramatically changed. Residents often lacked work in the area, plantation-owned housing was in jeopardy of being sold off or falling into disrepair and social services such as medical facilities and gyms once subsidized by the plantations were closed. The downturn in the area's economy has meant that many of the Planning Area's physical and cultural resources have become unmaintained remnants of a bygone era.

280 http://www.hawaiicountycdp.info/hamakua-cdp/draft-hamakua-cdp-documents/Hamakua%20Profile2012view.pdf/view

## Living Culture

In addition to Hāmākua's many *physical* cultural assets, it also enjoys a thriving *living* culture grounded in a rich oral tradition, active cultural practices, and art. Hawaiian culture is celebrated through ahupua'a-based farming, fishing, gathering, and hunting; hula halau; and many other practices. Likewise, traditions from the region's Filipino, Japanese, Chinese, Micronesian, European, American, and other cultures are carried from one generation to the next.

## Festivals

The many cultural and community events that the community organizes are prime examples of Hāmākua's rich, living culture:

- **Honoka'a Peace Parade and Festival**, Honoka'a
- **Western Week Festival (and Paniolo Parade),** Honoka'a
- **Hāmākua Music Festival,** Honoka'a
- **Laupāhoehoe Music Festival,** Laupāhoehoe Point
- **Mochi Pounding Festival,** Wailea: a Japanese New Year's celebration where mochi is pounded the traditional way and the community gathers to help pound, celebrate, and eat.
- **Laupāhoehoe Tsunami Memorial Event**: This is an annual observance held on the anniversary of the 1946 April 1st tsunami that destroyed the school at Laupāhoehoe Point and killed 25 Laupāhoehoe residents (including 16 students and 5 teachers).
- **Bon Dances and Lantern Lighting ceremonies** at various Hongwanji in the Planning Area are held during the Bon Season (June-August). The bon odori is a celebration of life and a tribute to the dead that began 500 years ago in feudal Japan.
- **Hāmākua Alive** has been an intermittent harvest festival celebrating local agriculture that features local product venders, music, and contests.
- **Plantation Days / Plantation Reunions**, have been held in Pepe'ekeō and in other areas. These events provide an opportunity for former plantation workers to gather to celebrate the legacy of the plantation era and renew old ties. It also provided opportunities for oral histories to be gathered and chronicled.
- **Community farmer's markets** and informal food exchanges are occurring throughout the Planning area where folks gather, exchange locally produced products, share stories, and often play music and games;

## Heritage Centers & Local Museums

- **Laupāhoehoe Train Museum[281]:** The purpose of the Laupāhoehoe Train Museum is to preserve, promote and protect the historic, cultural, educational, social, civic and economic, interests of the North Hilo and Hāmākua districts, while highlighting the history of the railroads on the island of Hawai'i .

281 http://www.thetrainmuseum.com/

- **The Heritage Center**[282] (at North Hawai'i Education and Research Center): is an active educational facility that fosters pride and perpetuates the diverse heritage of Hāmākua and North Hawai'i while providing the community with a foundation to thrive into the future. The Heritage Center also trains students and community members in curatorial practices, museum exhibit development and heritage management.

- **Hawai'i Plantation Museum**[283]**:** is a new museum with a collection of plantation era memorabilia and official historical documents spanning from the industry's earliest beginnings in the 1800s, to the closing of the very last sugar mill in 1996. The museum is located in the old Onomea Plantation Store in Pāpaikou.

### Challenges

- Time, climate conditions, agricultural land uses, and neglect have severely impacted and degraded many historical/cultural sites;

- Competing land uses and dramatic changes in economic drivers have rendered many plantation era facilities obsolete and crumbling;

- Shifting societal values has led to a trend toward a homogenization of language, culture, and values.

- Connection to community: One of the foremost challenges in honoring a multi-cultural community is the changing lifestyles and values of contemporary residents in Hāmākua. The changes in plantation camp populations, in employment options, and in small mom-and-pop businesses have meant that many commute great distances for work, many travel to get basic goods and services, and a growing number of residents may not know their neighbors or feel connected to the community around them in the same traditional ways as previous generations have in the Planning Area.

## Hāmākua Community Development Plan Community Objectives Relative to Cultural Resources

- **Protect and nurture Hāmākua's social and cultural diversity and heritage assets, including sacred places, historic sites and buildings, and distinctive plantation towns**.

- Direct future settlement patterns that are sustainable and **connected**. **Honor Hāmākua's historic and cultural asset**s by concentrating new development in existing, walkable, mixed-use town centers while limiting rural sprawl.

- Encourage the increase and diversity of employment and living options for residents, including living wage jobs and entrepreneurial opportunities that **allow residents to work and shop close to home and that complement Hāmākua's ecology, rural character, and cultural heritage**.

- Revitalize retail, service, dining, and entertainment centers that complement the community's rural character and culture.

- **Promote Hawai'i's host culture and Hāmākua's heritage roads, historic plantation towns, and festivals that celebrate our rich multi-cultural music, art, and agriculture.**

282 http://hilo.hawaii.edu/academics/nherc/HeritageCenter.php
283 http://memoriesofhawaiibigisland.com/index.html

## General Plan Cultural Resource Management Policies

The County General Plan is also clear about the need to inventory, protect, and enhance cultural and historic resources:

- 6.2(a): **Protect, restore, and enhance the sites, buildings, and objects of significant historical and cultural importance to Hawai'i.**
- 6.2(b): **Appropriate access to significant historic sites, buildings, and objects of public interest should be made available.**
- 6.3(e): **Embark on a program of restoring significant historic sites on County lands**. Assure the protection and restoration of sites on other public lands through a joint effort with the State.
- 6.3(f): **Encourage the restoration of significant sites on private lands**.
- 6.3(d): Public access to significant historic sites and objects shall be acquired, where appropriate.
- 6.3(h): **Aid in the development of a program of public education concerning historic sites**.
- 6.3(i): Signs explaining historic sites, buildings and objects shall be in keeping with the character of the area or the cultural aspects of the feature.
- 6.3(g): **Collect and distribute historic sites information of public interest and keep an inventory of sites.**
- 6.3(j): **Develop a continuing program to evaluate the significance of historic sites**.
- 6.3(m): **All new historic sites placed on the State or Federal Register after the adoption of the general plan shall be included in the General Plan**.
- 6.3(o): **Recognize the importance of certain natural features in Hawaiian culture** by incorporating the concept of **"cultural landscapes" in land use planning**.
- 6.5.6.2(a): **Support the establishment of Hawaiian Heritage Corridors**.

## Previous Related Planning/Studies

NOTE: Due to the importance of culture in the region, most planning efforts have addressed Culture, Heritage, and Historical Resources to various degrees. This analysis will focus on recent plans that have addressed these subjects with goals or strategies that are aligned with Hāmākua CDP Values and Vision and Community Objectives.

**Hawai'i State Historic Preservation Division Statewide Historic Preservation Plan: I ka wā ma mua ka wā hope, October 2012- October 2017**[284]: The purpose of this Hawai'i Historic Preservation Plan is to guide efforts to preserve and protect the valuable historic properties and cultural sites located in the State of Hawai'i. The plan establishes goals and objectives that the community has determined to be important for historic preservation. It defines strategies and actions that will serve as a road map for future activities with an eye toward achieving the preservation goals of the community.

Building on community input, the Advisory Committee developed four major goals.

- Goal 1: Increase awareness, understanding and support for historic preservation throughout the State.

284 http://hawaiihistoricpreservation.com/wp-content/uploads/2012/03/HSHPP_report.pdf

- Goal 2: Develop and maintain an inventory process supported by an easily accessible database of sites and an associated Geographic Information System (GIS).
- Goal 3: Increase the number of identified, protected, and properly maintained historic properties reflective of the diversity of the State.
- Goal 4: Strengthen the infrastructure for historic preservation in Hawai'i.

**A Cultural Resources Management Plan for the University of Hawai'i Management Areas on Mauna Kea, Mauna Kea Comprehensive Management Plan:**[285] This is a sub-plan to the Mauna Kea Comprehensive Management Plan. This plan has extensive actions for general management of the summit lands, protecting cultural practices, and protecting historic property. The plan's actions also include directions for allowed activities, permitting and enforcement, infrastructure and maintenance, best management practices, operation and implementation, and monitoring and evaluation.

**Hawai'i 2050 Sustainability Plan: Charting a course for Hawai'i's sustainable future,** 2008[286]: This plan's 5th main goal is that: **"**Our Kanaka Maoli and island cultures and values are thriving and perpetuated." In line with this, a priority action to **Preserve and perpetuate our Kanaka Maoli and island cultural values** was established as a priority by 2020. Strategic actions to meet the main goal are as follows:

1. Honor Kanaka maoli culture and heritage
   - Ensure the existence of and support for public and private entities that further the betterment of Kanaka Maoli.
   - Increase fluency in Kanaka Maoli language. It is one of the official languages of Hawai'i.
   - Sponsor cross-sector dialogue on Kanaka Maoli culture and island values.
   - Protect Kanaka Maoli intellectual property and related traditional knowledge.
   - Provide Kanaka Maoli cultural education for residents, visitors and the general public.
2. Celebrate our cultural diversity and island way of life
   - Identify and protect the places, features and sacred spaces that give Hawai'i its unique character and cultural significance.
   - Increase the number of educators who teach cultural and historic education.
3. Enable Kanaka maoli and others to pursue traditional Kanaka maoli lifestyles and practices
   - Provide Kanaka Maoli mentors with opportunities to pass on Hawaiian culture and knowledge to the next generation of Kanaka Maoli and others. The power of wisdom comes from communication
4. Provide support for subsistence-based businesses and economies

In regards to benchmarks for the goal of Preserving and perpetuating our Kanaka maoli and island cultural values. (Goal 5, Strategic Actions 1 and 2):

- Why this goal matters:

285 http://hawaii.gov/dlnr/occl/mauna-kea-management-plan/CRMP_for_UH_Management_Areas_on_Mauna_Kea_-_Rev._10.2009.pdf
286 http://www.hawaii2050.org/images/uploads/Hawaii2050_Plan_FINAL.pdf

- Hawai‘i’s ethnic diversity and multiculturalism have contributed significantly to making our state unique. Support for culture and the arts ensures that our traditions continue to live and thrive through dance, festivals, education and music.

- Where we are now:
  - No data is currently compiled. An annual population survey could be conducted to measure this activity.
- 2020 Suggested Benchmark:
  - **Hawai‘i residents attend a cultural event at least once a quarter.**

**Hāmākua Agriculture Plan: Sustaining Rural Hāmākua Through Agriculture**[287]: This plan is primarily an agriculture plan, but it touches on culture and heritage as foundational to a thriving agricultural community. It states, “The community recognizes the importance of honoring those that have come before us and actively passing down these traditions and history to the future generations. The values encompassed by the meanings of the words aloha, kōkua, pono, lōkahi and māna are the unifying theme of this section and the values within which Hāmākua will prosper.”

Particularly relevant to culture is the plan’s **Goal 2: A community that honors it’s past and actively passes it on to future generations.** Objectives under Goal 2 include:

1. Create a strategic plan for preserving Hawaiian history and culture and passing this history onto future generations.
2. Foster an awareness of the importance of the cultural resources and the history of Hāmākua and how that defines a sense of place and identity for the region.
3. Identify, preserve, enhance and use our cultural resources in an appropriate way.
4. Develop an educational program that will raise awareness and teach about traditional Hawaiian culture.

Implementing Actions related to cultural resources include:

1. Seek out and engage Native Hawaiians and other interested parties who are knowledgeable about Hawaiian history and culture in Hāmākua to develop a strategic plan that will allow for Hawaiian history and culture to be passed on to future generations.
2. Identify, support, and promote existing initiatives that perpetuate Hawaiian culture.
3. Identify, preserve, and protect historically, archaeologically and culturally significant areas, sites, and features within the Hāmākua District.
4. Encourage the recordation of local history.
5. Promote the development of educational and cultural programs that emphasize the perpetuation of Hawaiian arts, crafts and cultural practices.
6. Create a cultural center that will showcase our past and provide opportunities to raise awareness and pass the culture on to future generations.
7. Create ways to celebrate our past and diversity through festivals and community events.
8. Collaborate with farmers to encourage plantings and markets for traditional crops.

**Waipi‘o Valley Community Action Plan, Draft**[288]encourages developing the following cultural and historical strategies within Waipi‘o Valley:

- Genealogy Learning Center & Program

287 Hāmākua Agriculture Plan can be found on the CDP website at: http://tinyurl.com/l5vznrj
288 This draft plan can be viewed on the CDP website at http://tinyurl.com/opmt3jm

- Taro Farmers Entrepreneurial Hui and Taro Support
- Special Area Zoning and Designation of "Wahi Pana"
- Visitor Center and related educational programs, including Interpretive Walking Tours
- Nawailana Project: An integrated historical trails and valley access system for Residents and visitors

## Current Tools and Alternative Strategies for Managing Cultural Resources

### State Policy

**Coastal Zone Management:** HRS section 205A-2 establishes the following CZM policies related to cultural resources:

- Identify and analyze significant archaeological resources;
- Maximize information retention through preservation of remains and artifacts or salvage operations; and
- Support state goals for protection, restoration, interpretation, and display of historic resources.

### Historic Sites and Districts

**Historic Structures and Districts**[289]: The term "certified historic structure" means any building that is listed in the National Register of Historic Places (NRHP) or is located in a registered historic district and is certified by the Secretary of the Interior as being of historic significance to the district.

The term "registered historic district" means any district listed in the NRHP or any district that is designated under a statute of the appropriate State or local government, if such statute is certified by the Secretary of the Interior as a) containing criteria that will substantially achieve the purpose of preserving and rehabilitating buildings of historic significance to the district and b) meeting substantially all of the requirements for the listing of districts in the National Register.

Sites in the Planning Area that are listed on the National and State Register of Historic Places include:

- Schools
    - Kalaniana'ole Elementary and Middle School
    - Laupāhoehoe Elementary and High School
    - Honoka'a School
- Private Properties
    - H. Tanimoto Residence (Honomu Theater)
    - Hakalau's Plantation Manager's House (29-2301 Old Mamalahoa)
    - Yanamoto Store
    - Old Laupāhoehoe Jodo Mission
    - East Hāmākua Protestant Church
    - Pā'auhau Plantation House

289 http://hawaii.gov/dlnr/hpd/hpregistr.htm

- Honoka'a Plantation Manager's Residence

Other Sites:

- Hāmākua Steel Bridges
- Mauna Kea Adz Quarry

**National Historic Landmark District**[290]: National Historic Landmarks are nationally significant historic places designated by the Secretary of the Interior because they possess exceptional value or quality in illustrating or interpreting the heritage of the United States. Of the more than 80,000 places on the National Register of Historic Places, fewer than 2,500 are Historic Landmarks. There are only 33 in the State and seven in Hawai'i County, including two in the Planning area (Mauna Kea Adz Quarry, and the now demolished Chee Ying Society Clubhouse)

**Historic Property**: HRS section 6E-2 defines "historic property" as any building, structure, object, area or site, including heiau and underwater sites, which is over fifty years old.

**Hawai'i State Register of Historic Places**: The Hawai'i Register of Historic Places (HRHP) is the official list of cultural resources recognized by the State of Hawai'i for significance in Hawai'i 's history, architecture, archaeology, engineering or culture. Listing a property on the State Register "signifies a recognition that the owner has a historic property, and that the preservation and maintenance of the property is contributing to the State's and nation's historic patrimony, and is thus serving the public good (HAR section 13-198).

Properties may be entered on the State Register that possess qualities of significance in Hawaiian history, architecture, archaeology and culture and that possess integrity of location, design, setting, materials, workmanship, feeling and association (pursuant HRS section 6E-5.5 and HAR section 13-198-8). There are five sites listed from the Planning Area in the State Registry of Historic Places, see the CDP Profile, Table 6-1.

**Reasons to Establish Historic Districts**[291]: The most common motives behind establishing historic districts include:

- Protection of Historic Properties: Residents recognize the area's historical importance, its role in local or national heritage, and the history that should be preserved and told.
- Control of New Development: Residents recognize the cultural, aesthetic, and economic importance of conserving the historic integrity of a neighborhood while being respectful of sympathetic new construction. Cases such as these tend to require strict design guidelines for new construction, which detail aspects of height, massing, facade treatments and exterior paint schemes.
- Redevelopment Initiative: Residents see the possibility of utilizing under-developed or blighted historic communities as a way of initiating redevelopment. They see historic buildings as prime real estate with the potential for generating neighborhood renewal and creating centers for heritage tourism.
- Stabilization of Property Values: Studies have consistently found that historic designation does not negatively impact property values. In fact, most properties tend to increase or stabilize in value. Historic designations tend to increase the appeal of the community to potential buyers who welcome the historic aesthetic.

290 http://www.nps.gov/history/nhl/
291 Planetizen Course. Plan-110: Introduction to Historic Preservation Planning

- Public Relations and Promotion: Some communities are interested in promoting their history in the expectation that economic growth will occur. However, there are no guarantees that the benefits will be readily apparent.

- Many communities do not experience real economic growth for decades. Economic growth and true historic valuation takes time and are a function of many factors.

There are several compelling reasons to establish historic districts. However, there is also the possibility that the social character of districts may change through gentrification. Gentrification is the process of neighborhood revitalization that brings about a change in the socioeconomic status of its residents. Conflict occurs when a well-established, socially-diverse, historic neighborhood becomes so successful in its revitalization efforts that its original residents may no longer be able to afford to live there as property taxes and the cost of other services dramatically increase. With this possibility in mind, there are some who feel that neighborhoods should be holistically analyzed within the context of the history of its people and the buildings, and that both should be protected.

**Preservation Planning**: Once the decision to establish an historic district is made, a preservation plan for the proposed district must be prepared. The plan should include clear goals, a survey of historic sites and their properties, an evaluation of the significance of the sites, preservation treatment options, design guidelines, and policies for preservation incentives and adaptive reuse. The preservation plan can be used to register an historic district and to guide implementation of complementary preservation treatment initiatives.

**Treatment Options**: A range of tools can be used to preserve historic sites and districts, including easements, transfer of development rights, covenants, design guidelines, conservation overlay districts, zoning districts, and building codes.

**Access for Cultural Purposes**: Article 12, section 7 of the Hawai'i State Constitution states that "The State reaffirms and shall protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua'a 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."

**Public Access**: Pursuant HCC section 34-4(a), a subdivider or developer of a multiple-family development shall dedicate land by right-of-way in fee or easement for public access from a public highway or public street to public shoreline areas, the land below the shoreline, and public mountain areas where there are existing facilities for hiking, hunting, fruit picking, ti-leaf sliding, other recreational purposes and where there are existing public mountain trails. "Mountain areas" are lands situated above the one thousand-foot elevation above sea level, and "recreational activities" include viewing or enjoying historical, archaeological, or scenic sites.

## Agencies and Programs Supporting Historic Preservation

**State Historic Preservation Division**[292]: The State Historic Preservation Division (SHPD) in the Department of Land and Natural Resources (DLNR):

- Maintains a statewide Inventory of Historic Properties

- Maintains the Hawai'i Register of Historic Places and Hawai'i properties entered on the National Register

292 http://hawaii.gov/dlnr/hpd/hpgrtg.htm

- Reviews development projects to mitigate the effects on historic and cultural resources
- Maintains a library of archaeological inventories and reports
- Manages the Burial Sites Program, the Certified Local Government Program, the Historic Preserves Program, the Information and Education Program, and Inter-agency Archaeological Services to promote the use and maintenance of historic properties.

**SHPD Review and Public Notice**: Pursuant HRS section 6E-10, landowners shall allow SHPD an opportunity for review of any construction, alteration, disposition or improvement of any nature that affects an historic property on the Hawaii register of historic places. SHPD can permit the owner to proceed; undertake or permit the investigation, recording, preservation, and salvage of any historical information deemed necessary to preserve Hawaiian history; or commence condemnation proceedings for the purchase of the historic property if the department and property owner do not agree upon an appropriate course of action.

Pursuant HRS section 6E-42, prior to approval of any project involving a permit, license, certificate, land use change, subdivision, or other entitlement for use that may affect historic property, which includes any building, structure, object, area or site that is over fifty years old, SHPD is to be advised by Hawai‘i County of the project and allowed an opportunity for review and comment on the effect of the proposed project on historic properties. Moreover, SHPD is to inform the public of any project proposals submitted to it under this section that are not otherwise subject to the requirement of a public hearing or other public notification.

The Planning Department sends SHPD all of its public notices, and SHPD often requests that the Department require applicants to prepare an Archaeological Inventory Survey, Architectural Inventory Survey, or Preservation Plan for review and comment by SHPD. When archaeological, historic, or cultural resources are found, SHPD will recommend measures to protect those resources, and the Department will include those as conditions of the permit or entitlement being requested.

**Hawai‘i County Cultural Resources Commission**: HCC section 2-224 establishes the Hawai‘i County Cultural Resources Commission to protect, preserve, and enhance historic properties and artifacts and to formulate historic preservation policies, programs and plans. The Commission’s duties include:

1. The commission shall advise and assist Federal, State and County government agencies in carrying out their historic preservation responsibilities. The commission shall provide public information, education, training and technical assistance relating to the National, State and County historic preservation programs.
2. The commission shall initiate, accept, review and recommend to the State historic preservation officer, historic properties nominations for inclusion on the Hawai‘i and National registers.
3. The commission shall maintain a system for the survey, inventory and nomination of historic properties and archaeological sites within the County, as well as a system of site monitoring, that is compatible with that of the State historic preservation office.
4. The commission shall administer the certified local government program of federal assistance for historic preservation within the County.
5. The commission shall provide design review for projects affecting any building or structure, site or district eligible for listing on the National or Hawai‘i register of historic places and shall request and consider the State historic preservation officer’s review and comment on all County undertakings, including the granting of permits. In its review, the commission shall consider the cultural significance of the site and its surroundings along with the secretary of the United States Department of the Interior’s standards for rehabilitation, as amended.
6. The commission shall use the State Historic Preservation Plan to develop and implement a comprehensive County-wide historic preservation planning process, which includes the submitting of information pertaining to the State inventory of historic places to the State historic preservation officer.

7. The commission shall make recommendations to the Council for the expenditure of gifts and grants accepted by the Council for projects connected with the identification, rehabilitation, restoration and reconstruction of historic properties, the historic preservation planning process, and the promotion of exhibits and other information activities in connection therewith.
8. The commission shall adopt rules and regulations of procedure and conduct, pursuant to chapter 91, Hawai'i Revised Statutes.
9. The commission may review and comment on archaeological reports submitted as part of development proposals to various County agencies.
10. The commission may make recommendations to the State historic preservation officer and the Hawai'i Island burial council on the appropriate management, treatment, and protection of Native Hawaiian burial sites, which are customary with traditional Native Hawaiian burial practices.
11. The commission may undertake any other action or activity necessary or appropriate towards the implementation of its powers or duties or towards implantation of the purpose of this article. More specifically these may include, but not be limited to, the following:
    a. Recommend new ordinances establishing special treatment districts and archaeological districts;
    b. Review and recommend amendments to current policies and laws on the enforcement of existing codes relating to historic sites;
    c. Continually reevaluate building code requirements and enact amendments that are more sympathetic to preservation or provide exemptions for historic properties;
    d. Encourage the County, State, and Federal governments, and the private sector, to implement appropriate management strategies, curatorships and meaningful interpretive programs at significant historical and archaeological structures, sites, and districts; and
    e. Assist in programs of historic preservation including presentations, films, exhibits, conferences, publications and other educational means which increase public awareness and participation in preserving the past. (2008, Ord. No. 08-42, sec. 1; Am. 2013, Ord. No. 13-9, sec. 2.)

Note: This is a newly formed committee, sworn in April 2013.

**Certified Local Government**[293]: The federal government offers preservation grant funds to local government agencies through the Certified Local Government (CLG) program, which is administered by SHPD. CLG funds are provided to the state by the federal government to support locally-controlled decision-making about preservation projects. CLG funds can be used for:

- Technical support
- Architectural, historical, archeological surveys
- Nominations to the State and National Registers of Historic Places
- Staff work for historic preservation commissions
- Design guidelines and preservation plans
- Public outreach materials such as publications, videos, exhibits, and brochures
- Training for commission members and staff
- Rehabilitation or restoration of National Register listed properties.

293 http://www.nps.gov/history/hps/clg/

If Hawai‘i County becomes qualified as a CLG, it will become eligible to apply for CLG funding for projects in Hāmākua.

## Financial Incentives and Funding for Historic Preservation

**Federal Historic Preservation Tax Incentive Program**[294]: The Federal Historic Preservation Tax Incentive Program was created to preserve historic buildings from demolition and encourage their adaptive reuse. The program is managed jointly by the National Park Service (NPS) and the Internal Revenue Service (IRS) and rewards private investment for the rehabilitations of historic properties such as offices, retail stores, factories, and rental housing.

There are two credits: 20% Historic Tax Credits (HTCs) are available for buildings that are National Historic Landmarks (NHL), are listed in the National Register of Historic Places, or contribute to National Register Historic Districts or local historic districts. 10% credits for non-historic properties are also available to rehabilitate buildings built before 1936 that do not have a historic status associated with them. All restored buildings and properties must be income producing and rehabilitated according to standards set by the Secretary of the Interior.

**Hawai‘i County Historic Property Tax Exemption**: Pursuant HCC section 19-89.1, historic residential properties that are listed on the Hawai‘i Register of Historic Places are exempt from County property tax, except for the minimum tax (currently $100/year).

Historic Hawai‘i Foundation commissioned a study titled “The Economic Benefits of State Historic Preservation Investment Tax Credits.” The study found that in the 29 states that have a rehabilitation tax credit, all of them determined that the fiscal return was greater than the state’s forgone taxes, often returning 3 to 5 times more revenue to the state in new taxes and significant new investment. The rehabilitation tax credit also was successful in creating new jobs, increasing loan demand and deposits in local financial institutions, enhancing property values, and generating sales. In addition to these direct fiscal impacts, the tax credit also has proven benefits related to environmental sustainability, affordable housing, tourism and visitation, and neighborhood revitalization.

**Hawai‘i County Public Access, Open Space, and Natural Resources Preservation Commission** (PONC): The public access, open space, and natural resources preservation fund is used for acquiring lands or property entitlements in the County of Hawai‘i for, among other things, preservation of historic or culturally important land areas and sites. Based on recommendations from the Public Access, Open Space, and Natural Resources Preservation Commission (PONC), the Finance Department seeks to acquire property for preservation with these funds.

**DLNR DOFAW Legacy Lands Conservation Program** (LLCP)[295]: The LLCP provides grants to local organizations and agencies seeking to acquire land and conservation easements for Hawai‘i’s unique and valuable resources, including cultural and historical sites.

**Federal Save America’s Treasures (SAT) Program**[296]: The SAT program provides matching grants for preservation and/or conservation work on nationally significant intellectual and cultural artifacts and nationally significant historic structures and sites. Funds may be used for projects resulting in the protection and preservation of nationally significant historic structures and sites, as well as nationally significant collections of intellectual and cultural artifacts, documents, sculpture and works of art. Maui County and Chinatown in Honolulu are designated SAT communities.

294 http://www.nps.gov/tps/tax-incentives.htm
295 http://hawaii.gov/dlnr/dofaw/llcp
296 http://www.nps.gov/history/hps/treasures/

## Oral History

The mo'olelo of Hāmākua (i.e., its stories or oral history) articulates the community's relationship to place and communicates its authenticity and distinctiveness. Gathering memories and stories of place can be a powerful tool for capturing what is sacred, honoring the wisdom of the past, and advancing Hāmākua's living culture. In addition to stories, an oral history project could capture languages spoken, food culture, and customs that are unique to Hāmākua. The mo'olelo also helps residents welcome visitors, giving them insight into the authentic Hāmākua and tools for demonstrating respect and sensitivity during their stay.

Oral history projects can also provide a platform for youth to interact with kūpuna; learn about the significant cultural, historical, and natural sites of the area; and develop their skills to not only gather the stories but also design an effective system for sharing the stories through technology and social networking strategies.

**Oral history projects in our Planning Area:**

- **Pa'auilo Mauka Kalōpā Community Association** is currently seeking grants for to complete an ongoing oral history project;
- **Laupāhoehoe Community Public Charter School** has school/community events focused on collecting historic artifacts (photos, etc.,) and documenting oral histories;
- **Laupāhoehoe Train Museum** Oral History Project;
- **The Closing of the Sugar Plantations: Interviews with Families of Hāmākua and Ka'u, Hawai'i, Center of Oral History/UH Mānoa**[297]: In the late 1990s, The Center for Oral History at the University of Hawai'i at Mānoa conducted life history interviews with displaced workers of the Hāmākua Sugar Company and Ka'ū Agribusiness Company who were surveyed in an earlier research project assessing the impact of job loss. The interviewees represent two generations of sugar workers – one generation retired, the other laid off due to the closure of Hāmākua Sugar. Interviewees talked extensively about what the end of the sugar industry in Hawai'i meant to them and their families – how the closings affected their sense of security and their individual and community identity.
- **The North Hawai'i Education and Research Center (NHERC) Heritage Center**[298]: With the help of community volunteers, the Heritage Center is collecting and cataloging oral histories, photographs and documents pertaining to Hāmākua and North Hawai'i.

There are many sources for assistance and information for collecting oral histories, including:

- **The Center for Oral History** (COH)[299] preserves the recollections of Hawai'i's people through oral interviews and disseminates oral history transcripts to researchers, students, and the general community. COH also develops products based on oral histories, serves as a resource center for oral history materials, and trains groups and individuals in oral history research.
- **The Smithsonian Center for Folklife and Cultural Heritage**[300] offers a folklife and oral history overview and helpful interviewing guide.

297 http://www.oralhistory.hawaii.edu/pages/community/hamakua.html
298 http://hilo.hawaii.edu/academics/nherc/HeritageCenter.php
299 http://www.oralhistory.hawaii.edu/
300 www.folklife.si.edu/education_exhibits/resources/guide/introduction.aspx

- **The Columbia University Oral History Research Office**[301] is the oldest and largest organized oral history program in the world.

- Historian and educator Judith Moyer has developed a thorough guide to collecting and preserving oral history[302]

There are many examples communities pursuing oral, photo, or video history projects, including:

- **Mo'olelo Aloha 'Āina**[303] is a video documentation and political education project focusing on the oral histories of activists and community organizers who have fought to protect Hawaiian lands. The project brings crews comprised of mentors and youth apprentices together to conduct and film talk-story sessions with kūpuna and mākua. In the process, young people get to hear these stories firsthand, and they learn research, media production and social networking skills. The end products are videos available to a wider public through the Internet, which can serve as an oral history archive, resources for educators, or simply a source of wisdom and inspiration.

- **The Hula Preservation Society**[304] is compiling oral histories of kumu hula.

- **PhotoVoice**[305] works with individuals and communities to create participatory photography programs that achieve meaningful improvements in the lives of participants.

- **The Wisdom of the Elders**[306] project developed a curriculum for K-12 schools based on outstanding storytellers, artists, singers and environmentalists from six Northwest tribes. Materials for social studies, language, environmental science, and arts have been developed that align with Oregon educational benchmarks and help to increase the appreciation for the diverse cultural arts and history of these tribes.

- **The Neighborhood Story Project**[307] published Coming Out the Door for the Ninth Ward, which captures community stories from New Orleans' Ninth Ward. NSP also coordinates the "Seventh Ward Speaks" oral-history project, which involves neighbors sharing the stories of their lives with one another. As part of the project, interview content is used on posters that are displayed throughout the neighborhood, helping to bring neighbors together and also providing a greater sense of community identity for the Seventh Ward. The NSP will turn the collection of histories into a book.[308]

- **The University of Texas (UT) Humanities Institute** used a combination of writing, photography, and video to capture the diversity of community residents across the city of Austin and central Texas. More than 900 people of all ages and ethnicities responded with English and Spanish stories in written (hand- and typewritten), visual (photographs and video), and oral form (video) provide snapshots of life in the region. 127 of the individual stories were captured in Writing Austin's Lives: A Community Portrait.

## Community and Cultural Centers

301 http://www.columbia.edu/cu/lweb/indiv/oral/index.html
302 http://www.dohistory.org/on_your_own/toolkit/oralHistory.html
303 http://moolelo.manainfo.com/
304 www.hulapreservation.org
305 www.photovoice.org
306 www.wisdomoftheelders.org
307 www.neighborhoodstoryproject.org
308 "Community Heritage and Culture: How the arts and culture sector strengthen cultural values and preserve heritage and history." Arts and Culture Briefing Papers 02. APA.

**Performance Spaces or Community Gathering Places**: The Ashe Cultural Arts Center in New Orleans213 utilizes arts and culture activities for neighborhood and economic development purposes to revive and reclaim a historically significant corridor in Central City New Orleans. Using a combination of storytelling, poetry, music, dance, photography, and visual art, Ashe celebrates the life and cultural traditions of the surrounding neighborhood and "immortalizes" these traditions in art. Beyond its official work as a cultural center, social service provider, and player in the economic revitalization of the corridor, the organization is a community hub — a safe place where people can be heard and recognized as active, contributing citizens. Nationwide, there are many examples of similar community cultural "hubs." As a historical and current example, Honoka'a People's Theater has played such a role in Hāmākua**.**

**Cultural Centers and Networks**: In concept, a cultural center could celebrate rich history, educator residents and visitors, perpetuate living culture, serve as the hub of cultural preservation efforts, and even generate income for the community.

However, the statewide track record of cultural centers is mixed at best. Many have been proposed, and a few have been established, but few have proven viable over the long term. For example, ethnic cultural centers on O'ahu have struggled over the years because of:

- High initial capital investment costs (ranging from $9 to 14 million), delaying development seven to ten years
- High ongoing operating costs
- Insufficient revenue generating sources. Sources of income typically include a mix of facilities, banquet, and meeting space rentals; museum/gallery activities; and cultural and educational workshops and events.
- Inconsistent grant support for social, cultural, educational, and economic/workforce development programs and activities
- Insufficient broad based donor support.

Those that remain open are located in densely populated communities that provide strong constituent bases but have not provided a sustained market over time: the Japanese Cultural Center (Moilili, Honolulu), the Okinawan Cultural Center (Waipio), and the Filipino Community Center (Waipahu).

A previously-established Korean cultural center on O'ahu closed, but a capital campaign is in its fourth year for a new Korean Cultural Center, which also has significant support from the South Korean government.

Also under development is the Ka'iwakīloumoku Hawaiian Cultural Center, which will soon be constructed at Kamehameha Schools Kapālama in Honolulu.

In 1998, the Kaua'i Heritage Center of Hawaiian Culture & the Arts was established in Kapa'a. In a 1,200 square feet facility in the Kaua'i Village Shopping Center, the Heritage Center offered classes in Hawaiian language, music, hula, lei and cordage making, the lunar calendar, healing, and chanting. The Center also provided training to the visitor industry in traditional Hawaiian values. Video presentations focused on diverse subjects including legends, traditional arts and crafts, and the overthrow of the Hawaiian Monarchy.

The Center also displayed museum quality exhibits including tapa, Hawaiian quilts, stone adzes and poi pounders, wooden calabashes, hand-carved fishing tools, shell and feather lei, hula implements and instruments, woven baskets, hats, fans and mats. For financial reasons, the Kaua'i Heritage Center is no longer operating out of the Kaua'i Village Shopping Center. However, the Center still conducts programs

including offering free lectures on Hawaiian culture and providing educational training workshops and classes to Kaua‘i residents and visitors.

In 1967, six charter organizations reflecting Hilo’s multi-ethnic heritage founded the East Hawai‘i Cultural Center. The Center’s facilities include three public galleries; a gift shop featuring locally created art and artifacts; and a performance space that serves as a theater, an art studio, a meeting room, and a dance floor.

As an alternative to a physical center, the community could build on previous, site-specific plans to develop a regional, multi-site, and more personalized approach to the cultural center concept. A “high tech and high touch” strategy, Hāmākua’s cultural network could be organized on the Internet (including maps, site-specific information, and audio and video material), accessible on mobile devices, and made real through access to community cultural events, interpretive signage, and curators or guides available for tours.

This strategy also offers more intimate and personal visitor experiences that provide the greatest opportunity for relationships of reciprocity for both host and visitor that can be more transformative and lasting.

## Organizations and Programs Supporting Cultural Resource Management

### Nonprofit Organizations

**Historic Hawai‘i Foundation** (HHF)[309]: HHF is a statewide non-profit organization that encourages the preservation of historic buildings, sites and communities relating to the history of Hawai‘i. HHF programs include:

- Preservation Resource Center, including FAQs and “Ask an Expert” for information about preservation programs, techniques, and resources
- The Guide Nominating Properties to the Hawai‘i Register of Historic Places
- Hawai‘i’s Most Endangered Historic Sites list, which lists historic properties that are threatened and encourages actions to preserve them.
- The Heritage House Workshop Series to assist homeowners gain practical and in-depth knowledge on how to repair, maintain, and preserve older homes
- The Circuit Rider program, through which preservation services staff conduct regular visits to all of the Hawaiian islands to work with local communities and host classes, seminars and in-person visits to answer preservation questions
- The Preservation Professionals Directory
- An extensive online Resource Directory for historic preservation.

**The Main Street movement:** is a national program that achieves economic development and vitality of core commercial areas in towns and cities through historic preservation activities. The Main Street Four-Point Approach® is a unique preservation-based economic development tool that enables communities to revitalize downtown and neighborhood business districts by leveraging local assets – from historic, cultural, and architectural resources to local enterprises and community pride. It is a comprehensive strategy that addresses the variety of issues and problems that challenge traditional commercial districts.

309 www.historichawaii.org

## Academic Programs

**Kamehameha Schools Wahi Kūpuna Program (Cultural Resource Management)**[310]**:** The Kamehameha Schools Wahi Kūpuna Program conducts ethnographic and archaeological studies to inform agricultural planning and development of Kamehameha Schools' agricultural lands within the Planning Area. To date the Wahi Kūpuna Program has conducted archaeological investigations of mauka Waipi'o Valley and of selected archaeological features within a portion of Honokaia ahupua'a.

**UH Mānoa Graduate Certificate in Historic Preservation**[311]: The University of Hawai'i offers a graduate certificate program in historic preservation, which may be taken alone or in conjunction with an M.A. or Ph.D. degree in either American Studies or another department. The program includes interdisciplinary coursework in a range of disciplines, including history, anthropology, archaeology, Hawaiian studies, law, geography, urban and regional planning, travel industry management, and architecture.

**UH Mānoa American Studies Department**[312]: The University of Hawai'i offers historic preservation summer field schools, which could be used to research and prepare nominations for historic sites and districts.

**UH Mānoa Department of Anthropology**[313]: Archaeology faculty members at the University of Hawai'i lead summer field schools, which could be used to document Hāmākua's many archaeological resources.

**UH Hilo Heritage Management program**: In 2008, the Hawai'i State Legislature passed House Resolution 130 that requested the University of Hawai'i at Hilo create a master of arts program in cultural resource management. The two-year program requires approval from the UH System's Council of Chief Academic Officers and eventually from the UH Board of Regents. UH Hilo is seeking endowment funding of roughly $3 million through the UH Foundation to cover the new faculty and program costs.

UH Hilo's heritage management master's program would be aimed primarily at Hawai'i residents with baccalaureate degrees who are committed to the preservation of traditional Hawaiian artifacts and archaeological sites, many of whom are (or aspire to be) employed by agencies like SHPD, the National Park Service, Kamehameha Schools, Bishop Museum, and private archeological consulting firms. Graduate students will also be able to develop heritage preservation projects with local communities that are hoping to design their own preservation plans.

## Community-based, Collaborative Cultural Resource Management in Other Communities

Many communities across the country pursue strategies to protect and enhance historic and cultural resources. A few examples not referenced above include:

- Inventories and maps of historical and cultural resources in the community. Digital Moku[314] has developed an online inventory and map of historic sites in North Kohala.
- Local historical preservation associations that, among other things, advance the reuse and preservation of historic structures by establishing historic districts, registering historic sites, and creative use of tax incentives, federal grants, and local preservation funds
- Community murals or public art to celebrate community heritage. [315]

310 http://www.ksbe.edu/land/pdf/CRMP_brochure.pdf
311 http://www.catalog.hawaii.edu/schoolscolleges/arts-sciences/departments/amst.htm
312 http://www.hawaii.edu/amst/historic_hawfield.htm
313 http://www.anthropology.hawaii.edu/Department/Subfields/Archaeology/index.html
314 www.digitalmoku.net

Finally, the American Planning Association (APA) studied the role of arts and culture in community planning and the preservation of heritage and history and made these observations:[316]

- Keypoint #1: Compiling the history and heritage of a place requires time, resources, and commitment; there may be conflicts among community narratives, and these may take time to resolve.
- Keypoint #2: The involvement of trusted community-based organizations — such as churches, schools, art centers, ethnic associations, and community social service agencies can be key to the advancement and preservation of culture and heritage.
- Keypoint #3: It often takes an outsider to catalyze identification of and discussions about important aspects of a community that some residents might take for granted.
- Keypoint #4: Using venues such as parks, open spaces, and public streetscapes as places for arts and cultural expressions can be an effective way to integrate history and heritage into the everyday lived experience.

## Cultural Resources Analysis Table

The following Table shows the process used in evaluating the findings from the research and consultations throughout the analysis process up to this point. The Table clearly identifies:

- **Challenges** (1st column) identified in the analysis.
- **Support/Rationale** (2nd column) lists Policy Support (applicable governmental policies) and Plan Support (how the issue relates to researched plans/studies). This column will generally link back to the associated sections of the analysis document where that strategy support is located.
- **Possible CDP Strategy Direction** (3rd column) – the general strategy direction the CDP will likely be taking in addressing the challenge in order to meet the community's objectives.

The Strategy Directions are categorized into one of the four following CDP Strategy Types:

  - **Policy**: establish policy with policy maps (Official Land Use Map) and policy statements related to land use, watersheds and natural features, public improvement priorities, government services, and public re/development;
  - **Advocacy:** recommend advocacy with federal and state policy makers and agencies for policies, regulations, incentives, programs, and action;
  - **Community-based, Collaborative Resource Management (CBCM)**: including research, place-based planning and program design, and program implementation;
  - **Easement and Acquisition (E&A):** identify easement and acquisition priorities by fee simple ownership or through conservation easements;

At times, the CDP Strategy Direction will relate to other Analysis sections not yet complete (Community and Economy). In those cases, the table may refer to the appropriate section still under development, but will not contain a link to that section until that section is complete.

315 "Overview: The role of arts and culture in planning practice." Arts and Culture Briefing Papers 01
316 "Community Heritage and Culture: How the arts and culture sector strengthen cultural values and preserve heritage and history." Arts and Culture Briefing Papers 02. APA.

This is a working document, and the **Possible CDP Strategy Directions** are intended to be preliminary. We expect community feedback that may provide additional information that could further inform our analysis.

**Table 8. Cultural Resources Analysis Table**

| Challenges | Support/Rationale | CDP Strategy Direction |
|---|---|---|
| **Identification, protection and maintenance of historic/cultural sites**<br>▪ Identify and protect places, features, and sacred spaces that give Hawai'i its unique character and cultural significance<br>▪ Identify appropriate sites with interpretive signage<br>▪ Many owners of historic properties are not aware of the programs and incentives available to help with restoration. | **Plan Support:**<br>▪ Statewide Historic Preservation Plan;<br>▪ Hawai'i 2050 Sustainability Plan;<br>▪ Hāmākua Agricultural Plan;<br>▪ Waipi'o Valley Community Action Plan<br>**Policy Support:**<br>▪ General Plan: 6.2(a), 6.2(b), 6.3(e), 6.3(f), 6.3(d), 6.3(j), 6.3(m); Interpretive Signage: 6.3(h), 6.3(i), 6.3(g)<br>▪ County: HCC 2-224<br>▪ State: HRS 205A-2, HRS 6E-2, HAR 13-198, HRS 6E-10, HRS 6E-42 | **Policy**: Secure Certified Local Government status for COH<br>**CBCM**: Form a Cultural Resource Subcommittee to the CDP Action Committee to:<br>▪ take the lead in identifying and inventorying important sites<br>▪ map resources<br>▪ make recommendations to County Cultural Resource Commission for sites in PA<br>**CBCM**: For Historic Downtowns: Review flexible alternatives to Historic District designations; Look at Main Street Four Point Approach for Downtown Honoka'a<br>**CBCM/Advocacy**: Support Waipi'o Valley groups' endeavors toward official Wahi Pana status<br>**Advocacy**: Legislature for addition funds for the State Historic Preservation Division for additional staffing support to expedite/improve review process<br>See Community/Economy sections of the Analysis for further discussions of historic downtown revitalization and Heritage Corridor strategies) |
| **Preserving ethnic diversity and multiculturalism**<br>▪ Support for culture and arts | **Plan Support:**<br>▪ Hawaii 2050 Plan | **Encourage and support gathering events that connect communities with a sense of place, with each other, and with** |

| | | |
|---|---|---|
| to ensure continuation of cultural traditions | **Policy Support:** (see above) | **the past**<br><br>**Policy**: Prioritize County of Hawai'i resources for supporting community festivals & events as a way to connect people with their community (and as appropriate, provide uniqe visitor experiences)<br><br>**CBCM:** Work with COH Dept. of Research and Development to develop, promote, and maintain the continuity of community festivals & events |
| **Knowledge of Hāmākua's Heritage is Gradually Being Lost** | **Plan Support:**<br><br>▪ Hawai'i 2050 Plan<br><br>Look at Economy section for cultural-based and subsistence-based economic strategies [Link]<br><br>**Policy Support:** (see above) | **Policy:** Prioritize Festival support through Dept. of Research & Development<br><br>**CCBM:** Document Mo'olelo of Hāmākua using resources outlined in Oral History |
| **Waipi'o Valley Cultural Resource Management** | **Plan Support:**<br><br>▪ Waipi'o Valley: Towards Community Planning and Ahupua'a Management, Phase II,<br><br>▪ Waipi'o Valley Community Action Plan,<br><br>▪ Waipi'o Stream Management Plan<br><br>**Policy Support:**<br><br>General Plan: 6.2(a), 6.3 (g), 6.3(j), 6.3(m), 6.3(h), 6.3(i), 6.3(o) | **Policy/CBCM/Advocacy**: Designation Waipi'o Valley as a Wahi Pana and create an overlay and regulations<br><br>**Policy/CBCM/Advocacy**: Support the Waipi'o Valley Visitor Center & its related Educational Programs through CIP funding and grant support<br><br>See Waipi'o Valley Section for more information |

# PUBLIC ACCESS MANAGEMENT

Public access to the ocean and mountains has special recreational, traditional, and cultural significance to the people of the Hāmākua CDP Planning Area. The original inhabitants of the Planning Area, the ancient Hawaiians, depended on an extensive network of trails as their only means of overland transportation. While the canoe was a principal means of travel, human survival depended on trails for connecting human settlements, gathering of food and water, and harvesting of materials used for shelter, clothing, medical care, tools, canoe building, religious observances and much more.

In more modern times, many privately maintained and privately owned sugar cane haul roads enabled the public to access the forests and coastlines for over a century while sugar plantations were in operation. Access users were primarily local residents who depended on access to favorite hunting and fishing spots to bring food to the family table and to teach harvesting skills to younger generations. After the sugar era ended in 1994, former sugar plantation land holdings and the mostly unpaved, cane haul roads crossing these lands have been subdivided, bought, and sold. The result is a patchwork of land ownership and an end to the open network of former cane haul roads.

Land owners and managers, including the DLNR, DHHL, Kamehameha Schools, and the County lack the resources to control public access, enforce laws and regulations, and otherwise manage public access to the natural and cultural resources that were once easily accessible. Unlike in the early days of the sugar plantation era when everyone seemed to know each other or each other's family, those seeking outdoor access today are often unknown to land managers. Hunters and fishers are concerned about the potential of over-harvesting and want to limit access for hunting and fishing to people who live in nearby communities. Trespassing appears to be a common practice, whether on purpose or unintended and damaged fences, gates left open, and cruelty to livestock are among the problems reported.

Some landowners and managers have responded by prohibiting access, but hikers, hunters, fishermen, and community members who are used to unfettered access find this unacceptable. Furthermore, landowner concerns over liability continue to be a barrier to opening private lands to public access.

"Fixing" the public access situation in the Planning Area is more complex than most people realize. Passionate beliefs, if not supported by Hawai`i's laws, will not open closed access points. Restoring accesses that were once open and developing new access opportunities will require more than just government intervention and programs. Resources for public access management and maintenance are limited, while the interest in and need for outdoor recreational access keeps growing as the island's population grows. Meeting the challenges will require partnerships between the public, community groups, government agencies, and receptive landowners and land managers.

## Hāmākua CDP Community Objectives Relative to Public Access Management

- Protect, restore, and enhance watershed ecosystems, sweeping views, and open spaces from mauka forests to makai shorelines, **while assuring responsible public access for recreational, spiritual, cultural, and sustenance practices.**

- Encourage community-based collaborative management plans to assure that human activities are in harmony with the quality of Hāmākua's unique natural and cultural landscape.

## Hāmākua's Public Access Assets and Challenges

**Assets**

- Ancient Hawaiian values of love (*aloha*), responsibility (*kuleana*), and care (*mālama*) for the land (*`āina*) endure in modern Hawai`i.
- Traditions of cultural & recreational access to shoreline and mauka areas remain strong.
- The region has abundant and scenic natural areas with potential for recreational access and subsistence hunting and fishing.
- Among the approximately 62 miles of old government roads, a.k.a. "Roads in Limbo," within the CDP Planning Area are potentials for development of new public access opportunities.
- Miles of historic trails appearing on old maps may meet the legal definition of "public trails."
- Large tracts of mauka land owned by the State of Hawai`i could be made accessible if public roads or trails were developed to reach them.
- Knowledgeable long-time residents remember where culturally important areas are located and are willing to share their knowledge.
- The County Planning Department has compiled an island-wide Access Inventory, which, if kept current, can serve as a tool to ensure that existing and potential public accesses are not lost in the process of issuing permits.
- There are State and County laws, regulations, and programs intended to protect existing public access and support the development of new public access opportunities.

**Challenges**

- Public trails and roads leading into public lands exist, but need to be surveyed and developed.
- Although there are State and County laws, regulations, and programs intended to protect and support public access, their application by staff can be inconsistent or non-existent.
- Lateral public access along the coast, so desired by the community, is frequently blocked by coastal residential lots, which have not been required to keep a shoreline setback open for lateral public access.
- Existing and potential public accesses can be lost when permits are reviewed and approved without adequate research into the public access potentials on the affected properties.
- No County agency is tasked with managing public accesses that are being dedicated to and accepted by the County.
- For those public access declarations and grants expressly requiring that a County-approved permit or registration system for night fishing be made available, no clear procedures have been adopted for obtaining night fishing permits.
- Resources are limited for the management of public trails and other public accesses.
- Destructive and illegal behaviors in and around public accesses are difficult to prevent and control.
- Community-based management of public access is desired, but community groups lack the capacity to assume long-term management responsibility.

- "Community Access," as described by community members, can be interpreted as discriminatory and not "Public Access."
- Trespassing on private land to get to shoreline/mauka destinations and other violations are not improving relationships between landowners and the public.
- Changes in land ownership and multiple landowners increase the complexity of developing new public accesses or reopening former accesses.
- Closure and subsequent deterioration of former cane haul roads make it cost-prohibitive to re-open them to public use.
- The region has significant physical barriers and hazardous topography, especially along the coast (i.e. cliffs, residences, etc.).
- Hawai`i's liability laws are poorly understood, and uncertainty about liability risks and protections of public and private landowners can limit voluntary provision of public access.
- Private landowners voluntarily providing accesses for the public face the risk that the public will lobby for government acquisition of the accesses by eminent domain.

## Alignment with County Policy

- 5.3(k): **Develop an integrated shoreline erosion management plan that ensures** the preservation of sandy beaches and **public access to and along the shoreline**, and the protection of private property from flood hazards and wave damage.
- 6.3(d): **Public access to significant historic sites and objects shall be acquired**, where appropriate.
- 7.3(a): **Increase public pedestrian access opportunities** to scenic places and vistas.
- 7.3(d): **Access easement to public or private lands that have natural or scenic value shall be provided or acquired for the public.**
- 8.3(r): **Ensure public access is provided to the shoreline, public trails and hunting areas**, including free public parking where appropriate.
- 8.3(s): **Establish a system of pedestrian access trails to places of scenic, historic, cultural, natural, or recreational values.**
- 12.3(l) **Public access to the shoreline shall be provided in accordance with an adopted program of the County of Hawai'i.**
- 12.3(m): **Develop a network of pedestrian access trails** to places of scenic, historic, natural or recreational values. This system of trails shall provide**, at a minimum, an island-wide route connecting major parks and destinations.**
- 12.3(u): **Provide access to public hunting areas.**

## Previous Public Access Planning/Studies

### Community Planning

**A Plan for the Hilo Hāmākua Coast**[317]**:** In 2000, the Hilo Hāmākua Community Development Corporation (HHCDC) undertook an intensive community engagement process to develop "A Plan for the Hilo Hāmākua Coast", which at the time prioritized the economic, cultural, educational, and infrastructure priorities of the residents of the Hilo Hāmākua coast. Thousands of community comments from area wide surveys and three visioning conferences were categorized and voted upon to prioritize, in order of importance, the community's wishes. The category *Environment-Access, specifically for Hunting, Gathering, and Fishing*, came in at number five (5) out of the top twenty issues.

**Hāmākua Agriculture Plan: Sustaining Rural Hāmākua Through Agriculture**[318]**:** This 2006 community-based plan covers the area from the Maulua Gulch in North Hilo, to Waipiʻo Valley in Hāmākua, and was developed as a pre-cursor to the CDP for the area. While planners initially sought to focus on issues important to the success of diversified agriculture, the final document included high community priorities as well. Participants identified Mauka and Makai Access as a major priority, so much so that the plan dedicated an entire section to the issue. The plan's goals and objectives for Mauka and Makai Access are:

***Goal 1. Assure access to Hāmākua's ocean and mountains.***

- Form a coalition of people who are interested in working together on access issues.
- Identify specific areas of importance for public access.
- Place priority on publicly owned lands and public rights-of-way.
- Determine which accesses should receive priority attention and why.
- Explore ways in which public access arrangements can alleviate landowner, land manager, and agriculture producers concerns.

***Goal 2. Protect and maintain rural lifestyles and traditional Hawaiian values that uphold respect and love of the land.***

- Promote public access arrangements that support rural lifestyles and traditional Hawaiian values, such as *aloha, `āina* and *mālama `āina.*
- Promote public access arrangements that are fair, *i.e.*, not just for those who can afford high fees or know the "right" people.
- Teach outdoor skills and stewardship of natural areas to younger generations.
- Encourage family activities that can be conducted in the mountains and ocean.

***Goal 3. Promote responsible exercise of access rights and stewardship of natural areas.***

- Involve schools and families in outdoor activities made possible through public access.
- Research how public access arrangements can have built-in controls (*i.e.*, use of keys and permits).
- Form partnerships between responsible and stable public access user groups and landowners/managers to help with maintenance and monitoring of accesses.

317 http://www.hawaiicountycdp.info/hamakua-cdp/about-the-hamakua-cdp-planning-area/past-and-current-planning-activities-in-the-hamakua-cdp-planning-area/Hilo%20Hamakua%20plan.pdf/view

318 http://www.hawaiicountycdp.info/hamakua-cdp/about-the-hamakua-cdp-planning-area/past-and-current-planning-activities-in-the-hamakua-cdp-planning-area/AG%20PLAN-2006.pdf/view

## State Plans

**The Hawai'i State Comprehensive Outdoor Recreation Plan (SCORP)** [319]**:** Updated in 2008, the SCORP was prepared by the Department of Land and Natural Resources (DLNR), with the participation of other State, Federal, and County agencies and members of the public. The SCORP is intended to present a balanced program of acquiring, developing, conserving, using and managing Hawai'i's recreation resources.

Through public meetings throughout the development of the SCORP, residents reported, amongst other things, that accesses to recreation areas are limited or blocked by private property, which create the situation where users are forced to trespass in order to gain access to public lands that are landlocked by private property. In addition, a Public Recreation User Survey showed that 56% of respondents identified "Public access to recreation areas", and "Increased opportunities in mauka areas for hiking, camping, hunting, and other outdoor recreation activities" as a High Priority. These two issues were the 5th and 6th highest priorities of survey respondents.

The SCORP recommends the following goals, strategies, and actions to expand access to Recreation Resources.

***Goal: Remove and/or reduce constraints to recreation access and implement management strategies that expand, rather than limit, recreation opportunities and areas.***

- Strategy: Improve access to shoreline and public forest areas by protecting existing accesses, creating new accesses, and reestablishing access to areas that are currently blocked or restricted by private land ownership and or development.
    - Action: Give priority to acquiring public access to and along shoreline and mauka (with wilderness access) recreation areas.
        - Agency: DLNR (including Office of Conservation and Coastal Lands), County Parks and Recreation Departments, County Planning Departments, State Legislature, County Councils
        - Comment: Accesses to and along many public shoreline and mauka areas are blocked by private properties. This results in overcrowding at accessible public areas.
    - Action: Prevent the blocking of existing legal public access paths, and enforce public access requirements for new subdivisions.
        - Agency: DLNR, State Legislature, County Planning Departments, County Councils
        - Comment: There have been incidences where property owners adjacent to a public recreation resource have blocked access by placing signs, gates, boulders, and plants to prevent people from parking and/or using access.
    - Action: Provide direction and entry signage to public recreation areas.
        - Agency: DLNR, County Parks and Recreation Departments, DOT, County Transportation Departments
        - Comment: A reported access constraint was not being able to find recreation resources due to lack of signage. In addition, an increase in the popularity of guidebooks and internet site revealing locations of previously unknown or lesser-known sites has brought more visitors

319 http://state.hi.us/dlnr/reports/scorp/SCORP08-1.pdf

to areas lacking signage. Visitors may unknowingly trespass on private property as well. Directional and entry signage should be consistent, prominent, and separate from other types of signage (i.e. regulatory, interpretive).

- Action: Continue and increase use of easements to protect areas of high public value from development and ensure public access.
  - Agency: State Legislature, County Councils
  - Comment: Provide incentives to private landowners to open more beach and trail accesses by limiting liability and providing tax incentives and/or zoning credits.
- Action: Provide management assistance to private landowners that allow recreational access on their lands.
  - Agency: DLNR, County Parks and Recreation Departments
  - Comment: Types of assistance include: reducing liability/cost of damage caused by public recreational use; responding to landowner complaints; assisting landowner to mitigate costs associated with public use; identifying and addressing inappropriate user behavior; encouraging landowners to post signage on their property based on acceptable uses; and providing landowners with signs.
- Action: Coordinate with private landowners, the DLNR Land Division, and the Department of Hawaiian Homelands (DHHL) to assure access through leased lands to Forest Reserve areas.
  - Agency: DLNR Land Division, DOFAW, DHHL
- Action: Review existing laws, rules, and regulations and recommend amendments, if necessary, to ensure public access for recreational uses as well as cultural practices and subsistence gathering, hunting, and fishing.
  - Agency: DLNR, County Parks and Recreations, County Planning Departments

***Goal: Provide residents and visitors with a variety of recreational opportunities, resources, and facilities.***

- Strategy: Increase the number and range of resources and facilities to support expanded participation in ocean and shoreline recreation activities.
  - Action: Purchase, lease, or otherwise acquire additional beach areas and rights-of-ways.
    - Agency: DLNR, County Parks and Recreation Departments, County Planning Departments
    - Comment: Because shoreline and ocean recreation areas are well used by residents and visitors and are a limited resource, acquiring additional beach areas and rights-of-ways for beach and ocean recreation is important to reduce overcrowding problems at beaches with public access.
- Strategy: Increase the number and range of resources and facilities to support and expand recreation opportunities in mauka and natural upland areas.
  - Action: Plan and develop more mauka multi-use trails
    - Agency: DOFAW, Na Ala Hele, State Parks, Counties

- Comment: Na Ala Hele continues to negotiate trail access with major landowners throughout the State and to develop a trail and access network and management system that provides a broad range of recreational, cultural, and subsistence opportunities and helps conserve Hawai'i 's cultural heritage and environment.

- Action: Open more public hunting areas, improve access to hunting areas, and provide more hunting opportunities.

  - Agency: DOFAW

  - Comment: Allowing hunters to participate in ungulate eradication programs provides hunters with the opportunity to hunt in an area that might otherwise be closed for resource protection reasons.

**Public Access Plan for the UH Management Areas on Mauna Kea**[320]: The summits of Mauna Kea and Mauna Loa, are within the Hāmākua District. Completed in January 2010, the Public Access Plan (PAP) is a sub-plan of the Mauna Kea Comprehensive Management Plan (CMP). It was required as a condition of approval of the CMP by the Hawai`i State BLNR. The purpose of the PAP is to provide guidance to the University of Hawai`i in addressing public access within the Mauna Kea Science Reserve, Summit and Access Road, and mid-level facilities at Hale Pōhaku, an area encompassing approximately 11,235 acres of state-owned land from 9,200 ft. elevation to the summit of Mauna Kea (13,796 ft.). The PAP provides a set of principles and policies to guide the University in the development of management actions relating to existing and future public and commercial activities.

Access policies adopted in the PAP pertain to:

- Inclusion of the BLNR and the public in Rule-Making and Management Decision-Making - the University will consult with user groups that may be affected by proposed management actions and adopt public access rules after a public review process and review and approval by the BLNR.

- Public Safety and Emergency Response - potentially hazardous weather conditions and Summit Access Road limitations dictate the need for high management priority given to public health and safety.

- Education and Interpretation - educational outreach regarding health issues associated with the high elevation environment is ongoing; and signage, other educational methods and programs will be used to raise awareness of the mountain's natural, spiritual, cultural and scientific resources, as well as inform people of safe behavior while visiting Mauna Kea.

- Traditional and Customary Activities - the exercise of Native Hawaiian cultural practices on Mauna Kea is recognized as a legally and constitutionally protected right to be safely accommodated and reasonably regulated as permitted by law.

- Commercial Activities - regulation of commercial activities and enforcement of permit conditions will ensure that commercial entities operate safely and appropriately.

- Enforcement - compliance with the safety and resource protection rules will be sought at the lowest levels of control using education, communication and collaboration.

- Infrastructure - the need for public support facilities will be monitored and assessed so that adequate facilities will be anticipated and provided.

320 http://www.malamamaunakea.org/site/news/MaunaKeaPublicAccessPlan_Jan10_DS-printF.pdf

- Monitoring and Management of Human Impacts - public activities will be encouraged at the lower elevations to protect public safety and health and in already disturbed areas in order to minimize human impacts on cultural and natural resources. Monitoring of the impacts of human activities will help to guide ongoing adaptive management decision-making.

## Current Tools and Alternative Strategies

This section will outline existing programs, best practices and tools to address Public Access specific community objectives. Other strategies may be found in the other sections of Natural and Cultural Resource Analysis. While this list is not exhaustive, these alternatives will help inform the preferred CDP strategies.

**Native Hawaiian Traditional and Customary Access Rights**: Public access rights are not the same as Native Hawaiian Traditional and Customary Access Rights. Native Hawaiians have special access rights that are not available to the general public. Article 12, Section 7 of the Hawai'i State Constitution states that "The State reaffirms and shall protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua'a 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." What those rights are and how they are exercised is determined on a case-by-case basis, as there are no definitions that apply across all situations or in all places. Customary practices can also change over time. The term "PASH Rights" refers to the case, *Public Access Shoreline Hawaii (PASH) vs. County of Hawaii Planning Commission*. It is one of several lawsuits that have reaffirmed the legal existence of Native Hawaiian access and gathering rights.

### Government Agencies and Programs Involved in Public Access Acquisition and Management

**State Department of Land and Natural Resources:** The Department of Land and Natural Resources (DLNR), headed by an executive Board of Land and Natural Resources (BLNR), is responsible for managing, administering, and exercising control over public lands, water resources, ocean waters, navigable streams, coastal areas (except commercial harbors), minerals, and all interests therein. The department's jurisdiction encompasses nearly 1.3 million acres of State lands, beaches, and coastal waters as well as 750 miles of coastline (the fourth longest in the country). It includes state parks; historical sites; forests and forest reserves; aquatic life and its sanctuaries; public fishing areas; boating, ocean recreation, and coastal programs; wildlife and its sanctuaries; game management areas; public hunting areas; and natural area reserves.

**Division of Forestry and Wildlife (DOFAW)**: This DLNR agency's responsibilities include management of state-owned forests, natural areas, public hunting areas, and plant and wildlife sanctuaries. Program areas cover watershed protection; native resources protection, including unique ecosystems and endangered species of plants and wildlife; outdoor recreation; and commercial forestry. Many of the lands under the jurisdiction of DOFAW contain trails and accesses that are open to public access.

**Na Ala Hele Statewide Trail and Access System**: First established in 1988, this program is part of DLNR's Division of Forestry and Wildlife and is responsible for the planning, development, acquisition, management and maintenance of trails and accesses, statewide. Its purposes, authorities and responsibilities are detailed in HRS Chapter 198D. The program is required to inventory "all trails and accesses in the State." The program is responsible for managing and maintaining only those trails and accesses that are approved by the Board of Land and Natural Resources to become a part of the statewide trail and access system. Trails/accesses in the CDP Planning Area under the jurisdiction of Na Ala Hele include several coastal trails in Onomea, Kaluakauka Trail, Humu`ula Trail and the Muliwai Trail.

**State Historic Preservation Division (SHPD):** Part of DLNR, SHPD works to preserve and sustain reminders of earlier times which link the past to the present. When historic and ancient trails are

identified, Na Ala Hele and SHPD collaborate on the best ways to protect the trails and nearby historic and cultural sites. When historic trails are located in proposed resort and other developments, they work closely to identify trail locations, determine best management practices when trails are restored and opened to public use, and establish suitable trail buffers and buffer treatments.

**Division of State Parks**: This DLNR agency manages and administers 52 state parks encompassing nearly 25,000 acres on the 5 major islands. These parks offer varied outdoor recreation and heritage opportunities in park environments ranging from landscaped grounds with developed facilities to wildland areas with trails and primitive facilities.

**Land Division**: Among other responsibilities, this DLNR agency manages state-owned lands that are not under the jurisdiction of other state agencies. This includes making lands under their jurisdiction available to the public through fee sales, leases, licenses, grants of easement, rights-of-entry, or month-to-month tenancies.

**County of Hawai'i Planning Department**: The Planning Department provides technical advice to the Mayor, Planning Commission, and County Council on all planning and land use matters. The Department has the authority to recommend and set public access conditions in its review and approval of applications for Special Permits, Rezonings, Subdivisions, and developments within the Special Management Area. It is charged with the administration of the Subdivision, Zoning, and Public Access Codes and the updates, management and compliance with the County's General Plan and associated implementation plans. It also maintains an Access Inventory, which, if kept current and comprehensive, can be a key tool in ensuring that existing and potential public accesses are protected in permit processing and planning.

**County of Hawai'i Parks and Recreation Department**: This department has wide-ranging responsibilities. It has responsibility over a few trails, including "Old Wālua Road: The Toni Fortin Blair Memorial Bicycle and Pedestrian Scenic Path" in North Kona and "Ke Ala Kahawai o Waimea" (a.k.a. Waimea Trails and Greenways). It also has been given administrative and management responsibility over the Public Access, Open Space, and Natural Resources Preservation Maintenance Fund, established as a County Charter amendment in 2012.

**County of Hawai'i Public Works Department**: Public Works has responsibility over the County's Roads in Limbo, a major responsibility with limited funding. Where the largely substandard, Roads in Limbo are concerned, the department's focus is in identifying which of these old government roads are in greatest need of being fixed. The department is not responsible for, nor does it have the resources to develop old government rights-of-way into non-vehicular trails for public use. The department's staff has access to historic information about the old roads and trails and can be very helpful in determining whether a road is public or privately owned.

**County of Hawai`i Public Access, Open Space, and Natural Resources Preservation Commission (PONC)**: Formed in 2005 and administered by the County Finance Department, the commission reviews and prioritizes suggestions submitted by the public for County acquisition. The commission submits an annual report to the mayor that recommends properties for consideration. The PONC fund is set at a minimum of 2% of the certified real property tax revenues, including penalty and interest. This percentage was established as a County Charter amendment in 2012. Up to now, the PONC recommended priorities have not focused on public accesses or trails. However, when open spaces are acquired, frequently there are existing or potential public accesses or trails present on those properties, such as the open space purchased at Kāwā Bay in Kaū District and Kaiholena in North Kohala District. By December 2012, the County owned a total of 955 acres of land purchased with the PONC fund and received a total of $4,166,750.00 in grant monies by leveraging funds with State and Federal sources.

**County of Hawai'i Game Management Advisory Commission**: This commission was established by a ballot initiative in 2012 and is administered by the Office of the Mayor. Its purpose is to "advise County, State and Federal agencies on matters related to the preservation of subsistence hunting and fishing, as well as protecting traditional and cultural gathering rights." It is anticipated that this commission, once set-up and operational, will advise government agencies re: existing and potential public accesses and trails.

## Tools and Strategies for Acquisition and Development of Public Access

**Public Access Rights in Government-Owned Lands:** Public access rights in government-owned lands are subject to regulation and management by the government agency with responsibility over the subject lands.

**Highways Act of 1892**: HRS Sections 264-1 & 2 give fee-simple ownership to government over roads, alleys, streets, ways, lanes, trails, bikeways and bridges that were opened, laid out, or built by government or otherwise surrendered to public use in 1892 or prior. If the State of Hawai'i declares a trail or other non-vehicular pathway to be a public right-of-way by virtue of the Highways Act of 1892, that trail is determined to be a public trail and under the jurisdiction of the State Board of Land and Natural Resources. Some public trails are located within privately owned lands. More government resources and protection are available for those ancient and historic trails that are declared owned in fee by the state. It is important to note that a government claim of ownership does not automatically mean that the state is prepared to open the trail or road to public use.

- **Government Roads**: Old government roads and trails sometimes lead to areas of importance to the public. These include old homestead roads, "paper roads," and "Roads-In-Limbo." Even if an old government road or trail has been unused by the public for many years and has physically deteriorated, it continues to be owned by government until public ownership by the state or county is formally relinquished, as required in HRS Section 264-1(d). Like public trails, old government roads are sometimes located within privately owned lands, and it is against the law to obstruct them. Old government roads include:

    - Homestead Roads: Authorized by the Homestead Act of 1895, these roads are relied upon extensively for vehicular access to residential lots.

    - Paper Roads: Some old government roads exist only on maps (referred to as "paper roads") because they were never actually built. Although never built, the alignment is still government-owned.

    - Roads in Limbo: The state and county have a long history of debating who should bear the responsibility for maintaining and repairing old government roads that can be substandard, hazardous and vulnerable to erosion. Such roads have been referred to as "Roads in Limbo." Pursuant HRS Section 28-2 and HCC Sections 22-2.4 and 22-8, even though a government road may be "in limbo," it is against the law (and subject to prosecution) for any person(s) to obstruct any state or county street, road or path, without the legal privilege to do so.

  The physical location of a well-used government road sometimes differs from its alignment on a map. This can complicate efforts to open such a road to the public, because its physical alignment weaves in and out of private land. Some old government roads have more value as hiking and/or equestrian trails or neighborhood walking and/or bicycling paths separated from busy highways, rather than as vehicular roadways. For example, residents of Āhualoa have compiled a map illustrating how paper roads and Roads in Limbo could form a network of walking paths within their community.

- **Rights of Public Access in State-Owned Lands**: It is not correct to assume that the public has the right of access on all government-owned lands. When state-owned lands are leased to private

interests, those lands are governed by the lease agreement, which may or may not contain public access provisions. HRS Section 171-37 allows the BLNR to withdraw lands from existing leases for public uses or purposes, including "rights-of-way and easements of all kinds," under certain conditions. Furthermore, HRS Section 171-26 requires that the State Board of Land and Natural Resources (BLNR) "Prior to the disposition of any public lands,…shall lay out and establish over and across such lands a reasonable number of rights-of-way…in order that the right of the people to utilize the public beaches, game management areas, public hunting areas, and public forests and forest reserves shall be protected." Public access in state-owned lands is subject to the regulations set by the state agency that has jurisdiction over the lands of interest.

- **Rights of Public Access in County-Owned Lands**: HRS Section 46-1.5 gives counties powers to acquire, lease and hold real and personal property as the interests of the county's inhabitants may require, including the power of condemnation by eminent domain when it is in the public interest to do so. Public access in county-owned lands is subject to the regulations set by the county agency that has jurisdiction over the lands of interest.

**Public Access Rights Over Private Lands:** Public access rights to cross private land may exist if it is determined that a government-owned road or trail is located there. However, there are reasons for keeping such roads or trails closed to public use, such as: government agencies may be unable to manage and maintain them; they may be located in hazardous areas; they may not lead to any area of public interest; or they may be located next to sensitive cultural and historic sites or fragile natural areas.

- **Government Road:** The services of an abstractor or land surveyor may be required to research whether a government-owned road exists on the private land and where. This includes old government roads that were laid out by government but never built (a.k.a. "paper roads") and unmaintained old government roads (often called "Roads in Limbo"). The counties and the state have limited staff capable of doing the research. There is one abstractor on staff in the State's Na Ala Hele trails and access program covering statewide requests. If found to be a government-owned road, it will depend on the interested government agency to decide what to do.

- **Ancient Trail:** Ancient trails that cross private property may be public trails, owned in fee-simple by government. The Na Ala Hele abstractor researches whether an ancient trail meets the requirements of a "public trail" per HRS Section 264-1 and the Highways Act of 1892. The abstractor issues an opinion, and the State Department of Land and Natural Resources officially confirms the government's property interest.

- **Public Access Requirements in Subdivisions:** HRS Section 46-6.5 directs the counties to adopt ordinances to require subdividers of six or more lots to dedicate land for public access for pedestrian travel from a public highway to "the land below the high-water mark on any coastal shoreline" or to "areas in the mountains where there are existing facilities for hiking, hunting, fruit-picking, ti-leaf sliding, and other recreational purposes, and where there are existing mountain trails." Hawai`i County's Public Access Code, HCC Chapter 34, details public access requirements of subdividers of six or more lots, or developers of multiple-family developments of six or more dwelling units on one lot. Accesses are to be dedicated to the county by right-of-way in fee or easement for public access from a public highway or street to public shoreline areas and the land below the shoreline. Planning Department Rule 21 regulates the use and management of the public accesses that are created under HCC Chapter 34. Standards for spacing between mauka-makai shoreline public accesses are set forth in HCC Chapter 34, but the Planning Director is given some discretion in determining the frequency and locations of public access requirements.

- **Special Management Area**: HRS Section 205A-Part II of Hawai'i's Coastal Zone Management Law gives the counties the authority and responsibility to administer the Special Management Area. SMA

permits for oceanfront properties, including resort and single-family residential developments, frequently contain conditions requiring the applicants to allow some form of mauka-makai and/or lateral shoreline public access. Conditions vary with the type of SMA permit, the unique characteristics of the access location, and the year in which the permit was granted. Public access conditions in existing permits may be reviewed at the County Planning Department.

- **County Planning Department's Access Inventory**: HCC Section 34-4(b) requires the County Planning Department to work with the State DLNR and County Department of Parks and Recreation to compile an inventory (including maps) of "public-owned areas and the approximate location of the existing public trails." The inventory currently consists of primarily shoreline accesses with a few mauka accesses in the CDP Planning Area. The inventory is a record of not only existing public accesses but also accesses that may have potential for future public use. The Access Inventory consists of maps and data that can be referred to by planners when applications to develop and/or subdivide land are reviewed. Throughout the Hāmākua CDP process, information received from community members regarding the locations and conditions of accesses, many of which are no longer open to public use, has been recorded in the Planning Department's island-wide Access Inventory.

- **Beach Transit Corridor:** HRS Section 115-5 acknowledges that cliffs and other topographic features can leave the public with "no reasonably safe transit" along the shoreline below private property lines. This law authorizes the counties to establish (through condemnation of private property) "public transit corridors which shall be not less than six feet wide." The law gives the State Department of Land and Natural Resources' authority to require abutting landowners to remove the landowner's human-induced, enhanced, or unmaintained vegetation that interferes or encroaches within "beach transit corridors." The beach transit corridor is defined as: "The right of transit shall exist seaward of the shoreline and this area shall be defined as a beach transit corridor. For purposes of this section, 'shoreline' shall have the same meaning as in section 205A-1."

- **Public Access Easement:** Sometimes a little-known public access easement exists that is encumbering a property. A land title report will hopefully discover the existence of such an easement.

- **Purchase:** If no other option exists, there are provisions in the law for the public to purchase access rights through the government's powers of eminent domain (HRS Chapter 115 and HRS Section 46-1.5). The County's Public Access, Open Space, and Natural Resources Preservation Fund and the State's Legacy Lands Conservation Program offer other acquisition options. The acquisition may be in fee-simple or in the form of a conservation easement. Also, private land trusts, non-profit organizations, and government agencies have partnered to purchase lands for public purposes.

- **Voluntary Access**: A landowner can voluntarily allow the public to cross his land in order to reach popular natural areas, such as beaches, waterfalls and scenic points. Often the public is trespassing to reach those attractions anyway. The landowner has the right to manage and control the use of this voluntary access, which may include trail closures at night and other rules. It is not an uncommon practice for fishermen and hunters to ask permission of private landowners before crossing private lands to access a favorite hunting or fishing area. That would be a private access arrangement. Liability, should someone get injured while crossing private lands, tops the list of concerns for landowners, although liability protection of private landowners who voluntarily allow recreational public access on their lands is available through HRS Chapter 520. Recent examples from the CDP Planning Area that discourage voluntary public access provision by private landowners include: successful lobbying by the public to persuade government to use its powers of eminent domain to publicly acquire a voluntary access; killing or maiming of livestock; leaving gates open, resulting in time-consuming (and costly) recapture of livestock; and extensive graffiti defacing plantation-era historic sites.

## Liability

Legal uncertainty and confusion about how Hawai`i's legal system will interpret existing laws meant to protect landowners when the public is allowed recreational access, make liability a major concern for both public and private landowners. Increasing numbers of people are requiring rescue or sustaining injuries (sometimes fatal) while using trails that are officially closed and not maintained for public use. Guidebooks and websites commonly encourage people to venture into natural areas without regard to land ownership and natural hazards. The fear of liability and the doubts that existing laws will be protective enough discourage landowners from opening lands to public access.

- **Liability Protection of Private Landowners for Recreational Public Access:** To encourage private landowners to voluntarily allow recreational public access on their lands, HRS Chapter 520, Hawai'i's Recreational Use Statute (RUS), was first established in 1969. It limits the private landowner's liability if access is made available to the public without charging a fee. RUS's do not prevent landowners from being sued, but they make it difficult for the injured recreational user to win a lawsuit. One nationwide study of 637 appellate court cases heard since 1965 involving recreational injuries in all 50 states, concluded that state RUS's provide significant liability protection for landowners, but landowners and a number of resource management professionals are unaware of the liability protections afforded by RUS's.[321] A few highlights of Hawai`i's law:

    - "Recreational purposes" covered under this law are very broad and include but are not limited to "hunting, fishing, swimming, boating, camping, picnicking, hiking, pleasure driving, nature study, water skiing, winter sports, and viewing or enjoying historical, archaeological, scenic, or scientific sites."

    - The owner who permits recreational public access "owes no duty of care to keep the premises safe," or "to give any warning of a dangerous condition, use, structure, or activity" on the premises to recreational users or to those who enter to provide rescue, medical care, or other form of assistance to the recreational user. Nor does the landowner assume any responsibility for any injury to the recreational user or the user's property while entering his property for recreational purposes.

    - The law's protection extends to landowners who are required to provide access or parking for public access because of "state or county land use, zoning, or planning law, ordinance, rule, ruling, or order, etc."

    - The law does not require the landowner to open his/her property to every member of the public in order to receive protection of the statute.

    - "No person shall gain any rights to any land by prescription or otherwise, as a result of any usage thereof for recreational purposes as provided in this chapter." (Section 520-7) If the landowner complies with the requirements of HRS Chapter 520, no prescriptive rights of access can be claimed by any individual or the public as a result of being able to access that land.

    - Protection under this law does not extend to the landowner's house guests or if any admission price or fee has been asked in return for invitation or permission to enter the land. Also, there is no protection under this statute for "willful or malicious failure to guard or warn against a dangerous condition… which the landowner knowingly creates or perpetuates."

321 Wright, B. A., R.A. Kaiser, and S. Nicholls. 2002. "Rural landowner liability for recreational injuries: Myths, perceptions, and realities." 2002 Journal of Soil and Water Conservation, Vol. 57. Number 3: pp. 183-191.

- If the landowner receives compensation from leasing the land to the State or other government entity, that will not be considered a "charge" for use of the land, and protection under this law will still be given.

- **Liability Protection on Unimproved Public Lands:** HRS Chapter 520 does not include government-owned lands in its liability protection. After the First Circuit Court found the state negligent in the 1999 Mother's Day rock slide in Sacred Falls State Park that killed eight people and injured 42, Hawai`i's legislature passed Act 82 in 2003 to help the state and counties manage their liability exposure through more effective hazard warning signage and other public safety enhancements. Without liability protections, closure of recreational public lands is a real possibility (Sacred Falls State Park remains closed to the public today). Act 82 (SLH 2003) requires the state and counties to establish a risk management system for posting and maintaining adequate hazard warnings on "improved public lands." Subsequent amendments to Act 82 (SLH 2003) have clarified the definition of "improved public lands." This definition is key because the state and counties are held to a higher standard of care and responsibility on lands that are improved and managed for public use, such as public parks and trails/accesses that are officially part of the State's Na Ala Hele system. For unimproved public lands, Act 82 (SLH 2003) states that "The State or a county shall have no duty to warn of dangerous natural conditions on unimproved public lands." Not having a duty to warn of dangerous natural conditions on unimproved public lands is similar to provisions in HRS Chapter 520 for private landowners who do not have a "duty of care to keep the premises safe for entry or use by others for recreational purposes, or to give any warning of a dangerous condition, use, structure, or activity on such premises." The liability protection with regards to unimproved public lands (lands that are not being managed for public use) is due to sunset (be repealed) in 2014 (per Act 81 of 2009), unless it is made permanent or its sunset date extended.

## Tools & Strategies for Improved Management of Public Access

Regardless of the tool used to acquire and/or retain public access rights over public or private lands, governmental capacity to open and manage public accesses is limited. The lack of management of public access raises major concerns for access users, managers, neighbors, and landowners. Lacking the resources to properly maintain a public access can prevent existing public access easements from being developed and lead people to question whether new public accesses should be acquired (if existing ones are not being cared for). The practice of "land banking" is employed when opportunities arise to acquire lands and accesses for public use before resources become available to open them to the public with adequate management. Insufficient management and maintenance can also lead to higher liability exposure if the poorly maintained access is part of a county or state park system or part of the State's Na Ala Hele Statewide Trail and Access System.

**Public Access Management Planning/Program**: One way municipalities in Hawai'i have tried to address public access management issues is by developing management plans, and in some cases instituting public access management programs. One example of this is the ***1986 Maui County Shoreline Access Management Plan***[322] *(1986)* and follow-up ***Maui County Shoreline Access Inventory Update - Final Report***[323] ***(2005)***. Each of these County commissioned plans/reports provided the following types information:

- *Legal Framework*: A review of up to date federal, state, and county shoreline public access laws and regulations, including a review of different community plans.

322 Awaiting digital copy to post

323 http://www.co.maui.hi.us/documents/17/68/97/ShorelineAccessReport.pdf

- *Inventory of Existing Access ways:* The 1986 plan inventoried existing shoreline accesses (both public and private), and the 2005 update updated that inventory and added additional access points into a public access database.

- *Public Access Criteria:* Both documents made recommendations for prioritizing shoreline public access points relative to location, distribution, siting, surrounding land uses, natural & cultural resource characteristics, and hazards. The 2005 report expanded the criteria to include fiscal appropriateness, environmental sustainability, parking, level of use, variety of activities and recreation, investment return on public access improvements, and carrying capacity.

- *Funding Considerations:* The 2005 report summarized advantages and disadvantages of various public access funding mechanisms.

- *Regulatory Recommendations:* The 2005 report summarized the advantages and disadvantages of regulatory mechanisms such as: Permit conditions,

    - Permit conditions
    - Realtor disclosure of access requirements
    - Strengthening Parks Department access provisions, and
    - Signage

- *Access Maintenance:* Both documents made recommendations on maintenance programs for public access including design, construction and maintenance standards, financing of access maintenance, etc.

- *Prioritization of Future Accesses:* Both documents made recommendations on acquisition of future shoreline public access points in different areas of the County by applying their access criteria. In addition, the 2005 report provided an explanation of the prioritization including priority resources, improvement needs, acquisition financing recommendations, regulatory mechanisms, consistency with community plans, and maps/pictures of the desired access.

**Components of Public Access Management**: Not all trails and accesses require the same level of maintenance and management. Management requirements will vary with the type of trail/access (i.e., urban, rural or wildland), types and levels of usage (i.e., pedestrian only, shared use with bicycles and/or horses, vehicular access), environmental impacts that are observed, and behaviors that may need to be controlled. Management should be proactive, responsive, and flexible in order to appropriately maintain and repair, manage waste, inform and educate users, establish rules, and manage risks (i.e., accident prevention and liability). To do that, conditions on the ground and in the field must be monitored. Publicly accessible areas that are open 24 hours/day, 7 days a week are increasingly rare in both public and privately managed public accesses. Where hours are concerned, a wide spectrum exists for when public accesses are opened and closed:

**Figure 11. Public Access Spectrum**


Permit conditions will often state the hours in which public accesses are required to be opened and closed. Where coastal public accesses are closed at night, provisions for night fishing permits are sometimes required to accommodate traditional fishing activities.

**County of Hawai'i Public Access, Open Space, Natural Resources Preservation Maintenance Fund**: Approved by the voters of Hawai`i County in 2012 as an amendment to the County Charter, this fund sets aside 0.25 percent of property tax revenue to be used to maintain properties that are acquired by the county through its Public Access, Open Space, and Natural Resources Preservation Fund. It is expected that non-profit organizations will be able to apply for grants created from this fund to assist in maintenance and management activities.

**Community-Managed Public Access:** Increasingly, government cannot afford to open and manage new public services and spaces, such as parks and public trails/accesses. Community-managed public access has been recommended as a way to increase the number of public accesses through partnerships between community members and groups, landowners, and government agencies. The public can become more involved in the management and control of public accesses in their communities with sufficient resources to do so. Bringing management to a more local level will foster a sense of stewardship and "kuleana" (responsibility) that is needed if this approach is to succeed. Community-managed public access does not fall together just by chance. It requires organization and planning. The more heavily used accesses will be more complex to manage. Rules help to prevent misuse and damage of the areas being accessed and should be made clear to the users through signage and education. There are a growing number of community-based organizations entering into stewardship agreements to manage public spaces. Much can be learned from those who are doing this important work. Each location and community group will have unique management requirements, so the community-managed public access system is intended to be flexible. One recent example of the application of community-based public access management principles is the "Public Access with Kuleana" Project.

- **"Public Access with Kuleana Project"** is the name given to a grant funded by the Island Innovation Fund (managed by Hawai`i Community Foundation) that was awarded to People's Advocacy for Trails Hawai`i (PATH) in March of 2012. The project is intended to demonstrate and implement a community-managed public access model that allows the public to access special places with a shared sense of "kuleana" (responsibility) to the land. *The Public Access with Kuleana Project consists of five major elements that are considered helpful to long-term success of community managed public accesses:*

    1. Agreements: Management partners enter into agreement(s) before investing significant time and/or money into managing a public access. Clear, agreed-upon roles and responsibilities help prevent misunderstandings and hard feelings later. This promotes an enduring working relationship.
    2. Partnerships: Managing a public access is a long-term commitment and will involve ongoing expenses and labor. It is important to have a realistic plan. Ideally a tax-exempt, non-profit

group capable of receiving grants and tax-deductible donations would be on the team. Each member of the partnership brings unique assets and strengths to the project. Community groups, which may lack the tax-exempt, non-profit status, can contribute committed, trained, and organized volunteers to the team effort.

3. Access Management & Accountability: Education and orientation of access users help to prevent and minimize problems. Signage can be used to inform people of the rules. Most people respect the rules, especially when they understand the need for them. Permit systems enable a higher level of control and monitoring but are more costly to operate and labor intensive. Community-level managers need to consider whether they have the ability to manage a permit system and its requirements.
4. Risk Management: Opening lands to public access and managing the access raises the specter of liability. There are ways to reduce liability exposure and these need to be understood by all involved. Effectively designed and properly placed warning signs; safety training and risk assessments; and waivers of liability are among the important tools. Partners need to obtain liability insurance coverage.
5. Evaluation: Evaluation is used to guide where improvements need to be made. Access users, neighbors, affected landowners, managers, and partners should all be part of the evaluation process.

- **The "Smart Card"**: Enforcement of rules and consequences for violating the rules are difficult to incorporate into community-managed public access. Frequently it is difficult, if not impossible, to identify rule violators and hold them accountable, especially when there is no one entry point that can be monitored and controlled. The Public Access with Kuleana Project investigated the feasibility of a "Smart Card" system that would consist of an electronically controlled, locked gate that can be opened and closed using an activated card remotely capable of triggering it to open and close. The time and date the card was used is recorded. To obtain a card, the applicant for access receives training in its use, agrees to abide by the access and card use rules, and pays a fee to help maintain the system. If it is shown that a card user violated the rules, the access card can be inactivated. One of the concerns with the system is that the video camera and control mechanisms would be expensive to replace if stolen, vandalized, or otherwise damaged. The system would have ongoing expenses, such as internet, phone, and electrical service. The system cannot be used in areas lacking internet, phone, and power services. While the desire is to keep the fees low for community access, the costs of installing and maintaining a Smart Card system would likely be unsustainable for a small community group.

- **Phone Answering Service:** This is a type of permit system being used successfully by a private ranching operation that is required to allow public access for hunting, hiking and use of a forestry cabin as part of their land lease with the State of Hawai`i. The rancher employs a phone answering service, which uses email extensively to inform the rancher of who is planning to enter through the gate(s) and when. The service maintains the master records of permit use. To apply for a permit, there is a simple "Request to Enter" form that verifies one's identity and requires a signature to abide by the rules. Once approved, a PIN # is given that enables use of the phone service to obtain the gate lock combination of the day. Several locked gates are being operated in this manner, and the rancher is finding that permit holders are helping to watch for problems and reporting suspicious activities. Littering also seems to be on the decline. Managing the permit system, gates, changing the lock combinations, interacting with the public, monitoring the accesses, and paying for the phone service are among the public access-related duties of the rancher. In this case, the

rancher believes the system is working and sees major improvement over problems that were occurring in the past. These improvements help to compensate for the additional duties (and costs) of managing the system. This public access management approach appears to be worth testing in other locations, but it requires controlled entry points and a responsible, willing manager.

### Existing, Community-Based Public Access Groups

- **Mauka and Makai Access Committee (MAMA)**: is a community group of long-time residents of the Island of Hawai`i that advocates for public and community access mostly in the CDP Planning Area. Formed in 2004 to represent public access interests in the "Hāmākua Agriculture Plan" initiative, the committee continues to watch and speak up when issues arise that could lead to new public access opportunities or result in losses of public access.

- **Āhualoa Trails Committee**: is an informal group of area residents who get-together to hand-clear old Āhualoa Homestead roads for hiking purposes. In doing so, they are maintaining these old government-owned roads for public access purposes and helping to ensure that the public right to use these roads is not forgotten.

- **North Kohala Access Group**: has been meeting on a monthly basis since 2007. Formed while the North Kohala CDP was being developed, it has become a subcommittee of the CDP's Action Committee. The group advocates for mauka and makai public access opportunities throughout North Kohala; encourages community-management of Kohala's public accesses; and works for preservation of open space and archaeological/cultural sites, especially along the North Kohala coast. The group is advocating for a comprehensive, long-range stewardship plan for North Kohala's natural and cultural open spaces.

- **Ocean Warriors**[324]: under the auspices of the Mālama Kai Foundation, this coastal stewardship and protection program is for middle and high school students in North Kohala and Waikoloa. Developed about 6 years ago, the program is extra-curricular and combines environmental education with leadership experiences and place-based learning and service projects. Students are mentored in activities that include camping, clean-up of coastal accesses, surveys of access users, and resource monitoring via snorkel-based fish and coral surveys and tidepool monitoring. Families, coastal users, school faculty, and community partners frequently join youth activities, thereby expanding youth-led, near-shore stewardship into a broader community effort.

- **Hui Aloha Kīholo**[325]: formed in 2007, this active stewardship group is a 501(c)(3) non-profit, which focuses its work in the Kīholo region of North Kona. Many of its members have historic, family connections to Kīholo, reside nearby, and/or recreationally enjoy Kīholo Bay, a State Park Reserve. In collaboration with State Parks, the National Parks' Ala Kahakai National Historic Trail, other non-profit organizations, schools, etc., the Hui conducts and encourages volunteer activities that educate people to *mālama* the historic trails and the numerous cultural and natural resources of Kīholo.

- **Waimea Trails & Greenways (a.k.a. Ke Ala Kahawai o Waimea)**[326]: formed in 1994, this community-based group continues to advocate for a bicycle and pedestrian path that would follow the banks of an intermittent stream that winds through the heart of Waimea town. The group has consistently worked on securing funding, landowner agreements, and permits to construct the trail and organizes regular volunteer days to clear and maintain trail sections that have been approved for public use. The group works closely with the County's Parks and Recreation Dept., local school groups, and non-profits.

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324 http://www.malama-kai.org/ocean-warriors.html
325 http://www.huialohakiholo.org/
326 http://www.waimeatrails.org/

- **People's Advocacy for Trails Hawai`i (PATH)**[327]: PATH is a 501(c)(3) non-profit formed in 1986. Its mission is to safely connect people and places on Hawai`i Island with pathways and bikeways. It regularly sponsors bicycle clinics and fun runs, advocates for pedestrian and bicycle "Safe Routes to School" and "Complete Streets," and works collaboratively with other non-profit groups (including Waimea Trails & Greenways) and government agencies to organize volunteer maintenance activities on publicly accessible trails. Through the "Public Access with Kuleana Project," PATH has entered into trail stewardship agreements with the County Parks and Recreation Dept. and the State DLNR.

- **E Mau Nā Ala Hele**[328]: formed in 1979, this 501(c)(3) non-profit's mission is "to preserve and protect the ancient and historic trails of Hawaii including their natural and cultural surroundings." The group collaborates with other non-profit groups and government agencies to conduct volunteer stewardship activities, with an emphasis on historic trails.

- **Hawaiian Islands Land Trust**[329]: founded in 2001, the trust owns and manages 277 acres of coastal land known as Waihe`e Coastal Dunes and Wetlands Reserve on Maui. The refuge is open to the public daily and closed at night. It is a popular fishing area with 2 miles of coastal trail and camping by permit. There is a live-in caretaker and an active volunteer component to involve and educate the community in the protection of the area's special environmental and cultural resources. The Trust also actively works to acquire and protect open spaces on all the islands.

- **Hoaloha 'Āina (Friends of the Land)**[330]: South Maui Volunteers: meet regularly every Monday morning. They collaborate with Maui County Parks, State DLNR, the UH Sea Grant Program, Hawaii Tourism Authority, and Tri-Isle Resource Conservation and Development, Inc. and are featured prominently on the Pacific Whale Foundation's "Volunteering on Vacation" website. The group was formed in 2002 when they began working on the "South Maui Coastal Heritage Corridor Trail," which continues to be a volunteer project for the group.

- **Friends of Ka'ena**[331]: formed in 2008, Friends of Ka'ena conducts regular guided nature hikes in the Natural Area Reserve and Ka`ena State Park, regular beach clean-ups, vegetation restoration, and cultural site protection under agreements with State DLNR agencies.

- **Surfrider Foundation**[332]: Hawai'i Island, Kaua'i, Maui and O'ahu Chapters: "Protecting Oceans, Waves and Beaches since 1984," this nationwide 501 (c)(3) has established chapters on several Hawaiian Islands. The Surfrider Foundation has advocated for coastal public accesses and surfing spots in Hawai`i. Public beach access is described as a "universal right" on their website. On a national level the foundation works to stop ocean pollution from plastics, and to protect unique marine habitats and beach access. Each Hawai`i chapter organizes local beach clean-ups and advocates on behalf of ocean-related issues of concern to their membership.

## Hāmākua CDP Public Access Mapping

From the inception of the Hāmākua CDP, public access has been one of the community's highest priorities. Throughout the process, the CDP planning team has spent considerable time and energy on engaging stakeholders to help identify existing public accesses, and areas of interest for future shoreline and mountain public access. Based on this consultation, the CDP team has drafted public access

327 https://pathhawaii.org/
328 http://emaunaalahele.org/
329 http://www.hilt.org/
330 http://www.southmauivolunteers.com/
331 http://www.friendsofkaena.org/
332 http://www.surfrider.org/

maps/tables that can be found at the end of this section (Figure x). A description of how the maps were created can be found through the next few pages.

- **Purpose of the Maps/Table**: In keeping with the community's emphasis on the need for public accesses to ocean and mountain resources for hunting, fishing, surfing, hiking and gathering purposes, these maps focus on trails and accesses that are (1) legally available for the public uses indicated above, and (2) trails and accesses that appear to have potential for being opened in the future. Although state and county parks are accessible to the public, not all parks in the CDP Planning area are shown on these maps. County Beach Parks are noted because of their importance to public fishing, surfing and many other ocean-related activities. Hunting areas and/or forest reserves are noted, because improving the accessibility of those lands would significantly increase opportunities for public hunting, hiking, environmental education, forest stewardship and other forest-related activities.

- **Sources of Information**: At all of the CDP's community workshops, attendees were welcomed to comment on and add directly to the maps. Their public access-related opinions, concerns and preferences were also recorded. Meetings were held with long-time residents of the CDP Planning Area known for their knowledge of hunting and fishing areas that were once popular. A few community groups with an interest in public access issues shared their knowledge. One group representative produced a map showing potential trail networks in his homestead area. Landowners and land managers shared their experiences, concerns and suggestions. Representatives of state and county agencies and programs were frequently contacted for information and input. Over a hundred new access points and lines have been added to the Planning Department's Access Inventory as a result of the collective input. Many of the identified trails and accesses are either no longer accessible to the public due to changes in land ownership and land use, or further research is needed to determine whether there is potential for re-opening them. The information is available via the Planning Department's Access Inventory for reference in reviewing permit applications.

- **How Accesses Were Selected for the Maps/Table**: Specific locations of interest to the community were studied in terms of:

    - Complexity of ownership of the land that must be crossed from the nearest public road
    - Whether there is a historic public trail, Road in Limbo or other public right-of-way that could serve as an access (or a portion of one)
    - Whether any permit has been issued requiring the access (or a portion of it)
    - Whether the county or state has shown an interest in acquiring the access, either through purchase or as an easement
    - Whether the county or state owns the land and is supportive of opening access to it
    - The natural hazards present and potential hazard mitigation costs

    It is very possible that with further research, additional trails and accesses may be identified as having future potential. Also, landowners may present opportunities in the future through conservation easements, development-related permits, and cooperation with the Public Access, Open Space, and Natural Resources Preservation Fund.

- **Use of the Maps**: The maps are not at a scale that enables the reader to find specific locations on the ground. Instead, they give an overall view of the vast CDP Planning Area, showing landownership patterns and the relative locations of large tracts of state-owned lands. The maps show the distribution of accesses that offer the kinds of activities of interest to rural communities. The largest concentration of coastal public accesses is in Pepeʻekeo. There are many miles separating coastal public accesses throughout the CDP Planning Area, and particularly in the Hāmākua District. The map helps to illustrate the need to open more, evenly distributed, coastal public accesses in the region. The maps also show that many hunting areas and/or forest reserves lack public access from a public road. Forest reserves lacking public access to them are referred to as "landlocked." If certain

requirements are met, a few forest reserve areas are indicated as having potential for public access. The implications for land use planning are that planners should be alert to opportunities to develop public access to coastal and mountain areas whenever possible in this extensive land area. Successful trail/access projects, particularly those that are miles in length, may need to be acquired incrementally and will require collaboration between multiple government agencies, several different landowners, and community stewardship groups.

**Table 9. Destinations Noted as Available for Public Access**

| Destinations | Owner(s) | Background Information. Principal Activities. |
|---|---|---|
| ʻĀleʻaleʻa Point Trail across TMK: 2-6-15:01 | Private | Public parking and pedestrian public access to shoreline created through permit requirement. Fishing. |
| Honoliʻi Beach Park TMK: 2-6-26:01 | Private. Leased to County for a park. | Managed by County Dept. of Parks and Recreation with community assistance. Surfing and picnicking. |
| Onomea Bay Trails across TMKs: 2-7-10:22 and 2-7-09:02 | State | Three historic trails lead to the bay and are managed by the State Na Ala Hele program in cooperation with the surrounding landowner. Fishing and hiking. |
| Pepeʻekeo Coast Trails across various parcels in TMK: 2-8-08 | Private | Public parking and pedestrian public access to shoreline created through permit requirement. Parking areas; mauka-makai shoreline public access easements; and lateral shoreline public access trails are located within the subdivisions. Fishing and hiking. |
| Kolekole Beach Park TMK: 2-8-15:15 | County | Managed by County Dept. of Parks and Recreation. Swimming, camping, and picnicking. |
| Hakalau Beach Park TMK: 2-9-02:80 | County | Managed by County Dept. of Parks and Recreation with community assistance. Swimming, fishing, and picnicking. |
| Hakalau Fishermen's Trail in | Private | Public access to shoreline created through permit |

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| TMK: 2-9-02:81 | | requirement. Access was required because of its traditional use by local fishermen. Shoreline is accessible only via hazardous cliff trail. |
| Kaiaʻakea Point<br>TMK: 3-4-03:14 | State | State land is unencumbered and open to shoreline public access. Shoreline is accessible only via hazardous cliff trail. Fishing. |
| Pāpaʻaloa Fishermen's Trail in<br>TMK: 3-5-08:28 | Private | Public access to shoreline created through permit requirement. Access was required because of its traditional use by local fishermen. Shoreline is accessible only via hazardous cliff trail. |
| Laupāhoehoe Point Park<br>TMK: 3-6-02:24 | County and State | Managed by County Dept. of Parks and Recreation. Swimming, camping, and picnicking. |
| Laupāhoehoe Forest Reserve<br>TMK: 3-7-01:02 and 12 | State | Park at the top of Spencer Road where Spencer Trail begins. Hunting and hiking. |
| Humuʻula Trail in<br>TMKs: 3-7-01:04, 08 and 09 | State | Road to the start of the trail is partially paved and not regularly maintained. Trail begins at FR boundary, and continues approx. 5.5 miles (one way) to the Keanakolu Ranger Station, where there are State-managed cabins. Hunting and hiking. |
| ʻOʻōkala Fishermen's Trails in<br>TMK: 3-9-01:07 | State | State land is, at the time of this writing, unencumbered and open to shoreline public access. Shoreline is accessible only via hazardous cliff trail. Fishing. |
| Hāmākua State Forest Reserve (Paʻauilo Section) via Antone DeLuz Rd.<br>TMK: 4-3-10:01 | County and State | Old homestead road used to get to FR boundary. Hunting and hiking. |
| Boundary Road and Skyline Trail (a.k.a. Mauna Kea Access Rd) in | State | Unpaved, infrequently maintained, 4-wheel drive |

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| TMK: 4-4-15:01 and 04 | | vehicular public accesses on state land. Hunting and off-road vehicles. |
| Humu‘ula Trail on Mauna Kea in TMK: 4-4-15:01 and 10 | State | Historic trail extends from approximately the 9,000-foot to 13,000-foot elevation. Hiking. |
| Kaluakauka Trail TMK: 3-7-01:02 | State | Trail to Dr. David Douglas historical monument. Hiking and hunting. |
| Kalōpā State Recreation Area and Hāmākua State Forest Reserve (Kalōpā Section) TMK: 4-4-14:01 | State | Trails extend from the State Park into the adjacent Forest Reserve. Cabins managed by State Parks, hunting, hiking, and picnicking. |
| Hāmākua State Forest Reserve (Āhualoa Section) via Ka‘ao Rd. TMK: 4-5-11:01 | State | Old homestead road used to get to FR boundary. Hunting and hiking. |
| Hāmākua State Forest Reserve (Honokaia Section) TMK: 4-6-11:41 | State | FR abuts Hawai‘i Belt Highway here. Hunting. |
| Kukuihaele Viewpoint in TMK: 4-8-06:41 (pedestrian trail to top of cliff) | Private | Pedestrian public access to top of cliff created through permit requirement. Pedestrian trail leads to a viewpoint of the coastline of Waipi‘o and beyond. Hiking. |
| Muliwai Trail in TMK: 4-9-13:02 | County, State, and Private | Approx. 9 miles long (one way), this trail starts at the Waipi`o Valley Lookout. It follows an old County road, a historic route leading to and across Waipi‘o Beach, and a historic trail to Waimanu Valley. State DOFAW manages the camping permits and maintains the hiking trail. Hiking, hunting, swimming, surfing, fishing, and camping. |

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**Table 10. Accesses Noted as Having Potential for Public Access If Requirements are Met**[333]

| Destinations | Owner(s) | Access Issues and Needs |
|---|---|---|
| Pāpaʻikou Mill Beach in TMK 2-7-27:65 and 2-7-04:118 (pedestrian trail to beach) | Private | The Hawai`i County Council has authorized acquisition of the access through eminent domain, and the acquisition process has begun. |
| Hilo State Forest Reserve in Honomū via Kaupakuea Hmstd. Rd. TMK: 2-8-01:03 | Private and State | County has secured a public access easement in TMK: 2-8-03:01, but the easement is not all the way to the Forest Reserve (FR) boundary. The State (and/or County) would need to extend the easement to the FR. |
| Hilo State Forest Reserve in Kaiwiki via Kaiwiki Hmstd. Rd. TMK: 2-9-05:01 | County and State | County and State cooperation needed to survey the government road all the way to the FR, post signs, mark a parking area, and delineate trail to FR. |
| Hilo State Forest Reserve in Kaiwiki via Chin Chuck Rd. TMK: 2-9-05:01 | County and State | County and State cooperation needed to survey the government road all the way to the FR, post signs, mark a parking area, and delineate trail to FR. |
| Hāmākua State Forest Reserve in Hōʻea Kaʻa ("Small Forest") TMK: 4-2-08:01 | State | State plans to reserve the right of public access to the FR through state lease of TMK: 4-2-07:02. The actual route for public access is yet to be determined. |
| Road to Haina (a.k.a. Honokaʻa) Landing in TMK: 4-5-02:19 | Private | Private, unpaved road to Haina Landing, voluntarily open. County would need to work with landowners to secure a public access easement. |

333 Public testimony in Laupāhoehoe CDP meetings strongly endorsed reopening the section of the old Laupāhoehoe Gulch access road leading down to the Point as a public hiking trail. A Geotechnical Engineering Assessment estimated that it would cost $2 million (in 2007) for rockfall/landslide mitigation and other improvements to render the old road safe for use as a public trail. The potential for reopening this trail would improve if the County administratively, politically, and economically supported it, and a community organization partnered with the County for stable, long-term trail management. Funds to mitigate hazardous conditions and make necessary improvements would need to be raised.

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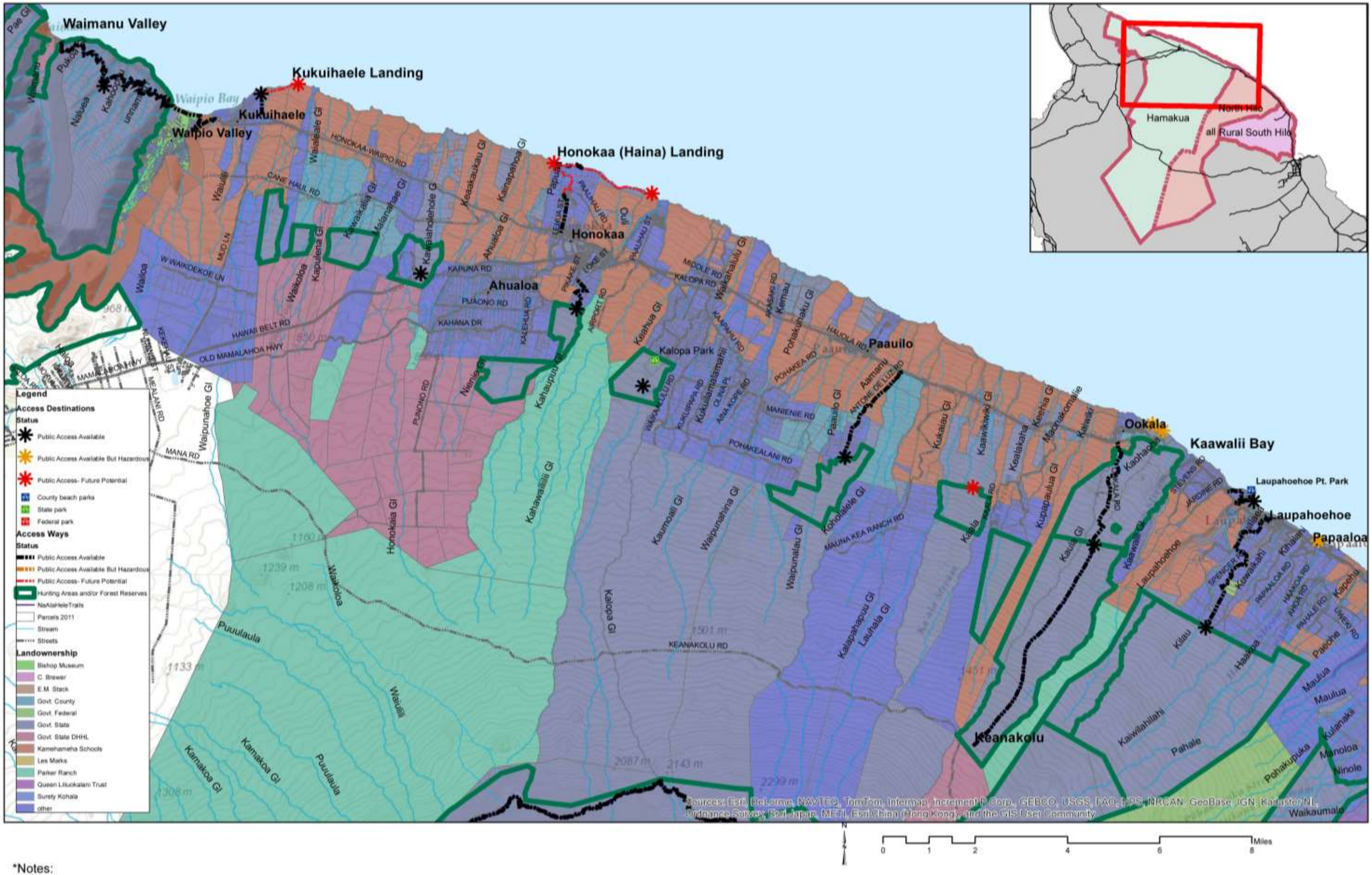
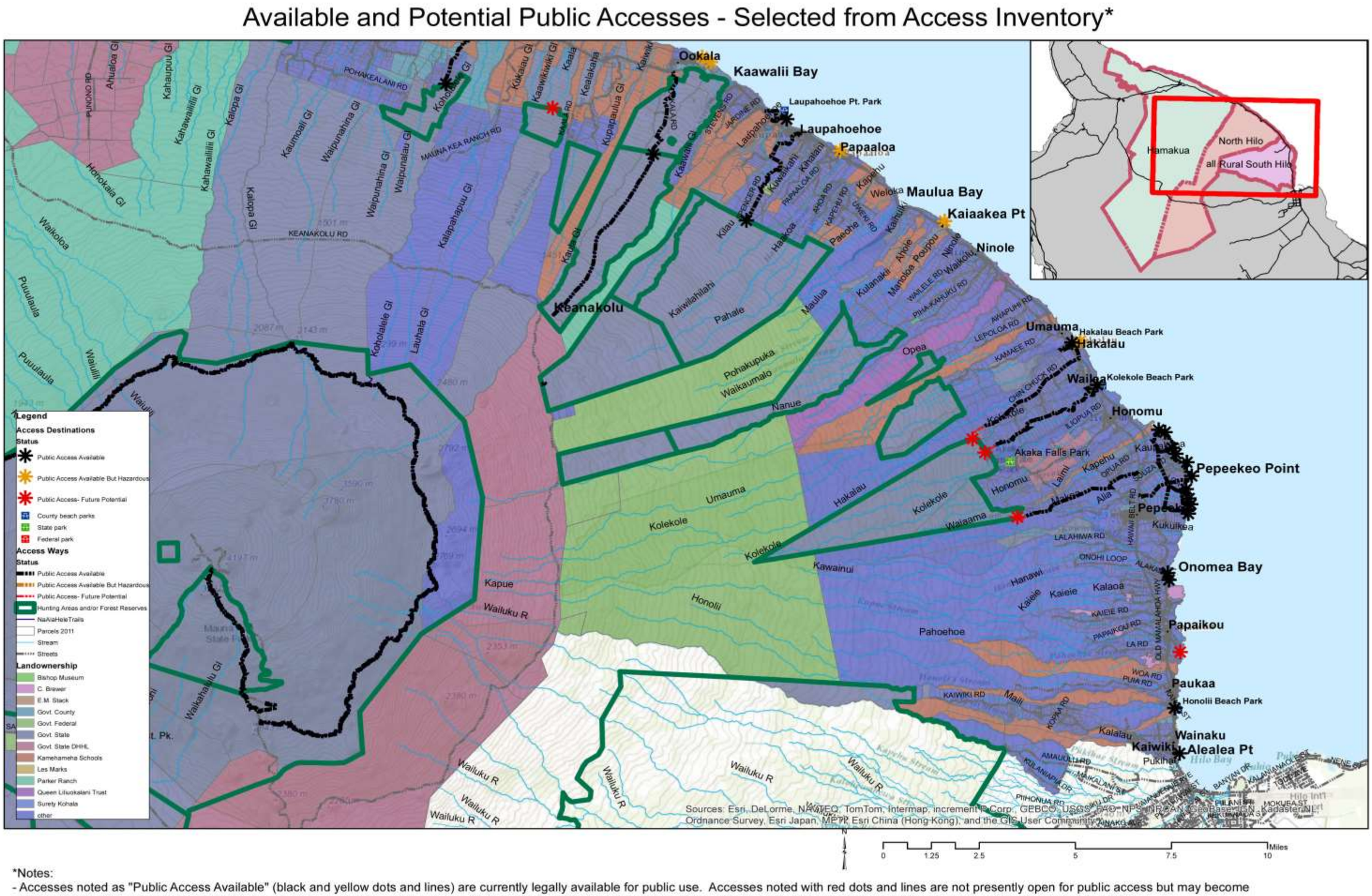
| Trail from Haina Landing to Pāʻauhau Landing in TMKs: 4-5-02, 4-5-01, and 4-4-05 (various parcels) | Private and State | County Planning Dept. has required several coastal developments along this section of coast to allow "lateral public access to and along the shoreline within forty feet of the top of the cliff or further mauka (inland) as may be necessary for the safety of the public traversing the area." It will take years to accomplish incrementally, but a continuous, lateral, public access corridor along the top of cliff would need to be acquired. |
| Trail from Kukuihaele Viewpoint to former Kukuihaele Landing in TMK: 4-8-01:04 | Private | County Planning Dept. has required pedestrian public access to a viewpoint at the top of cliff. From there, a continuous, lateral, public access trail along the top of cliff would need to be acquired to enable access to a fishing area at the former Kukuihaele Landing. |

**Figure 12. Available and Potential Public Accesses - Selected from Access Inventory - Hāmākua to North Hilo**




*Notes:
- Accesses noted as "Public Access Available" (black and yellow dots and lines) are currently legally available for public use. Accesses noted with red dots and lines are not presently open for public access but may become public accesses in the future, if certain requirements are met. Many old government roads (OGRs) exist in the Planning Area. Only certain OGRs are highlighted to better identify public access locations.
- Access users should be aware that many public accesses have rules, such as opening and closing times, pedestrian use only, hunting and fishing restrictions, etc.

**Figure 13. Available and Potential Public Accesses - Selected from Access Inventory - North Hilo to Rural South Hilo**




*Notes:
- Accesses noted as "Public Access Available" (black and yellow dots and lines) are currently legally available for public use. Accesses noted with red dots and lines are not presently open for public access but may become public accesses in the future, if certain requirements are met. Many old government roads (OGRs) exist in the Planning Area. Only certain OGRs are highlighted to better identify public access locations.
- Access users should be aware that many public accesses have rules, such as opening and closing times, pedestrian use only, hunting and fishing restrictions, etc.

## Public Access Analysis Table

The following Table shows the process used in evaluating the findings from the research and consultations throughout the analysis process up to this point. The Table clearly identifies:

- **Challenges** (1st column) identified in the analysis.
- **Support/Rationale** (2nd column) lists Policy Support (applicable governmental policies) and Plan Support (how the issue relates to researched plans/studies). This column will generally link back to the associated sections of the analysis document where that strategy support is located.
- **Possible CDP Strategy Direction** (3rd column) – the general strategy direction the CDP will likely be taking in addressing the challenge in order to meet the community's objectives.

The Strategy Directions are categorized into one of the four following CDP Strategy Types:

  - **Policy**: establish policy with policy maps (Official Land Use Map) and policy statements related to land use, watersheds and natural features, public improvement priorities, government services, and public re/development;
  - **Advocacy:** recommend advocacy with federal and state policy makers and agencies for policies, regulations, incentives, programs, and action;
  - **Community-based, Collaborative Resource Management (CBCM)**: including research, place-based planning and program design, and program implementation;
  - **Easement and Acquisition (E&A):** identify easement and acquisition priorities by fee simple ownership or through conservation easements;

At times, the CDP Strategy Direction will relate to other Analysis sections not yet complete (Community and Economy). In those cases, the table may refer to the appropriate section still under development, but will not contain a link to that section until that section is complete.

This is a working document, and the **Possible CDP Strategy Directions** are intended to be preliminary. We expect community feedback that may provide additional information that could further inform our analysis.

**Table 11. Public Access Analysis Table**

| Challenges | Support/Rationale | Possible CDP Strategy Direction |
|---|---|---|
| **Public Access Over Public Land**<br>▪ Need to survey and develop existing public trails and roads leading into public lands of importance for public access.<br>▪ Resources are limited for the management of public trails and other public accesses. | **Plan Support:**<br>▪ Hāmākua Agriculture Plan<br>▪ The Hawai'i State Comprehensive Outdoor Recreation Plan<br>**Policy Support:**<br>▪ General Plan 6.3(d), 7.3(a), 7.3(d), 8.3(r), 8.3(s), 12.3(u) | **Work with other government agencies to make improvements to the public access "system"**<br>**Policy**: Encourage County agencies to collaborate with state and federal agencies on public accesses that require multi-agency involvement<br>**Policy**: Ensure that publicly owned historic trails and roads are properly identified and consultation occurs to protect the public's interests<br>**Policy**: Work with State agencies to coordinate, survey, develop, and manage |

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| | ▪ HRS 171.37<br>▪ HRS 46-1.5 | public trails and roads leading to forest reserves<br><br>**CBCM**: Encourage the development of partnerships with community organizations capable of assisting with public access management.<br><br>**Advocacy**: Prior to disposing of, leasing or transferring public lands, including public roads or trails, public access potentials will be assessed, documented and protected, if public access use is in the public's interests |
| **Municipal Public Access Management Capacity**<br><br>▪ Inconsistent/non-existent application of existing laws & regulations<br><br>▪ Inadequate public access research during permit review<br><br>▪ No County agency is tasked with managing public accesses that are being dedicated to and accepted by the County. | **Plan Support:**<br><br>▪ Hāmākua Agriculture Plan<br><br>▪ Hawai'i State Comprehensive Outdoor Recreation Plan<br><br>▪ Maui County Shoreline Access Management Plan & Inventory Update<br><br>**Policy Support:**<br><br>▪ General Plan 6.3(d), 7.3(a), 7.3(d), 8.3(r), 8.3(s), 12.3(u)<br><br>▪ Coastal Zone Management - HRS Chapter 205A | **Improve the consistency and comprehensiveness of the County's public access "program"**<br><br>**Policy**: Ensure comprehensive reviews of projects that will affect public accesses and trails, whether on public or private lands<br><br>**Policy**: To achieve long term public access goals that involve several landowners, acquire the public access incrementally as opportunities arise to do so<br><br>**Policy**: Planning department to establish a "County of Hawai'i Public Access Program" with sufficient staff and resources<br><br>**Policy:** Develop and maintain a comprehensive Access Inventory & require staff to use it in all permit reviews<br><br>**Policy:** Planning Department to develop a night fishing permit process<br><br>**Policy**: County to prioritize public accesses that are acquired by or dedicated to the County and assign specific County agencies to develop, administer, and maintain them.<br><br>**Policy**: Encourage County agencies to partner with community organizations capable of assisting with public access management.<br><br>**Policy**: PD to develop public access rating system to help with priority-setting<br><br>**Advocacy**: Propose and support amendments to Hawai'i 's laws that will protect the county and state from liability when people access county or state lands |

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| | | (including trails) that are officially closed and unmaintained for public use |
| **Community Managed Public Access (CMPA)**<br>▪ Many community groups lack the capacity to assume long-term management responsibility of public access.<br>▪ "Community Access," as described by community members, can be interpreted as discriminatory and not "Public Access." | **Plan Support:**<br>▪ Hāmākua Agriculture Plan<br>▪ The Hawai'i State Comprehensive Outdoor Recreation Plan | **Policy/CBCM**: Establish a community-managed public access system that is capable and accountable<br>**CBCM**: Utilize and facilitate the assistance that is available and being offered by community groups and knowledgeable individuals<br>**CBCM**: Form a public access advisory group knowledgeable of past and present accesses in the Planning Area and consult with them when permits are reviewed, and to verify and improve information in the Access Inventory<br>**CBCM**: Encourage partnerships, funding, and liability protection for community level management of public access<br>**CBCM**: Study community level public access management approaches in order to identify best management practices that will promote success<br>**CBCM**: Work with interested community organizations to develop guidelines for "community access" that can qualify as "public access"<br>**CBCM**: Work with community advisors to develop broadly accepted criteria for prioritizing accesses when resources are limited to acquire, open and manage them |
| **Shoreline Access**<br>▪ Lateral public access frequently blocked due to lack of a public transit corridor required in the shoreline setback. | **Plan Support**:<br>▪ Hāmākua Agriculture Plan<br>▪ Hawai'i State Comprehensive Outdoor Recreation Plan<br>▪ A Plan for the Hilo-Hāmākua Coast<br>**Policy Support:**<br>▪ General Plan: 5.3(k), 7.3(d), 8.3(r), 12.3(i), | **Policy**: Develop objective guidelines for determining "top of cliff" and ensuring adequate shoreline setbacks that take into account potential coastal erosion/landslides<br>**Policy**: Include permit conditions for public transit along the top of cliff whenever possible and practical |

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| | 12.3(m)<br>▪ HCC Chapter 34<br>▪ State: Coastal Zone Management - HRS Chapter 205A, Beach Transit Corridor HRS 115-5 | |
| **Public Access over Private Land**<br>▪ Trespassing and other violations are not improving relationships between landowners and the public.<br>▪ Destructive and illegal behaviors in and around public accesses are difficult to prevent and control.<br>▪ Changes in land ownership and multiple landowners increase the complexity of developing new public accesses or reopening former accesses.<br>▪ Closure and subsequent deterioration of former cane haul roads make it cost-prohibitive to re-open them to public use.<br>▪ Hawai`i's liability laws are poorly understood, and uncertainty about liability risks and protections of public and private landowners can limit voluntary provision of public access.<br>▪ Private landowners voluntarily providing | **Plan Support:**<br>▪ Hāmākua Agriculture Plan<br>▪ The Hawai'i State Comprehensive Outdoor Recreation Plan<br>**Policy Support:**<br>▪ General Plan: 5.3(k), 7.3(d), 8.3(r), 12.3(i), 12.3(m)<br>▪ HCC Chapter 34<br>▪ State: Liability: HRS Chapter 520<br>▪ Coastal Zone Management - HRS Chapter 205A | **Public Access Acquisition**<br>**Policy**: Identify Roads in Limbo and other old road rights-of-way with public access value that are being obstructed by private parties and work to remove the obstructions<br>**Policy**: Develop a form to promote consistency and comprehensiveness in the Public Access Plans required of landowners<br>**Policy**: Planning Department to consistently require public access easements in subdivision and SMA permits when public access values are present.<br>**Policy**: public accesses that cross private land will be land banked until appropriate management of the accesses is in place.<br>**E&A:** Identify funding sources to purchase public access easements to priority areas<br>**Work to improve liability and public access-related laws, rules and regulations**<br>**CBCM/Advocacy**: Work with private landowners, legislators, and experts in government finance to improve the liability protections and economic incentives that can encourage landowners to voluntarily allow public access on their lands<br>**CBCM**: Form a working group to analyze and evaluate the Public Access Code (HCC Chapter 34) and propose amendments to make it more practical and effective |

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| accesses for the public face the risk that the public will lobby for government acquisition of the accesses by eminent domain. | | |

# WAIPIʻO VALLEY NATURAL AND CULTURAL RESOURCE MANAGEMENT

*There is a special mana in Waipiʻo. Mana from long ago; Mana still there; Mana still alive.*

*"Waipiʻo Valley embraces in that mana many things. It embraces the wai, the inland water, coursing through the valley floor, or simply falling from the sky, touching and in touching, along with the ʻaina, the land, nourishing all it touches. It embraces Kalo and the many other plants which abound. Ka Poʻe, the people, themselves are embraced by the mana of Waipiʻo, and over the generations of being embraced, have become kin to the spirit of the valley. Out of this sense of kinship grows the Aloha and a sense of* mālama ʻāina*, caring for the* ʻāina*, protecting the integrity of Waipiʻo by perpetuating her ability flow and flourish, and continue to touch the lives of so many more to come. This is the spirit of the valley.*

*"Economic, social and political changes throughout Hawaiʻi over the past two hundred or more years have impacted upon the total environment surrounding Waipiʻo. Many changes have come down that long, steep trail to the valley floor.*

*"It is time to gather the will of those who believe in the need to provide direction, guidance and boundaries to the valley, time to bring interested people of common purpose to plan the future, steeped in culture and tradition, respectful of the valley's nature, and mindful of changes."*[334]

The ʻĀina (Natural and Cultural Resources Chapter) includes this Waipiʻo Valley subsection due to the considerable input received during the community outreach phase of the CDP process regarding the need to focus attention on this special area. In addition to the "Current Tools and Alternative Strategies" contained in other sections of this appendix, the Waipiʻo Valley section will outline existing programs, best practices and tools to address Waipiʻo Valley-specific community objectives.

## Waipiʻo Valley Brief History

Located at the northern end of the Hāmākua CDP Planning Area, Waipiʻo Valley is rich in Hawaiian culture, history, and is revered for its perpetuation of Hawaiian taro farming and cultural traditions.

The Valley is a mile wide at the coastline and almost six miles deep. Hundreds of cascading waterfalls flow over the rim of the valley to the floor 2,000 feet below, including the one of Hawaiʻi 's most admired, powerful and tallest waterfalls - Hiʻilawe Falls.

Often referred to as "Valley of the Kings," Waipiʻo Valley has been the home or the seat of power to nine successive Pili line rulers, the most noted being Līoa and his son Umi-a-Līloa who united the island of Hawaiʻi under a single chiefdom.[335] The Valley continued to play an important role as one of many royal residences until the era of Kamehameha.[336] A young Kamehameha I was hidden from warring clans and raised in Waipiʻo Valley. Significant archaeological sites from this past, including heiau, fishponds, loʻi, and ʻauwai, remain today and are a testament of the Valley's royal history, religious, and cultural importance.

The Valley has been continuously inhabited for over 1,200 years, and at its peak, approximately 10,000 people may have lived in the Valley. Some oral traditions place the population as high as 40,000 residents.[337] In the prehistoric era, it is estimated that 1,280 acres or two square miles of taro were

334 From the lease between Bishop Museum and members of the Waipiʻo Valley Taro Farmers Association
335 Cordy, Ross. A Regional Synthesis of Hamākua District, Island of Hawaii. (1994).
336 Ibid.
337 From Ancient Times to Today, Water Has Defined Waipiʻo Valley. Environment Hawaii (1995, August).

cultivated on the lower floor and the upper Valley and the slopes. Wetland taro fields covered the entire Valley floor and dry land fields were located on the dryer, lower slopes of the Valley walls.[338]

Coupled with declining population during the post Western contact period, the acreage of cultivated taro also decreased. Following the Great Mahele in 1848, Charles Kana'ina assumed ownership of 5,800 acres in Waipi'o Valley. Ultimately Charles Reed Bishop purchased the land, and in 1896 the land was conveyed to Bishop Museum. The Museum continues to lease its land to Waipi'o Valley taro farmers. [339]

In the mid-nineteenth century period, Chinese immigrants began cultivating rice in the Valley after completing their plantation contracts. Although traditional taro cultivation also continued, the levels never recovered to the post-Western contact acreage. Waipi'o Valley continued to lose population and taro production during most of the 20th century. In 1927 the last rice crop harvested occurred because it could not compete with cheap California–grown rice[340]

Also adding to Waipi'o Valley's population decline were a series of natural disasters, including periodic flooding from tidal waves or tsunamis and overflowing rivers resulting from heavy rains. In 1946 a tsunami wave inundated the Valley and destroyed many homes and taro patches. A series of waves sent water surges up the Valley, and according to eyewitness accounts, "55–foot waves hit the Waimanu side of the pali, deflecting up the flat, and then circling down the Wailoa River in torrents." [341] While tsunami waves are extremely destructive, they are historically infrequent. Flooding, due to heavy rainfall; however, is much more frequent and is nearly as devastating as tsunamis, often washing away and destroying crops. The last major flood occurred in 1979, and many taro farms were destroyed.[342]

Despite these challenges, the legacy of Waipi'o Valley continues through the cultivation of taro and the perpetuation of Hawaiian cultural traditions. Today, Waipi'o Valley is experiencing a resurgence in taro farming with development of new lo'i as well as the restoration of former lo'i. However, the Valley continues to struggle with differing perspectives of how the Valley should manage issues such as water management, stream maintenance, public access, and tourism. Moreover, with limited access, the Valley is ill-prepared for natural disasters.

Many of the royal archaeological features in Waipi`o Valley are attributable to the time of `Umi or earlier. Among the most notable places are at least seven heiau. Of the seven heiau recorded for Waipi'o Valley, two (Paka'alana and Honua'ula) were in the beach area to the west (Kohala side) of Wailoa Stream, where the royal residence (Ka Haunokama'ahala) was also located; one (Kahalekapapa Heiau) was to the east (Hilo side) of the stream. In addition, Hōkūwelowelo Heiau was situated on the cliff on the east side of the valley, Palaka and Moa'ula Heiau were along the cliff slopes on the west side of the valley just inland from the beach area, and Küahailo (Küwahailo or Ka'ao Nui) was on the west side of the valley near Nanaue (Neneuwe) Falls. Paka'alana was considered one of the most important and sacred heiau on the island. Paka'alana originally may have been constructed as early as 1200 -1300s (Cordy, 1994) and underwent several renovations in the succeeding centuries.[343]

Several fishponds were also present in the valley. These include Muliwai (west side of valley) and Lālākea (east side of valley) fishponds. There was also a royal bathing pond (Mokapu Pond) in the beach area immediately makai of Muliwai Fishpond.

338 Ibid.
339 Ibid.
340 Waipi'o Valley: TOWARDS COMMUNITY PLANNING AND AHUPUA'A MANAGEMENT. University of Hawaii, Fall Practicum (1999).
341 Salmoiraghi, Franco & Yoshinaga, Yukie. Waipi'o: An Exhibition at the Wailoa Center [Exhibition catalog].(1974)
342 Waipi'o Valley: TOWARDS COMMUNITY PLANNING AND AHUPUA'A MANAGEMENT. University of Hawaii, Fall Practicum (1999).
343 http://www2.bishopmuseum.org/chpa/Waipio/pdf/waipio1999.pdf

These sites are a testament of the Valley's royal history, religious and cultural importance.

## Waipi‘o Valley Assets and Challenges

**Assets:** Waipi‘o Valley is recognized for its important role in traditional Hawaiian history, its association with several of the most respected ali‘i, and its agricultural capacity, which defined the valley as one of the most bountiful spots in the islands. Waipi‘o Valley’s exceptional significance is attributed to:

- Historical significance as one of the first settlements in Hawai‘i;
- Continuously inhabited for over 1,200 years, supporting a population of several thousand with approximately 800 acres of cultivated taro;
- Served as the residence of a succession of nine Pili line rulers, the most noted being Līloa and his son, Umi-a-Līloa, who united the island of Hawai‘i under a single chiefdom, and despite later relocation of the power center, the Valley continued to be important as one of many royal residences;
- One of the most sacred religious areas on the island, Paka‘alana was a luakini and also a pu’uhonua, even retaining its renown after its destruction in 1791 by Kaeokulani, king of Kaua‘i;
- Important akua worshipped in the Valley including Kane, Ku, Lona, and Kanaloa. Kane and Kanaloa believed to have lived in the Valley. Wakea, who is attributed to be the ancestor of all Hawaiian people, was said to have retired to the Valley. Lono’s wife, Kaikilani, was said to be found by Lono’s brothers beside Hi‘ilawe Falls. A well-known legend tells of the creation of Hi‘ilawe Falls;
- One of the largest valleys in the Hawaiian Islands, the Waipi‘o is fed by five streams—Wailoa River, Waima, Koiawe, Alakahi, Kawainui, and Hi‘ilawe —and nine waterfalls that still support native fauna;
- In spite of destruction by Kaeokulani and tsunamis of 1819, 1837, and 1946, the Valley is still full of ancient habitation and burial sites, temples, trails, irrigation ditches, and fishponds dating back to pre-contact times; and
- Overwhelming quiet and power, natural beauty, scenic vistas from the rim and from the valley floor;
- Waipi’o Valley provides the only pedestrian access via DLNRs Muliwai Trail (aka: the z-trail) to isolated Waimanu Valley for hikers, campers, hunters, traditional gatherers, etc.
- Waipi’o Valley has one of the few sandy beaches in the Planning Area

**Challenges:** A history of differing perspectives in the Valley on natural and cultural resource protection, water and stream maintenance management, public access, and tourism have resulted in little progress towards resolution of these fundamental issues over the years. Moreover, the Valley is ill prepared to face future natural disasters such as flood, tsunamis, fires, earthquakes, etc. Key challenges facing the community include:

**Effective natural and cultural resource management**

Specific issues include:

- Uncontrolled access into the Valley that poses a safety hazard along the narrow, steep access road;
- Tourism-related impacts, including trespassing on private property, desecration of sacred sites, and intrusion on the privacy of Valley residents and the peaceful character of the Valley;

- View shed impacts from potential development along the Valley rim that would be visible from the Valley floor;
- Effective Stream resource management program;
- Continuing restoration of the cultural-based agriculture: Preservation and perpetuation of the taro, cultural-based agriculture; and
- Inadequate disaster readiness (See Community Section).

## Hāmākua CDP Objectives Specific to Waipiʻo Valley

- Protect, restore, and enhance watershed ecosystems, sweeping views, and open spaces from mauka to makai, while ensuring responsible public access for recreational, spiritual, cultural, and sustenance practices.
- Protect and restore viable agricultural lands and resources. Protect and enhance viewscapes and open spaces that exemplify Hāmākua's rural character.
- Encourage community-based collaborative management plans to assure that human activities are in harmony with the quality of Hāmākua's unique natural and cultural landscape.
- Protect and nurture Hāmākua's social and cultural diversity and heritage assets, including sacred places, historic sites and buildings, and distinctive plantation towns.
- Promote, preserve and enhance a diverse, sustainable local economy.
- Enhance and promote local and sustainable agriculture, farming, ranching, renewable energy, and related economic support systems.
- Preserve traditional subsistence practices and encourage a reciprocity (i.e. bartering) economy as a sustainable complement to Hāmākua's resource-based economy.

## Previous Waipiʻo Valley Related Planning/Studies

**Waipiʻo Valley Stream Management Plan, 2006[344]:** U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) in cooperation with the University of Hawaii, the Waipiʻo Community Circle (WCC) and the Mauna Kea Soil and Water Conservation District

The Waipiʻo Valley Stream Management Plan was prepared by the Natural Resources Conservation Service (NRCS) in cooperation with the University of Hawaii, the Waipiʻo Community Circle (WCC) and the Mauna Kea Soil and Water Conservation District (MKSWCD). Based on concerns raised during the planning of the Lower Hāmākua Ditch Watershed Project, NRCS developed the plan to assist Waipiʻo taro farmers and residents with maintaining the streams in Waipiʻo while operating in a traditional manner, but within the constraints of modern law and society. The Plan provided the contacts and processes for acquiring permits for maintenance activities and discussed the community organization's need to implement the management plan.

The Plan serves as a tool for current and future Waipiʻo Valley residents and farmers as well as government regulatory agencies. It was developed with an understanding that Waipiʻo is a sacred place that should be preserved for the future and is also a place for farmers and residents to enjoy life. The plan endeavors to be sensitive to people and wildlife and to aid farmers and residents in balancing their need for water, flooding concerns and value of nature. The Plan identifies strategies for implementation

344 http://www.pia.nrcs.usda.gov/programs/waipio_stream.html

of a Watershed Management program that is based on the traditional Ahupua‘a land management principle.

The Plan identifies the impediments to a successful stream management program, including the differing views and opinions of the stakeholders (cultural practitioners, taro farmers, environmentalist and regulatory agencies) on how to best manage the streams and the complexity of governmental permits and regulations as well as makes recommendations on both organizational structure and physical improvements to the watershed.

According to the Plan, a successful watershed maintenance planning model would involve four interrelated dimensions:

- Public Trust: encouraging agencies and all stakeholders to move from regulations to cooperative management.
- Stewardship: ability of the local community to obtain some management responsibility from landowners and agencies.
- Place Based Management: Use of the traditional Hawaii management system of konohiki (caretaker of the ahupua‘a) and ‘aha council (recognized group of expert leaders from the ahupua‘a).
- Equitable Relations: Agreed upon norms and behaviors (social contract) among farmers, small tour operators, and other community members.

Using this organizational model, the Plan recommends the following stream maintenance approach:

- Wailoa River Mouth Clean Up: Activities should be co-designed, communicated and approve by all stakeholders, including farmers, property owners, beach users, surfers to gain acceptance and avoid disruptions. A schedule of task could be prepared by the watershed leaders, and the river mouth cleanup should precede the Wailoa and Hi‘ilawe Stream channel work.
- ‘Auwai and Lo‘i Maintenance: the stream and lo‘i maintenance decision should be made by the waterhead leaders who are experienced and the taro farmers respect. The waterhead leaders will be able to resolve complaints and issues in an orderly manner.
- Protocols: Develop protocols or guidelines for checking stream work to ensure that stakeholders see the long-term commitment, including data collection and storage; conflict resolution; new lo‘i water diversion, and equipment use.

The Plan includes the following Specific Strategies for Stream Management Implementation:

- Strengthen community organization around meetings of the waterhead leaders in the locality where problem arise;
- Establish work days and learning days for regular maintenance work in the stream;
- Create a taro farming apprenticeship programs with local high school and college;
- Involve youth in community meetings;
- Elect community leaders to serve;
- Create visual stream management posters with BMP images that can be moved around to show different alternatives;
- Recommend types of equipment for different maintenance, permit required; and
- Provide alternatives of manpower option to avoid permits.

Strategies for overall valley management include:

- Establish a good neighborhood policy;
- Meet with Bishop Museum Board;
- Raise money to fund cultural programs and education;
- Restrict vehicular access to the valley;
- Develop funding strategies;
- Control tourism and development.

The Plan further recommended that, with the support of the stakeholders, designating and adopting in the County of Hawai'i General Plan and Local Area Plans Waipi'o Valley as a Wahi Pana zone.

Finally, the Plan outlined the following potential funding sources for implementation of the alternatives mentioned in this plan:

- State Civil Defense Pre-Disaster Mitigation Program
- Department of Health, Clean Water Branch for projects that involve pollution reduction
- Natural Resources Conservation Service who administer many Farm Bill programs that may be useful in conducting treatment alternatives in the Valley
- State Dept. of Bus., Econ. Development & Tourism, Coastal Zone Management Program
- Private Funding Sources, such as the National Fish and Wildlife Foundation for Conservation on Private Lands. Locally, Bishop Museum, Bishop Estate and Kamehameha schools could be potential funding entities.

**Waipi'o Valley Flood Damage Reduction and Stream Stabilization Preliminary Investigation[345]:** Prepared for the Mauna Kea Soil and Water Conservation District in 2012, the objective of the Waipi'o Valley Flood Damage Reduction and Stream Stabilization Preliminary Investigation was to propose alternatives to reduce damages to property resulting from flooding events while maintaining a reliable source of irrigation water to the valley taro farmers from the Wailoa Stream. The study focused on developing alternatives for the two most severe problem areas identified in the previous 2006 Waipi'o Stream Management Plan: near Kawashima farm and at the Linda Beach Crossing. At both locations, deposition and channel migration have adversely affected the ability to supply adequate irrigation to the taro fields. Bank erosion was also affecting levees designed to protect the fields during high flow events. The Preliminary Investigation project proposed alternatives to stabilize the Wailoa Stream channel at these locations.

The report proposed multiple design alternatives to establish stable channel geometry to transport the sediment load through the project reach, while also providing reliable diversion of flow in the 'auwai. Bank full geometry for the two project sites was estimated, and design alternatives were developed to reconstruct stable channel geometry.

Streambank erosion concerns at the two sites were addressed through the use rock vanes to redirect the erosive velocities of the stream away from the bank and into the center of the river. The vanes would also be used to develop flow conditions within depositional zones to increase the sediment transport through the reach.

345 http://www.maunakeaswcd.org/Documents/Waipio_Report_NRCS-FinalReport.pdf

Based on stakeholder review and input, the selected designs took different elements from the alternatives and created final approaches that met the physical needs of addressing the stream's energy, and the ability of the valley residents to utilize their lands.

The Study also recommended the following technical and financial assistance:

- Watershed and Flood Prevention Act
- The Emergency Watershed Protection
- Farm Bill Conservation Programs
- U.S. Fish and Wildlife Service National Fish Habitat Action Plan Grants
- U.S. Army Corps of Engineers Planning Assistance to the States Program
- U.S. Environmental Protection Agency watershed and water quality funding programs
- National Oceanic and Atmospheric Administration administers the Coastal Resilience
- Hawai'i Congressional Delegation Hawai'i 's Congressional delegation has taken a strong interest in solving the water resources problems that exist in the state. Special Appropriation Acts are often passed by Congress to direct agencies to provide financial or technical assistance to a project without being a part of an established program.

State of Hawai'i

- Department of Health administers the federal CWA, Section 319(h) grants program
- Coastal Zone Management Program
- Mauna Kea Soil and Water Conservation District

County of Hawai'i

Non-Governmental Organizations

- Big Island Resource Conservation and Development
- Hawaii Community Foundation
- Group 70 Foundation Fund and the HFC/NOAA Community-based Coastal Restoration Grant Program

Other Foundations

- A number of other private foundations offer grants to community-based organizations for beneficial projects in Hawai'i.

**Waipi'o Valley: Towards Community Planning and Ahupua'a Management[346]:** report was prompted by the preparation of the Final Environmental Impact Statement for the Lower Hāmākua Ditch Watershed Plan. The report, which explores community planning and ahupua'a management in Waipi'o Valley, is a culmination of a six-month long inclusive planning process and contains input from community

346 http://www.hawaiicountycdp.info/hamakua-cdp/about-the-hamakua-cdp-planning-area/past-and-current-planning-activities-in-the-hamakua-cdp-planning-area/Waipio%20Practicum%20Report%2099.pdf/at_download/file

organizations, resource management experts, government agencies, major landowners in the area, and Native Hawaiian cultural practitioners. The intent of the study was to work with the communities in Waipiʻo Valley to develop, as much as possible, a shared vision of the future and strategies for action to identify issues, develop and obtain data, evaluate alternatives, and identify and pursue actions to resolve problems in the Valley. Based on field visits to assess the existing conditions and input from the community, the practicum report identified the following key issues: water management, stream maintenance, public access, tourism and the absence of government intervention.

The Practicum derived a list of common goals for the community in Waipiʻo. These common goals were presented in the report as:

- Perpetuation of taro cultivation;
- Perpetuation of Hawaiian culture;
- Protection of Historic sites;
- Educating youth on the cultural and historic significance of Waipiʻo Valley;
- Protection and maintenance of the environment and its resources;
- Maintenance of public use areas; and
- Balancing present and future economic needs of the valley.

The practicum also outlined the following processes to help the community work towards resolution of the identified issues:

- Work towards common goals and resolutions
- Recognize that all groups have particular interests and needs which are important to them; however, all wants cannot be satisfied
- Collaborate on ideas to generate a plan, which specifies responsibilities for all groups involved
- Work together to create an access agreement and governance model for the Valley. This plan should discuss practical methods of implementation and enforcement.
- Establish limitations on public access
- Establish a cultural-learning center
- Establish partnerships with Kanu O Ka ʻĀina, Friends of the Future, and the Edith Kanakaʻole Foundation
- Restore historic sites, such as the fishpond and the King's Quarters

**Waipiʻo Valley: Towards Community Planning and Ahupua'a Management, Phase II[347]:** The Fall 2001 Practicum was part of a collaborative agreement between the United States Department of Agriculture, Natural Resources Conservation Service, and the Department of Urban and Regional Planning, University of Hawaiʻi . The key objective of the study was to:

- Identify and where possible quantify natural resources favorable to taro farm production;
- Integrate natural biological assessments into the study;

347 http://www.durp.hawaii.edu/Library/Document%20pdf/Waipio%20Report%20Fall%202001%20opt.pdf

- Complement stream management plans for Waipiʻo Valley;
- Study natural and cultural land use changes and assets in the Valley; and
- Provide training opportunities to students in natural resource conservation and planning.

The Practicum accomplished this objective by addressing themes such as public trust and government agencies, stewardship of large landowners, Ahupua'a and watershed planning, and models for coexistence among various stakeholders in a community. The practicum explored how co-management and planning can improve the care and protection of Waipiʻo Valley. The practicum intent was to provide planning assistance for residents as well as community-based stream/loʻi/Ahupua'a management by addressing resource conservation, access issues, and cultural issues. The study analyzed the following issues and made recommendation for further research and analysis:

- Access to Waipiʻo Valley is one of the most contentious issues within the valley. Inquiry into the historical ownership and current laws for the roads has uncovered some answers. The research has not been exhaustive and further research is needed.
- Waipiʻo Valley is rich in known and yet undiscovered historical and cultural resources that are in direct need of care and restoration. Supportive programs need to be established to ensure these unique resources are preserved. In return, these resources will help to uplift the study of Hawaiian culture for all practitioners on all islands and beyond.
- Tourism needs to integrate the values of environment, economy, and community to discover operational levels that are sustainable and practical. The Community Circle of Waipiʻo Valley has started in this endeavor to heal old wounds and establishing networks that will drive the community to help it find opportunities by which to heal.
- Waipiʻo is a leading force in taro cultivation. Through technical expertise from outside help, Waipiʻo can overcome some barriers that in the past have not allowed the valley to realize its potential.
- Culture is dependent upon natural resource tools that are used in cultural practices. If Waipiʻo is to become a sustainable wahi pana, organized restoration of Waipiʻo's natural resources needs to be accomplished.
- A long-term comprehensive stream management plan needs to be facilitated by community-based processes. Non-mechanized, nature based, and community driven activities should be incorporated into the plan.

**Waipiʻo Valley Community Action Plan[348]:** Since 1999, the Community Circle of Waipiʻo Valley has been meeting on generally a monthly basis to identify and discuss issues and concerns relative to the Waipiʻo Valley. The draft Waipiʻo Valley Community Action Plan was developed in response to the issues, concerns, and suggestions raised at the Community Circle of Waipiʻo Valley Meetings, as well as from discussions with other community members. The Action Plan represents a broad range of interests, issues, ideals and concerns and serves as a guide for the implementation of a possible detailed Master Plan for Waipiʻo Valley. The Action Plan is comprised of two main categories and seven detailed categories. The main categories are Identification of Key Projects and Inventory and Assessment, and the seven detailed categories are as follows:

- Access

348 http://www.hawaiicountycdp.info/hamakua-cdp/about-the-hamakua-cdp-planning-area/past-and-current-planning-activities-in-the-hamakua-cdp-planning-area/WAIPIO%20VALLEY%20ACTION%20PLAN%20final.pdf/view

- Tourism
- Community and Institutional
- Historical/Cultural
- National Resource Management
- Stream Management
- Soil and Agricultural Productivity

Within each of these categories, the Action Plan prioritizes the recommendations from "1" to "3," with "1" denoting the highest priority and "3" the least priority. The Action Plan contains a total of 62 recommendations, and while there is not agreement on all suggestions, the Action Plan presents ideas that the community can further refine, discuss and negotiate. Due to the number of recommendations, a summary of each category is presented in the following. In cases where progress has been made in achieving the recommendation, an update is provided in parenthesis.

- Category I: Identification of Key Projects: Includes 10 key projects ranging from designating Waipiʻo Valley as a Conservation Improvement Project, developing a Valley Master Plan, and forming a 501(c)(3) nonprofit foundation for community empowerment to developing a Land Management Partnership and publicity and public relations programs to enhance outside awareness and support for preservation of the tradition. (Progress has been made in Land Management Partnership project through the Farmer Training Program at North Hawaii Education and Research Center and by farmers who are offering practitioner training on an informal basis).

- Category II: Inventory & Assessment: Includes 12 projects that range from a high priority for land appraisal and boundary survey and inventorying and assessing cultural and historic resources to assessing the impacts from tourism-related transportation modes on the Valley and compiling an inventory of natural and cultural features as well as existing tourism use and potential. (The *Waipiʻo Valley Flood Damage Reduction and Stream Stabilization Preliminary Investigation*, 2012, report was prepared to analyze and make recommendations on alternatives to reduce damages to property resulting from flooding events while maintaining a reliable source of irrigation water to the valley taro farmers. The report has been accepted, but the improvement projects are lacking funding. The Water quality appraisal is also being complete by the students from the Kanu o ka ʻĀina Learning ʻOhana Charter School).

- Category III: Access: Includes ten projects ranging from Identification of public versus private access; developing a facilities plan that addresses the maintenance, monitoring and financing the road and trail network; and developing a Valley gateway sign program to restoring trails and developing road protocols. (Valley Interpretative signs designed by the community and local students were developed and installed at the Lookout. The recommended enforcement guards proposed in the Facilities Plan have been replaced with the Education and Information Officer Program).

- Category IV: Tourism: Includes six projects ranging from a high priority of developing a Visitors Center to marketing community events to increase awareness of local heritage and lifestyle.

- Category V: Community & Institutional: Nine recommended projects are outlined, with the highest priority a community empowerment program that would be used to define future actions for the Valley. (While there is presently not consensus on this model, most members believe an empowerment program is a necessary step towards resolving long-term community issues. Other high priority projects in this category include creating a special area zoning designation of Wahi Pana; a nonprofit foundation to oversee the development of the Valley vision and County General Plan. (There is community consensus on designating Waipiʻo Valley as a Wahi Pana).

- Category VI: Historical/Cultural: Three projects are identified in this category, including creation of a genealogy program and learning center and development of guidelines and criteria for an educational "eco-tourism" program.

- Category VII: Natural Resource Management: This category identifies five projects, including formation of a community-based committee to design, initiate, and lead effort in maintaining a pristine and clean stream environment. Other projects include developing a local flood alert system, a riparian stabilization enhancement, and improved natural resource management system.

- Category VIII: Stream Management: This category identifies five stream maintenance related projects, including a management plan, maintenance, monitoring and clarification of permitting requirements.

- Category IX: Soil & Agricultural Productivity: Three projects to support taro production comprise this category. Projects include Best Management Practices to improve crop yield and development of a comprehensive support system for taro production.

**Taro Security and Purity Task Force 2010 Legislative Report**[349]: In 2008, the Hawai'i State Legislature passed Act 211, establishing the Taro Security and Purity Task Force (TSPTF). The Task Force; which included representatives from University of Hawai'i , State Departments of Agriculture, Land and Natural Resources, Farm Bureau Federation, 'Onipa'a Nā Hui Kalo and taro farmers from each of the Islands; was charged with finding solutions to the problems facing taro production, taro farmers and taro markets. The State Office of Hawaiian Affairs provided funding and administrative support to enable the Task Force to meet consistently and to gather input from taro growing communities on all islands over the period of the last 12 months.

The resulting report includes a critical section called concepts of importance that contains the following:

- Definitions of taro security and purity,
- Descriptions of the taro farmer life style,
- The importance of taro to Hawai'i 's identity,
- Taro as a centerpiece of Hawaiian culture,
- Taro's role in agriculture, and
- How current land designations impact on the cultural continuity of taro and its ability to contribute towards food self-sufficiency.

According to the report, these concepts are essential for legislators, agencies, institutions and researchers to grasp prior to engaging in work and decision making related to taro farming. Understanding what is at risk is critical to re-valuing taro and its role in the wellbeing of the state. The task force developed 87 recommendations and grouped them according to the following categories: Land; Water; Economic Viability; Biosecurity; Research; Communication, Education, and Public Awareness; and Hawaiian Taro Varieties.

The final report contains details and specific actions for each recommendation. Due to the number of recommendations, only those that are relevant to Waipi'o Valley community objectives are provided in the following:

349 http://www.oha.org/pdf/TSPTF_Report_091229.pdf

A. Create a permanent TSPTF body to continue to represent taro farmer concerns at the Legislature and with agencies, to continue the work outlined in Act 211 and this report and provide a point of contact for researchers and agencies interested in working with taro farmers.

**Land**

A. Improve access to taro-growing lands.
   1. Support a comprehensive study to research existing maps and records, survey state lands on the ground, identify parcels, stream, elevation, location within parcels, site condition, water and infrastructure (access, utilities, terraces, ʻauwai, etc.) availability and agency jurisdiction to determine the extent of traditional taro lands still present (wetland and dryland) and potential for rehabilitation, as well as new lands that would be suitable and available for taro production.
   2. Develop long-term, reduced lease rent rates for taro farmers on state-leased lands under jurisdiction of DLNR, HDOA and DHHL.
   3. Encourage partnership efforts on private and county lands, including Kamehameha Schools, Bishop Museum, Board of Water Supply and other private land holders that support access to long term lease agreements for taro farmers.

B. Improve protections to taro-growing lands
   1. Reconsider the state's agriculture land capability class designations to better protect viable taro-growing lands.
   2. Tighten land conversion laws (zoning) to better protect known taro growing lands.
   3. Work with state and federal agencies to improve understanding of the historic presence of traditional food production sites such as loʻi kalo and fishponds on their lands.

C. Create incentives for active rehabilitation of taro-growing lands that result in taro lands protection.
   1. Provide a tax credit at the county level for landowners for the perpetual conservation of taro systems on private land (i.e. agricultural, conservation or cultural easements) and further for owners and lessees who enter into long term agreements (20 years) to rehabilitate taro systems to active use.
   2. Allow lands in conservation districts dedicated to growing taro to receive tax rates equal to or less than agriculture dedication rates.
   3. Reconsider existing and proposed state agriculture incentive programs aimed at agricultural lands protection where they exclude small growers due to size, income, education or location.

**Water**

A. Support and enforce the State Constitution and the State Water Code.
   1. Support the full implementation of the existing legal framework for managing Hawaii's precious freshwater resources and stewardship of these resources as a Public Trust per the State Constitution, Articles XI Sections 1 and 7 and the State Water Code, HRS 174C.
   2. Provide more funding and staff to better implement fundamental mandates,
   3. Hold DLNR and CWRM responsible for fulfilling their obligation to conduct appropriate water studies, such as baseline and interim instream flow standards studies and environmental assessments, to ensure that all stream diversions do not adversely affect the rights of traditional and customary Native Hawaiian and appurtenant water right holders as well as any other public trust purpose.
   4. Implement all court and other administrative orders regarding stream flows and restoration.
   5. Per the State Water Code, fulfill the intent of the Water Resources Commission membership to include at least one member with traditional water management knowledge, by appointing an experienced wetland taro farmer to the Commission.
   6. Assist taro farmers with CWRM water permitting process.

B. Improve and fund, through enforcement and other measures, stream maintenance capacity in taro-growing communities

1. Encourage the Governor to release allocated disaster funding to help taro farmers and residents of Waipi'o Valley avoid future flood damage.
2. Provide guidance and support to taro-farming communities with flooding and stream blockage issues on how to interface with federal and state agencies and the permitting process.

**Economic Viability**

A. Establish a taro advocacy group to represent the voice and interests of all taro growers throughout the state.

1. Establish a taro advocacy group to represent the voice and interests of all taro growers, using the TSPTF to serve as the POC as a starting point for initial dialogues and the development of a long-term entity.
2. Adopt and implement a regular holistic analysis of the state of taro in Hawai'i , in coordination with the TSPTF, HDOA and UH CTAHR.

B. Improve taro markets and identify ways to advocate for taro farmers

1. Research the demand, preference for, and seasonal availability of locally grown taro.
2. Develop a program to facilitate and encourage distributors, wholesalers and other buyers to purchase local taro and taro products before considering importing taro from outside Hawai'i .
3. Promote "Buy Local" for locally-grown taro products and improve the existing "Local Grown" and "Seal of Quality" food labeling programs as a model for the future and to provide opportunity for taro farmers to indicate "miles traveled" and "point of origin" information to help concerned consumers make environmentally healthy purchasing decisions.
4. Work with HDOA, HUD, and DOH to explore federal initiatives that could improve access to taro and taro products for low-income families.

C. Improve access to farming resources

1. Develop a supply of local, sustainable input resources such as organic fertilizers, bonemeal, bloodmeal, ground coral and invasive or beached seaweed with no net negative impacts or losses to the environment.
2. Encourage and assist local groups of taro growers to develop a farm equipment bank that taro farmers can access for on-farm work with the goal of becoming self-supporting.
3. Support the ability of taro farmers to live where they farm to reduce the cost of farming and provide greater protection for farm assets and crops.
4. Develop a taro farming grant program to assist taro farmers in need to preserve the cultural legacy of taro farming for future generations.
5. Develop local Pekin duck breeding programs on each island to assist farmers in daily field control of established populations of apple snails through local Agriculture Extension Services and NRCS partnerships.

D. Support and increase new taro farmers and labor resources

1. "Grow" new farmers within the local community.

E. Develop taro farmer business skills and farm-to-consumer capabilities

1. Conduct training and education programs with a focus on small business management for taro farmers and poi makers to include information on new business models for farming, milling, cooperatives and other innovative approaches.
2. Improve supports and resources for farmers to process their own poi for their communities.

F. Improve taro farmer access to quality health insurance

1. Provide low-cost health and farm insurance options for taro farmers
2. Provide information and education on health and ailments related issues specific to taro farming.

G. Heighten awareness of food security issues in Hawai‘i
   1. Conduct a Food Security Disaster Response Assessment involving all state agencies, farmers and the Governor to assess what needs to be implemented now in order to feed Hawai‘i from local sources in the case of a natural disaster or fuel crisis.

**Biosecurity**

A. Improve and expand inspection facilities for imports at national and international arrival points (harbors and airports).
   1. Support improved inspection facilities on each island, such as the new facility on Maui.

B. Improve and expand inter-island inspection capacity
   1. Support improved inspection facilities for outgoing produce and non-agriculture cargo at barges, harbors and cargo flights on Hawai‘i Island.
   2. Support improved joint inspection facilities for incoming produce and non-agriculture cargo on barges, at harbors and airports on all islands.

C. Improve and expand HDOA authority to conduct agricultural and non-agriculture commodity inspections.
   1. Improve HDOA capabilities to track, and access to, cargo manifests.
   2. Support HDOA’s request to expand its authority to allow for inspection of non-ag commodities and to require more specific manifest information.

D. Improve USDA and HDOA risk management capacity for taro in Hawai‘i .
   1. Support efforts to adopt and implement the USDA-HDOA Pathway Risk Analysis, Maritime Risk Assessment and HDOA Biosecurity Program.
   2. Request that USDA designate the alomae-bobone virus complex and taro beetle (*Papauana spp.*) as “actionable pests” in the findings of the USDA and HDOA report to prevent the entry of these pests into Hawai‘i from foreign countries.
   3. Research additional pests and diseases specific to taro for further petition to the USDA “actionable pest” list and revise HDOA regulations accordingly.
   4. Change the definition of taro to a propagatable material under HAR4-70 importation rules for the State of Hawai‘i.
   5. Make mandatory the limitations on importation of taro to only dried, cooked or frozen taro products to protect local taro crops from new pests and diseases and subject to a fine for violation; maintain a complete ban of taro products from countries known to host alomae-bobone virus and taro beetle.

E. Develop funding mechanisms to improve biosecurity measures for taro pest and disease risks in Hawai‘i and to fund strategic apple snail control and controls research.
   1. Support passage of the proposed changes to the proposed cargo fee law which increases HDOA’s ability to enforce and impose penalties for non-payment (Pest Inspection Quarantine and Eradication (PIQE) fund) and the “barrel tax” as funding sources for biosecurity measures recommended in this report.
   2. Explore the feasibility of a “taro tax” on all taro and taro products imported into the state whose revenues go directly to HDOA inspection funds.

F. Increase incentives and disincentives to improve pest and disease-free product and cargo shipments in and out of the state.

1. Support increased resources to HDOA to implement compliance reviews and revoke import permits and export certifications and/or fine offenders who introduce and/or import invasive species.
2. Develop a robust system of screening and risk assessment tools, including global searches for documented invasiveness information, pests and diseases and a balanced set of parameters, including environmental and economic impacts in Hawai'i (not just point of origin), that aid the Board of Agriculture in decision making for importers of plant products prior to permit approval.
3. Require an EA/EIS prior to a request for importation of potentially invasive or harmful pests, diseases, animal or plant organisms for private, public or research entities or individuals where the potential for environmental and/or economic damage to taro or taro farming is evident or is known to exist outside the state for the same or closely related species.
4. Require researchers, research institutions and any others requesting a permit to import taro and taro pest or disease organisms for study to be bonded to cover the costs of potential escapes and cleanup costs.

G. Improve pro-active prevention of pest and disease movement between islands and intra-island from valley to valley by taro farmers and partners.
1. Develop practical, affordable, efficient and effective 'best practices" for existing and future pest and disease control using the best knowledge of taro farmers, researchers, and agencies.
2. Increase education outreach among taro growers on all islands in appropriate settings (i.e. in taro farming communities) to prevent transport of invasive species, including apple snails and California bulrush (*Schoenoplectus californicus*) and *Malachra alceifolia*, two aggressive wetland weeds found in taro patches on Kaua'i.
3. Update existing HDOA rules to close loopholes that support invasive species enterprise development and marketing.

H. Control apple snails in infested areas not used for taro-growing, with a high priority on those areas adjoining, up, or downstream from taro farms, or which are water sources for taro-growing systems.
1. Collaborate with state, federal and private landowner controlled wetlands and waterbodies where *Pomacea canaliculata* is already present to implement strategic and regular apple snail control measures.

**Research**

A. Establish policy to guide and encourage taro research that supports taro farmer needs and concerns.
1. Develop a comprehensive document (a white paper) that establishes taro growers' vision on research and research protocols.

B. Apple snail control research
1. Develop taro research and outreach for the control and eradication of apple snails using the guidance of the 2006 Apple Snail Control Plan.
2. Research, document and refine fallow techniques, including cover crop rotations demonstrated on Kaua'i that reduce snail populations over time.

C. Research how to rebuild taro soils quality and fertility
1. Research traditional Hawaiian agricultural practices in wet and dryland taro systems.
2. Research the viability of traditional and non-traditional mulching resources and green manure cover crops and their feasibility under current farm conditions as an alternative to chemical fertilizer application on small, medium and large scale wet and dry taro farms.
3. Reduce impacts of fungal disease in wetland taro soils.

D. Integrated pest management (IPM)

1. Develop and test comprehensive integrated pest management strategies for wet and dryland taro production, incorporating soil and water quality improvement recommendations as outlined in this report.

E. Cultivar research
   1. Improve the integrity of taro descriptors for all taro varieties currently found in Hawai‘i.
   2. Develop a network of taro growers at numerous locations, soils, elevations and aspects (sun exposures) throughout the state that are observing, recording and sharing observations on the characteristics and behavior of the Hawaiian varieties over successive generations and varying locations.

**Communication, Education and Public Awareness**

A. Increase public awareness of the designation of taro as the State Plant, the value of taro and its role culturally, socially, in health and well-being, environmentally, and economically in the state.
   1. Document the full value of taro to the State of Hawai‘i economically, environmentally, educationally, socially, culturally, and in health and well-being.
   2. Report on the status and history of taro as an industry.
   3. Raise the cultural awareness of the general public about taro
   4. Raise food security and self-sufficiency awareness of the general public, students, teachers, researchers and lawmakers in relation to taro through multiple educational events, presentations and publications.

B. Develop a program to provide taro education and training opportunities.
   1. Develop taro education and training opportunities for students, adults, communities, agencies, decision-makers and taro farmers
   2. Improve communication among taro growers, and between agencies and taro growers, with an emphasis on transparency.
   3. Establish a protocol for communication between agencies and taro growers.
   4. Establish a multi-partnered and linked website managed to share taro growing wisdom with other farmers.
   5. Provide taro farmers information on invasive species that have the potential to threaten taro production; infestation locations; decontamination, eradication and control protocols and where new threats might come from.
   6. Increase taro grower understanding of technical and scientific terms, such as ‘hybrid’ and ‘gmo’ in relation to taro.
   7. Educate the general public, taro farmers and legislators of taro farmer water rights.

**Traditional Hawaiian Taro Varieties**

A. Support the recovery of traditional Hawaiian taro cultivars throughout the state.
   1. Create a network of farmers, researchers, and botanical gardens to document cultivar characteristics, best growing conditions, preferred growing sites, pest and disease resistance, and productivity (corm and huli) under a range of conditions, sites, and growing practices.
   2. Establish huli banks with clean (disease-free), pure plant stock on each island to revitalize taro field diversity.
   3. Support local germplasm and tissue culture preservation of tradition Hawaiian taro varieties for use statewide and as a second tier of conservation.
   4. Identify and characterize all existing taro varieties, including hybrids, and develop a policy for improving future distribution and monitoring practices, including preventing the release of undocumented uncharacterized hybrids and new varieties of taro for distribution.

B. Establish a project through school and alternative education programs that will seek to educate families on how to grow taro for home use and partner with existing collections to provide huli for those families who wish to grow taro for subsistence.
    1. Conduct archival and ethnographic research of the history of taro and taro practices in Hawai'i and the traditional Hawaiian cultivars to aid in [taro's] revival and revision of Bulletin 84. Revise Bulletin 84: Taro Varieties in Hawaii (1939) which is the key reference for taro growers and researchers.

C. Expand existing taro identification and verification outreach
    1. Continue regular verification of all taro varieties collections. Continue to support and expand the taro identification workshops and partnerships that facilitate and support these workshops.

## County General Plan Policies

The County of Hawai'i's General Plan is the policy document for the long range comprehensive development of the island of Hawai'i. The General Plan articulates this long range vision through a series of goals, polices, standards and courses of actions in 13 elements. The General Plan contains clear direction in regards to protection of natural and cultural resources throughout Hawai'i Island, including Waipi'o Valley.

The following General Plan policies and course of actions support Waipi'o Valley natural and cultural resource objectives and are organized by Kahakai, Agricultural, and Cultural Resource Management Policies. The final section is policies and courses actions that are specific to Waipi'o Valley.

### General Plan Kahakai Management Policies

- 2.3(h): Protect essential land, water, sea, and people resources for present and future generations through economic incentives.
- 5.3(b): Review land use policy as it relates to flood plain, high surf, and tsunami hazard areas.
- 5.3 (a): Enact restrictive land use and building structure regulations in areas vulnerable to severe damage due to the impact of wave action. Only uses that cannot be located elsewhere due to public necessity and character, such as maritime activities and the necessary public facilities and utilities, shall be allowed in these areas.
- 5.3(k): Develop an integrated shoreline erosion management plan that ensures the preservation of sandy beaches and public access to and along the shoreline, and the protection of private property from flood hazards and wave damage.
- 7.3(b): Develop and establish view plane regulations to preserve and enhance views of scenic or prominent landscapes from specific locations, and coastal aesthetic values.
- 8.2(e): Protect and effectively manage Hawai'i's open space, watersheds, shoreline, and natural areas.
- 8.3(c): Maintain the shoreline for recreational, cultural, education, and/or scientific uses in a manner that is protective of resources and is of the maximum benefit to the general public.
- 8.3(r): Ensure public access is provided to the shoreline, public trails and hunting areas.
- 8.3(d): Protect the shoreline from the encroachment of man-made improvements and structures.

- 8.3(g): Promote sound management and development of Hawai‘i ’s land and marine resources for potential economic benefit.
- 8.4: The following shall be considered for the protection and conservation of natural resources.
  - (a) Areas necessary for the protection and propagation of specified endangered native wildlife, and conservation for natural ecosystems of endemic plants, fish and wildlife.
  - (b) Lands necessary for the preservation of forests, park lands, wilderness and beach areas.
  - (c) Lands with a general slope of 20 per cent or more that provide open space amenities or possess unusual scenic qualities.
  - (f) The Coastal Zone and Special Management Area as defined by statute and in accordance with the adopted objectives and guidelines.

### General Plan Agricultural Resource Management Policies

- 2.3(a): Assist in the expansion of the agricultural industry through the protection of important agricultural lands….
- 2.3(s): Assist the further development of agriculture through the protection of important agricultural lands.
- 4.3(g): Participate in watershed management projects to improve stream and coastal water quality and encourage local communities to develop such projects.
- 5.2(e): Reduce surface water and sediment runoff.
- 5.2(f): Maximize soil and water conservation.
- 5.5.9.2(a): Improve and upgrade existing flood control measures as necessary.
- 5.5.9.2(b): Continue proper soil conservation measures to complement the existing systems.
- 5.3(e): Promote and provide incentives for participation in the Soil and Water Conservation Districts' conservation programs for developments on agricultural and conservation lands.
- 5.3(o): Encourage and provide incentives for agricultural operators to participate in Soil and Water Conservation District Programs.
- 5.3(n): Develop drainage master plans form a watershed perspective that considers non-structural alternatives, minimizes channelization, protects wetlands that serve drainage functions, coordinates the regulation of construction and agricultural operation, and encourages the establishment of floodplains as public green ways.
- 8.3(l): Work with the appropriate State, Federal agencies, and private landowners to establish a program to manage and protect identified watersheds.
- 8.3(j): Encourage the protection of watersheds, forest, brush and grassland from destructive agents and uses.
- 9.3(x): Vacant lands in urban areas and urban expansion areas should be made available for residential uses before additional agricultural lands are converted into residential uses.
- 14.1.2(b): Protect and encourage the intensive and extensive utilization of the County's important agricultural lands.
- 14.2.2(b): Preserve the agricultural character of the island.

- 14.2.2(a): Identify, protect and maintain important agriculture lands on the island of Hawaii.
- 14.2.3(a): Implement new approaches to preserve important agriculture land.
- 14.2.3(d): Agricultural land may be used as one form of open space or as green belt.
- 14.2.3(i): Designate, protect and maintain important agricultural lands from urban encroachment.
- 14.2.3(j): Ensure that development of important agricultural land be primarily for agricultural use.
- 14.2.3(s): Important agricultural lands shall not be rezoned to parcels too small to support economically viable farming units.
- 14.2.3(t): Discourage speculative residential development on agricultural lands.
- 14.8.3(d): Zoning, subdivision and other applicable ordinances shall provide for and protect open space areas.

## General Plan Cultural Resources Management Policies

- 6.2(a): Protect, restore, and enhance the sites, buildings, and objects of significant historical and cultural importance to Hawai‘i.
- 6.2(b): Appropriate access to significant historic sites, buildings, and objects of public interest should be made available.
- 6.3(d): Public access to significant historic sites and objects shall be acquired, where appropriate.
- 6.3(e): Embark on a program of restoring significant historic sites on County lands. Assure the protection and restoration of sites on other public lands through a joint effort with the State.
- 6.3(f): Encourage the restoration of significant sites on private lands.
- 6.3(g): Collect and distribute historic sites information of public interest and keep an inventory of sites.
- 6.3(j): Develop a continuing program to evaluate the significance of historic sites.
- 6.3(h): Aid in the development of a program of public education concerning historic sites.
- 6.3(i): Signs explaining historic sites, buildings and objects shall be in keeping with the character of the area or the cultural aspects of the feature.
- 6.3(m): All new historic sites placed on the State or Federal Register after the adoption of the general plan shall be included in the General Plan.
- 6.3(o): Recognize the importance of certain natural features in Hawaiian culture by incorporating the concept of “cultural landscapes” in land use planning.
- 6.5.6.2(a): Support the establishment of Hawaiian Heritage Corridors.

## General Plan Policies and Courses of Action Specific to Waipi‘o Valley

**Flooding and Other Natural Hazards**

5.5.4.2(a): The Hawaii County "Drainage Master Plan" for the Waipi‘o-Kukuihaele, Honoka‘a-Pā‘auhau, and Pa‘auilo-Kukaiau areas shall be updated and implemented.

5.5.4.2(d): The Waipi‘o Valley area shall be retained for limited recreational and agricultural activities due to its high susceptibility to flooding and tsunami inundation.

**Recreation**

12.5.4.2(b): Encourage the recreational development of Waipiʻo and Waimanu Valleys as natural and wilderness areas. Encourage the State to provide small recreation sites on the edge of Waipiʻo Valley.

12.5.4.2(d): Encourage the State to develop a scenic park on the Kohala side of Hiʻilawe Falls in conjunction with the development of the scenic highway.

**Transportation-Roadways**

13.2.5.4.2(c): Encourage the State to construct a scenic highway from the Waipiʻo Valley lookout extending mauka to connect to Mud Lane at the entrance of Waimea.

## Natural and Cultural Resource Related Federal Policies

There are a myriad of Federal, State and Hawaii County Laws, Regulations and Programs that affect Waipiʻo Valley. In addition to those cited in the other Natural and Cultural Resource subsections, the following Federal Laws and Programs include the 1972 Coastal Zone Management Act (CZM) and Clean Water Act, are applicable to specific Waipiʻo Valley community objectives.

### Coastal Zone Management Act

The Coastal Zone Management (CZM) Act is administered by the National Oceanic and Atmospheric Administration and provides for management of the nation's coastal resources and balances economic development with environmental conservation. The Federal CZM delegates authority for administering the program to the States, and Hawaii adopted the State CZM in 1977.

Hawaiʻiʻs CZM Program was enacted to provide a common focus for state and county actions dealing with land and water uses and activities. As the State's resource management policy umbrella, it is the guiding perspective for the design and implementation of allowable land and water uses and activities throughout the state. The Office of Planning administers the CZM law.[350]

Special Management Area (SMA) permitting system is part of the CZM Program approved by Federal and State agencies. The State of Hawaii delegates permitting authority within the Special Management Areas to the Counties. Through the SMA permit system, Hawaii County assesses and regulates development proposals in the SMA for compliance with the CZM objectives and policies and SMA guidelines as set forth in Chapter 205A, Hawaii Revised Statues (HRS). The SMA Permit is a management tool to assure that permitted uses and activities that are defined as developments in the SMA are designed and carried out in compliance with the CZM objectives and policies and SMA guidelines.

The SMA boundary for Waipiʻo Valley extends from the shoreline to the bottom of the pali. The Waipiʻo Valley rim is outside of the SMA boundary.

### Federal Clean Water Act

The objective of the Federal Water Pollution Control Act, commonly referred to as the Clean Water Act (CWA), is to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands. The act established the goals of eliminating releases of high amounts of toxic substances into water, eliminating additional water pollution by 1985, and ensuring that surface waters would meet standards necessary for human sports and recreation by 1983.[351]

350 http://planning.hawaii.gov/czm/

351 http://www2.epa.gov/laws-regulations/summary-clean-air-act

The Act applies to all navigable waterways as well as those water bodies that have a "significant nexus" to navigable waters. Activities affecting the five streams that flow through Waipi'o Valley, including regular maintenance, requires various Federal permits, including the following:

- National Pollutant Discharge Elimination System permit for storm water associated with construction activity;
- Army Corp of Engineer's administered Section 401 Water Quality Certification and "dewatering" permit;
- State of Hawai'i Department of Land and Natural Resources Stream Channel Alteration Permit
- The Endangered Species Act, Section 7, consultation with the National Marine Fisheries Service US Fish and Wildlife Service
- State of Hawai'i Conservation District Use Permit
- National Historic Preservation Act Section 106 requires consultation with the Hawaii State Historic Preservation Division when a proposed project may affect historic properties

Other applicable land use Federal regulations that apply to Waipi'o Valley, but not included in this analysis, include the National Environmental Protection Act, Watershed and Flood Protection Act and Endangered Species Act.

## Natural and Cultural Resource Related State Policies

### State Land Use Classification

**Conservation District:** The public and private lands within Waipi'o Valley are classified within two of the four State Land Use Districts. The entire coastline (to a range of distances mauka from the shoreline) is in the State land use Conservation District. Pursuant HRS section 205-2(e), the conservation district includes areas necessary for:

- protecting watersheds and water sources
- preserving scenic and historic areas
- providing park lands, wilderness, and beach reserves
- conserving indigenous or endemic plants, fish, and wildlife, including those that are threatened or endangered
- preventing floods and soil erosion
- open space areas whose existing openness, natural condition, or present state of use, if retained, would enhance the present or potential value of abutting or surrounding communities, or would maintain or enhance the conservation of natural or scenic resources
- areas of value for recreational purposes.

In the State Conservation District, there is no county zoning, per se, so the DLNR has jurisdiction on uses and activities, which require a conservation district use permit from the Board of Land and Natural Resources or other written approval from the Department of Land and Natural Resources Office of Conservation and Coastal Lands, pursuant HAR section 13-5.

Hawai'i Administrative Rules (HAR) section 13-5 establishes the following subzones within the Conservation district:

- Protective: to protect valuable resources in designated areas such as restricted watersheds, marine, plant, and wildlife sanctuaries, significant historic, archaeological, geological, and volcanological features and sites, and other designated unique areas. The Protective subzone includes lands necessary to protect watersheds, preserve historic sites, and preserve natural ecosystems, particularly those with endangered species.

- Limited: to limit uses where natural conditions suggest constraints on human activities. The Limited subzone includes land susceptible to hazards.

- Resource: to develop, with proper management, areas to ensure sustained use of the natural resources of those areas. The Resource subzone includes parkland, forestry, and recreational uses.

- General: to designate open space where specific conservation uses may not be defined, but where urban use would be premature. The General subzone includes lands not needed for urban, rural, or agricultural use and lands suitable for agriculture.

- Special: to provide for areas possessing unique developmental qualities which complement the natural resources of the area.

The rules in HAR 13-5 may be amended to change a subzone boundary.

HAR 13-5 also details permitted uses in each subzone. Depending on the subzone and proposed land use, either no permit will be required, site plan approval from the DLNR is required, a permit approved by the Chair of the DLNR is required, or a permit from the Board of Land and Natural Resources is required.

State land use district boundary amendments involving lands in the conservation district, land areas greater than fifteen acres, or lands delineated as important agricultural lands are processed by the Land Use Commission, but following HAR section 13-5-40(b), public hearings do not have to be held in the judicial district in which the land is located. State land use district boundary amendments involving other lands are processed by the Planning Department, Planning Commission, and County Council, pursuant Planning Commission Rule 13.[352]

**Agricultural District:** The majority of the land within the Valley is within the Agricultural State Land Use District. Pursuant HRS section 205-5(b), the minimum lot size in the Agricultural District is one acre. HRS sections 205-2 and 205-4.5, contain the following permitted uses in the Agricultural District:

- The cultivation of crops for bioenergy, flowers, vegetables, foliage, fruits, orchards, forage, timber, and forestry.

- Raising of livestock, animal husbandry, and game and fish propagation, including poultry, bees, fish, or other animal or aquatic life.

- Aquaculture.

- Agricultural parks.

- Agricultural tourism conducted on a working farm, or a farming operation, for the enjoyment, education, or involvement of visitors, provided that the agricultural tourism activity is accessory and secondary to the principal agricultural use and does not interfere with surrounding farm operations.

352 http://hawaii.gov/dlnr/occl

- Bona fide agricultural services and uses that support the agricultural activities of the fee or leasehold owner of the property and accessory to any of the above activities, regardless of whether conducted on the same premises as the agricultural activities to which they are accessory, including
  - farm dwellings, which is defined as a single-family dwelling located on and used in connection with a farm, including clusters of single-family farm dwellings permitted within agricultural parks developed by the State, or where agricultural activity provides income to the family occupying the dwelling
  - employee housing
  - farm buildings
  - mills
  - storage facilities
  - processing facilities
  - agricultural-energy facilities
  - vehicle and equipment storage areas
  - maintenance facilities
  - roadside stands for the sale of products grown on the premises.
- Wind generated energy production and wind machines and wind farms, including the appurtenances associated with the production and transmission of wind generated energy, provided that the wind energy facilities and appurtenances are compatible with agriculture uses and cause minimal adverse impact on agricultural land.
- Solar energy facilities on land with soil classified by the land study bureau's (LSB) detailed land classification as overall (master) productivity rating class B, C, D or E (Hawai‘i County has no LSB A land). Energy facilities placed within land with soil classified as overall productivity rating class B or C shall not occupy more than ten percent of the acreage of the parcel, or twenty acres of land, whichever is lesser.
- Biofuel production.
- Biofuel processing facilities, which are defined as facilities that produce liquid or gaseous fuels from organic sources such as biomass crops, agricultural residues, and oil crops, including palm, canola, soybean, and waste cooking oils, grease, food wastes, and animal residues and wastes that can be used to generate energy, including the appurtenances associated with the production and refining of biofuels that is normally considered directly accessory and secondary to the growing of the energy feedstock, provided that biofuels processing facilities and appurtenances do not adversely impact agricultural land and other agricultural uses in the vicinity. "Appurtenances" means operational infrastructure of the appropriate type and scale for economic commercial storage and distribution, and other similar handling of feedstock, fuels, and other products of biofuels processing facilities.
- Agricultural-energy facilities, including appurtenances necessary for an agricultural-energy enterprise, provided that the primary activity of the agricultural-energy enterprise is agricultural activity. To be considered the primary activity of an agricultural-energy enterprise, the total acreage devoted to agricultural activity shall be not less than ninety percent of the total acreage of the

agricultural-energy enterprise. The agricultural-energy facility shall be limited to lands owned, leased, licensed, or operated by the entity conducting the agricultural activity.

- Public institutions and buildings necessary for agricultural practices.
- Open area recreational facilities, including day camps, picnic grounds, parks, and riding stables, but not including dragstrips, airports, drive-in theaters, golf courses, golf driving ranges, country clubs, and overnight camps.[353]

**Boundary Amendments and Special Permits:** State Land Use district boundaries may be amended by the State Land Use Commission (LUC), or, if the property is 15 acres or less in size, by the County Council.

Rather than amend district boundaries, landowners often apply for a special permit, as permitted by HRS section 205-6. The LUC (or, for parcels 15 acres in size or smaller, the County Planning Commissions) may permit certain unusual and reasonable uses within agricultural district other than those for which the district is classified and may impose restrictions as may be necessary or appropriate in granting the approval, including the adherence to representations made by the applicant.[354]

## Shoreline Jurisdiction

In addition to State Agency's with shoreline jurisdiction listed in the Kahakai Subsection, the following Agencies and Programs have direct responsibility to the shoreline in Waipi'o Valley.

**State Department of Land and Natural Resources:** Coastal waters are managed by the State Department of Land and Natural Resources (DLNR) (for aquatic resources and boating), the State Department of Health (DOH) (for water quality), and the Federal Army Corps of Engineers (COE). The County is responsible for the Special Management Area, including the shoreline setback area. Other agencies that have jurisdiction in the shoreline area include the DOH (for wastewater and underground injection) and the DLNR for wells.

HRS section 205A-1 and HAR section 13-222-2 define the shoreline as "the upper reaches of the wash of the waves, other than storm or seismic waves, at high tide during the season of the year in which the highest was of the waves occurs, usually evidenced by the edge of vegetation growth, or the upper limit of debris left by wash of the waves."[355]

**Department of Health Clean Water Branch Classification**: The Clean Water Branch protects public health and inland and coastal waters for marine life wildlife. Responsibilities include coastal water surveillance and watershed-based environmental management through permitting, monitoring, enforcement, polluted runoff control projects, and public education.[356]

**DLNR Office of Conservation and Coastal Lands (OCCL)**: The OCCL is responsible for overseeing private and public lands that lie within the State Land Use Conservation District as well as beach and marine lands out to the seaward extent of the State's jurisdiction. The OCCL processes all Conservation District Use Applications (CDUA), conducts certified shoreline surveys, and manages beach restoration projects.[357]

**Marine and Coastal Zone Advocacy Council (MACZAC)**: For a review of MACZAC's responsibilities, please click on the following link: MACZAC

353 http://planning.hawaii.gov/lud/
354 Ibid.
355 http://hawaii.gov/dlnr/dar/fishing.html
356 http://health.hawaii.gov/cwb/
357 http://hawaii.gov/dlnr/occl

## County Natural and Cultural Resource Related Policies

**General Plan Land Use Pattern Allocation Guide (LUPAG) Map**: The LUPAG map in the County General Plan includes land use designations that effectively serve as resource protection overlays and establish an Urban Growth Boundaries between the agricultural designations (orchard, agricultural, and intensive agricultural) and the urban designations (low, medium, and high density urban). The LUPAG map is a broad, flexible design intended to guide the direction and quality of future developments in a coordinated and rational manner. It indicates the general location of various land uses in relation to each other. State land use boundary amendments, changes in zone, project districts, subdivisions, planned unit developments, use permits, variances, and plan approval must be consistent with the General Plan.

There are three LUPAG designations within Waipi'o Valley. A narrow strip along the shoreline and the eastern and southeastern portions are classified as Open Area, which is intended for parks and other recreational areas, historic sites, and open shoreline areas. The majority of the Valley floor is comprised of two Agriculture Designations, Extensive Agriculture Designation adjacent to the shoreline and the mauka portion of the Valley, and an area near the center of the valley is designated Important Agricultural Land. Pursuant to the General Plan, "Important Agricultural Lands are those with better potential for sustained high agricultural yields because of soil type, climate, topography, or other factors. Important agricultural lands were determined by including the following lands:

- Lands identified as "Intensive Agriculture" on the 1989 General Plan Land Use Pattern Allocation Guide maps.
- Lands identified in the Agricultural Lands of Importance to the State of Hawaii (ALISH) classification system as "Prime" or "Unique".
- Lands classified by the Land Study Bureau's Soil Survey Report as Class B "Good" soils. (There are no Class A lands on the island of Hawaii)
- Lands classified as at least "fair" for two or more crops, on an irrigated basis, by the USDA Natural Resource Conservation Service's study of suitability for various crops.
- In North and South Kona, the "coffee belt", a continuous band defined by elevation, according to input from area farmers.
- State agricultural parks.

Because of the scale of the Land use Pattern Allocation Guide maps used to designate Important Agricultural Land, the location of these lands should be verified by more detailed mapping when considering specific land use decisions."

Finally, the Valley is rimmed by the Conservation LUPAG designation, which includes "forest and water reserves, natural and scientific preserves, areas in active management for conservation purposes, areas to be kept in a largely natural state, with minimal facilities consistent with open space uses, such as picnic pavilions and comfort stations, and lands within the State Land Use Conservation District."

### County Zoning

The majority of the Valley floor is zoned A-40a. Pursuant Hawai'i County Code (HCC) section 25-5-70, the Agricultural District "provides for agricultural and very low density agriculturally-based residential use, encompassing rural areas of good to marginal agricultural and glazing land, forest land, game habitats, and areas where urbanization is not found to be appropriate." The number followed by the "A" refers to the minimum number of acres for each building site, or as in the case of A-40a, a minimum of 40 acres per building site.

The south and southeastern portion of the Valley are within the Open Zoning District. The Open zone "applies to areas that contribute to the general welfare, the full enjoyment, or the economic well-being of open land type use which has been established, or is proposed. The object of this district is to encourage development around it such as a golf course and park, and to protect investments which have been or shall be made in reliance upon the retention of such open type use, to buffer an otherwise incompatible land use or district, to preserve a valuable scenic vista or an area of special historical significance…." In the Open zone, development is strictly controlled.

### Public Access

HRS section 46-6.5 requires that the counties, in the subdivision process, ensure public access to "land below the high-water mark on any coastal shoreline." When the provisions of HRS section 46-6.5 are not applicable, HRS section 115-2 mandates that the counties acquire such access "for public rights-of-way to the shorelines, the sea, and inland recreational areas." In addition, HRS section 115-7 allows for State and County "co-sponsorship" of acquisitions for public access. Pursuant HCC section 34-4(a), a subdivider or developer of a multiple-family development shall dedicate land by right-of-way in fee or easement for public access from a public highway or public street to public shoreline areas and the land below the shoreline. More information on public access can be found in the Public Access section.

### Special Management Area

The Special Management Area (SMA) permit is a management tool to assure that developments in the SMA are designed and carried out in compliance with the Coastal Zone Management (CZM) objectives, policies, and SMA guidelines.

The SMA permitting system regulates development within SMAs extending from the shoreline inland, as designated on maps filed with the County Planning Commission. The SMA boundary in Waipi'o Valley extends from the shoreline to bottom of the pali on all sides.

**SMA Boundaries**: Please click on the following link for a detailed discussion on the SMA boundary amendment process, please click on the following link: SMA

### Tsunami Evacuation Zone

The entire Valley is within the Tsunami Evacuation Zone. Civil Defense authorities use these zones to facilitate evacuation in the case of a tsunami hazards.

## Current Tools and Alternative Strategies for Managing Waipi'o Valley's Natural and Cultural Resources

Although there are varying opinions on what and how Waipi'o Valley's natural and cultural resources should be protected, most can agree that the Valley holds significant value in Hawaiian history and culture. Each of the studies summarized in the "Previous Waipi'o Valley Related Planning/Studies" subsection discuss the need to protect the Valley's resources. The majority of the studies also cite the following key issues associated with protection of Valley's natural and cultural resources:

- Uncontrolled access into the Valley that poses a safety hazard along the narrow, steep access road;
- Tourism-related impacts, including trespassing on private property, desecration of sacred sites, and intrusion on the privacy of Valley residents and the peaceful character of the Valley; View shed impacts from potential development along the Valley rim that would be visible from the Valley floor;

- Effective Stream resource management program, and

- Continuing restoration of the cultural-based agriculture: Preservation and perpetuation of the taro, cultural-based agriculture.

**Managing Tourism:** As discussed in the 1999 and 2001 University of Hawaii Practicum reports, Waipiʻo Valley has a long history of unmanaged access and tourism issues. According to the 1991 Task Force to Preserve WaipiʻoValley report, "The influx of visitors negatively impacts the natural and cultural resources of the valley."[358] "A coordinated strategy is needed to preserve the benefits of tourism for future generations while guaranteeing that cultural sites are not damaged beyond repair and to ensure thousands of years of history remain with us forever".[359]

The General Plan natural and cultural resource policies, LUPAG, Zoning, and the State Land Use Classifications provide a certain degree of protection; however, these existing tools cannot be used exclusively to limit or control access and manage tourism in the Valley or provide the level of protection expressed in the CDP Objectives. However, "when property managed, tourism can enhance both the physical and the intangible heritage of an area while offering a positive, peaceful way for communities to express pride in their cultural identity".[360]

**Managing Access:** The Valley is comprised of both public and private properties. The State of Hawaiʻi's public access laws and regulations, which pertain to both private and public property, are complex and accordingly add to the difficulty of creating a managed access program.

One of the key issues identified in a number of the studies summarized in the "Previous Waipiʻo Valley Related Planning/Studies" subsection is the lack of understanding the historical record of access into the Valley to determine the public (county or state) roads and trails from the private accesses. Once this is accomplished, a designated trail system could be established to channelize tourism routes on publically owned property trails and thus protect private property.

However the ability to effectively control public access is further constrained by government's limited capacity to manage public accesses. Consequently, the lack of management of public access raises major concerns for access users, managers, neighbors, and landowners.

**Viewshed Protection:** The area west and southwest of the Valley is within the Forest Reserve and Special Management Area, and, consequently, has limited development potential as well as an added level of discretionary review, through the SMA process. However, the Valley rim on the east and southeast sides are within the A-40a Zone District, with the potential for one dwelling unit per acre, an ohana unit, and additional farm dwelling units, subject to compliance with HCC Section 25-5-77. By right, the A-40a setbacks are 30 feet front and rear and 20 feet side yards. Consequently, structures can locate and encroach into the viewshed from the Valley floor. The 1990 Hamakua Regional Plan called for a "Waipiʻo Preservation Buffer," a planning envelope along the northern boundary of the Mauka property. The buffer would help preserve the cultural and scenic integrity of the rim by preventing view plane encroachment from private structures. The plan recommended a 300 foot setback that the State would undertake through transfer of fee title and or easements for future use of the land[361].

358 Task Force to Preserve Waipiʻo Valley. (1991, December 18). A Study to Protect and Preserve Waipiʻo Valley as a Valuable State Resource for Future

359 Waipiʻo Valley: Towards Community Planning and Ahupuaʻa Management Phase II, Department of Urban and Regional Planning, Fall 2001 Practicum.

360 Ibid.

361 Hāmākua Regional Plan: From Kaiaakea to Waipiʻo, 1990

The following is a summary of tools, programs, strategies, and technical resources that communities have utilized to protect their unique values. While in some cases, these tools and programs are examples of resources that can be applied to address Waipi‘o Valley’s challenges, in other cases they are specific strategies to address an identified Waipi‘o Valley issue. Additional strategies are also found in the other sections of Natural and Cultural Resource Analysis. The tools, programs, and best management practices are arranged by the following four core CDP strategies.

## Managing Tourism, Viewshed, and Access to Waipi‘o Valley

As discussed in the 1999 and 2001 University of Hawaii Practicum reports, Waipi‘o Valley has a long history of unmanaged access and tourism issues. According to the 1991 Task Force to Preserve Waipi‘o Valley report, “The influx of visitors negatively impacts the natural and cultural resources of the valley.”[362] “A coordinated strategy is needed to preserve the benefits of tourism for future generations while guaranteeing that cultural sites are not damaged beyond repair and to ensure thousands of years of history remain with us forever”.[363]

The General Plan natural and cultural resource policies, LUPAG, Zoning, and the State Land Use Classifications provide a certain degree of protection; however, these existing tools cannot be used exclusively to limit or control access and manage tourism in the Valley or provide the level of protection expressed in the CDP Objectives.

“When property managed, tourism can enhance both the physical and the intangible heritage of an area while offering a positive, peaceful way for communities to express pride in their cultural identity”.[364] The following is a summary of tools, programs, strategies, and technical resources that communities have utilized to protect their unique values. Through these strategies and tools, communities have been able to collaborate with various public and private entities to develop programs to manage tourism in a manner that contributes rather than impacts the communities. While in some cases, these tools and programs are examples of resources that can be applied to address Waipi‘o Valley’s challenges in other cases they are specific strategies to address an identified Waipi‘o Valley issue. Other strategies may also be found in the other sections of Natural and Cultural Resource Analysis. The tools, programs, and best management practices are arranged by the four core CDP strategies as they apply to the various section:

- **Establish Policy/Official Map** designate on the official land use map and policy statements in the CDP that relate to land use, watersheds and natural features, public improvement priorities, government services, and public re/development;

- **Recommend Advocacy** with federal and state policy makers and agencies for policies, regulations, incentives, programs, and action;

- **Detail Community-based, Collaborative Resource Management**, including research, place-based planning and program design, and program implementation; and

- **Identify Easement and Acquisition Priorities**, either by fee simple ownership or through conservation easements.

The tools, programs, and best management practices for the issues of an effective stream management program and preservation and perpetuation of the taro, cultural-based agriculture are contained in

362 Task Force to Preserve Waipi‘o Valley. (1991, December 18). A Study to Protect and Preserve Waipi‘o Valley as a Valuable State Resource for Future

363 Waipi‘o Valley: Towards Community Planning and Ahupua‘a Management Phase II, Department of Urban and Regional Planning, Fall 2001 Practicum.

364 Ibid.

separate sections following the Protection of Natural and Cultural Resources through Managing Tourism, Access and View Shed Protection.

## Establish Policy/Official Map

**Designation of Waipiʻo Valley as a Wahi Pana Overlay Zone in the CDP:** In the Hawaiian cultural traditions, the term Wahi Pana is used to recognize "celebrated" and "storied" places that have significant Native Hawaiian cultural and historical heritage. A Wahi Pana can be a *heiau*, royal birth site, legendary site and places of significance for the people who live there. These sacred places have mana (spiritual power) and are treated with great respect, honor and reverence[365]. Most of the studies cited in "Previous Waipiʻo Valley Related Planning/Studies" recommend designating Waipiʻo Valley as a Wahi Pana due to its significant natural, cultural, historical, and spiritual value.

County CDPs are an opportunity to implement specific community objectives. The CDP could officially recognize Waipiʻo Valley's significance as a natural, cultural, and scenic resource that merits a greater level of protection through the establishment of an overlay zone on the Hāmākua CDP Land Use Policy Map. The CDP would also include an Action Item directing the preparation and adoption of the overlay zone. The overlay zone would entail County Code regulations to protect the Valley's cultural and historical resources through measures such as vehicular access management measures, establishing scenic vistas, resource protection, etc.

The Wahi Pana Overlay designation could also bolster community-based efforts to achieve greater level or protection and financial assistance through the state, national and international programs summarized in the "Community-based, Collaborative" examples below. Appropriate programs must be applicable to private as well as public property and enable controlled access.

**Waipiʻo Valley Education and Information Program (Waipiʻo Ranger Program):** Development of a new County Department of Parks and Recreation Program for continued funding for Education and Information (E&I) Program (Waipiʻo Valley Rangers Program): From 2007 to 2010, Friends of the Future served as fiscal manager for the highly successful "*Waipiʻo Ranger Pilot Program.*" The program was funded by two Hawaiʻi Tourism Authority Natural Resources grants obtained by the County Department of Research and Development (R&D). The purpose of the program is to place guides at the entrance the valley who will educate visitors about the valley's history, its cultural importance, its unique challenges as actively cultivated agricultural land in a fragile ecosystem, and the second most visited location on Hawaiʻi Island. The E&I staff will advise visitors on road conditions, driving "etiquette," and the lack of services on the valley floor. They will also serve as the eyes and ears of public safety and an important liaison between the Waipiʻo community, the visitor industry and County and State agencies. The grant funding has lapsed, and the County budgeted $70,000 in the 2013/14 Operating Budget to continue this program until the funds are depleted. The CDP could recommend continued funding of the E&I Program on a permanent basis administered through the Parks and Recreation or Research and Development Departments.

**Waipiʻo Valley Lookout Visitor Center:** The County has already purchased a 1.804-acre site for the Visitor Center at the Waipiʻo Valley Lookout (TMK (3)4-8-004:006). The Waipiʻo Circle, a group of Valley residents and others interested, have started the planning and manual site clearing for this facility. The facility could have the following potential functions:

365 ahahi.files.wordpress.com/2012/07/wahi-pana-brochure.pdf

- Interpretive and Educational. The Visitor Center would have displays, presentations, docents, publications, performances, and other means to engage and inform the visitor of the historic, cultural, and natural treasures of the Valley. The information would be geared to school children, local residents, and visitors. The intent would be to provide a fulfilling experience without having to actually go into the Valley. For those choosing to trek into the Valley, they would learn the proper protocols.

- Research and Archival. There is significant research already complete—the Visitor Center would be a repository of this knowledge base where sources or artifacts would be stored and/or easily accessed. There is also much still to be learned, and the Visitor Center would drive this research and be a place for discussion, working space with computer access, and integration of science and culture.

- Ceremonial. As appropriate, the Visitor Center can serve as a place for practitioners to pay respects to the akua of the Valley.

- Valley Agricultural Products Sales/Distribution Center. To expand the market demand for products grown by the existing Valley farmers as well as to encourage a resurgence of increased taro cultivation, the Visitor Center could be a type of farmer's market, possibly exclusive to the Valley farmers. A portion of the revenues generated would be used for the overall management of the Valley/Visitor Center.

- Management. The management entity for the Visitor Center could be the same entity for management of the Valley. It could be an entity that already exists, such as the Waipiʻo Circle, transformed as necessary with formal bylaws and elected directors. Ideally, this entity would incorporate the functions of other existing groups such as those related to stream management.

- Access Control. The visitor would be required to go through the Visitor Center.

The CDP could support the development of the Visitor Center through the following measures:

- Priority for CIP funding to design and construct the Visitor Center;

- Coordination with the Department of Parks and Recreation to integrate the support facilities for the existing Lookout with the Visitor Center;

- Integration of the Visitor Center into the Heritage Corridor route and "story"

- Support for community-based management of the Visitor Center through a lease or cooperative use agreement with the County Department of Parks and Recreation

**Resource Protection Overlays:** The CDP could establish a Resource Protection Overlay on portion of the Valley and the east and southeast areas of the rim. The overlay could be designated on the official Land Use Plicy Map, and the CDP could include an Action item to create the overlay regulations.

Comprehensive, regional, conservation, watershed, and open space plans often use resource protection overlay districts to link land use policies and conservation strategies with specific landscapes. Overlay zoning is a regulatory tool that creates a special zoning district, placed over an existing base zone(s), which identifies special provisions in addition to those in the underlying base zone. Regulations or incentives are attached to the overlay district to protect a specific resource or guide development within a special area. Overlays are often used for various resource protections, as illustrated in the following examples:

- Falmouth, a coastal community in Maine, established Resource Conservation, Shoreland Resource Protection, and Stream Protection Zoning overlay districts in its Open Space Plan and Zoning Code.[366]

- Through the "East of Sandy River Rural Area Plan," Multnomah County, Oregon, which includes Columbia River Gorge (a State Scenic Waterway, a National Scenic Area, and a federal Wild and Scenic River), established a "Sandy River Significant Environmental Concern (SEC) Zoning Overlay." The SEC overly extends one-quarter mile on both sides of the Columbia River banks and 100-300 feet of the centerline of sensitive streams. In the SEC, all proposed development must meet standards related to protection of the waterways and their banks from erosion, unsightly views, elimination of wildlife habitat, and other similar issues.[367]

- The Town of Westminster, Vermont, established Historic Preservation, Agricultural Land, Resource Conservation, Connecticut River Conservation, Water Supply Resource Protection, and Ridgeline Protection overlay districts in its Zoning Ordinance.[368]

- Finally, the Town of Empire, Fond du Lac County WI developed a Critical Areas Overlay (CAO) District to minimize development in areas prone to unwanted soil erosion and groundwater contamination, and on sites difficult to develop in a safe manner. The CAO also preserves unique and valuable geologic and other natural resource features, such as the Niagara Escarpment and woodland. The ordinance specifies a ridgeline buffer, lists prohibited uses, states grading restrictions for roads, requires vegetative screening of buildings on the ridge, preserves existing vegetation and significant rock outcroppings and limits impervious surface.[369]

Overlays are an effective way to safeguard the unique characteristics of an area. The creation of an Overlay District would not change the underlying use categories, and it would not prohibit development in the area within the overlay, but any future development would be subject to the standards and regulations of the overlay zone.

**Viewshed Siting Guidelines Ordinance:** Some municipalities establish specific heights, landscaping, screening, setback, and lighting guidance within protected viewsheds to preserving scenic vistas via Zoning Code regulations. For example, the New Jersey State Department of Transportation is working with the municipalities along the Route 57 Corridor to develop a scenic corridor overlay zone.[370] The following are some the features that could potentially be regulated:

- Building height, mass, and siting
- Building materials, colors and styles
- Parking
- Signs, billboards, and telecommunications towers
- Outdoor lighting
- Landscaping and grading

366 http://www.beginningwithhabitat.org/pdf/falmouth_RCZO.pdf
367 http://web.multco.us/streams-and-watersheds-policies
368 http://www.westminstervt.org/vertical/sites/%7BA171D8D5-AAF9-44F2-8E0E-B30695F0816B%7D/uploads/%7BF75C174A-A6F7-41E5-B032-43C338CA7EF9%7D.PDF
369 http://www.uwsp.edu/cnr-ap/clue/Documents/PlanImplementation/Overlay_Zoning.pdf
370 http://www.state.nj.us/transportation/works/studies/rt57/pdf/ScenicCorridorOverlayZoning..pdf

- Tree and woodland conservation

The CDP could include an Action item to prepare view shed siting guidelines in the County Zoning Code that would affect potential along the southeast and eastern portions of the rim.

**Establish a Viewshed Protection District:** Similar to an overlay zone, a viewshed protection district could be established on the official land use map and regulations incorporated into the County Zoning Code. Viewshed Protection Districts are used primarily for unique situations regarding views and vistas that are not adequately covered by the standard zoning districts. The City of San Antonio has established a Viewshed Protection District with regulations that protect, preserve, and enhance views and vistas. The City of San Antonio has many views and vistas of historic places, landmark buildings, and other sites of cultural importance. These views will continue to be amenities and assets of great value to the city, its people, and its economy. The regulations require that new development in the vicinity of these important places shall not be permitted to encroach into any designated view shed as set forth in this ordinance unless an encroachment was approved legally before the effective date of the Viewshed Protection ordinance.[371]

**Transfer of Development Rights (TDR):** Transfer of Development Rights (TDR) is an alternative strategy to purchasing land for protection of natural or cultural resources. TDRs preserve scenic areas by transferring, or "sending," development rights from sensitive lands to "receiving" areas marked for growth. Most TDR programs offer incentives such as increased density, faster permit processing, less stringent design review, or tax breaks to encourage developers and landowners to take advantage of the program. Successful TDR programs have been in place throughout the country since 1980, and have protected tens of thousands of acres of farmland and open space. TDR is most suitable in places where large blocks of land remain in agricultural use. TDR has been adapted by some communities into Density Transfer Charge (DTC) or Residential Density Transfer (RDT) programs[372]. Monterey County, CA and South Lake Tahoe, CA are just two of the more than 50 areas nationwide that have successfully used TDR programs to protect their unique character from the development pressure of nearby cities.[373]

Analysis completed for the Kona CDP suggests that for a TDR program to be successful, sufficient demand for development rights needs to be stimulated, opportunities to circumvent the market by seeking variances and zoning changes need to be limited, and an efficient and transparent market structure needs to be established.

HRS section 514B-136 is the enabling State legislation for TDR programs. The County of Hawai‘i must adopt enabling legislation for the option to be available locally. Some communities defer to nonprofit organizations to manage their TDR programs.

**Amend the Special Management Area Boundary:** As noted in the introduction to this subsection, the SMA boundary in Waipi‘o extends Mauka from the shoreline to the bottom of the Valley walls. The area west and southwest of the Valley is within the Forest Reserve and Special Management Area, and, therefore, has limited development potential. However, the Valley rim on the east and southeast sides are within the A-40a Zone District, with the potential for residential and farm dwelling units. The CDP could recommend extending the SMA boundary beyond the Valley on the east and southeast sides a prescribed distance to ensure that greater setbacks and view shed protections are incorporated into the review of structures in these areas.

One of the factors the SMA regulations require is the evaluation of a proposal’s potential effect on the “loss or destruction of any natural or cultural resource, including but not limited to, historic sites and

371 http://www.sanantonio.gov/historic/viewsheds.aspx
372 APA PAS Memo — May/June 2010. “TDR-Less TDR Revisited: Transfer of Development Rights Innovations and Gunnison County's Residential Density Transfer Program.” By Mike Pelletier, Rick Pruetz, FAICP, and Christopher Duerksen.
373 http://smartpreservation.net/tdr-updates/

view planes outlined in the General Plan or other adopted plans." The SMA process allows the County to apply reasonable conditions to a proposal to mitigate potential impacts.

The Planning Director may initiate amendments to SMA boundaries, and by 2/3 vote, the Planning Commission may also direct the Planning Director to initiate SMA boundary amendments.

## Recommended Advocacy

**'Aha Moku System:** Act 212 took effect in 2007, establishing the 'Aha Ki'ole Advisory Committee charged with recommending to the legislature how to establish an 'Aha Moku Council system in Hawai'i based upon the indigenous resource management practices of moku (regional) boundaries that acknowledges the natural contours of the land and ocean, the specific resources located within those areas, and the methodology necessary to sustain resources and the community.[374]

The eight members of the 'Aha Ki'ole Advisory Committee were appointed in November 2007, and their term ended June 30, 2011. Hugh "Buttons" Lovell represented Hawai'i Island, and Leimana DaMate of Ocean View served as coordinator. The Committee prepared reports to the legislature for the 2009[375] and 2011[376] legislative sessions. The Committee recommended that the 'Aha Moku system of natural and cultural resource management be integrated into the governance regime of Hawai'i through the creation of an 'Aha Ki'ole Commission. The members of the Commission would be selected by local 'Aha Moku Councils, which are composed of persons having traditional Hawaiian cultural and generational knowledge and expertise as mahi'ai (farmers), lawai'a (fishermen), and konohiki for each ahupua'a. The 'Aha Moku System would involve community consultation, community-based codes of conduct, education, and development of regulations that are responsive to actual environmental conditions and community design.

The 'Aha Ki'ole Commission, through the 'Aha Moku System, would provide consultation and recommendations to state, county and federal agencies, boards and organizations that have responsibilities and authority for the creation and implementation of regulations and policies for natural and cultural resources management. The 'Aha Moku System would also be integrated into all County General Plans and Community Development Plans through consultation and the creation of policies, rules, regulations and ordinances.

In 2012, Act 288 established the 'Aha Moku Advisory Committee in the Department of Land and Natural Resources, pursuant HRS Chapter 171. The Committee may provide advice to the chairperson of the Board of Land and Natural Resources on:

- Integrating indigenous resource management practices with western management practices in each moku;
- Identifying a comprehensive set of indigenous practices for natural resource management;
- Fostering the understanding and practical use of native Hawaiian resource knowledge, methodology, and expertise;
- Sustaining the State's marine, land, cultural, agricultural, and natural resources;
- Providing community education and fostering cultural awareness on the benefits of the aha moku system;
- Fostering protection and conservation of the State's natural resources; and

374 http://www.ahakiole.org/aboutus.html
375 http://www.ahakiole.org/documents/Final%20Report%2012%2018%2008.pdf
376 http://ahamoku.org/wp-content/uploads/2011/09/2011-Aha-Kiole-Legislative-Report-Final.pdf

- Developing an administrative structure that oversees the ʻaha moku system.

In February 2013, the Governor selected the new members of the ʻAha Moku Advisory Committee. Piʻilani Kaʻawaloa, who lives in the ahupuaʻa of Puna was selected to represent Hawaiʻi Island.

## Community-based, Collaborative Resource Management

**Hawaiʻi Community Stewardship Network (HCSN):**[377] The Waipiʻo Valley community and/or Hāmākua CDP Action Committee could partner with organizations that help build community capacity to implement programs to achieve their community objectives, such as resource protection. One such example in the state is HCSN. HCSN helps communities that request support to improve their quality of life through caring for their environmental heritage. HCSN provides resources and technical assistance in the following areas: community advocacy, natural and sociocultural resources management, youth engagement, community-based economic development, capacity-building for community-based organizations, and monitoring and evaluating program impacts. HCSN also convenes the E Alu Pū (move forward together) network consisting of 25 communities statewide, including Ka ʻOhana o Honuʻapo, Ka ʻOhana o Hōnaunau, Kalapana Fishing Council, Kamaʻāina United to Protect the ʻĀina (Hoʻokena), and Paʻa Pono Miloliʻi.

HCSN's vision for community stewardship is that the following four conditions are a broad-based reality in Hawaiʻi:

- Communities are decision-makers. Community members understand the political and legal processes that affect the environment, and they actively participate in those processes and with the responsible agencies. They are proactive, working to put their vision into place, and they remain makaʻala (aware) of proposals that would erode their vision.

- Communities are resource managers. Community members – especially those that understand their environmental heritage through consistent interaction with it – are active participants in the day-to-day, on-the-ground management of a place, and they pass the knowledge, skills, and kuleana ethic to upcoming generations.

- Communities adapt to lessons learned and changing conditions. Community members consistently monitor their management activities and regularly assess how changes to environmental, social, or political conditions may be affecting their efforts. They improve and adapt their activities accordingly.

- Communities sustain their projects for as long as is needed to reach their goals. Community members build economically viable and institutionally strong projects or organizations that are supported by an engaged community that effectively manages conflict.

**State, Federal and International Resources for Implementing Waipiʻo Valley as a Wani Pana:** The following provides examples of state, federal and international programs that provide variety of tools for protecting the natural and cultural resources of a designated place as well as technical and in some case, financial assistance. The Waipiʻo Valley community could consider utilizing one or more of these programs for a limited area within and surrounding the Valley or on a Valley-wide basis.

- **State of Hawaiʻi Historic Register:** The list formally recognizes districts, sites, structures, buildings and objects and their significance in Hawai`i's history, architecture, archaeology, engineering and culture. Some of the other criteria considered by the review board include association with events that have made a significant contribution to broad patterns of our history; association with the lives of persons significant in our past; possession of high artistic value; designs and techniques typical of

377 http://www.hcsnetwork.org

a time period; or potential to yield information important in prehistory or history.[378] Mookini Heiau, Lapakahi Complex, and Pāʻauhau Plantation House are examples of local historic complexes on the State Register.

Pursuant HCC section 19-89.1, historic residential properties that are listed on the Hawaiʻi Register of Historic Places are exempt from County property tax, except for the minimum tax (currently $100/year).

Historic Hawaiʻi Foundation commissioned a study titled "The Economic Benefits of State Historic Preservation Investment Tax Credits." The study found that in the 29 states that have a rehabilitation tax credit, all of them determined that the fiscal return was greater than the state's forgone taxes, often returning 3 to 5 times more revenue to the state in new taxes and significant new investment. The rehabilitation tax credit also was successful in creating new jobs, increasing loan demand and deposits in local financial institutions, enhancing property values, and generating sales. In addition to these direct fiscal impacts, the tax credit also has proven benefits related to environmental sustainability, affordable housing, tourism and visitation, and neighborhood revitalization.[379]

- **Historic Hawaiʻi Foundation (HHF)[380]:** HHF is a statewide non-profit organization that encourages the preservation of historic buildings, sites and communities relating to the history of Hawaiʻi. HHF programs include:
    - Preservation Resource Center, including FAQs and "Ask an Expert" for information about preservation programs, techniques, and resources
    - The Guide Nominating Properties to the Hawaiʻi Register of Historic Places
    - Hawaiʻi's Most Endangered Historic Sites list, which lists historic properties that are threatened and encourages actions to preserve them.
    - The Heritage House Workshop Series to assist homeowners gain practical and in-depth knowledge on how to repair, maintain, and preserve older homes
    - The Circuit Rider program, through which preservation services staff conduct regular visits to all of the Hawaiian islands to work with local communities and host classes, seminars and in-person visits to answer preservation questions
    - The Preservation Professionals Directory
    - An extensive online Resource Directory for historic preservation
- **Designation on the National Register of Historic Places:** The National Register of Historic Places is the Nation's official list of cultural resources worthy of preservation. Authorized under the National Historic Preservation Act of 1966, the National Register is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources. Properties listed in the Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and

378 http://hawaii.gov/dlnr/shpd/architecture/register-of-historic-places
379 http://www.nps.gov/tps/tax-incentives.htm
380 www.historichawaii.org

culture. The National Register is administered by the National Park Service, which is part of the U.S. Department of the Interior.[381]

For a property to be eligible for the National Register, it must meet at least one of the four National Register key criteria.

- Criterion A, "Event," the property must make a contribution to the broad patterns of American history. Criterion
- B, "Person," is associated with significant people in the American past.
- Criterion, C, "Design/Construction," concerns the distinctive characteristics of the building through its architecture and construction, including having high artistic value or being the work of a master. Criterion,
- D, "Information potential," is satisfied if the property has yielded or may be likely to yield information important to prehistory or history.

Some property owners may qualify for grants, for instance the Save America's Treasures grants, which apply specifically to properties entered in the Register at a national level of significance or designated as National Historic Landmarks. Owners of properties listed in the National Register may also be eligible for a 20% investment tax credit for the certified rehabilitation of income-producing certified historic structures such as commercial, industrial, or rental residential buildings. This credit can be combined with a straight-line depreciation period of 27.5 years for residential property and 31.5 years for nonresidential property for the depreciable basis of the rehabilitated building reduced by the amount of the tax credit claimed. Federal tax deductions are also available for charitable contributions for conservation purposes of partial interests in historically important land areas or structures. Owners of private property listed in the National Register are free to maintain, manage, or dispose of their property as they choose provided that no Federal monies are involved.

Of the 85,516 total registered sites, 321 registered sites are in the State of Hawai'i and 67 in Hawai'i County. Examples of historic complexes or districts in Hawai'i County, include: Kahalu'u Historic District, Hōlualoa 4 Archaeological District, Kamoa Point Complex, Lapakahi Complex, etc.

- **National Historic Landmark:** National Historic Landmarks are nationally significant historic places designated by the Secretary of the Interior because they possess exceptional value or quality in illustrating or interpreting the heritage of the United States. National Historic Landmarks are exceptional places.

The quality of national significance is credited to districts, sites, buildings, structures and objects that possess exceptional value or quality in illustrating or interpreting the heritage of the United States in history, architecture, archeology, technology and culture; and that possess a high degree of integrity of location, design, setting, materials, workmanship, feeling, and association, and: Sites where events of national historical significance occurred; Places where prominent persons lived or worked; Icons of ideals that shaped the nation; Outstanding examples of design or construction; Places characterizing a way of life; or Archeological sites able to yield information.

About half of the National Historic Landmarks are privately owned. A friends' group of owners and managers, the National Historic Landmark Stewards Association, works to preserve, protect and promote National Historic Landmarks. Listing of private property as a National Historic Landmark or

381 http://www.nps.gov/nr/

on the National Register does not prohibit under Federal law or regulations any actions which may otherwise be taken by the property owner with respect to the property.[382]

Benefits include limited Federal grants through the Historic Preservation Fund are available; Landmark owners should check with their State Historic Preservation Officer to find out about the availability of Federal and State funds. Often State and local governments have grant and loan programs available for historic preservation; these funds tend to be for small amounts. National Register listing is a condition for receiving grants and loans from many State and local governments as well as private sources. Some funding sources give National Historic Landmarks higher priority for funding than other National Register properties. There are also Federal income tax incentives available for donating easements and for rehabilitating income-generating historic buildings.[383] Examples in the state include the Arizona; Iolani Palace; Cook Landing Site (Kauai); Kamakahonu, Kailua-Kona; Keauhou Holua Slide; Mookini Heiau; Puukohola Heiau; South Point Complex, etc..

- **National Park:** Throughout the Nation, people are working to conserve natural resources, protect historic sites, and to provide recreational opportunities for a growing population. Many communities also are looking for ways to combine conservation with efforts to attract visitors who will help support the local economy. The National Park Service is responsible for carefully screening proposals for new park units to assure that only the most outstanding resources are added to the National Park System. Regardless of economic considerations or other factors, a new national park area must meet criteria for national significance, suitability, and feasibility. Various other management options are also weighed.

  A proposal will be considered nationally significant if it meets all four of the following standards:

  - it is an outstanding example of a particular type of resource.
  - it possesses exceptional value or quality in illustrating or interpreting the natural or cultural themes of our Nation's heritage.
  - it offers superlative opportunities for recreation for public use and enjoyment, or for scientific study.
  - it retains a high degree of integrity as a true, accurate, and relatively unspoiled example of the resource.

- **National Heritage Area:** National Heritage Areas (NHA) expand on traditional approaches to resource stewardship by supporting large-scale, community centered initiatives that connect local citizens to the preservation and planning process. National Heritage Areas are places where natural, cultural, historic and scenic resources combine to form a cohesive, nationally important landscape arising from patterns of human activity shaped by geography. These patterns make National Heritage Areas representative of the American experience through the physical features that remain and the traditions that have evolved in them. These regions are acknowledged by Congress for their capacity to tell important stories about our nation. Continued use of National Heritage Areas by people whose traditions helped to shape the landscape enhances their significance.[384]

  The heritage area concept offers an innovative method for citizens, in partnership with local, state, and Federal government, and nonprofit and private sector interests, to shape the long-term future of their communities. The partnership approach creates the opportunity for a diverse range of

382 http://www.nps.gov/nhl/
383 http://www.nps.gov/nhl/tutorial/Benefits/Benefits2.htm
384 www.nps.gov/history/heritageareas

constituents to come together to voice a range of visions and perspectives. Partners collaborate to shape a plan and implement a strategy that focuses on the distinct qualities that make their region special. The National Park Service (NPS) provides technical, planning and limited financial assistance to National Heritage areas.

- **World Heritage Areas:** World Heritage Areas embody the diversity of the planet, and the achievements of its peoples. They are places of beauty and wonder; mystery and grandeur; memory and meaning. In short, they represent the best Earth has to offer. The program catalogues, names, and conserves sites of outstanding cultural or natural importance to the common heritage of humanity. The pyramids of Egypt, the Great Wall of China and the Taj Mahal are some of the most outstanding examples of humanity's cultural achievements. The Great Barrier Reef, the Galápagos Islands and Serengeti National Park are among the world's greatest natural treasures.[385]

  Hawai'i Volcanoes National Park is globally recognized by the United Nations Education, Scientific, and Cultural Organization (UNESCO) as part of the Man and the Biosphere (MAB) program (Biosphere Reserve Program) and as a World Heritage Site, which is acknowledged worldwide and links the Park with the planet's most cherished and endangered treasures. The Papahānaumokuākea Marine National Monument is also a World Heritage Site.

  World Heritage properties can only be nominated by the national government of a country that has signed and ratified the World Heritage Convention. However, governments do not decide whether a property in their country is inscribed on the World Heritage List. That decision is made by the World Heritage Committee, a group of elected representatives of 21 of the States Parties based at UNESCO's headquarters in Paris.

  To be included on the World Heritage List, properties must

  - be of outstanding universal value; and
  - meet at least one of ten selection criteria.

  Benefits of the World Heritage Program including belonging to an international community of appreciation and concern for universally significant properties that embody a world of outstanding examples of cultural diversity and natural wealth; access to the World Heritage Fund (annually, about US$1 million is made available to assist States Parties in identifying, preserving and promoting World Heritage sites); and elaboration and implementation of a comprehensive management plan that sets out adequate preservation measures and monitoring mechanisms. Emergency assistance may also be made available for urgent action to repair damage caused by human-made or natural disasters. Designation increase in public awareness of the site and of its outstanding values, thus also increasing the tourist activities at the site; however, when these are well planned for and organized respecting sustainable tourism principles, they can bring important funds to the site and to the local economy.[386]

**Community-Managed Public Access**: As noted in the "Public Access" section, one way municipalities in Hawai'i have tried to address public access management issues is by developing management plans, and in some cases instituting public access management programs." The *1986 Maui County Shoreline Access Management Plan (1986)* and follow-up *Maui County Shoreline Access Inventory Update - Final Report*[387] *(2005) are cited as examples of access management plans*. Please click on the following link to review further information on these programs:

385 http://whc.unesco.org/en/about/
386 http://whc.unesco.org/en/list
387 http://www.co.maui.hi.us/documents/17/68/97/ShorelineAccessReport.pdf

The "Public Access" section also cites Community-Managed Public Access Programs as a tool for managing and controlling public *access within a community. One example of community-based public access management cited is "Public Access with Kuleana" Project.* For more information on these program, please click on the following links: Access Management Programs and Public Access with Kuleana Project.

**Scenic America** Strategies for Protecting Scenic Views and Vistas: Scenic America, a nonprofit organization that helps citizens safeguard the scenic qualities of America's roadways, countryside and communities, outlines the following strategies for community seeking protection of their scenic views and vistas.[388]

- **Incentive-Based:** Incentives can provide significant motivation for preserving scenic vistas and view sheds. Grants to community groups to conduct education programs for local landowners on the benefits of view shed protection or to establish a local land trust, can help preserve scenic quality. Other strategies include providing tax breaks for property owners who donate land or easements, and establishing an awards program to honor successful scenic conservation efforts.

- **Land Purchase:** Although purchasing parcels of land or easements is among the most expensive options, outright purchase is sometimes the only way to permanently protect scenic vistas and views heds from development. One method of accomplishing this is to establish a land trust. Land trusts are private organizations at the local, state, or regional level that hold land and partial interests in land for the benefit of the public. Some land trusts use "revolving" funds to purchase threatened land and then resell it at cost to buyers who agree to specific land use restrictions. Land trusts also use their resources to educate property owners on the benefits of voluntary land or easement donations.

## Easement and Acquisition Priorities

**Conservation Easements:** Conservations easements are voluntary legal agreements between a landowner and a land trust or government agency that permanently limits uses of the land in order to protect its conservation values. The agreements typically allow landowners to continue to own and use their land, and they can also sell it or pass it on to heirs. Easements are a viable alternative to development because they can provide cash flow, reduce property and estate taxes, and qualify the owner for tax deductions.

Conservation values can include open space, scenic views, agriculture, natural habitats, ecosystem services, historic and cultural resources, or other characteristics valued by the community. Conservations easements can be a "win-win" for the landowner and the community; however, up-front costs can be high, and the easements typically take considerable time to prepare and finalize. As a result, landowners who pursue easements often have non-financial motivations, like multi-generational ties to the land.

Each easement is tailored to the unique characteristics of the land and circumstances of the owner, and there is considerable flexibility in how easements are crafted. For example, the legal metes and bounds of the easement can be drawn creatively to accommodate a diversity of uses, and some development is allowed as long as it is consistent with the goals of the community and the trust or agency that holds the easement. Easements have been executed that allow home sites, farm infrastructure, recreation, tourism, and other components that increase the land's long-term financial viability. The most effective easements also clearly outline management responsibilities.

388 www.scenic.org/issues/scenic-easements-a-view-protection/strategies-for-protecting-scenic-views-and-vistas

The O'ahu Resource Conservation and Development Council (RC&D)[389] has a useful online directory of land preservation tools[390], including presentations from land preservation workshops[391].

**Land Trusts:** There are several organizations in Hawai'i that help landowners prepare conservation easements and hold the easements in trust:

- Trust for Public Land (TPL)392: TPL is a 40-year-old national organization that has had an active office in Hawai'i , where it has helped conserve more than 36,000 acres, including coastal, heritage, ad agricultural lands at Honu'apo, Kāwā, Lapakahi, Wao Kele o Puna, Waianae, and Turtle Bay.

- Hawaiian Islands Land Trust (HILT)393: In 2011, the Kaua'i Public Land Trust, O'ahu Land Trust, Maui Coastal Land Trust, and Hawai'i Island Land Trust joined forces to form the HILT.

- Land Trust Alliance394: The Land Trust Alliance is a national network of conservation professionals and organizations.

**Funding:**

- **Hawai'i County Public Access, Open Space, and Natural Resources Preservation Commission (PONC)**: HCC section 2-214 establishes the Public Access, Open Space, and Natural Resources Preservation Fund and the PONC. In addition to a percentage of real property taxes, grants, private foundation funds, and proceeds from the sale of general obligation bonds may also be deposited into the Fund. In November 2012, voters amended the County Charter to require that a minimum of 2.0% of real property tax revenue be contributed to the Fund.

  The Fund shall be used to purchase (or finance the purchase of) lands or property entitlements for public outdoor recreation, education, access to beaches and mountains, historic or culturally important areas and sites, significant habitat or ecosystems, forests, beaches, coastal areas, natural beauty, agricultural lands, and watershed lands.

  Annually, the PONC updates a prioritized list of lands worthy of preservation. The public is invited to nominate properties for acquisition. Based on recommendations from the PONC via the Mayor, and with approval of the County Council, the Finance Department seeks to acquire property for preservation with these funds.

  Newly acquired lands require plans for managing natural, cultural, trail, recreation, and other resources on site. Based on experience to date, County lands used for active recreation (e.g., established parks and facilities) are managed by the Department of Parks and Recreation, and other lands are managed by community-based organizations. The Finance Department's division of Property Management focuses solely on acquiring property and does not have the capacity to manage newly acquired land. In November 2012, voters amended the County Charter, setting aside .25% of real property tax income (capped at $3 million) for maintenance of protected land.

- **DLNR DOFAW Legacy Lands Conservation Program (LLCP)[395]**: The LLCP provides grants to local organizations and agencies seeking to acquire land and easements for Hawai'i 's unique and valuable resources, including watersheds, parks, coastal areas and access, natural areas, habitat,

389 http://www.oahurcd.org/
390 http://www.oahurcd.org/land-preservation-2/
391 http://www.oahurcd.org/Presentations-and-Materials/
392 www.tpl.org
393 http://www.hilt.org/
394 http://www.landtrustalliance.org/

395 http://hawaii.gov/dlnr/dofaw/llcp

agricultural production, cultural and historical sites, open spaces, and scenic, recreational, and public hunting resources. The LLCP has invested $21.5 million in protecting 7,966 acres in Hawai'i.

- **Other Funding Sources**: There are also other funds available to secure easements for coastal, agricultural, and forest lands, including the Coastal and Estuarine Land Conservation Program, the Farm and Ranchland Protection Program, and the Forest Legacy Program. The sections specific to those resources below introduce those funds.

## Development of an Effective Stream Resource Management Program

Similar to other challenges in the Valley, there are also a variety of opinions regarding the necessity and components of a stream maintenance program. Several studies that have been conducted over the last 15 years identified the need for a stream maintenance program to ensure sufficient conditions for the cultivation of taro as well as providing flood protection. The aforementioned studies have numerous and detail recommendations; however, the complexity of the permitting process and the implementation cost have resulted in minimal implementation of the technical and organizational suggestions. The following are a summary of resources and existing strategies that the community can explore to assist with developing and implementing a stream maintenance program.

### Recommend Advocacy

**House Bill 414:** In early 2013, H.B. No. 414, Waipi'o Valley Advisory Commission, was introduced to the State Legislature. H.B. No. 414, "Establishes the Waipi'o Valley Advisory Commission to advise the Department of Land and Natural Resources on the development of a long-term plan for ensuring the proper stewardship, preservation, and maintenance of Waipi'o Valley." and " Appropriates funds for the design and construction of flood damage reduction and stream stabilization in Waipi'o Valley."[396]

The purpose and intent of this measure is to promote the proper stewardship, preservation, and maintenance of Waipi'o Valley on the island of Hawai'i.

Although the draft Bill passed the House, it was ultimately not passed by the Senate prior to the end of the 2013 legislative session. However, bills introduced during the session of an odd-numbered biennium year that fail to meet the deadline can be considered again during the session of an even-numbered biennium year. Consequently, H.B. No. 414 can be reconsidered in the 2014 legislative session.

### Community-based, Collaborative Resource Management

**Hanalei Watershed Hui:** Hanalei Watershed Hui is a 501(c)(3) non-profit environmental organization that strives to care for the Ahupua'a of Hanalei, Waioli, Waipa, and Waikoko guided by Hawaiian and other principles of sustainability and stewardship, integrity and balance, cooperation and aloha, cultural equity and mutual respect.

The Hanalei Watershed Hui (the Hui), was established in 2000 as a 501c3 nonprofit to implement the Hanalei American Heritage River Program and Hanalei Watershed Action Plan. The Hui has focused its effort and funding awards on the assessment and restoration of the natural, cultural and economic assets of Hanalei. Recent projects include a continuing water quality monitoring program, restoration of the Okolehao Trail, replacement of aging cesspools in the riparian zone of the Hanalei River and the establishment of the Hanalei Makai Watch Program. The Hui also offers a continuing cultural education program which highlights watershed stewardship and kuleana curriculum. The Hui partners with Federal, State, County, NGO and community organizations and residents to address issues and concerns

396 http://www.capitol.hawaii.gov/measure_indiv.aspx?billtype=HB&billnumber=414&year=2013

raised by the community and scientific assessment.[397] In a 2008 update to the HWH Strategic Plan, the following areas of focus were selected:

- ensure water to Hanalei famers
- improve water quality in Hanalei River and Bay
- sustainable fishery
- Develop integrated resource management plan, mauka to makai
- Get the cars off the beach
- Enforce the no wake zones in the Hanalei River and Bay
- Develop a Hanalei Reef Name map
- No big boats in Hanalei
- Teaching youth about their place and kuleana

**American Heritage Rivers:** The heart of the American Heritage Rivers initiative is locally driven and designed solutions. The federal role is confined to fostering community empowerment, while providing focused attention and resources to help river communities restore their environment, revitalize their economy, renew their culture and preserve their history.

The American Heritage Rivers initiative has three objectives: natural resource and environmental protection, economic revitalization, and historic and cultural preservation. The role of the federal government is to support community-based efforts through a complementary role with state, local and tribal governments as follows:[398]

- Identify existing programs that can offer assistance to the river communities.
- Refocus programs, grants and technical assistance as is practicable and permitted by law and regulation.
- Identify technical tools that can be applied to river protection, restoration, and community revitalization.
- Provide access to existing scientific data and information consistent with agency mission and resources and as is permitted by law.
- Cooperate with state, local and tribal governments.
- Commit to a policy that has a positive effect on the natural, historic, economic, and cultural resources of the rivers.
- Provide, at the communities' request, a representative called a "River Navigator" whose role is to facilitate community-agency interchange.
- Allow public access to the river for agencies with facilities along the river.
- Cooperate with communities on projects that protect or preserve stretches of the river that are on federal property or adjacent to a federal facility.

397 www.hanaleiwatershedhui.org/about
398 www.14rivers.org/index.html

The Hanalei River in Kauai is an American Heritage River.

## Continuing restoration of the cultural-based agriculture: Preservation and perpetuation of the taro, cultural-based agriculture.

In 2008, the Hawai'i State Legislature passed Act 211, establishing the Taro Security and Purity Task Force. The Task Force; which included representatives from University of Hawai'i , State Departments of Agriculture, Land and Natural Resources, Farm Bureau Federation, 'Onipa'a Nā Hui Kalo and taro farmers from each of the Islands; met consistently for 12 months to gather input from taro growing communities on all islands. The result was a comprehensive report with 87 recommendations based on the following keys concepts:

- Definitions of taro security and purity,
- Descriptions of the taro farmer life style,
- Importance of taro to Hawai'i 's identity,
- Taro as a centerpiece of Hawaiian culture,
- Taro's role in agriculture, and
- How current land designations impact on the cultural continuity of taro and its ability to contribute towards food self-sufficiency.

One of the key community challenges relative to taro cultivation is the decline of production throughout the 20th century. Today, approximately 150 acres of taro are grown, which is far below the estimated 800 acres of the past. In addition to the comprehensive recommendations in the report, the following resources and programs provide potential strategies to encourage the growth of traditional taro production in the Valley.

### Establish Policy/Official Map

**Local Property Tax Reduction Programs**: Please click on the following link for information on this program and its potential applicability to protecting agricultural uses in Waipi'o Valley: County Property Tax Reduction. The CDP could include an Action item for the County to reassess the current property tax structure for agricultural lands.

### Reccommended Advocacy

**State Important Agriculture Lands**:[399] Please click on the following link for information on this program and its potential applicability to protecting agricultural uses in Waipi'o Valley: IAL

### Community-based, Collaborative Resource Management

There are a variety of existing tools community can utilize to protect agricultural uses. Please click on the following link for more information on Agricultural Conservation Easements: PACE

In addition to the USDA Specialty Crop Block Grant Program listed below, a variety of programs and Funding for Agricultural Land Management can be found at the following link: Programs and Funding for Agricultural Land Management.

- **USDA Specialty Crop Block Grant Program:** The purpose of the Specialty Crop Block Grant Program (SCBGP) is to solely enhance the competitiveness of specialty crops. Specialty crops are defined as "fruits, vegetables, tree nuts, dried fruits, horticulture, and nursery crops (including floriculture)."

399 http://hawaii.gov/hdoa/Info/ial/important-agricultural-lands-update

The Hawaii State Department of Agriculture administers the program in behalf of the USDA and annually solicit request for proposals for qualifying project funding.

## Waipi‘o Valley Strategies Analysis Table

The following Table shows the process used in evaluating the findings from the research and consultations throughout the analysis process up to this point. The Table clearly identifies:

- **Challenges** (1st column) identified in the analysis.
- **Support/Rationale** (2nd column) lists Policy Support (applicable governmental policies) and Plan Support (how the issue relates to researched plans/studies). This column will generally link back to the associated sections of the analysis document where that strategy support is located.
- **Possible CDP Strategy Direction** (3rd column) – the general strategy direction the CDP will likely be taking in addressing the challenge in order to meet the community’s objectives.

The Strategy Directions are categorized into one of the four following CDP Strategy Types:

  - **Policy**: establish policy with policy maps (Official Land Use Map) and policy statements related to land use, watersheds and natural features, public improvement priorities, government services, and public re/development;
  - **Advocacy:** recommend advocacy with federal and state policy makers and agencies for policies, regulations, incentives, programs, and action;
  - **Community-based, Collaborative Resource Management (CBCM)**: including research, place-based planning and program design, and program implementation;
  - **Easement and Acquisition (E&A):** identify easement and acquisition priorities by fee simple ownership or through conservation easements;

At times, the CDP Strategy Direction will relate to other Analysis sections not yet complete (Community and Economy). In those cases, the table may refer to the appropriate section still under development, but will not contain a link to that section until that section is complete.

This is a working document, and the **Possible CDP Strategy Directions** are intended to be preliminary. We expect community feedback that may provide additional information that could further inform our analysis.

**Table 12. Waipi‘o Valley Analysis Table**

| Challenges | Support/Rationale | Possible Strategy Direction |
|---|---|---|
| **Protection of Natural and Cultural Resources, includes strategies to address:**<br>▪ **Protection and maintenance of historic/cultural resources**<br>▪ **Managing access into the Valley**<br>▪ **Managing tourism**<br>▪ **Protection of viewsheds** | **Plans/studies Support:**<br>▪ Waipi’o Valley : Towards Community Planning and Ahpua’a Management (WVTCPAM)<br>▪ Waipi’o Valley Community Action Plan (WVCAP)<br>▪ Waipi’o Valley : Towards Community Planning and Ahpua’a Management, | **Policy:** Designate Waipi‘o Valley as a Wahi Pana Overlay and include an Action item in the CDP to develop Overlay regulations to protect and managed the Valley's natural and cultural resources.<br>**Policy:** Explore methods for continued funding of the Waipi‘o Education and Information Program (Waipi‘o Valley Rangers Program). |

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| | Phase II (WVTCPAM11)<br><br>▪ Waipi'o Stream Management Plan (WSMP)<br><br>**Policy Support:**<br><br>General Plan: 2.3(h); 6.2(a); 6.2(b); 6.3(d); 6.3(e); 6.3(f); 6.3(f); 6.3(g); 6.3(h); 6.3(i); 6.3(o); 6.5.6.2(a); 7.3(b); and 8.3(r) | **Policy:** Support CIP funding for the Waipi'o Valley Lookout Visitor Center and support for its related Educational Programs through grant funding.<br><br>**Policy:** Establish a Resource Protection Ordinance for the south and southeast portions of the Valley rim.<br><br>**Policy:** Amend the SMA Boundary to include properties on the rim and within the A-40a Zone District.<br><br>**Policy:** Secure Certified Local Government status for County of Hawaii to secure technical and financial assistance for cultural resource identification and protection.<br><br>See Public Access Analysis Table for specific Policy recommendations to identify and manage public access, including the following:<br><br>▪ Work with other government agencies to make improvements to the public access "system."<br><br>**CBCM**: Form a Cultural Resources Subcommittee to the CDP Action Committee to:<br><br>▪ take the lead in identifying and inventorying important sites<br><br>▪ map resources<br><br>▪ make recommendations to County Cultural Resource Commission<br><br>**CBCM**: Designation of a National or World Heritage Area or National Historic Landmark to effectively manage the Valley's natural and cultural resources |

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| | | and tourism.<br><br>**CBCM:** Strengthen Community capacity through Hawai'i Community Stewardship Network<br><br>**CBCM:** Partner with existing Hawai'i Land Trusts to acquire land through conservation easements and acquisition to ensure view shed protection.<br><br>**CBCM**: Secure funding through PONC, DLNR LLCP, or other similar programs for purchase of easements and potential acquisition of land to protect views of the Valley rim.<br><br>See strategies listed under the Community Managed Public Access Section of the Public Access Analysis Table.<br><br>**Advocacy:** Encourage the State's implementation of the 'Aha Moku System approach to natural and cultural resource management. Advocate the County of Hawai'i's integrate into the General Plan and CDPs policies, rules, regulations, and ordinances consistent with the with the 'Aha Kiole Commission's recommendations for resource protection. |
| **Stream Maintenance** | **Plans/studies Support:**<br><br>▪ WVTCPAM<br>▪ WVCAP<br>▪ WVTCPAM11<br>▪ WSMP<br><br>**Policy Support:**<br><br>▪ General Plan: 4.3(g); 8.3(l); 5.5.9.2(a) | **Policy**: See strategies listed under Watershed Resource Management Analysis Table, including the following:<br><br>▪ County to build internal capacity to support development of watershed and stream management plans and assistance for securing stream maintenance related permits.<br><br>**CBCM:** Support community organizations, such as the |

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| | | Waipi'io Circle in formulating a watershed plan based on a Hanalei Watershed Hui model or similar community-based management plan.<br><br>**CBCM:** Support partnerships with state, federal, and non-profit agencies on initiatives such as the American Heritage Rivers Program to secure funding and technical resources.<br><br>**Advocacy:** Support Reintroduction of H.B. 414 or similar legislation that would provide funding and technical assistance for stream maintenance programs. |
| **Continuing Restoration of Culturally-based Agriculture** | **Plans/studies Support:**<br>▪ WVTCPAM<br>▪ WVCAP<br>▪ WVTCPAM11<br><br>**Policy Support:**<br>▪ General Plan Policies: 2.3(a); 2.3(s); 14.2.2(b); 14.2.2(a); 14.2.3(a) | **Policy:** Re-examine County tax reduction programs to better align with agricultural preservation and production goals.<br><br>**CBCM:** Utilize the financial and technical resources provided through the USDA NRCS, including CTA, EQIP, AMA, CLP and CSP.<br><br>**Advocacy:** Support the State and County's efforts in developing the Important Agriculture Lands Program.<br><br>**Advocacy:** Encourage the state to apply for Specialty Crop Block Grants to strengthen taro production. |

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