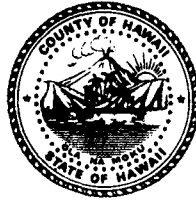


PUNA COMMUNITY DEVELOPMENT PLAN



SEPTEMBER 2008
(As Amended)

COUNTY OF HAWAI‘I



STATE OF HAWAI‘I

BILL NO. 194
(DRAFT 3)

ORDINANCE NO. 10 104

AN ORDINANCE AMENDING THE PUNA COMMUNITY DEVELOPMENT PLAN, AS ADOPTED BY ORDINANCE NO. 08-116.

BE IT ORDAINED BY THE COUNCIL OF THE COUNTY OF HAWAI‘I:

SECTION 1. The Puna Community Development Plan, as adopted by Ordinance No. 08-116, is hereby amended as indicated by the revisions contained in the document attached hereto and labeled as “Proposed Amendments.”

SECTION 2. Amendments to the Puna Development Community Plan, as provided in the document attached hereto and labeled as “Proposed Amendments,” are indicated by Ramseyer format, whereby material to be repealed is bracketed and stricken through, and material to be added is underscored.

SECTION 3. Twelve maps in the Puna Community Development Plan are amended, and one map is added (Exhibit I), as attached hereto as Exhibit A through M as follows:

- Exhibit A:** Figure 3-2: Proposed Town and Village Center Locations
- Exhibit B:** Figure 4-1: Proposed Transportation Corridor Improvements
- Exhibit C:** Figure 5-1: Kea‘au Regional Town Center
- Exhibit D:** Figure 5-2: Pāhoa Regional Town Center
- Exhibit E:** Figure 5-3: Hawaiian Paradise Park Regional Town Center and Village Centers
- Exhibit F:** Figure 5-4: Volcano Community Village Center
- Exhibit G:** Figure 5-5: Mountain View Community Village Center
- Exhibit H:** Figure 5-6: Kurtistown Community Village Center
- Exhibit I:** Figure 5-7: Maku‘u Community Village Center
- Exhibit J:** Figure 5-8: ‘Āinaloa Neighborhood Village Center
- Exhibit K:** Figure 5-9: Hawaiian Beaches Neighborhood Village Center

Exhibit L: Figure 5-10: Orchidland Neighborhood Village Center

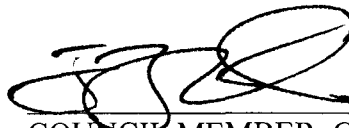
Exhibit M: Figure 5-11: Nānāwale Neighborhood Village Center

SECTION 4. In printing the Puna Community Development Plan, as amended, the brackets, bracketed material, and underscoring need not be included; the maps labeled as Exhibits A through M shall supplant their corresponding maps or be inserted as a new map (Exhibit I); the table of contents, header/footer, and page numbers shall be updated to correspond with the adopted amendments; the month and year of adoption of this ordinance shall supplant the existing provisions for such, in all instances; the title page shall indicate the original adopting ordinance and the ordinance enacting these amendments; and the document shall be printed using a standard font (e.g., Times New Roman).

SECTION 5. Severability. If any provision of this ordinance or the application thereof to any person or circumstance is held invalid, the invalidity shall not affect other provisions or applications of the ordinance which can be given effect without the invalid provision or application, and to this end, the provisions of this ordinance are declared to be severable.

SECTION 6. This ordinance shall take effect upon its approval.

INTRODUCED BY:



COUNCIL MEMBER, COUNTY OF HAWAI'I

Kona, Hawai'i
Date of Introduction: October 6, 2010
Date of 1st Reading: October 6, 2010
Date of 2nd Reading: October 20, 2010
Effective Date: November 4, 2010

REFERENCE: **Comm:** 664.40

OFFICE OF THE COUNTY CLERK
 County of Hawai'i
 Kona, Hawai'i

REC 1450

(Draft 3)

Introduced By: J Yoshimoto
 Date Introduced: October 6, 2010
 First Reading: October 6, 2010
 Published: N/A

REMARKS: _____

Second Reading: October 20, 2010
 To Mayor: October 28, 2010
 Returned: November 4, 2010
 Effective: November 4, 2010
 Published: November 12, 2010

REMARKS: _____

ROLL CALL VOTE

	AYES	NOES	ABS	EX
Enriques	X			
Ford		X		
Greenwell	X			
Hoffmann		X		
Ikeda	X			
Naeole-Beason	X			
Onishi	X			
Yagong	X			
Yoshimoto	X			
	7	2	0	0

ROLL CALL VOTE

	AYES	NOES	ABS	EX
Enriques	X			
Ford		X		
Greenwell	X			
Hoffmann		X		
Ikeda	X			
Naeole-Beason	X			
Onishi	X			
Yagong	X			
Yoshimoto	X			
	7	2	0	0

I DO HEREBY CERTIFY that the foregoing BILL was adopted by the County Council published as indicated above.

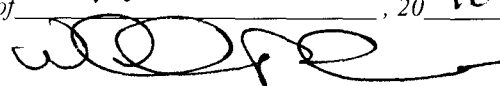
APPROVED AS TO
 FORM AND LEGALITY:


 DEPUTY CORPORATION COUNSEL
 COUNTY OF HAWAII

Date NOV - 4 2010


 COUNCIL CHAIRMAN


 COUNTY CLERK

Approved/Disapproved this 4th day
 of November, 2010

 MAYOR, COUNTY OF HAWAII

Bill No.: 194 (Draft 3)
 Reference: C-664.40/PC-97
 Ord No.: 10 104

COUNTY OF HAWAII



STATE OF HAWAII

ORDINANCE NO. 08 116 BILL NO. 318
(Draft 4)

AN ORDINANCE ADOPTING THE COUNTY OF HAWAII PUNA COMMUNITY DEVELOPMENT PLAN.

BE IT ORDAINED BY THE COUNCIL OF THE COUNTY OF HAWAII:

SECTION 1. Purpose. The purpose of this ordinance is to adopt the Puna Community Development Plan (attached hereto as Appendix A, as amended to Draft 3) pursuant to the County of Hawaii General Plan. Section 15.1 (February 2005 as amended).

SECTION 2. Adoption. Chapter 16, section 16-2, Hawaii County Code 1983 (2005 Edition, as amended), is amended to read as follows:

“Section 16-2. Adoption of community development plans. The community development plans listed below are adopted and incorporated by reference. A copy of the plans and amendments shall be available for public inspection at the Planning Department.

PUNA. The document identified as “Puna Community Development Plan” is adopted by reference subject to later amendments by ordinance, and may be cited as the “Puna CDP.” The planning area for the Puna CDP encompasses the judicial district of Puna and the Volcano Census Designated Place that includes the Volcano Golf Course subdivision in the district of Ka’u.”

SECTION 3. Severance. In the event that any portion of this ordinance is declared invalid, such invalidity shall not affect the other parts of this ordinance.

SECTION 4. Material to be repealed is bracketed and stricken. New material is underscored. In printing this ordinance, the brackets, bracketed and stricken material, and

underscoring need not be included.

SECTION 5. Effective Date. This ordinance shall take effect upon its approval

INTRODUCED BY:



COUNCIL MEMBER, COUNTY OF HAWAII

Kona, Hawai'i

Date of Introduction: August 13, 2008
Date of 1st Reading: August 13, 2008
Date of 2nd Reading: August 27, 2008
Effective Date: September 10, 2008

REFERENCE: ~~Comm.~~ 1300.67/1 Council

OFFICE OF THE COUNTY CLERK
 County of Hawai'i
 Kona, Hawai'i

(Draft 4)

RECEIVED

Introduced By: Bob Jacobson
 Date Introduced: August 13, 2008
 First Reading: August 13, 2008
 Published: N/A

REMARKS: _____

Second Reading: August 27, 2008
 To Mayor: September 5, 2008
 Returned: September 10, 2008
 Effective: September 10, 2008
 Published: September 18, 2008

REMARKS: _____

2008 SEP 24 10:10 AM ROLL CALL VOTE				
	AYES	NOES	ABS	EX
Ford				
Higa				
Hoffmann	X			
Ikeda		X		
Jacobson	X			
Naeole	X			
Pilago	X			
Yagong	X			
Yoshimoto		X		
	6	3	0	0

ROLL CALL VOTE				
	AYES	NOES	ABS	EX
Ford	X			
Higa		X		
Hoffmann	X			
Ikeda		X		
Jacobson	X			
Naeole	X			
Pilago	X			
Yagong	X			
Yoshimoto		X		
	6	3	0	0

I DO HEREBY CERTIFY that the foregoing BILL was adopted by the County Council published as indicated above.

APPROVED AS TO
 FORM AND LEGALITY:

Am D. Self
 DEPUTY CORPORATION COUNSEL
 COUNTY OF HAWAII

Date SEP - 8 2008

[Signature]
 COUNCIL CHAIRMAN
Casey Jarman
 COUNTY CLERK

Approved/Disapproved this 10th day
 of September, 2008
Harry Kim
 MAYOR, COUNTY OF HAWAII

Bill No.: 318 (Draft 4)
 Reference: C-1300.67/PC-89
 Ord No.: 08 116



PUNA COMMUNITY DEVELOPMENT PLAN

PUNA COMMUNITY DEVELOPMENT PLAN

SEPTEMBER 2008
(Amended November 4, 2010 by Ordinance No. 10-104)

Puna Community Development Plan Steering Committee

Jon A. Olson, Chair
Greg Braun, Vice-Chair
Eddie Alonzo
Stephanie Bath
Barbara Lively
Martha Lockwood
Kim D. Tavares
Frederick R. Warshauer
Darren AhChong (former member)
JoAnne Backman (former member)
Shirley Pedro (former member)

County of Hawai'i Planning Department Staff

Christopher Yuen, Director
Larry Brown, Project Manager
Ron Whitmore, Planner

Consultant to the Steering Committee

PlanPacific, Inc.
John P. Whalen, FAICP, Principal
Christopher Pramoulmetar
Kenji Salmoiraighi

Cover: The flower of the 'ōhi'a lehua tree, which is found from mauka to makai in Puna, and is a symbol of resilience and adaptability.



PROLOGUE

ŌLELO HOĀKĀKA

What we have in common is far greater than what separates us.

We need to become teachers of generosity through our compassionate deeds, actions, and example.

We need to address globalization, environmental changes, widespread poverty, and rapid human population growth.

Existing political and economic models need to be re-conceptualized, transformed, and balanced.

A cosmic sense of purpose and belief, coupled with critical and creative thinking will help us see the possibilities of the future.

It's a kakou thing - we are all connected.

Hawaiians have been here for [centuries].

The Po'e Kahiko, the People of Old, mastered environmentalism and sustainability.

In these times, if we look back to the wisdom and ways of our ancestors, we could better move forward.

'E kuleana kakou!

It's everyone's responsibility!

Luana Jones, Puna resident this page left intentionally blank.



TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION	Page
1.1 THE SETTING	1-1
1.2 THE PLANNING CHALLENGE	1-4
1.3 ORGANIZATION OF THE PLAN	1-6
CHAPTER 2 MĀLAMA I KA ‘ĀINA	
2.1 HISTORIC, CULTURAL, AND SCENIC RESOURCES	2-3
2.1.1 GOALS	2-3
2.1.2 OBJECTIVES	2-4
2.1.3 ACTIONS	2-4
2.2 NATIVE FORESTS AND GEOLOGICAL FEATURES	2-4
2.2.1 GOALS	2-5
2.2.2 OBJECTIVES	2-5
2.2.3 ACTIONS	2-6
2.3 AQUIFERS, COASTAL WATERS AND STORMWATER	2-8
2.3.1 GOALS	2-9
2.3.2 OBJECTIVES	2-9
2.3.3 ACTIONS	2-9
2.4 SHORELINE AREA	2-10
2.4.1 GOALS	2-11
2.4.2 OBJECTIVES	2-12
2.4.3 ACTIONS	2-12
CHAPTER 3 MANAGING GROWTH	
3.1 LAND USE PATTERN	3-3
3.1.1 GOALS	3-3
3.1.2 OBJECTIVES	3-4
3.1.3 ACTIONS	3-5
3.2 AGRICULTURE AND ECONOMIC DEVELOPMENT	3-7
3.2.1 GOALS	3-8
3.2.2 OBJECTIVES	3-9
3.2.3 ACTIONS	3-9
3.3 SOCIAL SERVICES AND HOUSING	3-11
3.3.1 GOALS	3-12
3.3.2 OBJECTIVES	3-12
3.3.3 ACTIONS	3-13
3.4 PUBLIC SAFETY AND SANITATION SERVICES	3-14
3.4.1 GOALS	3-14
3.4.2 OBJECTIVES	3-15
3.4.3 ACTIONS	3-15

TABLE OF CONTENTS



3.5 PARKS AND RECREATION 3-15
3.5.1 GOALS 3-16
3.5.2 OBJECTIVES 3-16
3.5.3 ACTIONS 3-17
3.6 ENERGY SUSTAINABILITY 3-19
3.6.1 GOALS 3-20
3.6.2 OBJECTIVES 3-20
3.6.3 ACTIONS 3-20

CHAPTER 4 TRANSPORTATION

4.1 TRAFFIC DEMAND MANAGEMENT 4-2
4.1.1 GOALS..... 4-2
4.1.2 OBJECTIVES 4-2
4.1.3 ACTIONS 4-2
4.2 MASS TRANSIT 4-3
4.2.1 GOALS..... 4-3
4.2.2 OBJECTIVES 4-3
4.2.3 ACTIONS 4-4
4.3 ROADWAY NETWORK 4-5
4.3.1 GOALS 4-5
4.3.2 OBJECTIVES 4-5
4.3.3 ACTIONS 4-6
4.4 HIGHWAYS 4-7
4.4.1 GOALS 4-7
4.4.2 OBJECTIVES 4-7
4.4.3 ACTIONS 4-8
4.5 NON-MOTORIZED TRAVEL AND SCENIC BYWAYS 4-8
4.5.1 GOALS 4-9
4.5.2 OBJECTIVES 4-9
4.5.3 ACTIONS 4-10

CHAPTER 5 IMPLEMENTATION

5.1 NATURAL AND CULTURAL RESOURCES PROTECTION..... 5-1
5.1.1 BIOSPHERE RESERVE BUFFER ZONE (VOLCANO AREA) 5-1
5.1.2 REVISED GRADING AND GRUBBING CONTROLS (DISTRICT-WIDE)..... 5-2
5.2 VILLAGE CENTER FORMATION 5-3
5.2.1 ZONING DESIGNATIONS 5-3
5.2.2 CRITERIA FOR PROPOSED LOCATIONS AND BOUNDARIES 5-3
5.2.3 USE AND DESIGN STANDARDS 5-4
5.2.4 INDUSTRIAL ZONING 5-18
5.3 IMPLEMENTATION TABLE 5-19



LIST OF TABLES AND FIGURES

FIGURE 1-1: GENERAL LAND COVER MAP 1-2

FIGURE 1-2: GEOLOGIC RISK ZONES RELATIVE TO POPULATED AREAS..... 1-4

FIGURE 2-1: NATURAL AREAS UNDER FEDERAL OR STATE PROTECTION 2-2

FIGURE 2-2: PROPOSED BIOSPHERE RESERVE BUFFER ZONE 2-7

FIGURE 2-3: SHORELINE SUBSIDENCE IN KAPOHO AREA 2-11

FIGURE 3-1: ALISH AND IAL LANDS IN PUNA..... 3-2

FIGURE 3-2: PROPOSED TOWN AND VILLAGE CENTER LOCATIONS..... 3-6

FIGURE 3-3: OVERVIEW OF PARKS AND NATURAL AREA NETWORK IN PUNA..... 3-22

FIGURE 4-1: PROPOSED TRANSPORTATION CORRIDORS IMPROVEMENTS 4-12

FIGURE 5-1: KE‘EAU REGIONAL TOWN CENTER..... 5-7

FIGURE 5-2: PĀHOA REGIONAL TOWN CENTER 5-8

FIGURE 5-3: HAWAIIAN PARADISE PARK REGIONAL TOWN AND VILLAGE CENTERS..... 5-9

FIGURE 5-4: VOLCANO COMMUNITY VILLAGE CENTER..... 5-10

FIGURE 5-5: MT. VIEW COMMUNITY VILLAGE CENTER..... 5-11

FIGURE 5-6: KURTISTOWN COMMUNITY VILLAGE CENTER 5-12

FIGURE 5-7: MAKU‘U COMMUNITY VILLAGE CENTER 5-13

FIGURE 5-8: ‘ĀINALOA NEIGHBORHOOD VILLAGE CENTER..... 5-14

FIGURE 5-9: HAWAIIAN BEACHES NEIGHBORHOOD VILLAGE CENTER..... 5-15

FIGURE 5-10: ORCHIDLAND NEIGHBORHOOD VILLAGE CENTER 5-16

FIGURE 5-11: NANAWALE NEIGHBORHOOD VILLAGE CENTER 5-17

TABLE 5-1: GENERAL USE AND DESIGN CRITERIA BY VILLAGE/TOWN CENTER TYPE..... 5-6

GLOSSARY

TABLE OF CONTENTS



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Chapter 1

INTRODUCTION

1.1 THE SETTING

Puna's natural environment is dominated by volcanic activity, unique geological events and formations, and a variety of plant communities that provide habitat for native species. Eruptions of Kīlauea and the nearby volcano Mauna Loa continue to shape the ecology of the region, and even the land itself. Rainfall is higher on the windward slopes of Kīlauea, while the leeward slopes, extending into Ka'ū, are relatively arid. The wetter side is covered by thick forests of 'ōhi'a trees and hāpu'u tree ferns on all but the youngest of lava flows or cleared land. On the drier side, vegetation is more open, exposing the underlying geology.

A distinguishing feature of Puna's native forest is its interaction with repeated, relatively recent lava flows, creating varied ages of forests underlain by different compositions of lava flows, ash and explosion deposits. This, in turn, enriches biodiversity, especially in older stands of forest, known as "kipuka", that have been isolated by younger lava flows.

Some of the native animal and plant species present in Puna are endemic to Hawai'i, found nowhere else in the world. In addition, Puna harbors many other native species, such as the pueo (Hawaiian Owl), the 'amakihi, the 'apapane, and various insects, some of which are rare.

Puna's unique lava tube caves are a notable geological feature and popular attraction. Kazumura Cave is recognized as the world's longest lava cave at nearly 40 miles. The lava caves are also important as natural habitats for endemic cave-adapted species of insects and invertebrates. In addition, some of the caves were used by ancient Hawaiians as burial sites for Ali'i (royalty) and others.

Puna's geology and biological resources inspired reverence for the landscape by the original human inhabitants of Hawai'i. By cultural tradition, Kīlauea is the home of the goddess Pele, giving the volcano and its surroundings sacred status. Ancient Hawaiians recognized Puna as Pele's land, with human habitation subject to Pele's will. Maka'ainana, or commoners, were free to relocate to other ahupua'a (the lands of another chief) when Pele reasserted her dominion over the land. A map dated 1826 indicates 24 ahupua'a located around the entire coast of Puna.¹ While human settlement from ancient times was concentrated in a 1- to 3-mile band near the shoreline, mauka areas near the volcano and upper reaches of forest were visited for gathering as well as spiritual purposes.

Many of the ancient trails, which are still protected as public land or with traditional access rights, connect areas of natural beauty that have cultural significance. Even though the 19th and 20th centuries brought rapid physical and cultural changes, some of the trails lead to remote spots that are important for traditional gathering and other cultural practices. The areas

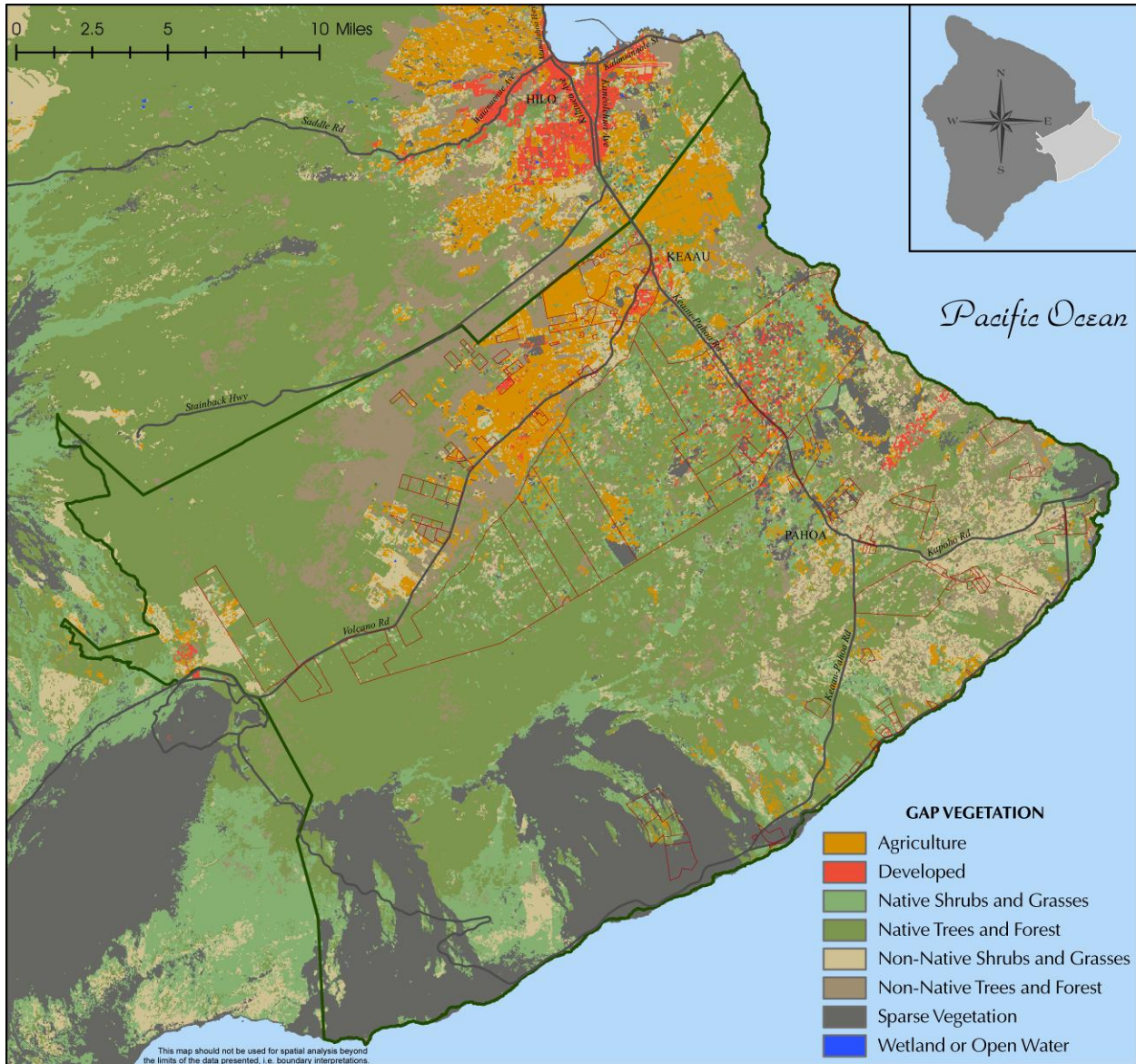
¹ Community Management Associates for the County of Hawai'i, *Puna Community Development Plan Technical Report*, 1995.



INTRODUCTION

they traverse include some stands of fairly intact native vegetation with little modern development, offering a glimpse to the past.

Figure 1-1: General Land Cover Map



Extensive tracts of Puna's landscape were transformed when Western contact brought large scale resource exploitation and agriculture in successive waves. Sandalwood export began in 1790, reaching its peak between 1810 and 1825. After Hawai'i's first forestry law in 1839 restricted the removal of sandalwood trees, cattle ranching and coffee cultivation became the leading commercial activities. By 1850, agriculture diversified with the cultivation of potatoes, onions, pumpkins, oranges, and molasses.² Soon, sugarcane was in large-scale production. The

² Hawai'i's Agricultural Gateway website, <http://www.hawaiiag.org/history.htm>

PUNA COMMUNITY DEVELOPMENT PLAN



dominant operation in Puna was the Puna Sugar Company, whose plantation fields extended for ten miles along both sides of Highway 11 between Kea‘au and Mountain View, as well as in the Pāhoā and Kapoho areas.³

Macadamia nuts and papaya were introduced in 1881 and 1919 respectively. Since the closure of the Puna Sugar Company in 1991, papaya and macadamia nut production have become the leading cash crops of Puna. About 97% of the state’s papaya production occurs in Puna, primarily in the Kapoho area. The closure of sugar production in Puna potentially opened a large amount of agriculture land to a more diversified industry, although much of the former plantation land lies unused and covered predominantly by non-native trees, shrubs and grasses.

A variety of growing conditions supports diversified agriculture in Puna. Presently, Puna produces at least 40 different agricultural products including cut flowers, fruits, vegetables, and livestock. While the district is generally a wet, warm climate, drier conditions at lowland areas such as Kapoho are ideal for cultivating papaya, whereas wetter, cooler conditions in the Volcano area are suitable for growing crops that cannot thrive in many other areas of Hawai‘i. Even the wettest of areas have produced well under greenhouse cover. Also, due to volcanic activity, the age of the soils varies considerably throughout Puna, with corresponding variations in inherent natural fertility and tendency to resist weeds.

The recent pattern of residential development and population growth in Puna is the result of widespread land subdivision within the past half century. Between 1958 and 1973, more than 52,500 subdivision lots were created. Since that time, nearly 2,500 of these lots have been covered by lava flows or have been rendered unbuildable by shoreline subsidence, reflecting the risks of building on a landscape subject to volcanic and seismic hazards. Moreover, most subdivision lots are accessed by private, unpaved roads. The streets generally lack sidewalks and lighting, and do not meet current County standards in terms of pavement width, vertical geometrics, drainage and other design parameters. None of the subdivisions have central sewer systems and only a couple have private water systems. Most lots rely on individual catchment systems supplemented with private delivery trucks for potable water. Large sections of some subdivisions are off the power grid.

Despite the natural hazards and rudimentary infrastructure and services in these subdivisions, build-out of the lots has been occurring, with the northeast quadrant of Puna and in the vicinity of Volcano experiencing the highest rates of population growth. Puna is experiencing the fastest rate of growth of all the districts in the County of Hawai‘i. The Census population count in 2000 for Puna was 31,335. In March 2007 the estimated population was 43,071, an increase of over 37% in less than 7 years. By 2030, the population is projected to grow to approximately 75,000. Since only about one-quarter of the available lots have been developed at present, it is clear that these extensive subdivisions present formidable challenges to the natural environment and the rational management of development and future population growth.

³ Hawai‘i Sugar Planters’ Association, Plantation Archives, http://www2.hawaii.edu/~speccoll/p_puna.html



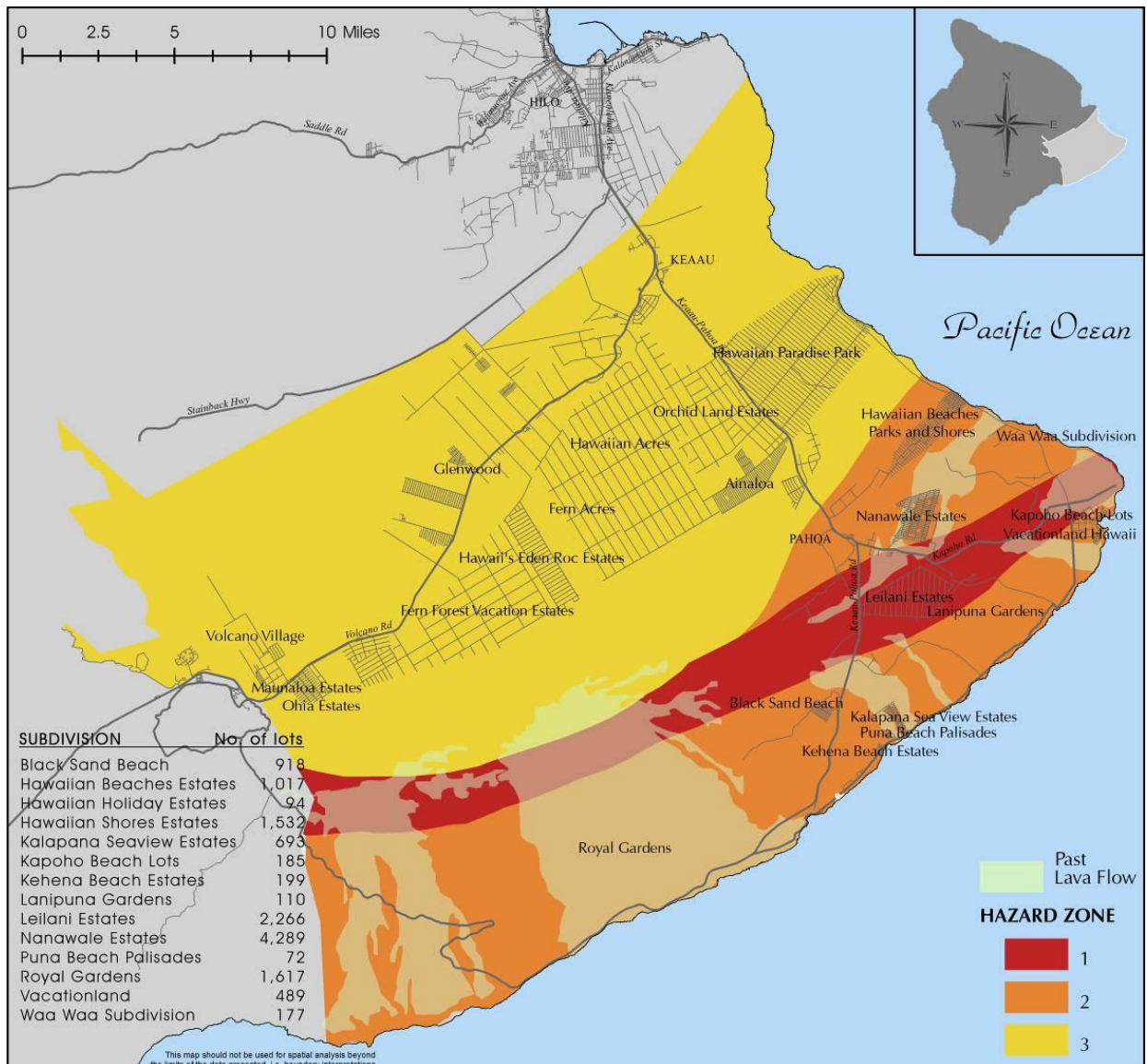
INTRODUCTION

1.2 THE PLANNING CHALLENGE

If Puna continues to develop at the present rate within the framework of the extensive subdivisions, there will be several types of significant, long-term consequences:

- An increasing number of people and property improvements are being put at risk due to natural hazards. All of Puna lies within the three most hazardous geological risk zones: LF1, LF2 and LF3. About 6,400 subdivision lots lie in the highest hazard zone, LF1, and over 500 of these are exposed to additional risks from subsidence, tsunami and earthquakes. That 2,038 lots in the lower hazard zone LF2 have been covered or cut off by lava flows in recent decades underscores the hazardous nature of much of the district.

Figure 1-2: Geological Risk Zones Relative to Populated Areas and Subdivisions



PUNA COMMUNITY DEVELOPMENT PLAN



- Because Puna’s subdivisions are so large and have few arterial streets, evacuation of residents on short notice in the event a lava flow, earthquake, tsunami or hurricane is a significant problem with serious consequences to public safety. The potential problem worsens as subdivision lots continue to develop and no infrastructure improvements are made.
- As more lots are developed, an increasing number of residents expect improved infrastructure. The cumulative impact of widespread use of cesspools on the quality of the aquifer and coastal waters is undetermined. Retrofitting infrastructure improvements is expensive, and not all residents are willing to either bear the cost or accept the transition from a “rural” setting to one that is more suburban.
- Because subdivision lots were sold in their undeveloped state rather than with dwellings, development has occurred in an uneven, “leap-frog” pattern, which makes it even more difficult to develop infrastructure and provide services to the population. Residents often must make long trips to employment, schools, shopping and other destinations to meet daily needs.
- While most of these subdivisions are on agricultural-zoned lands, the actual use of developed lots is predominantly residential. As in-fill residential development continues, it will be more difficult for existing small-lot agricultural uses to remain viable due to complaints from neighbors about nuisance effects of agricultural operations and potential increases in crop theft or vandalism.
- Lot development adversely impacts the native forest in an obvious way when an entire lot is cleared of vegetative cover to make way for buildings and yards. But clear-cutting and pin-to-pin grading and grubbing of lots has subtler impacts, as well, such as:
 - Openings in the forest promote the spread of invasive, non-native species. Non-native plants affect the forests by changing the soil chemistry and increasing shade, making it hard for native plants to compete and survive.
 - Fragmenting the forest creates “edge” habitat that further accelerates the decline of native organisms.
 - Fragmentation also changes the microclimate of adjacent forest (i.e., increased temperature and sunlight and decreased moisture in the understory), altering growing regimes for plants and the suitability of nesting sites.
 - Grading creates boggy areas devoid of vegetation, providing breeding habitat for mosquitoes, a vector for avian malaria, which further threatens the native bird population.
 - Re-contouring of lots through grading and filling alters local drainage patterns, affecting adjacent properties or rights-of-way.
 - Lot grading can lead to the collapse of an underlying lava tube, which in turn may expose a unique cave ecosystem or an ancient burial site or artifact.



INTRODUCTION

The combination of these challenges calls for bold planning initiatives to re-shape the pattern of future growth and development in a manner that is more in harmony with the natural setting and more supportive of a better, sustainable quality of life. These initiatives are embodied in the three main themes of this plan.

1.3 ORGANIZATION OF THE PLAN

The Puna Community Development Plan is organized into three overarching themes that correspond to the top three issues that face the region, as identified in the public involvement process, including:

- Public participation and County policy, as reflected in earlier planning efforts, including the draft Puna Community Development Plan in the early 1990's, the County of Hawai'i General Plan (2005), the Puna Regional Circulation Study (2005), and the various community-based master plans produced for several of Puna's subdivisions and villages.
- The 130 Small Group Meetings held throughout Puna in early 2006 to solicit issues, concerns and ideas at the "grass roots" level.
- The two public workshops held in July and September, 2006, to provide background information on conditions and trends and potential tools to address issues, as well as to solicit additional comments and ideas from Puna stakeholders.
- The analyses and recommendations in written reports prepared and submitted by the citizen-based Working Groups.
- Comments received on the series of three Working Papers prepared by the project consultant to address each of the three themes, drawing from the reports of the Working Groups and the preceding planning efforts.
- Deliberations and decisions by the Puna Community Development Plan Steering Committee in a series of meetings in September through December 2007 on preliminary goals, objectives and actions compiled by the project consultant, based on the results of the above work products.

At its January 18, 2007 meeting the Steering Committee adopted the following vision statement to embrace the three themes and guide the direction of the plan:

The Vision: Mālama Puna A Mau Loa!

Residents of Puna live in harmony with the `āina while promoting a sustainable vibrant local economy, healthy communities, and a viable transportation system that is accessible, friendly and safe for now and future generations.

PUNA COMMUNITY DEVELOPMENT PLAN



The three themes of this plan are presented in the following order:

- **Mālama I Ka ‘Āina** establishes how the contextual natural, historic and cultural features of Puna should be preserved and respected. The goals, objectives and implementing actions under this theme address cultural and historic sites and districts; forest lands and unique geological features; scenic resources; and drainage, aquifers and coastal water quality.
- **Growth Management** addresses how the future pattern of human settlement and land use should be shaped to respect that context and support the desired quality of life for Puna’s residents. The goals, objectives and implementing actions under this theme address the land use pattern; agricultural and economic development; public services, social services and housing; parks and recreation and renewable energy and energy efficiency.
- **Transportation** focuses on sustainable approaches to transportation to support the goals of the two above themes. The goals, objectives and implementing actions under this theme address mass transit and alternative travel modes, travel demand management and roadway connectivity and safety.



INTRODUCTION

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Chapter 2

MĀLAMA I KA ‘ĀINA

Despite the destruction of native forest and other resources that has occurred in Puna, and the potential for much more damage through land development in the extensive subdivisions, as described in Chapter 1, there remains a good opportunity not only to protect what is left, but even reverse some of the historical impacts.

Puna contains vast acreage of largely intact natural area that comes under the protection of Federal and State regulations; for example:

- The western portion of Puna is dominated by Hawai‘i Volcanoes National Park and the adjoining upper east Hawai‘i rainforest. The Park was designated by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) as an International Biosphere Reserve in 1980, reflecting its value for research and protection of evolutionary resources, and as a World Heritage Site in 1987, citing its geological resources.
- The State of Hawai‘i designated two areas adjoining the Park as Natural Area Reserves -- Kahauale‘a and Pu‘u Maka‘ala -- meeting the same standards of resource quality and protective management as the Biosphere Reserve.
- The State also manages several other forest reserves in Puna comprising 131,659 acres: Upper Waiākea Forest Reserve, Waiākea Forest Reserve, ‘Ōla‘a Forest Reserve (Mountain View Section), Nānāwale Forest Reserve, Malama Kī Forest Reserve, Keau‘ohana Forest Reserve, and the recently acquired Wao Kele O Puna Forest Reserve.⁴
- The State Conservation District, which encompasses almost all of the above areas as well as some additional lands, is organized as a regulatory hierarchy under the jurisdiction of the Hawai‘i Department of Land and Natural Resources (DLNR). There are five subzones of the Conservation District, each intended to provide a degree of regulatory protection that reflects the intactness or relative significance of the resources that are present in those subzones. About half of Puna’s Conservation District is in the Protective Subzone, which is the most restrictive of the five subzones in terms of allowable uses. The remainder is in either the Limited Subzone, which is designated for areas with potential high risk of natural hazard, or the Resource Subzone, which is generally applied to less intact forest reserves.
- The Conservation District also includes the submerged lands beneath coastal waters. DLNR’s Office of Conservation and Coastal Lands therefore addresses shoreline and near-shore issues and regulations. The Hawai‘i Department of Health (DOH) is

⁴ The Wao Kele O Puna Forest Reserve is owned by the Office of Hawaiian Affairs but managed by DLNR’s Division of Forestry and Wildlife.

