

Kamakana Villages at Keahuolu

TMK (3) 7-4-021:020
Keahuolu, North Kona, Hawai'i



Environmental Report

Applicant:

Forest City Hawaii Kona, LLC

Hawaii Housing Finance and Development Corporation

Prepared By:



January 2010

The cover photo of the Alahe'e (indigenous to Hawai'i) was taken in the ahupua'a of Keahuolu. In ancient times, the stem of the Alahe'e was used for O'o (digging sticks), fishhooks and spears.

KAMAKANA VILLAGES AT KEAHUOLU

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Environmental Report

Applicant:

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January 2010

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- B. Archaeological Mitigation Plan Update, Kamakana Villages at Keahuolu Project, Land of Keahuolu, North Kona District, Island of Hawai‘i, TMK: (3) 7-4-21:20, prepared by Haun & Associates, November 2009.
- C. Preliminary Engineering Report, for Kamakana Villages at Keahuolu, Kailua-Kona, Hawai‘i, TMK: (3) 7-4-021: 20, prepared by Lyon Associates, December 2009.
- D. Traffic Impact Analysis Report for the Proposed Kamakana Villages at Keahuolu, Tax Map Key: (3) 7-4-021:020, prepared by The Traffic Management Consultant, December 2009.
- E. Market Study, Economic Impact Analysis, and Public Costs/Benefits Assessment of the proposed Kamakana Villages at Keahuolu Community, Keahuolu, North Kona, Hawai‘i, prepared by The Hallstrom Group, Inc., October 2009.

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1.0 INTRODUCTION

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1.0 INTRODUCTION

1.1 PROJECT INFORMATION SUMMARY

Type of Application:	Petition for State Land Use District Boundary Amendment County of Hawai'i Project District Rezoning Application Hawaii Revised Statutes Section 201H-38 Resolution
Applicants:	Forest City Hawaii Kona, LLC 5173 Nimitz Road Honolulu, Hawaii 96818 Hawaii Housing Finance and Development Corporation 677 Queen Street, Suite 300 Honolulu, Hawaii 96813
Agent:	Group 70 International, Inc. 925 Bethel Street, 5 th Floor Honolulu, HI 96813 Contact: Jeffrey H. Overton, AICP, LEED AP Telephone: 808-523-5866
Approving Agency:	State of Hawai'i Land Use Commission Hawai'i County Planning Department Hawai'i County Planning Commission
Name of Action:	Kamakana Villages at Keahuolu
Project Location:	Keahuolu, North Kona District, Hawai'i (<i>Figure 1-1</i>)
Tax Map Keys (TMK):	(3) 7-4-021:020 (<i>Figure 1-2</i>)
Existing Uses:	Vacant
Proposed Uses:	Mixed-use: 2,330 Single-Family and Multi-Family Residential; 197,000 square feet (sf) Retail, Transit Connections, commercial uses, public and/or private school sites, archaeological and open space preserve areas, active and passive parks, trail and bikeway system, and support infrastructure.
Land Area:	272.063 acres (11,851,064. square feet)
State Land Use District:	271.865 acres in Agricultural and 0.198 acres in Urban (<i>Figure 1-3</i>)

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**Development Plan: Land Use
Planning Allocation Guide:**

Urban Expansion and Low Density Urban (*Figure 1-4*)

County Zoning:

271.865 acres Agricultural (A-5a) and 0.198 acres Residential RS-15 (*Figure 1-5*)

Special Management Area (SMA):

Not in SMA or Shoreline Setback Area (*Figure 1-6*)

Land Use Approvals:

1. State Land Use District Boundary Amendment
2. County of Hawai'i Change of Zone/Project District

1.2 OVERVIEW OF PROPOSED PROJECT

Forest City, in partnership with the State Hawai'i Housing Finance and Development Corporation (HHFDC), proposes to develop Kamakana Villages at Keahuolu (Kamakana Villages) in North Kona on the west coast of the island of Hawai'i (*Figure 1-1*). In 2008, Forest City was selected by HHFDC, the State of Hawai'i's agency charged with the responsibility of developing and financing low and moderate-income housing projects, to plan, design, and develop approximately 272-acres as a master-planned mixed-use affordable housing project, to be known as Kamakana Villages at Keahuolu. The vision for Kamakana Village is shaped by the land, its physical and cultural history, the aspirations expressed in the Kona Community Development Plan (Kona CDP), and the current planning by Forest City. Planning has been conducted in cooperation with HHFDC, community and County representatives and planners.

The objective of Kamakana Villages is to create an affordable, livable community derived from New Urbanist planning and design principles. Kamakana Villages is a compact, walkable, Transit-Oriented Development (TOD) Project envisioned by the Kona CDP to be comfortable, safe and ecologically sustainable. The approximately 272-acre project located along Palani Road mauka of Kailua-Kona (TMK (3)-7-4-021:020) is planned to be a master-planned, mixed-use community with affordable and market-priced housing. A variety of market products and land use densities are proposed that range from single family homes to duplexes and multiple family units. Overall unit densities total approximately 8.6 dwelling units per acre. The land plan proposes 2,330 dwelling units (du), 50+ percent (1,168 units) of which will qualify as affordable housing units. In addition to housing, the project includes 197,000 square feet of retail space, commercial uses, public and/or private school sites, archaeological and open space preserve areas, active and passive parks, trail and bikeway system, support infrastructure, and transit stops and centers.

1.3 ENVIRONMENTAL REPORT

The purpose of this Environmental Report (ER) is to provide background environmental documentation to support the State Land Use District Boundary Amendment (SLUBA). The Boundary Amendment is necessary to reclassify a majority of the project parcel from the State Agricultural District to the State Urban District as part of a Hawaii Revised Statutes (HRS) Section 201(H) Affordable Housing approval (*Figure 1-7*). In addition, this document supplements an application for County of Hawai'i Project District Rezoning. A full environmental review under HRS Chapter 343 was completed in September 2008 with publication of acceptance of a Final

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Environmental Impact Statement (EIS) on October 8, 2008 in the Office of Environmental Quality Control (OEQC) Environmental Notice (See Keahuolu Affordable Housing Project EIS).

The ER is presented in nine sections and includes the following: (i) an introduction to Kamakana Villages; (ii) a detailed description of the proposed action and request; (iii) a discussion of Kamakana Village's conformance with State and County plans and policies; (iv) a description of the environmental setting; (v) an evaluation of public facilities and services affected by Kamakana Villages; (vi) an environmental assessment and analysis including potential impacts, mitigation measures and an analysis of alternatives to the development of Kamakana Villages; (vii) a list of agencies, organizations, and individuals that participated in the planning process or consultation for Kamakana Villages; and (ix) a list of references cited or used in developing this ER.

Technical studies were also prepared in support of this ER are included as follows:

- Appendix A: "2009 Income, Sales and Rent Guidelines" by HHFDC for Hawai'i County
- Appendix B: Archaeological Mitigation Plan Update
- Appendix C: Preliminary Engineering Report (PER)
- Appendix D: Traffic Impact Analysis Report (TIAR)
- Appendix E: Market Study, Economic Impact Analysis, and Public Costs/Benefits Assessment

1.4 AGENCY AND COMMUNITY CONSULTATION

Agencies, organizations and individuals were consulted for the HHFDC's Keahuolu Affordable Housing Project throughout the various stages of the Chapter 343, Hawaii Revised Statutes (HRS), EIS planning process. During the preparation of this ER for the Project District Application, SLUBA and HRS Chapter 201H application and Resolution, agencies were contacted again to review the updated conceptual plans for Kamakana Villages.

A listing of those agencies, organizations and individuals who were consulted through the planning process is provided in *Section 7*, which also provides a detailed presentation of the various forms of consultation carried out through the community.

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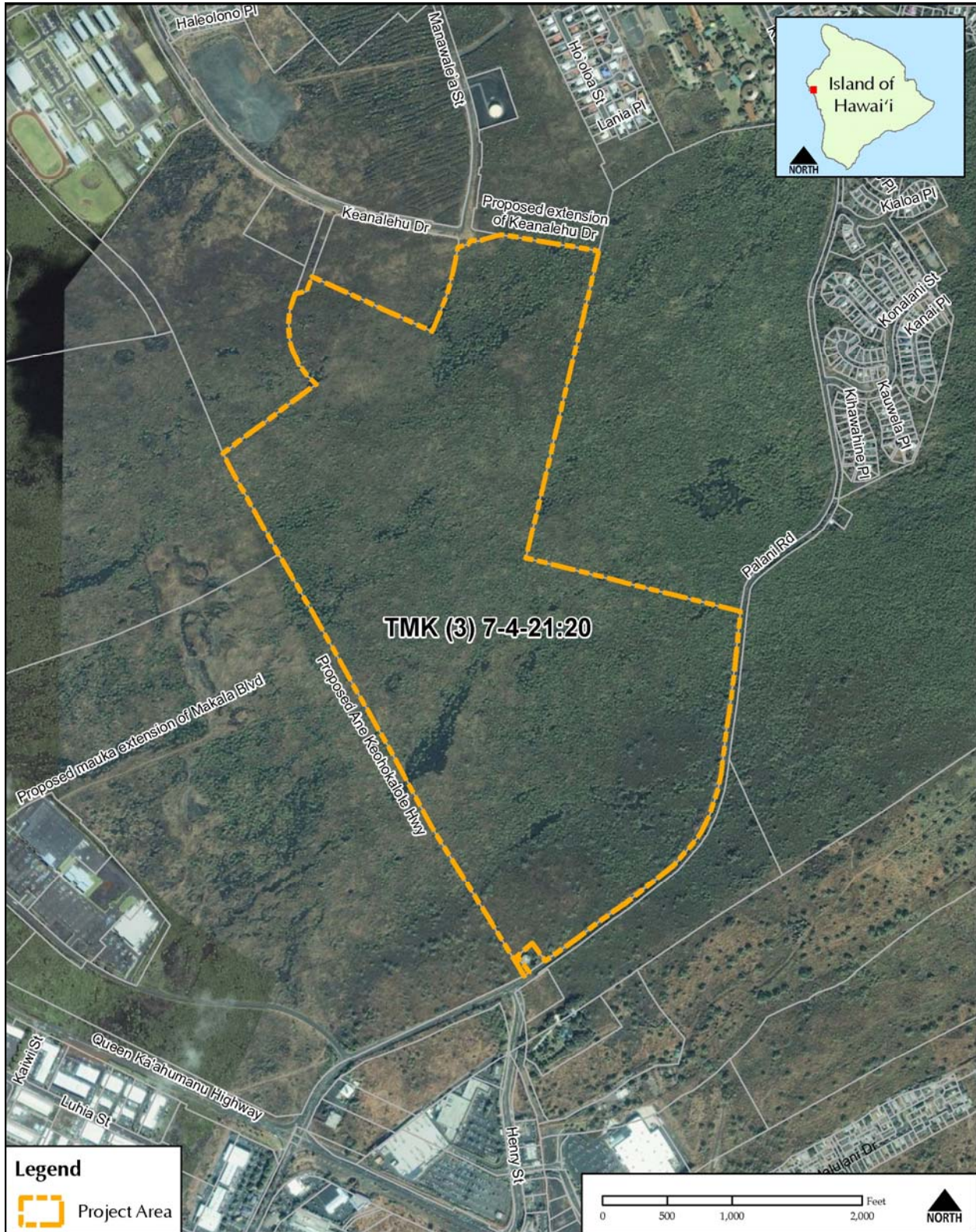
PROJECT LOCATION
KAMAKANA VILLAGES AT KEAHUOLU

GROUP 70
INTERNATIONAL

Figure 1-1

KAMAKANA VILLAGES AT KEAHUOLU

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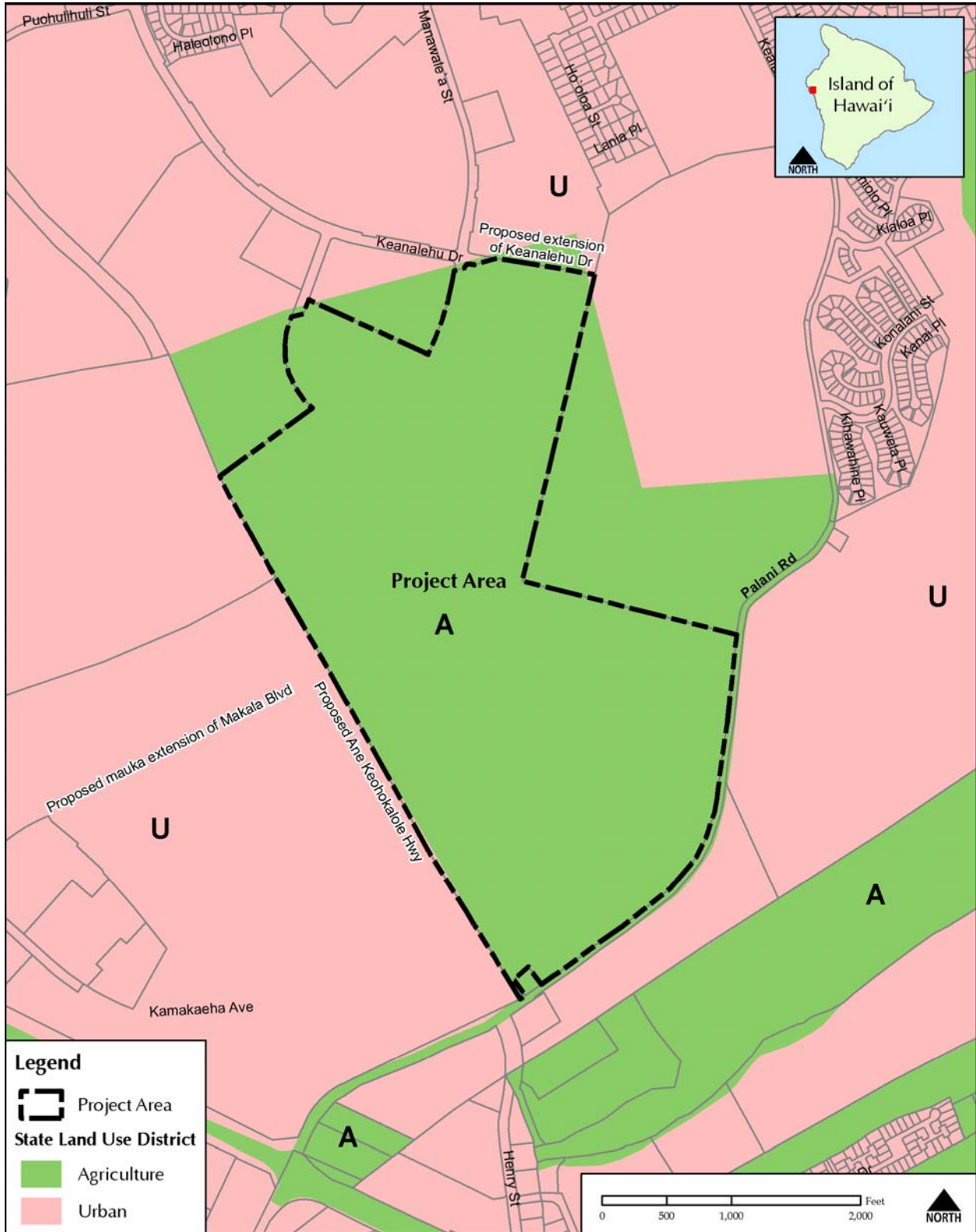
TAX MAP KEY (3) 7-4-021:020
KAMAKANA VILLAGES AT KEAHUOLU

GROUP 70
INTERNATIONAL

Figure 1-2

KAMAKANA VILLAGES AT KEAHUOLU

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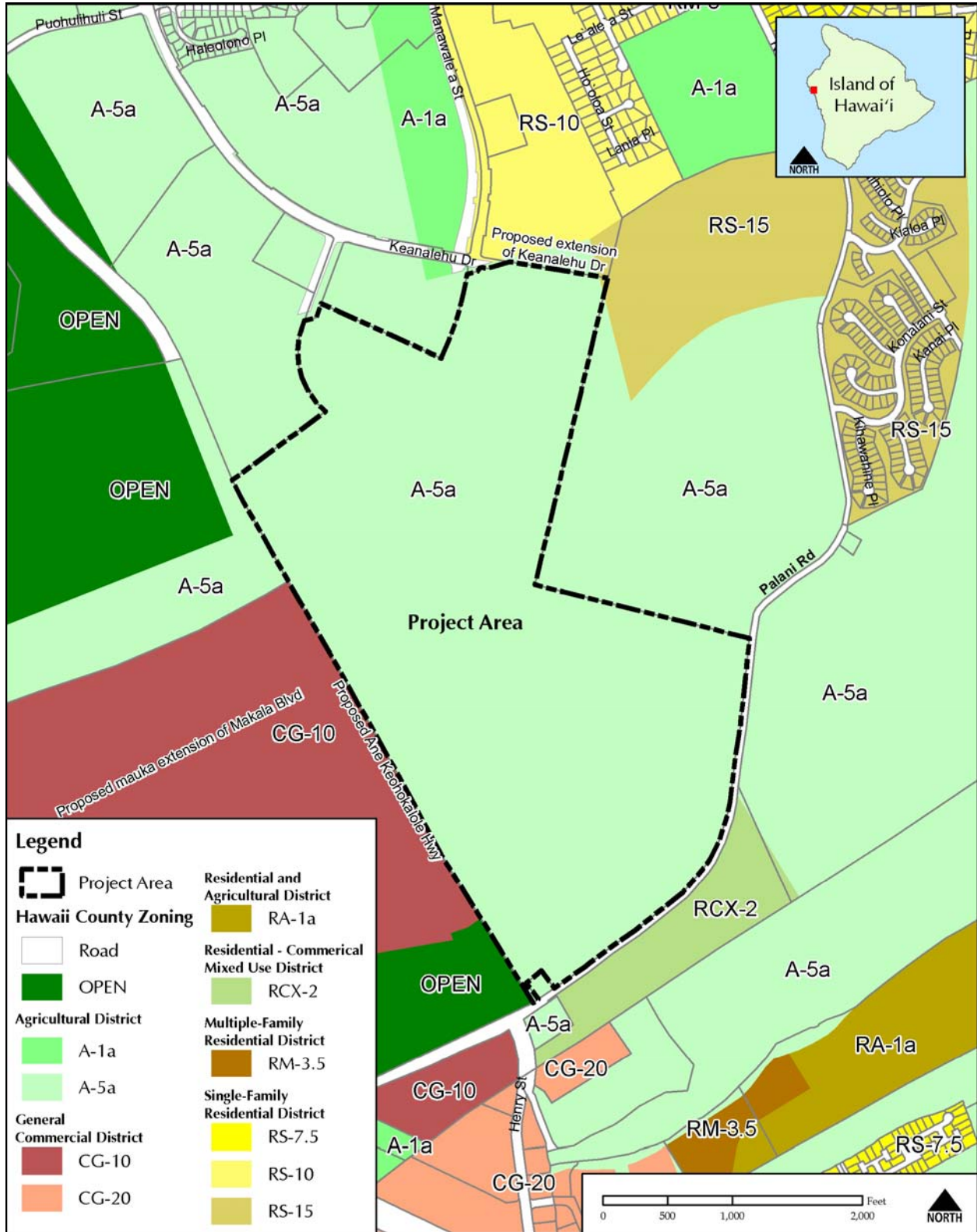
STATE LAND USE DISTRICT MAP
KAMAKANA VILLAGES AT KEAHUOLU



Figure 1-3

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COUNTY OF HAWAI'I ZONING MAP
KAMAKANA VILLAGES AT KEAHUOLU



Figure 1-5

KAMAKANA VILLAGES AT KEAHUOLU

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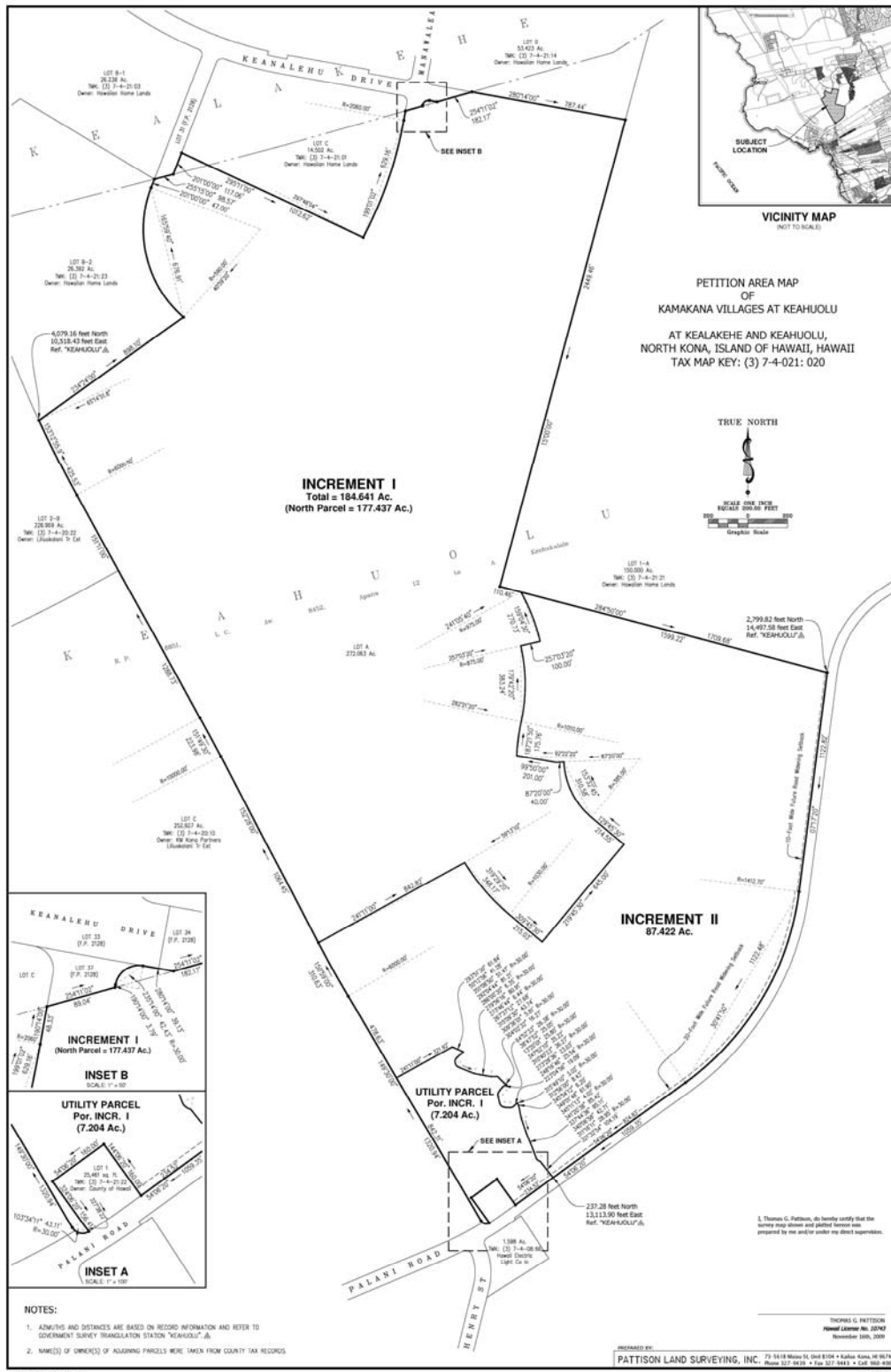
COUNTY OF HAWAI'I FLOOD ZONE AND SPECIAL MANAGEMENT AREA (SMA)
KAMAKANA VILLAGES AT KEAHUOLU



Figure 1-6

KAMAKANA VILLAGES AT KEAHUOLU

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PETITION AREA MAP
 KAMAKANA VILLAGES AT KEAHUOLU



Figure 1-7

2.0 SUBJECT REQUEST – DETAIL OF THE PROPOSED ACTION AND SUBJECT

2.0 SUBJECT REQUEST – DETAIL OF THE PROPOSED ACTION AND SUBJECT

2.1 PROJECT DESCRIPTION

The vision for Kamakana Villages has been shaped by the land, its physical and cultural history, the aspirations expressed in the Kona CDP, and planning by Forest City. Planning was conducted in cooperation with HHFDC, the community, and County representatives and planners.

Kamakana Villages will cover approximately 272-acres in North Kona on the west coast of the island of Hawai'i. Kamakana Villages is proposed to include up to 2,330 residential units (fifty-plus percent of which shall be affordable housing units) and up to 197,000 sf of retail space distributed within three mixed-use areas. Kamakana Villages is planned to be developed in six phases, with occupancy of the first residential units starting as early as 2012, and full build out and absorption anticipated sometime during 2028.

In addition to the residential and retail uses, Kamakana Villages will include approximately 12.41 acres for school/civic uses, 30.21 acres for park space, 9.02 acres for archaeological preserve sites and 18.39 acres for open space. Two transit stops along the Ane Keohokalole Highway are located adjacent to Kamakana Villages.

2.2 STATEMENT OF OBJECTIVES AND REASONS FOR THE REQUEST

The objective of Kamakana Villages is to create an affordable, livable community derived from New Urbanist planning and design principles described in the Kona CDP. Under the Kona CDP, Kamakana Villages is within the Kona Urban Area and Keahuolu Village (Neighborhood) TOD (*Figure 2-1 and 2-2*). As such, it is to be part of a multi-modal transit corridor extending from Captain Cooke to the proposed University Village (Palamanui). As a Neighborhood TOD, Kamakana Villages is intended have urban core areas that contain a concentration of predominately residential, public/civic uses, and small-scale neighborhood commercial uses. The look and feel of a Neighborhood TOD, as described in the Kona CDP Village Design Guidelines, is a compact, walkable and mixed-use community meant to be comfortable, safe and ecologically sustainable.

Kamakana Villages responds to the demand for affordable homes for working families in North Kona, and will help to reduce traffic on regional highways caused by Island residents traveling long distances between home and work. Other objectives for Kamakana Villages include the following:

- Provide the needed affordable homes in the most livable community within the shortest feasible duration. (See *Appendix A* for the 2009 Affordable Housing Guidelines from HUD/HHFDC for Hawai'i County.)
- Use design principles that will create a walkable, bikable, active-lifestyle community.
- Promote a walkable community that offers multiple modes of transportation options.

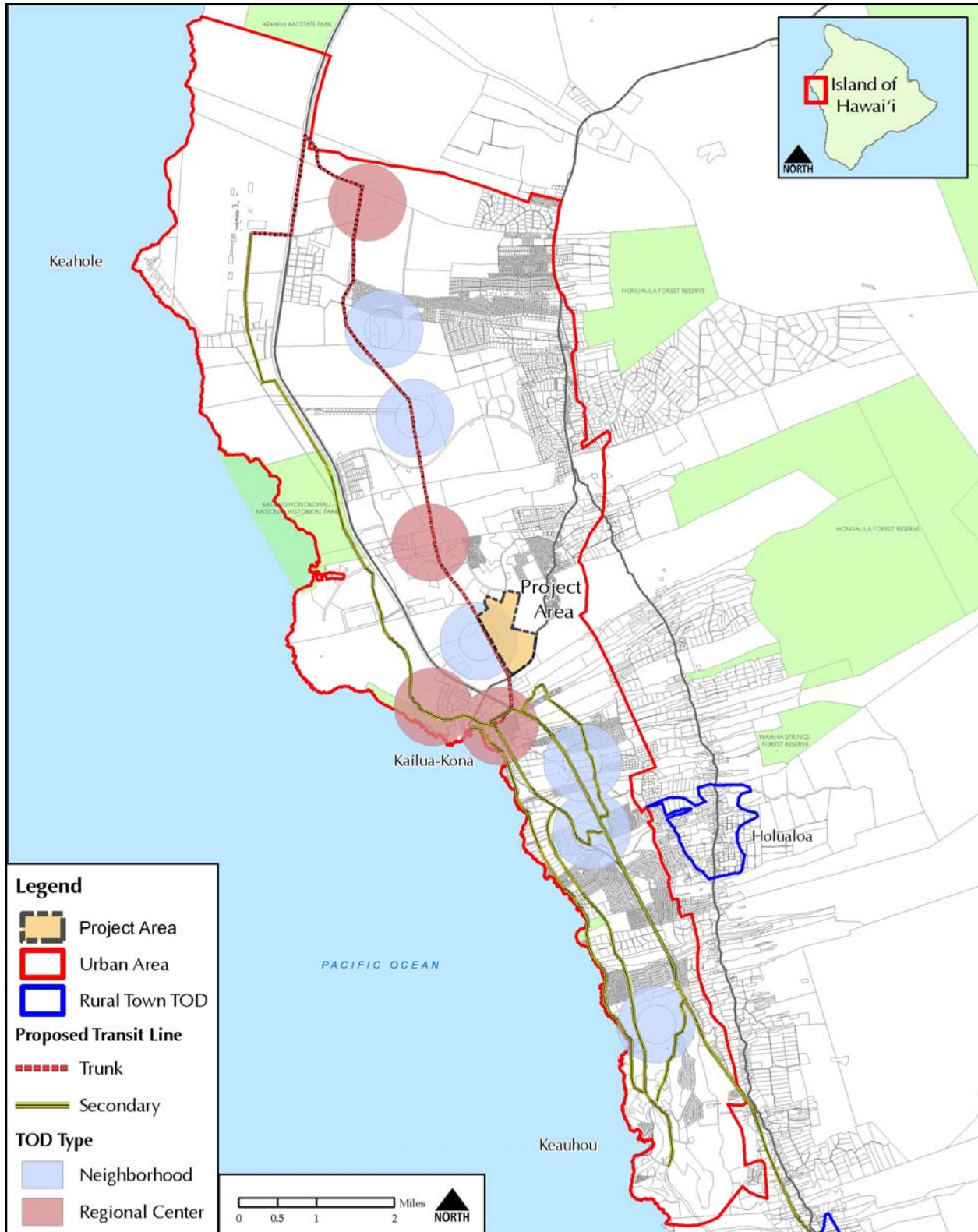
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- Integrate the project site with the area's current and future transportation network.
- Accommodate the potential for future feasible roadway connections to development on adjacent lands.
- Provide transit-oriented, high density development within easy walking distance (1/4 mile) of future bus transit stops along Ane Keohokalole Highway and the future extension of Makala Boulevard, and near Manawalea Street.
- Provide mixed-use centers in multi-block areas that contain multifamily housing with a mixture of ground-floor residential and non-residential space, such as commercial or other uses, and civic open space.
- Provide neighborhood parks.
- Provide approximately 12-acres for elementary school sites.
- Retain the approximately 7-acre archeological preserve area located in the southern, makai portion of the Kamakana Villages site, and develop an approximately 2.6 acre archeological preserve area in the northern, mauka portion of the site.
- Develop required infrastructure for the project.

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OFFICIAL KONA LAND USE MAP KAMAKANA VILLAGES

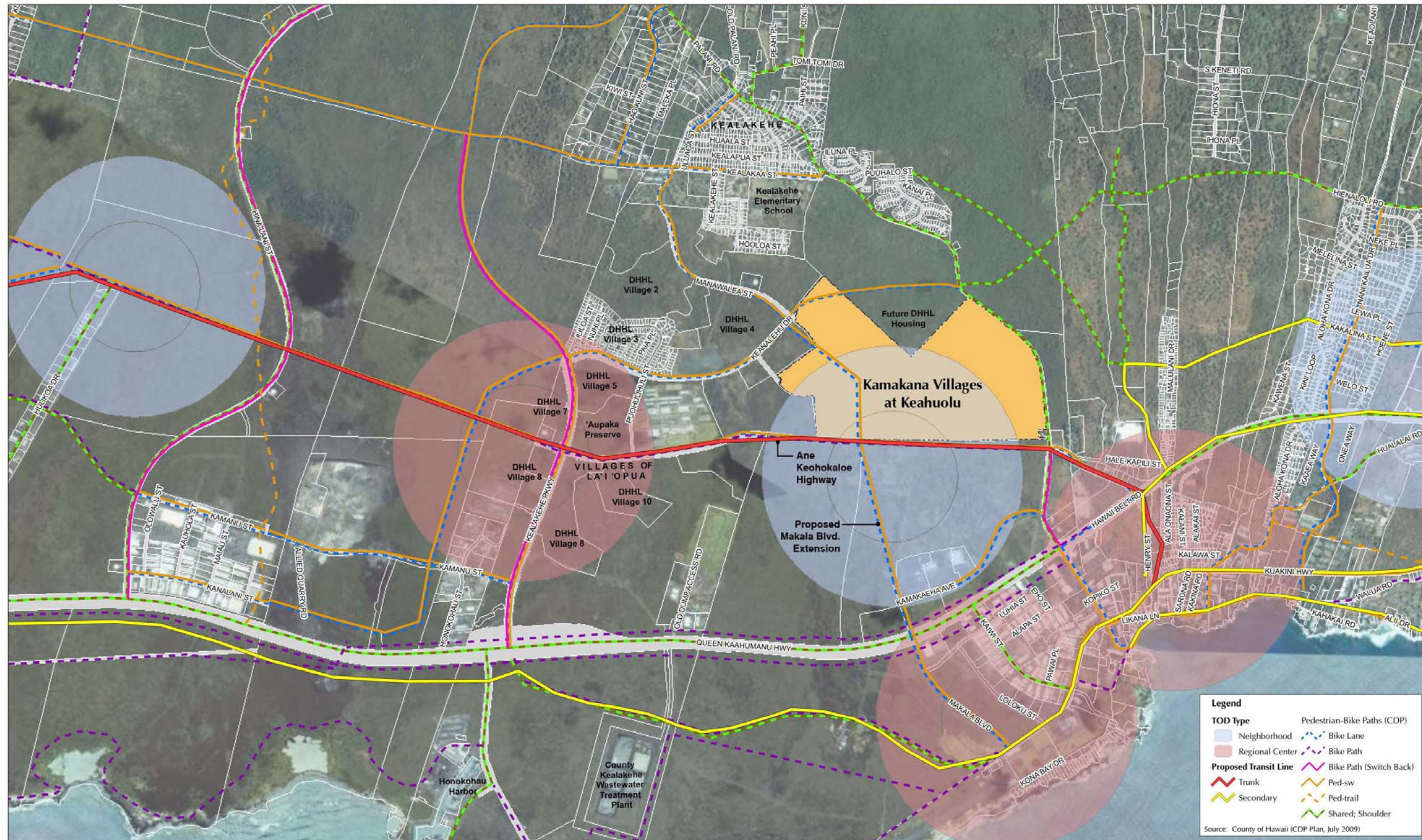
(Source: County of Hawai'i, Kona Community Development Plan, September 2008)



Figure 2-1

KAMAKANA VILLAGES AT KEAHUOLU

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KONA TOD
 KAMAKANA VILLAGES AT KEAHUOLU Kailua-Kona, Hawaii
 November 9, 2009

Forest City Hawaii Kona, LLC Honolulu, Hawaii
 Group 70 International, Inc. Honolulu, Hawaii
 Hawaii Housing Finance and Development Corporation Honolulu, Hawaii
 Calthorpe Associates Berkeley, California

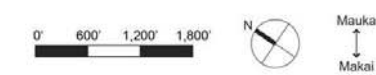


Figure 2-2

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2.2.1 Planning Process

The Concept Plan for Kamakana Villages (*Figure 2-3*) is a result of the collaborative planning process initiated by HHFDC in 2007, which resulted in a master plan with three alternative conceptual land use plans. Each of the three plans were assessed via a HRS Chapter 343 EIS, published in October 2008. In response to HHFDC's Request for Proposals, Forest City was selected by the HHFDC Board of Directors to be the master developer of Kamakana Villages.

In May 2009, Forest City embarked on a planning process with its consultants, which involved further investigation of the site, environs, culture and the application of the Kona CDP. As suggested by the Kona CDP, the first community Charrette was held in July 2009. Over 70 community members were present, many of whom were members or representatives of groups who have been active in Kona's planning and development.

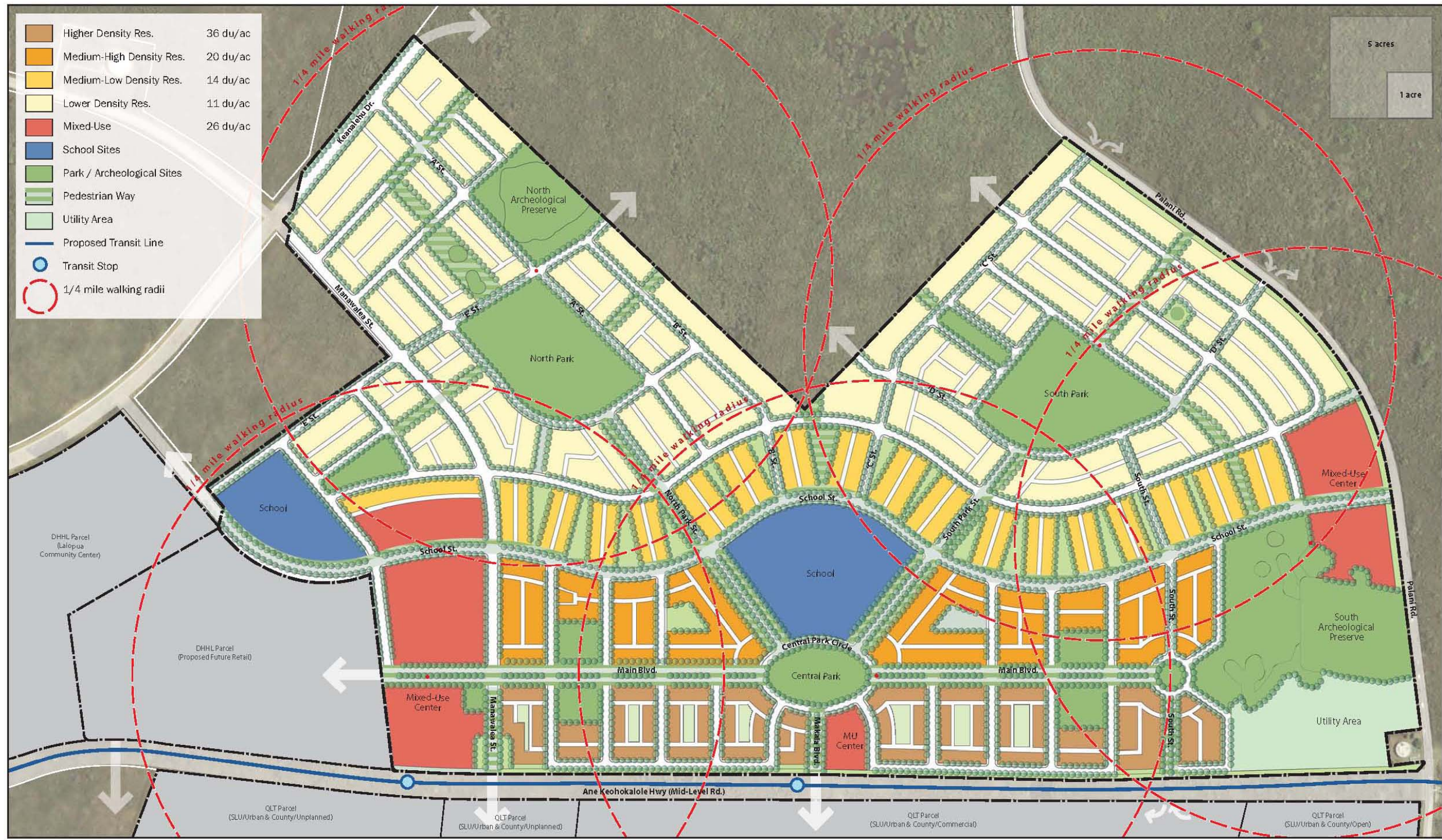
The Charrette began with a discussion of the current and future lifestyles of the potential residents of Kamakana Villages and the broader community. The purpose of this envisioning process was to focus away from "bricks and mortar" to the life of people; not just today but in the next 15-20 years and beyond. The group was then asked to identify and then choose up to five "Major Themes" that would characterize their understanding of the future community, and which would support the lifestyles of that community.

After discussion and a formal vote, the following Major Themes were selected:

- *Connectivity/Navigation* - Connection to the larger community, to the ahupua'a, to the land. Kamakana Villages was not to be an entity unto itself. Wayfinding assistance to be included for ease of navigation.
- *Open Spaces* – The group expressed the desire to have ample open spaces for use by the residents and for view planes, especially mauka and makai.
- *Education* - This is to be a learning community. The community, its lifestyle, physical environment and institutions are to support life-long learning.
- *Sustainability* – It was a unanimous sentiment that this community should be sustainable in its design, development and lifestyle.
- *Kokua Aku* - Kokua Mai – This is an expression of residents helping each other; extending and receiving kokua and interacting with one another. This implies a high level of commitment to the community and the educational, retail and social entities within the community.

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CONCEPT ILLUSTRATIVE PLAN

KAMAKANA VILLAGES AT KEAHUOLU Kailua-Kona, Hawaii

November 9, 2009

Forest City Hawaii Kona, LLC
Honolulu, Hawaii

Group 70 International, Inc.
Honolulu, Hawaii

Hawaii Housing Finance and Development Corporation
Honolulu, Hawaii

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Mauka
Makai

Figure 2-3

KAMAKANA VILLAGES AT KEAHUOLU

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Connectivity/Navigation

In viewing the 272-acre Kamakana Village's site, one is struck by its non-rectangular shape. While a challenge to the normal grid pattern of neo-traditional town planning reflected in the CDP's Design Guidelines, the proposed road layout uses the unusual mauka boundary geometry to off-set the slope of land. Primary roadways go north-south across the slope and are essentially flat to encourage walking and biking, mauka-makai roads also go cross-slope, thereby reducing grades from up to 15% to an average of 5-6%. This allows even these roadways to be accessible, walkable and bikable (*Figure 2-3*).

While the major thoroughfares for the community run across the slope thereby encouraging walking, biking and other forms of non-vehicular transportation, there are strong mauka-makai open space corridors. Connectivity and navigation is predicated on knowing "where you are" and by allowing people to place themselves in their environment via the traditional and natural mauka-makai way-finding.

The Concept Plan looks beyond the 272-acres within Kamakana Villages to the ahupua'a and immediate neighbors such as Kealakehe High School, Department of Hawaiian Homelands (DHHL) neighborhoods and adjacent parcels, Queen Lili'uokalani Trust (QLT) lands, and the La'i 'Ōpua 2020 community center (*Figure 2-3*). From this perspective, it becomes apparent that the land and roadway system, Kona CDP and the Charrette Major Theme of Connectivity indicate that the principal community, the future piko (Hawaiian term for center or core) of the area is not clearly within the Kamakana Villages's site, but may be better centered at the adjacent DHHL parcel.

The DHHL parcel is adjacent to the intersection of the proposed Ane Keohokalole Highway, also known as "Mid-Level Road" and Manawalea Street (a mauka-makai connector). It is also more central to the La'i 'Ōpua 2020, DHHL villages, Kealakehe High School and future QLT communities. With this in mind, Forest City shifted its view of the primary commercial core/piko being centrally located within Kamakana Villages (originally proposed to be located along the Mid-Level Road and Makala Boulevard). As shown on the Concept Plan, the initial Phases of development include a mixed-use area located adjacent to the DHHL property and near one of the proposed transit stops along Ane Keohokalole Highway. The repositioning of the mixed-use areas is intended to encourage the compact, "urban core" concept for Transit-Oriented Development (TOD) and (Traditional Neighborhood Design) TND developments proposed in the Kona CDP.

This planning paradigm also reinforces the intent of the Kona CDP. The TOD/TND envisioned is intended to serve not only the residents of Kamakana Villages, but residents of DHHL and QLT developments. The TOD/TND multi-modal concept also includes bike and pedestrian paths along with automobile and bus transit (*Figure 2-3*). This location of the primary piko will allow for safe pedestrian and bicycle access from a greater part of the community.

Additional discussion on connectivity through TOD strategies and concepts is provided in *Section 3.12.2*.

Open Space

Connectivity within Kamakana Villages will be provided through landscaped avenues, roadways and walks that pass from one major open space to another. This not only provides residents and visitors a pleasant, landscaped means of moving throughout the Villages, it will also define open spaces around new mauka-makai trails connecting the parks (*Figure 2-4*).

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The Concept Plan provides an important mix of small intimate open spaces and very large community parks. The smaller spaces take many forms within Kamakana Villages, and will anchor smaller clusters of homes and give neighbors an important environment to meet and socialize. The larger parks give the community areas for more active recreation. The larger parks can be seen from a distance as greenways accentuating both north-south and mauka-makai views.

The Open Space Plan meets the needs of future residents and reflects views expressed in the Charrette; it is also consistent with the Kona CDP. The Kona CDP specifically asks that new communities provide for open spaces serving passive and active uses and preserving mauka-makai and coastal view planes. With over 57-acres are planned for park, open space and archaeological preserve areas, Kamakana Villages satisfies these important open space criteria.

Education

Kamakana Villages is to be a place of life-long learning. This learning may center on Hawaiian culture, environment and sustainability. The physical and cultural environment (landscaping, buildings, cultural practices, educational institutions and services) will serve as catalysts for this learning community. The design of the community is a call to smarter development and an educated way of life, and this mission will be reflected in the manner that the community is developed and marketed.

Emblematic of this focus is the location of two proposed school sites. Kamakana Villages is organized around these schools so that both literally and symbolically “all roads lead to the school”. Form and function coordinate with a community that has been designed to emphasize education. Because the schools are central to the design of Kamakana Villages, they are also coordinated with other important components of the plan. While the schools will determine their own curricula, the plan has been designed in a manner that makes it easy to imagine an elementary school class having a community garden in a nearby regional park, and selling its produce for fundraisers in a community farmers market.

Integrating facilities into the community design provides opportunities for collaboration with Kealakehe High School and the Kamehameha pre-school at La’i ‘Ōpua, as well as to support additional learning opportunities within the DOE's Kealakehe complex.

Education will also be something that extends beyond the classroom and into the community itself. The Concept Plan sites its elements to promote interaction between members of the community. Through the frequent use of innovative and inviting community buildings, parks, plazas, and sidewalks, the Concept Plan enhances person-to-person learning which cuts across cultural and age boundaries by encouraging activities such as:

- Community gardening and sustainable education
- Community arts programs
- Neighborhood sports

Even simple things, like the creation of safe and walkable/bikable routes to school and work will ensure that community members have the chance to share and interact frequently, as well as to reinforce these (and other) healthy habits on a daily basis.

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PARKS and OPEN SPACE PLAN

KAMAKANA VILLAGES AT KEAHUOLU Kailua-Kona, Hawaii

November 9, 2009

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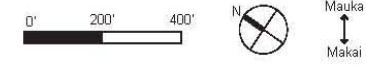


Figure 2-4

KAMAKANA VILLAGES AT KEAHUOLU

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Sustainability

By design, development and lifestyle, Kamakana Villages strives to be developed as a sustainable community. The Concept Plan for Kamakana Villages incorporates principles of sustainability from the Kona CDP TOD/TND concepts, to the pedestrian focus, the creation of piko, small lots and compact development. The highest density is located near transit stops and commercial centers, encouraging transportation by means other than cars.

Kamakana Villages as designed and submitted meets U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) Neighborhood Development (ND) standards. Through quantifiable smart growth strategies, certification through LEED ND recognizes the project's ability to meet or exceed the industry's best practices in various forms of neighborhood-scaled sustainability measures; these measures target overall efficiency gains in energy and water use, as well as promoting a better overall quality of life. Promoting concepts such as walkability, connectivity, transit adjacency, jobs/housing balance, affordability, mixed uses, environmental preservation and restoration, and various other neighborhood-scaled environmental strategies, LEED ND certifies developments which provide a richer quality of life, require fewer resources, and sit "lighter on the land".

The infrastructure is envisioned to include elements for renewable energy, solar hot water and water conserving strategies. Roadway widths have been minimized. Drainage control and education will reduce harm to makai lands from pesticides and other impacts. Information will be provided to residents on how to optimize energy savings and reduce waste, and a signage program will be developed to educate residents on the sustainable practices that characterize their community. The use of drought tolerant native plant species will minimize water use and reduce heat-island impacts.

Kamakana Villages will incorporate green building design principles to the extent practicable. The community's first priority is to provide affordable housing. Affordability is not a one-time issue and the reduction in on-going expenses is an important component of affordability however it can not be implemented in a manner that precludes families from purchasing in the first place. Keeping this balance in mind, design choices will be made to incorporate natural lighting to illuminate interior spaces, energy-efficient mechanical and electrical systems to maximize energy savings, efficient plumbing systems to save water, and the use of building materials and finishes that promote healthy living environments.

Kokua Aku - Kokua Mai

The Concept Plan for Kamakana Villages envisions a community that is knit together by design. In contrast to more common, auto-dependant residential communities, residents at Kamakana Villages will have the opportunity to know and interact with their neighbors because of gathering places at the three commercial/community piko and daily interactions at common open spaces, facing lanai, alleyways, schools, bikeways and pedestrian paths. In addition, the intentional mixing of all residents, regardless of home prices, and the normal mixing that comes through associations around schools, sports teams, churches and other communal activities, will encourage commonality and unity in the community.

Finally, the sharing of values, such as the Major Themes of education and sustainability, may enhance the articulated Major Theme of "kokua aku – kokua mai." As residents help one another and the larger community, the true meaning of kamakana, "the gift" will become apparent. Much

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more than a place for affordable housing, Kamakana Villages will be a place of laulima, malama and aloha, truly a makana, to this, and future, generations.

2.3 NUMBER OF ACRES/SQUARE FEET

The Kamakana Villages site is approximately 272.063 acres of land, located within TMK (3) 7-4-021: 020.

2.4 PROPOSED UNITS/LOTS/FLOOR AREA OF PROPOSED BUILDING ENVELOPE

As a result of collaborative planning process, and as guided by HHFDC's mission to develop affordable housing, Kamakana Villages is proposed to consist of up to 2,330 residential units (over 50%, or up to 1,168 of which are planned to be affordable housing units) and up to 197,000 sf of retail space. Other uses include 12.41 planned acres for school/civic uses, 30.21 acres for park space, 9.02 acres for archaeological preserve sites and an additional 18.39 acres for open space.

Homes and commercial buildings within Kamakana Villages will be reflective of the architectural characteristics of Kona's traditional ranches, coffee farms and historic commercial establishments. Careful site planning has allowed the community design to minimize the impact on the environment; the homes themselves will be sited to maximize use of natural sun and wind rather than artificial light and an over-use of air-conditioning. This careful attention to design qualifies the community under the LEED for Neighborhood Development criteria of the US Green Building Council.

2.4.1 Residential Units

Kamakana Villages proposes a broad range of residences from affordable multi-family rentals to townhouses, apartments, duplexes and detached homes (*Figure 2-5 and 2-6*). These will be distributed and mixed throughout the property but, in general, housing types and density will be distributed dependent upon the slopes. Higher density homes with larger building footprints will be located within the flatter portions of the property, closest to the Ane Keohokalole Highway, and the lower density homes generally with smaller building footprints are better suited for the steeper slopes of the property. The distribution of density follows the development pattern set forth in the Kona CDP. By locating density near Ane Keohokalole Highway, the Concept Plan creates critical mass around planned transit stops and encourages ridership.

These homes will be on small, walkable, tree-lined blocks. Blocks will be served by internal alleys, which will allow residential parking and trash receptacles to remain mostly hidden from the street. Alleys will also minimize curb cuts along streets which will maximize the opportunity for street parking. Homes will be adjacent, or close, to parks or other open spaces and within easy access to the schools, stores, commercial areas and other services within the three mixed-use areas of Kamakana Villages.

Homes within Kamakana Villages will be developed in a range of densities and product types. Multi-family units will be developed in multiple forms such as mixed-use, apartments, rowhouses and flats. Within the mix of multifamily housing will be mixed-use areas where stand-alone retail and stand-alone residential mix with buildings that include both uses, ground-floor retail with residential above. Multi-family units will predominately be 2 to 3 stories. There will be small lot

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single family houses that will be traditionally lined along a street. These homes may also be wrapped around a common open space or positioned along the mauka-makai oriented open spaces. Larger single family lots will also be provided in the mauka area primarily lined along the streets. Homes will vary in design and most will be built with porches and lanai facing the public way. *Figures 2-7 through 2-10* provides some example of the residential unit types that will be included in Kamakana Villages.



CONCEPTUAL RENDERING OF RESIDENTIAL AREAS ALONG ROADWAY

Figure 2-5

(Note: Architect's renderings, conceptual only. Dimensions, location and product types may vary in actual development.)



CONCEPTUAL RENDERING OF GREENBELT/OPEN SPACE WITHIN RESIDENTIAL AREAS **Figure 2-6**

(Note: Architect's renderings, conceptual only. Dimensions, location and product types may vary in actual development.)

KAMAKANA VILLAGES AT KEAHUOLU

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CONCEPTUAL RESIDENTIAL UNIT TYPES - COURTYARD RENTALS

Figure 2-7



CONCEPTUAL RESIDENTIAL UNIT TYPES – ROW HOUSES

Figure 2-8

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CONCEPTUAL RESIDENTIAL UNIT TYPES – GREEN COURT HOMES

Figure 2-9



CONCEPTUAL RESIDENTIAL UNIT TYPES – LARGE LOT ALLEY LOADED SINGLE STORY Figure 2-10

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2.4.2 Retail Space

Retail space will be distributed in three mixed-use areas within Kamakana Villages each planned to support neighborhood retail uses (*Figure 2-2*). Approximately 65,333 sq. ft. of retail space is planned to be developed during the first two Phases, starting with a mixed-use area fronting Ane Keohokalole Highway and the proposed transit stop close to Manawalea Street. *Figure 2-11* provides a conceptual rendering of the proposed mixed use retail areas in Kamakana Villages.

As more residents move into Kamakana Villages, it is expected that the retail space will be expanded mauka during the second Phase of development. Phase 3 will include up to 32,667 sf of retail space along Ane Keohokalole Highway and Makala Boulevard, nearby another of the proposed transit stops. The third mixed-use area, consisting of approximately 98,000 sf., is expected to be developed during Phase 6, the last Phase of development. This area will be located along Palani Road. At the time of this writing, the tenants/tenant types of the commercial space are not known.

The proposed 197,000 square foot commercial component is intended to meet the "neighborhood" and daily goods and services needs of the Kamakana Villages community population, other users and employees, its immediate neighbors in up-slope subdivisions who have no commercial opportunities within their immediate trade area, and the passer-bys utilizing the Ane Keohokalole Highway and Palani Road. It is not envisioned as serving any regional or major destination-based demand which may exist.



CONCEPTUAL RENDERING OF MIXED USE COMMERCIAL AREAS

Figure 2-11

(Note: Architect's renderings, conceptual only. Dimensions, location and product types may vary in actual development.)

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2.4.3 School/Civic Uses

Two school sites, totaling approximately 12.41 acres, are proposed for Kamakana Villages (Figure 2-3). The first school site is an approximately 4-acre area and the second school site is approximately 8-acres. Both sites will be located near parks and are accessible from bike and pedestrian paths. Including school sites within the design of Kamakana Villages is alignment with LEED principles for “Neighborhood Schools” which “promote community interaction and engagement by integrating schools into the neighborhood fabric, and support student health by encouraging walking and bicycling to school” (LEED for Neighborhood Development Rating System, NPD Credit 15: Neighborhood Schools). Both school sites are designed along a right-of-way with pedestrian and bicycle routes to encourage non-vehicular access to/from school.

2.4.4 Park Sites and Open Space

Approximately 30-acres within Kamakana Villages are proposed for park uses (Figure 2-3). The park site has been sized to potentially include one high school soccer field, Americans with Disabilities Act (ADA) accessible pathways, comfort station and paved parking lot.

In addition to the park spaces, approximately 18.39 acres within Kamakana Villages will be provided as open space (Figure 2-4).

2.4.5 Archaeological Preserve Areas

Integrated into the open space system is a total of approximately 9-acres for archaeological preserves (Figure 2-3). The primary preserve (the South Archeological Preserve), consisting of approximately 7-acres, is on a pu'u on the hema/makai corner of the Village. It includes several house platforms, agricultural walls and possible burial sites, and is located in the southwest corner of Kamakana Villages, near the intersection of Palani Road and Henry Street.

This area will be cleaned of invasive vegetation and protected. There will be a passive park surrounding the protected area. The park will be landscaped with native vegetation (see Section 2.7 and Figure 2-12).

The North Archeological Preserve, located in the northern/mauka portion of Kamakana Villages, consists of approximately 2.63 acres located in the northern, mauka corner of the Kamakana Villages site. It contains an enclosed complex of agricultural and habitation features (Site 13441).

An archaeological inventory survey was accepted by the Department of Land and Natural Resources (DLNR) State Historic Preservation Division (SHPD) in 1993 and an archaeological mitigation plan was also approved in 1993. Additional archaeological field work was done in 2007, as a Cultural Impact Assessment pursuant to HRS Chapter 343. In addition, in consultation with SHPD, Haun & Associates prepared an Archaeological Mitigation Plan Update in November 2009 (Appendix B), which is a preliminary step designed to determine appropriate archaeological mitigation tasks to be detailed in subsequently prepared plans for data recovery, burial treatment, site preservation, and monitoring that are tailored to the specific cultural resources present within the Kamakana Villages site. The Mitigation Plan Update included a 100% survey of three 50.0 meter wide transects (to further evaluate earlier survey data and generate data recovery-level documentation of agricultural sites), relocation of all previously identified sites recommended for data recovery and/or preservation, and an analysis of the existing field data and site

KAMAKANA VILLAGES AT KEAHUOLU

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documentation. The Archaeological Mitigation Plan Update has been submitted to SHPD for review.

Together, these documents provide a greater understanding of the Kamakana Village site's historic, archaeological and cultural resources. Archaeological sites conforming to the significance criteria established under State and Federal regulations will be preserved in coordination and consultation with SHPD.

2.5 DENSITIES

The Neighborhood TOD envisioned by the Kona CDP is a compact, mixed-use Village, oriented around "pedestrian sheds" roughly equivalent to a 5-minute walking radius of 1/4 mile from the core elements. Phased densities will range from 6.5 - 13 dwelling units per acre, with an average density of 8.6 dwelling units per acre. The anticipated densities for each of the six phases of Kamakana Villages are shown in *Table 2-1*.

**Table 2-1
Kamakana Villages Land Use Summary**

PROJECT AREA	LAND USES				APPROX AREA	APPROXIMATE TOTAL UNITS
	Occupancy	Residential Units	Total	Market		
Phase 1 (2012 ¹ - 2014)	Single Family	76	73	3	21.96 acres	416 (250 units, i.e., 60% are affordable). Cumulative Affordable Units: 60%
	Mixed-Use ² / Multi Family	340	93	247		
	School/Civic				0 acres	Residential Density for Phase 1: 10 du/acre
	Park				3.37 acres	
	Open Space				3.15 acres	
	Archaeological Site				0 acres	
	Utility Area				6.80 acres	
	Roads				6.42 acres	
Total Acres					41.7 acres	Cumulative Acres 41.7
Phase 2 (2015 - 2018)	Single Family	94	88	6	24.02 acres	531 (329 units, i.e., 62% are affordable). Cumulative Units: 947 Cumulative Affordable Units: 579 units/61%
	Mixed-Use ³ / Multi Family	437	114	323		
	School/Civic				4.26 acres	Residential Density for Phase 2: 9.8 du/acre
	Park				9.36 acres	
	Open Space				3.03 acres	
	Archaeological Site				0 acres	
	Utility Area				0 acres	
	Roads				13.36 acres	
Total Acres					54.03 acres	Cumulative Residential Density 9.9 du/acre Cumulative Acres 95.73

¹ Pre-sales of single family units to start in 2011; occupancy to start in 2012.

² 41,833 sq ft retail space.

³ 24,500 sq ft retail space.

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PROJECT AREA	LAND USES				APPROX AREA	APPROXIMATE TOTAL UNITS		
	Occupancy	Total	Market	Affordable				
Phase 3 (2019 - 2021)	Single Family	176	167	9	26.47 acres	378 (127 units, i.e., 34% are affordable).		
	Mixed-Use ⁴ /Multi Family	202	84	118				
	School/Civic				8.15 acres	Cumulative Units: 1,325 Cumulative Affordable Units: 706 units/53%		
	Park				1.70 acres			
	Open Space				4.15 acres			
	Archaeological Site				2.63 acres	Residential Density for Phase 3: 7 du/acre		
	Utility Area				0 acres			
Roads				10.53 acres	Cumulative Residential Density 8.8 du/acre			
Total Acres					53.63 acres	Cumulative Acres 149.36		
Occupancy	Residential Units	Total	Market	Affordable	16.89 acres	374 (200 units, i.e., 53% are affordable).		
Phase 4 (2022 - 2024)	Single Family	96	88	8				
	Multi Family	278	86	192				
	School/Civic						0 acres	Cumulative Units: 1,699 Cumulative Affordable Units: 906 units/53%
	Park						0 acres	
	Open Space						3.53 acres	
	Archaeological Site						0 acres	Residential Density for Phase 4: 13 du/acre
	Utility Area				0 acres			
Roads				8.16 acres	Cumulative Residential Density: 9.5 du/acre			
Total Acres					28.58 acres	Cumulative Acres 177.94		
Occupancy	Residential Units	Total	Market	Affordable	18.84 acres	339 (166 units, i.e., 49% are affordable).		
Phase 5 (2025 - 2026)	Single Family	80	76	4				
	Multi Family	259	97	162				
	School/Civic						0	Cumulative Units: 2,038 Cumulative Affordable Units: 1,072 units/53%
	Park						8.08 acres	
	Open Space						3.19 acres	
	Archaeological Site						6.33 acres	Residential Density for Phase 5: 6.5 du/acre
	Utility Area				0 acres			
Roads				15.52 acres	Cumulative Residential Density: 8.7 du./acre			
Total Acres					51.96 acres	Cumulative Acres 229.9		
Occupancy	Residential Units	Total	Market	Affordable	25.91 acres	292 (96 units, i.e., 33% are affordable).		
Phase 6 (2027- 2028)	Single Family	139	138	1				
	Mixed-Use /Multi Family ⁵	153	58	95				
	School/Civic						0 acres	Cumulative Units: 2,330 Cumulative Affordable Units: 1,364 units/50%
	Park						7.70 acres	
	Open Space						1.34 acres	
	Archaeological Site						0.06 acres	Residential Density for Phase 6: 6.8 du/acres
	Utility Area				0 acres			
Roads				7.44 acres	Cumulative Residential Density: 8.6 du/acre			
Total Acres					42.45 acres	Cumulative Acres 272.35		

⁴ 32,667 sq ft retail space.

⁵ 98,000 sq ft of retail.

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PROJECT AREA	LAND USES				APPROX AREA	APPROXIMATE TOTAL UNITS
	Residential Units	Total	Market	Affordable		
Total					50% affordable	Cumulative Residential Density: 2330/272.35 = 8.6
	Single Family	661	630	31	134.09 acres	
	Mixed-Use /Multi Family ⁶	1,669	532	1,137		
	Total Residential Units	2,330	1,162	1,168		
	Total School/Civic					12.41 acres
	Total Park					30.21 acres
	Open Space					18.39 acres
	Archaeological Site					9.02 acres
	Utility Area					6.80 acres
	Roads					61.43 acres
					272.35 acres	

Affordable Housing Units:

- 400 Rental Units at 140% and below the County Median Income.
- 768 For sale Affordable Units at 80% to 140% of the County Median Income.
- Affordable Rental and For-Sale prices are based on the current year's "Income, Sales and Rent Guidelines" for Hawai'i County available at <http://hawaii.gov/dbedt/hhfdc/developers/income-sales-rent-guidelines> (Appendix A).

2.6 PROPOSED ON-SITE AND OFF-SITE INFRASTRUCTURE

A Preliminary Engineering Report (PER) for Kamakana Villages was completed by Lyon Associates, Inc., and is provided in *Appendix C*. Overall existing conditions, impacts, and mitigation measures for utilities are discussed in *Section 5.0*.

The Kamakana Villages site is vacant, with no internal roads, water or electric service, sewer connections or solid waste collection services. The following sections describe the physical characteristics of these site utilities with the development of Kamakana Villages.

2.6.1 Roadways

Kamakana Villages' internal roadways will be pedestrian friendly, designed to accommodate cars, bicycles and pedestrians. The internal roadways will be designed in consultation with the County Department of Public Works for dedication to the County. The preliminary layout of the internal roads has been designed to comply with the Village Design Guidelines of the Kona CDP (*Section 5.5*).

Ane Keohokalole Highway is a key roadway to facilitate full build out of the Kamakana Villages Project. The Ane Keohokalole Highway design has been completed and construction is set to begin late 2009/early 2010. The right-of-way is set to be 120-feet wide and will have a posted speed limit of 30 miles per hour. There is a portion with two lanes in each direction and a portion with only one lane in each direction but future construction on the highway will upgrade the entire highway to a 4-lane highway. The initial phase also includes improvements to Palani Road from the Ane Keohokalole Highway down to Queen Ka'ahumanu Highway. The County plans to designate the highway as a bus transit corridor. The final plans indicate regional bus transit stops at the Ane Keohokalole Highway/Makala Boulevard intersection and at the Ane Keohokalole Highway/Manawalea Street intersection with both bus stops fronting the Kamakana Villages. Bus stops are also proposed on Ane Keohokalole Highway for local circulators serving the mauka and

⁶ 197,000 sq ft retail.

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makai neighborhoods. Construction costs for the Ane Keohokalole Highway will be paid for by Federal Stimulus funds.

One standard intersection and two right-in/right-out intersections are proposed along Palani Road. To minimize impacts on traffic along Palani Road, the intersections will likely include deceleration and acceleration lanes, and the right-in/right-out intersections will include a raised median to prevent vehicles from attempting to make left turn movements.

Section 4.11 and 6.2.12 provides an analysis on the existing traffic conditions, potential impacts, and mitigation measures.

2.6.2 Drainage

Storm water runoff within Kamakana Villages will be collected through swales, ditches, gutters, inlets and/or catch basins, and transported through pipes to dry wells, seepage wells or infiltration areas for disposal. Infiltration areas, seepage wells and dry wells will be located in open spaces and parking lots, where practical. The proposed drainage system will be designed according to County standards and is described in greater detail in *Section 5.10*.

2.6.3 Water

HHFDC, in collaboration with the Department of Water Supply (DWS), is pursuing the development of the existing, exploratory Keopu Well No. 3957-05 as a production well, which will provide water to Kamakana Villages and other water uses in North Kona. A second well will also be developed on or upgradient of DWS' Moeauoa Tank site. See *Section 5.6* for additional information.

Water system infrastructure is already located near Kamakana Villages. There are two waterlines within Manawale'a Street that stub out at the Kamakana Village's site and a waterline within the adjacent Palani Road. A new waterline will be installed within Ane Keohokalole Highway that will run from Palani Road to Manawalea Street. The onsite water system would consist of main waterlines within the roadway network. The system would be connected to the existing water system at Keanalehu Drive and Manawale'a Street and at Palani Road and Ane Keohokalole Highway, forming a looped water system.

A 1.0 million gallon (MG) reservoir is proposed to be constructed at the 595-foot elevation Kealakehe High School reservoir site (the location of an existing 1.0 MG reservoir). A second 1.0 MG reservoir is proposed to be located on DHHL property, also at the 595-foot elevation, and identified by TMK: 7-4-21: por. 21 (see the Keahuolu Affordable Housing Project EIS for an assessment of the reservoir site).

Section 5.6 presents a detailed water system analysis for the project. The well sites, reservoirs, water lines and appurtenant structures will be designed in accordance with County standards and will be dedicated to the DWS.

KAMAKANA VILLAGES AT KEAHUOLU

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2.6.4 Wastewater

The County has reserved 431,360 gallons per day (GPD) capacity at the Kealakehe Sewage Treatment Plant (STP) for Kamakana Villages (*Appendix C*). Increased capacity at the Kealakehe STP would be required to accommodate full development for Kamakana Villages. The Department of Environmental Management will have to expand the STP, and the County is currently reviewing options to upgrade the STP.

The onsite sewer system will consist of sewer lines within the roadway network. The onsite system will connect to the offsite sewer lines. There is one proposed outflow connection to the offsite sewer system at Ane Keohokalole Highway and Manawalea Street. Sewer lines from the project site to the STP would be routed along Ane Keohokalole toward Kealakehe Parkway. During later phases of development an additional line may be installed through the La'i 'Ōpua lands and across Queen Ka'ahumanu Highway. Refer to *Section 5.7* for additional description of the project's wastewater system.

2.6.5 Electrical

The proposed electric and communications systems would be developed in accordance with the specifications and standards of Hawaii Electric Light Company (HELCo), Hawaiian Telcom Inc. (HTCo) and Oceanic Time Warner Cable (Oceanic). As State Public Utility Commission (PUC) regulated public utilities, HELCo and HTCo are responsible for the development of off-site facilities that meet island-wide needs, such as power generating plants and power and signal transmission lines, and facilities that serve regional needs of the Kailua-Kona area. HELCo, HTCo, and Oceanic have sufficient capacity to serve the project through existing facilities in the area. HELCo will provide service through the Palani Substation and electric ductlines to the project site will be constructed. HTCo and Oceanic will also provide communication services through an existing system and will have ductlines constructed to service the project area (*Section 5.9*).

2.7 CONSTRUCTION CHARACTERISTICS

Infrastructure construction is anticipated to begin in 2010, and the entire project should be completed in 2028. The existing site is vacant and will require grading, vegetation clearing, excavation (cut and fill), general construction, and planting and landscaping. A brief description of each element is provided below.

Vegetation Clearing, Grading and Excavations (Cut and Fill)

Grading will be required at Kamakana Villages. The existing topography will be altered to the extent necessary for construction of the proposed improvements. It is anticipated that grading will occur on a localized scale, and that cut and fill quantities will generally balance as construction progresses by phase. Grading permits, approved by the State DLNR SHPD, the County Planning Department and the County Department of Public Works will be required for grading activities.

General Construction

The general construction of facilities will include the formation and placement of concrete foundations, the installation of mechanical equipment, the installation of electrical wiring and equipment, general carpentry work, painting and the many other trades and work associated with construction projects.

KAMAKANA VILLAGES AT KEAHUOLU

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Planting and Landscaping

Kamakana Villages will incorporate planting and landscaping throughout the site using a variety of trees, shrubs, groundcovers, and vines (*Figure 2-12*). Tropical landscaping to be included in the project landscape will preserve the rural character and further the rich cultural tradition of the area. The project will include landscaped avenues, roadways and walks that pass from one major open space to another, providing residents a pleasant landscaped structure to the primary streets while defining open spaces around new mauka-makai trails connecting the parks. Landscaping will incorporate existing landforms, native plant species and non-invasive plant species that are compatible with the climate of the region. Drought-tolerant species will also be incorporated to the extent possible to minimize irrigation requirements and water needs.

2.8 TIMEFRAME AND COSTS

Kamakana Villages is proposed to be developed in six phases, with occupancy of the first residential units starting in 2012, and full build out and absorption anticipated sometime during 2028.

In anticipation of the construction of the Ane Keohokalole Highway, the initial Phases of Kamakana Villages will be located along the Highway, allowing the earliest residents to take advantage of the transit facilities planned and along the Highway. The Phase Plan for Kamakana Villages is shown in *Figure 2-13*, and the proposed timing and components of each phase are listed in *Table 2-1*.

Development costs are projected to be approximately \$734,471,953, exclusive of any traffic related "area mitigation" improvements that would otherwise be required under Hawaii County Code Section 25-2-46⁷ (inclusive of land and on-site and off-site infrastructure costs).

2.8.1 Vertical Construction Costs

The estimated construction cost of the residential community will be approximately \$525,700,000 and the retail/commercial construction cost will be \$54,175,000.

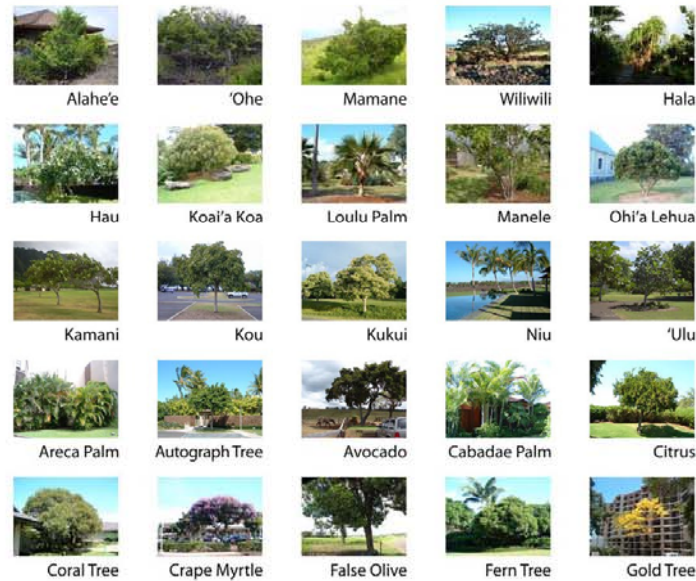
⁷ As an affordable housing project, Kamakana Villages is not required to perform traffic related area mitigation.

KAMAKANA VILLAGES AT KEAHUOLU

Environmental Report

Project Trees

Common Name	Botanical Name	Common Name	Botanical Name
Native to Keahuolu			
Alahe'e	<i>Psydrax odoratum</i> *	Formosan Koa	<i>Acacia confusa</i>
'Ohe	<i>Reynoldsia sandwicensis</i> *	Foxtail Palm	<i>Wodyetia bifurcata</i>
Mamane	<i>Sophora chrysophylla</i> *	Gelger Tree	<i>Cordia sebestena</i>
Wiliwili	<i>Erythrina sandwicensis</i> *	Gold Tree	<i>Tabebuia donnell-smithii</i> *
Native to Hawaii			
Hala	<i>Pandanus tectorius</i>	Hong Kong Orchid Tree	<i>Bauhinia x blakeana</i>
Hau	<i>Hibiscus tiliaceus</i>	Jacaranda	<i>Jacaranda acutifolia</i> *
Koai'a Koa	<i>Acacia koaia</i> *	Kiawe Tree 'Thornless'	<i>Prosopis pallida</i> *
Loulu Palm	<i>Pritchardia affinis</i>	Lignum Vitae	<i>Guaiaacum officinale</i> *
Manele	<i>Sapindus saponaria</i>	Lucuba Palm	<i>Chrysalidocarpus lucubensis</i>
Ohi'a Lehua	<i>Metrosideros polymorpha</i> *	Macadamia Nut	<i>Macadamia integrifolia</i>
Polynesian Introduction Plants			
Kamani	<i>Calophyllum inophyllum</i> *	MacArthur Palm	<i>Ptychosperma macarthurii</i>
Kou	<i>Cordia subcordata</i>	Mango	<i>Mangifera indica</i>
Kukui	<i>Aleurites moluccana</i> *	Manila Palm	<i>Veitchia merrillii</i>
Niu	<i>Cocos nucifera</i>	Monkeypod	<i>Samanea Saman</i> *
'Ulu	<i>Artocarpus altiiis</i>	Needle Flower Tree	<i>Posoqueria latifolia</i>
Introduced Plants			
Areca Palm	<i>Chrysalidocarpus lutescens</i>	Rainbow Shower	<i>Cassia javanica x Cassia fistula</i> *
Autograph Tree	<i>Clusia rosea</i> *	Red Bottlebrush	<i>Callistemon citrinus</i> *
Avocado	<i>Persea americana</i>	Royal Poinciana	<i>Delonix regia</i> *
Cabadae Palm	<i>Chrysalidocarpus cabadae</i>	Samoan Coconut	<i>Cocos spp.</i>
Coral Tree	<i>Erythrina crista-galli</i>	Sea Grape	<i>Coccoloba uvifera</i>
Crape Myrtle	<i>Lagerstroemia indica</i>	Silver Buttonwood	<i>Conocarpus erectus</i>
False Olive	<i>Elaeodendron orientale</i>	Silver Trumpet Tree	<i>Tabebuia aurea</i> *
Fern Tree	<i>Felicium decipiens</i>	Solitaire Palm	<i>Ptychosperma elegans</i>
		Veitchia Palm	<i>Veitchia joannis</i>
		White Tecoma	<i>Tabebuia berteroi</i>



Shrubs

Common Name	Botanical Name	Common Name	Botanical Name
Native to Keahuolu			
A'ali'i	<i>Dodonaea viscosa</i> *	Bird of Paradise	<i>Strelitzia reginae</i>
Ko'oko'olau	<i>Bidens micrantha</i> Gaud.*	Bougainvillea	<i>Bougainvillea spp.*</i>
'Ilie'e	<i>Plumbago zeylanica</i> *	Canna	<i>Canna indica</i>
'Ilima	<i>Sida fallax</i> *	Chenille Plant	<i>Acalypha hispida</i>
Popolo	<i>Solanum americanum</i> *	Coffee	<i>Coffea arabica</i>
Pua Pilo	<i>Capparis sandwichiana</i> *	Crape Jasmine	<i>Ervatamia divaricata</i>
'Uhaloa	<i>Waltheria indica</i> *	Dracaena	<i>Dracaena spp.</i>
Native to Hawaii			
'Akiokaha	<i>Hibiscus furcellatus</i>	Dwarf Scheffler	<i>Schefflera arboricola</i>
Ho'awa	<i>Pittosporum hosmeri</i>	Eldorado	<i>Pseuderanthemum reticulatum</i>
Naio	<i>Myoporum sandwicense</i> *	Heliconia	<i>Heliconia spp.</i>
Naupaka	<i>Scaevola sericea</i> *	Hibiscus	<i>Hibiscus spp.</i>
Pia	<i>Tacca leontopetaloides</i>	Hymenocallis L	<i>Hymenocallis littoralis</i>
Pua kala	<i>Argemone glauca</i> *	Ixora	<i>Ixora spp.</i>
Polynesian Introduction Plants			
Ape	<i>Alocasia macrorrhiza</i>	Lehua Haole	<i>Calliandra haematocephala</i>
'Awapuhi	<i>Zingiber zerumbet</i>	Mock Orange	<i>Murraya paniculata</i>
Kalo	<i>Colocasia esculenta</i>	Monstera	<i>Monstera deliciosa</i>
Ki	<i>Cordyline fruticosa</i>	Moraea Iris	<i>Moraea iridioides</i>
Noni	<i>Morinda citrifolia</i> *	Philodendron	<i>Philodendron selloum</i>
'Olena	<i>Curcuma longa</i>	Pikake	<i>Jasminum sambac</i>
Pia	<i>Tacca leontopetaloides</i>	Pittosporum	<i>Pittosporum tobira</i>
		Plumbago	<i>Plumbago auriculata</i> *
		Privet	<i>Ligustrum spp.</i>
		Red Bauhinia	<i>Bauhinia galpinii</i>
		Rhapis Palm	<i>Rhapis excelsa</i>
		Red Ginger	<i>Alpinia purpurata</i>
		Spider Lily	<i>Crinum asiaticum</i>
		Tiare Gardenia	<i>Gardenia taitensis</i>



Groundcovers / Vines

Common Name	Botanical Name	Common Name	Botanical Name
Native to Keahuolu			
Ala'ala-wai-nui	<i>Peperomia leptostachya</i>	Cat's-Claw Creeper	<i>Macfadyena unguis-cati</i>
Ala'ala-wai-nui wahine	<i>Plectranthus parviflorus</i> *	Daylily	<i>Hemerocallis spp.</i>
Huehue	<i>Cocculus trilobus</i>	Dwarf Natal Plum	<i>Carissa spp.</i>
Kauna'oa	<i>Cuscuta sandwichiana</i> *	Honeysuckle	<i>Lonicera spp.</i>
Koali-'awa	<i>Ipomoea indica</i> *	Jade Vine	<i>Strongylodon macrobotrys</i>
Kupukupu	<i>Nephrolepis exaltata</i>	Joyweed	<i>Alternanthera tenella</i>
Moa	<i>Psilotum nudum</i> *	Kuhio Vine	<i>Ipomoea horsfalliae</i>
Pili Grass	<i>Heteropogon contortus</i> *	Laue Fern	<i>Phymatosorus grossus</i>
Native to Hawaii			
'Ae'ae	<i>Bacopa monnieri</i>	Lippia Grass	<i>Lippia spp.*</i>
Akia	<i>Wikstroemia uva-ursi</i> *	Mexican Creeper	<i>Antigonon leptopus</i> *
'Akiukuli	<i>Sesuvium portulacastrum</i> *	Pothos	<i>Epipremnum pinnatum</i>
Beach Morning Glory	<i>Ipomoea pes-caprae</i> subsp. <i>Brasiliensis</i> *	Sandpaper Vine	<i>Petrea volubilis</i>
Beach Vitex	<i>Vitex rotundifolia</i> *	Spider Plant	<i>Chlorophytum comosum</i>
Hinahina	<i>Heliotropium anomalum</i> var. <i>argenteum</i> *	Stephanotis	<i>Marsdenia floribunda</i>
Pa'u-o-Hi'iaka	<i>Jacquemontia ovalifolia</i> subsp. <i>Sandwicensis</i> *	Sweet Potato	<i>Ipomoea batatas</i>
Uki'uki	<i>Dianella sandwicensis</i>	Trailing Gardenia	<i>Gardenia augusta</i> 'Radicans'
Polynesian Introduction Plants			
Auhuhu	<i>Tephrosia purpurea</i> *	Carpet Grass	<i>Axonopus affinis</i>
		Seashore Paspalum	<i>Paspalum vaginatum</i>
		St. Augustine Grass	<i>Stentaphrum secundatum</i>
		Zoysia Grass	<i>Zoysia japonica</i> 'El Toro'



Photos Courtesy of Forest and Kim Starr and the University of Hawaii Botany Department

LANDSCAPE PLANTS

KAMAKANA VILLAGES AT KEAHUOLU Kailua-Kona, Hawaii

November 9, 2009

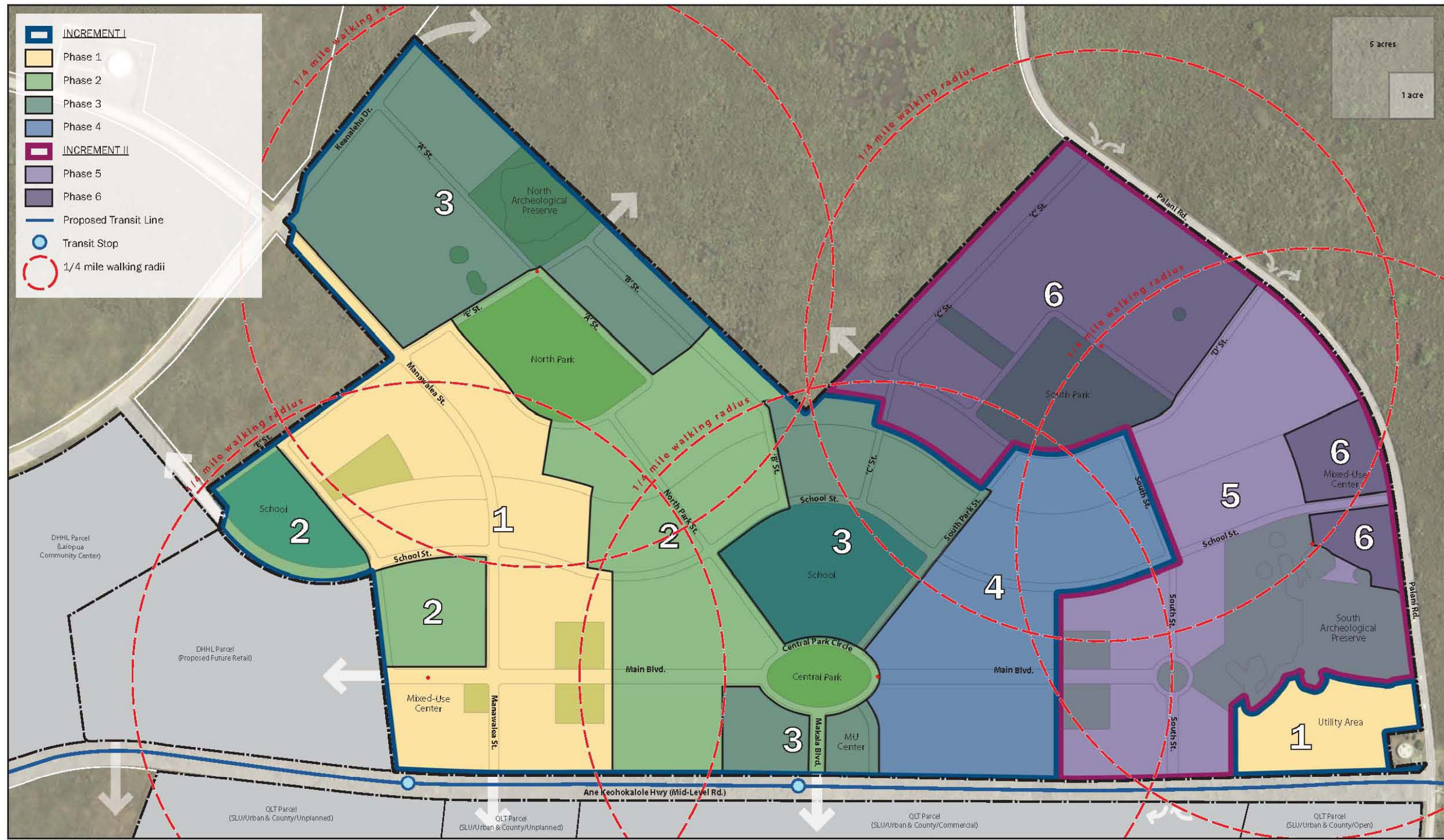
Forest City Hawaii Kona, LLC Honolulu, Hawaii
Group 70 International, Inc. Honolulu, Hawaii

Hawaii Housing Finance and Development Corporation Honolulu, Hawaii
Calthorpe Associates Berkeley, California

Figure 2-12

KAMAKANA VILLAGES AT KEAHUOLU

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PHASE PLAN

KAMAKANA VILLAGES AT KEAHUOLU Kailua-Kona, Hawaii

November 9, 2009

Forest City Hawaii Kona, LLC
Honolulu, Hawaii

Group 70 International, Inc.
Honolulu, Hawaii

Hawaii Housing Finance and Development Corporation
Honolulu, Hawaii

Calthorpe Associates
Berkeley, California

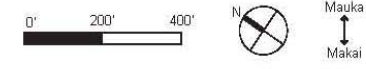


Figure 2-13

KAMAKANA VILLAGES AT KEAHUOLU

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2.8.2 Infrastructure Costs

An order-of-magnitude construction cost for the internal roadways, including water, sewer, drainage, electric, telephone and cable television utilities, estimated to be approximately \$129,915,378, and the off-site infrastructure costs are estimated to be \$24,463,425 for a total of \$154,378,803. Overall construction cost by phase has been broken down in *Table 2-2*.

Table 2-2
Construction Cost by Phase

Project Development	Onsite Cost	Offsite Cost	Total Phase Cost
Phase 1	\$29,129,377	\$11,941,075	\$41,070,452
Phase 2	\$27,162,240	\$3,049,900	\$30,212,140
Phase 3	\$22,159,703	\$1,000,000	\$23,159,703
Phase 4	\$13,677,271	\$8,472,450	\$22,149,721
Phase 5	\$17,194,959	\$0	\$17,194,959
Phase 6	\$20,591,828	\$0	\$20,591,828
Total Construction Cost			\$ 154,378,803

Local traffic improvements recommended in the Traffic Impact Analysis Report (TIAR) completed by the Traffic Management Consultant (TMC) (*Appendix D*) is estimated to be approximately \$1,830,000. Therefore, total infrastructure cost is for Kamakana Villages is approximately \$156,208,803.

2.9 PROPOSED FINANCING

Forest City has the necessary economic ability to complete Kamakana Villages as currently designed, and has successfully developed, and is developing, numerous large-scale mixed use communities throughout the U.S. In addition to direct Forest City investment, Forest City has obtained a \$25M Dwelling Unit Revolving Fund (DURF) loan from HHFDC to be used for the development of Kamakana Villages. This DURF loan, combined with subsidies to date and Forest City's investment and financing, helps secure the funding needed for the initial Phases of development. Additional funds are expected to come from lender financing and the proceeds from the sales at Kamakana Villages. HHFDC and Forest City have committed to working together to raise financing for infrastructure and other improvements necessary to support Kamakana Villages.

2.10 FEASIBILITY STUDY AND MARKETING PLAN

In October 2009, The Hallstrom Group, Inc. performed a Market Study, Economic Impact Assessment, and Public Costs/Benefits Assessment to determine the strength of market demand for Kamakana Villages (*Appendix E*). The research examined historical data, unit qualitative analysis, and internal needs assessments.

The proposed master planned community will be among the first major self-contained projects in Greater Kailua-Kona oriented towards resident working families. In place of the piece-meal subdivision and limited amenity smaller developments which have traditionally provided most of

KAMAKANA VILLAGES AT KEAHUOLU

Environmental Report

the affordable and low-market priced housing stock in the area, Kamakana Villages will offer a sustainable environment with schools, parks, neighborhood retail businesses and services, and open spaces and preserves.

The subject property and proposed development will have the attributes necessary to be highly competitive in all its product sectors, and will capture a reasonable market share during its offering period. Therefore, it is estimated that all 2,330 residential units (including for sale and rental units) will be absorbed between 2011 and 2030. Assuming that sufficient inventory is constructed in a timely fashion, all 2,330 housing units could be absorbed within a 17 year offering period, commencing in 2011 as the initial infrastructure is being developed. The affordable priced units are expected to be absorbed more quickly than the market priced units.

Even with the development of Kamakana Villages and other planned projects, the anticipated shortfall of housing units in the Greater Kailua Kona area during the coming two decades is anticipated to be between 1,500 to 6,000 units. The affordable-priced sector will continue to be the most underserved during the study period, with the presently envisioned supply being only about half of the quantified demand.

The location of Kamakana Villages is superior for the proposed development. The site has extensive frontage on Palani Road and the soon-to-be-constructed initial stretch of Ane Keohokalole Highway, which will enable ease of access; regional infrastructure systems are available in the vicinity; and, the makai and mauka panoramas are highly desirable as is the climate. The location is also favorable from a market perspective. Nearby existing development is complimentary; it is proximate to supporting services, employment and businesses in central Kailua-Kona; and, is in an area the market considers as having urban use potentials.

It is anticipated that it will take another year-plus (late 2010 through 2011) for the West Hawai'i residential market to stabilize and begin moving into an upward trending environment, with full recovery and upcycle indicators by mid to late decade. By then, tourism will have rebounded, as will business creation and employment, with development capital and investment flowing again into the region.

The resident population of West Hawai'i is forecast to increase by about 60 percent over the next two decades, reaching some 118,000 persons. In Greater Kailua-Kona (stretching from Keahole to Keauhou), the resident population is projected to grow from a current level of just over 23,000 to circa 40,000 persons by 2030.

These additional residents will primarily result from the natural growth of existing Big Island families, with secondary contributors being intra-state migration from other islands, and immigration of mainland and foreign persons. Non-resident purchasers will also be active in the market. Combined, this should create demand for some 7,560 to 10,162 new housing units in Greater Kailua-Kona during the 2010 through 2030 projection period (mid-point of 8,861 units). About 44 percent of this demand will be for resident/workforce housing units meeting affordable pricing guidelines. Non-resort multifamily units will comprise an increasing percentage of the housing stock.

There are significant numbers of potential residential units for North Kona which have applied for entitlements, been proposed, announced or otherwise discussed in the market, with nearly 11,000 units in major developments and another 1,200 in smaller projects. However, few of the holdings

KAMAKANA VILLAGES AT KEAHUOLU

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have obtained entitlements, several of the proposed larger undertakings are not moving forward at this time, and others are for sale. Additionally, none of the proposed/discussed projects are expected to include as large an affordable priced component as Kamakana Villages (at over half of the total inventory).

The residents of Kamakana Villages will generate a demand for more than 110,000 sf of proximate neighborhood commercial floor space comprised of retail, restaurant, service/support, business/office and medical uses based on regional and statewide spatial demand trends. Additionally, subject commercial development would receive patronage from employees and day workers in the community, nearby residents in un-serviced subdivisions, and passer-bys and intercept customers. With the development of Kamakana Villages, area residents and day workers are anticipated to generate a demand for 199,500 sf of commercial space. Therefore, the 197,000 sf of commercial space planned for the 3 mixed-use centers within Kamakana Villages should be fully absorbed and in operation by 2028.

2.11 NUMBER OF EMPLOYEES AND CLIENTELE

Development of Kamakana Villages will create both direct and indirect employment within the County. During the development period, on- and off-site, direct and indirect worker wages would total \$505 million.

From 2011 to 2030 the number of worker-years created on- and off-site, directly and indirectly, by the development varies from 103 to 1,173 positions annually, totaling 11,131 worker-years over the entire timeframe.

On a stabilized basis, after the completion of construction (year 20 and beyond), the project will generate some 933 permanent full-time equivalent employment opportunities, 654 directly related to on-site activities, and 279 indirect positions throughout the island (*Appendix E*).

2.12 PARKING ARRANGEMENTS

Kamakana Villages is a TOD/TND development with three compact, mixed-use centers and designed to promote interconnectivity and easy pedestrian and bicycle travel. Two transit stops are proposed along a portion of the Ane Keohokalole Highway adjacent to Kamakana Villages. Once completed, these transit stops should further reduce auto-reliance among the residents of Kamakana Villages. A reduction in curb cuts due to the predominance of alley-loaded streets, will enable more on-street parking for residents, guests and other parking needs. As a HRS 201H affordable housing project, Kamakana Villages is entitled to be exempt from the usual statutes, ordinances, charter provisions, and rules relating to planning, zoning, construction standards for subdivisions, development and improvement of land, and the construction of dwelling units. Exemptions for parking requirements to the Zoning Code and the Kona CDP/VDG, as applicable, will be sought by Forest City. The exemptions will be in the form of a reduction of parking required, credit for onsite tandem parking and/or credit for on-street parking to be counted towards parking requirements.

KAMAKANA VILLAGES AT KEAHUOLU

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2.13 TRAFFIC

A TIAR for the Kamakana Villages Project performed in accordance with the Hawai'i County Code, Section 25-2-46, was completed by the Traffic Management Consultant (TMC) (*Appendix D*). The TIAR conducted an evaluation of existing and future roadways and traffic conditions, future roadways and traffic without the project, and three progressive future scenarios with the project (Year 2014, Year 2019, and Year 2029).

Traffic improvements will be required with or without the development of Kamakana Villages. The ongoing improvements on Queen Kaahumanu Highway have improved traffic operations and which are expected to continue with the Phase II improvements. Further improvements will be required on the cross streets on Queen Kaahumanu Highway to minimize delays and optimize intersection operations. Without the proposed project, Queen Kaahumanu Highway will require additional widening, from four lanes to six lanes, from south of Henry Street to north of Kealakehe Parkway.

The Year 2029 PM peak hour traffic demands at the Queen Kaahumanu Highway intersections at Palani Road, and at Henry Street are expected to reach the limits of capacity for an at-grade intersection. Ane Keohokalole Highway is expected to provide some relief to Queen Kaahumanu Highway. Additional capacity on the north-south highway corridor can be provided by the planned extension of Kuakini Highway from Makala Boulevard to Kealakehe Parkway.

Palani Road is expected to require an additional mauka bound lane by the Year 2019 without the proposed project, and an additional makai bound lane by the Year 2019 with the proposed project. Additional capacity in the mauka-makai directions can be provided by the extension of Kealakehe Parkway to Mamalahoa Highway/Palani Road. Together with the extension of Kuakini Highway to Kealakehe Parkway, this second access route to and from Kailua Town would relieve the heavily traveled Palani Road.

Kamakana Villages will contribute to improvements in the regional roadway network by providing roadway connections to existing and future developments on adjacent lands, which will help improve regional traffic circulation through the use of alternate routes to Queen Ka'ahumanu and Mamalahoa highways. In addition, Kamakana Villages will provide pedestrian, bicycle, and bus facilities, as well as provide connectivity to the surrounding street network. *Section 4.11 and 6.2.12* provides an analysis on the existing traffic conditions, potential impacts, and mitigation measures.

3.0 CONFORMANCE WITH STATE AND COUNTY LAND USE PLANS AND POLICIES

3.0 CONFORMANCE WITH STATE AND COUNTY PLANS AND POLICIES

In this chapter, the project's consistency with applicable land use policies set forth in the Hawai'i State Land Use law, Hawai'i State Plan, Hawai'i State Functional Plans, Hawai'i Coastal Zone Management Program, Hawai'i Revised Statutes, Chapter 201H, West Hawai'i Regional Plan, County of Hawai'i General Plan, Keāhole to Kailua Development Plan, Keāhole to Konaunau Regional Circulation Plan, County of Hawai'i Zoning Code, and Special Management Area regulations, and Kona Community Development Plan, are discussed.

3.1 HAWAII STATE LAND USE DISTRICT BOUNDARIES

The State of Hawai'i Land Use Law, Chapter 205, HRS, regulates the classification and uses of lands in the State to accommodate growth and development, and to retain the natural resources in the area. All lands within the State are classified by the State Land Use Commission (LUC), as Urban, Rural, Agricultural, or Conservation. Each district has specific land use restrictions. Any proposed changes to the district boundaries greater than 15-acres in size requires approval by the LUC, whose primary responsibilities are to: (1) administer the law and determine the boundaries for each district; (2) preserve and protect Hawai'i's land; (3) encourage uses to which lands are best suited; and (4) ensure that areas of State concern are addressed in the land-use decision making process.

The proposed 272.063 acre Kamakana Villages site is within the State Agricultural District, with a small portion (0.198 acres) within the State Urban District. The proposed Kamakana Villages is a master-planned mixed-use affordable housing project which will include retail space, commercial uses, public and/or private school sites, archaeological and open space preserve areas, active and passive parks, trail and bikeway system, and support infrastructure and transit stops and centers. This type of mixed use community development is not permitted within the State Agricultural District; however, it is permitted in the State Urban District. Therefore, the 271.865 acres designated as Agricultural require a SLUBA from Agricultural to Urban.

When reviewing a Petition for district boundary amendment, the LUC considers the decision making criteria of HRS Section 205-17. A discussion of Kamakana Villages's consistency with the criterion under HRS Section 205-17 is provided below.

- (1) *The extent to which the proposed reclassification conforms to the applicable goals, objectives, and policies of the Hawaii state plan and relates to the applicable priority guidelines of the Hawaii state plan and the adopted functional plans;*
- (2) *The extent to which the proposed reclassification conforms to the applicable district standards;*
- (3) *The impact of the proposed reclassification on the following areas of state concern:*
 - a. *Preservation or maintenance of important natural systems or habitats;*
 - b. *Maintenance of valued cultural, historical, or natural resources;*
 - c. *Maintenance of other natural resources relevant to Hawaii's economy, including, but not limited to, agricultural resources;*
 - d. *Commitment of state funds and resources;*
 - e. *Provision for employment opportunities and economic development; and*

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- f. Provision for housing opportunities for all income groups, particularly the low, low-moderate, and gap groups;*
- (4) The standards and criteria for the reclassification or rezoning of important agricultural lands in section 205-50;*
- (5) The county general plan and all community, development, or community development plans adopted pursuant to the county general plan, as they relate to the land that is the subject of the reclassification petition; and*
- (6) The representations and commitments made by the petitioner in securing a boundary change.*

Discussion

Kamakana Villages is consistent with the goals, objectives, policies, and priority guidelines of the Hawai'i State Plan, State Functional Plans, County General Plan, and Kona CDP. The proposed reclassification conforms to the Urban District standards and would allow the subject property to conform to the County's General Plan LUPAG which designates the majority of the subject property for Urban Expansion, and the remainder of the property as Low Density Urban. The reclassification would also accommodate the projected population growth of the County and would support current State land use classifications of the surrounding areas, which is almost entirely within the Urban district.

Because the project site is vacant and undeveloped, development of Kamakana Villages will alter much of the existing landscape. However, technical studies and surveys of the area have been carried out to assess anticipated impacts to the natural environment. No significant natural systems or habitats have been identified within the project area. Additionally, the site is not considered to be a valued agricultural resource due to the poor quality of the soil. Cultural and archaeological resources identified as a result of archaeological assessments of the subject property will be preserved and/or mitigated in accordance with procedures established by the State Historic Preservation Division.

Costs associated with processing of the Final EIS, proposed district boundary amendment and other land use entitlements is, in part, a joint commitment of State and private resources through HHFDC and Forest City. Forest City will continue the efforts in partnerships with the HHFDC, and will coordinate funding sources for site work and the construction of on-site and off-site infrastructure.

Kamakana Villages will contribute to the economic development of both the County and the State by creating employment opportunities in the construction field, as well as long-term employment associated with the commercial and civic development, all of which will increase State and County revenues through real property and personal income taxes. Kamakana Villages fulfills State and County objectives of encouraging residential development, especially by providing housing opportunities for low, low-moderate and gap groups in North Kona, and by providing those new housing opportunities in an area near existing and future job centers.

Forest City is committed to securing a SLUBA and will meet all applicable requirements. Kamakana Villages will meet the objectives, policies, and guidelines of various State plans, County General Plan and Kona CDP. The applicability and the extent to which Kamakana Villages conforms to these plans is discussed in further detail below.

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In addition to considering the decision-making criteria of HRS Section 205-17, the LUC reviews a Petition to reclassify lands to the Urban district under the following standards:

Hawai'i Administrative Rules (HAR) Section 15-15-18, Standards for Determining "U" Urban District Boundaries:

- (1) *It shall include lands characterized by "city-like" concentrations of people, structures, streets, urban level of services and other related land uses;*
- (2) *It shall take into consideration the following specific factors:*
 - a. *Proximity to centers of trading and employment except where the development would generate new centers of trading and employment;*
 - b. *Availability of basic services such as schools, parks, wastewater systems, solid waste disposal, drainage, water, transportation systems, public utilities, and police and fire protection; and*
 - c. *Sufficient reserve areas for foreseeable urban growth;*
- (3) *It shall include lands with satisfactory topography, drainage, reasonably free from the danger of any flood, tsunami, unstable soil condition, and other adverse environmental effects;*
- (4) *Land contiguous with existing urban areas shall be given more consideration than noncontiguous land, particularly when indicated for further urban use on state or county general plans or county community plans or development plans;*
- (5) *It shall include lands in appropriate locations for the new urban concentrations and shall give consideration to areas of urban growth as shown on the state and county general plans or county community plans or development plans;*
- (6) *It may include lands which do not conform to the standards in paragraphs (1) to (5):*
 - a. *When surrounded by or adjacent to existing urban development; and*
 - b. *Only when those lands represent a minor portion of this district;*
- (7) *It shall not include lands, the urbanization of which will contribute toward scattered spot urban development, necessitating unreasonable investment in public infrastructure or support services; and*
- (8) *It may include lands with a general slope of twenty per cent or more if the commission finds that those lands are desirable and suitable for urban purposes and that the design and construction controls, as adopted by any federal, state, or county agency, are adequate to protect the public health, welfare and safety, and the public's interests in the aesthetic quality of the landscape.*

Discussion

Kamakana Villages is consistent with the Urban standards. It is almost entirely surrounded by Urban district lands that are either being used for residential development or are planned for residential and other urban development. Therefore, the reclassification of the Kamakana Villages site will not contribute to scattered spot urban development.

Most of the Kamakana Villages site is designated as Urban Expansion on the County's General Plan LUPAG map, with a small area designated as Low Density Urban. The entire Kamakana Villages site is within the Kona CDP Urban Area.

The project site is proximate to supporting services, employment and businesses in central Kailua-Kona; and, is in an area the market considers as having urban use potentials. Kamakana Villages is

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located approximately one mile from Kailua-Kona, West Hawai'i's commercial, industrial and economic center. While some basic services are already available to the site, the development of Kamakana Villages will include additional parks and school sites. Additionally, Forest City will construct on-site and off-site infrastructure that may be dedicated to the County and become part of the County's regional system. The proposed master planned community will be among the first major self-contained projects in Greater Kailua-Kona oriented towards resident working families. In place of the piece-meal subdivision and limited amenity smaller developments which have traditionally provided most of the affordable and low-market priced housing stock in the area, Kamakana Villages will offer a sustainable environment with schools, parks, neighborhood retail businesses and services, and open spaces and preserves.

The Kamakana Villages site is developable, with satisfactory topography consistent with urban design standards. Overall, the site has a slope of less than 20%. Most of the lower half of the site has a slope of less than 5%, with portions having a 5% to 15% slope. Most of the upper half of the site has a less than 15% slope. The site is generally free of potentially adverse environmental conditions, including floods, tsunamis, and unstable soil conditions.

3.2 HAWAI'I STATE PLAN

The Hawai'i State Plan, HRS Chapter 226 (HSP), serves as a written guide for the future long range development of the State.

Part I of the HSP establishes a statewide planning system that provides goals, objectives, and policies that detail priority directions and concerns of the State of Hawai'i. Specific objectives and policies of the HSP that pertain to the development of Kamakana Villages are discussed below. Objectives and policies related to agriculture are not applicable to Kamakana Villages because the site has such poor soil ('a'a Lava Flows (rLV), Pahoe-hoe Lava Flows (rLW), Kaimu extremely rocky stony peat (rKED), and Punaluu extremely rocky peat (rPYD)) the proposed development will not remove currently productive agricultural lands from use.

Under Part 1 of the HSP, it is the goal of the State to achieve the following:

- *A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai'i present and future generations.*
- *A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.*
- *Physical, social, and economic well-being, for individuals and families in Hawai'i, that nourishes a sense of community responsibility, of caring, and of participation in community life (Chapter 226-4, HRS).*

a. Section 226-5 Objective and policies for population.

- (a) *It shall be the objective in planning for the State's population to guide population growth to be consistent with the achievement of physical, economic, and social objectives in the chapter.*
- (b) *To achieve the population objective, it shall be the policy of this State to:*
 - (1) *Manage population growth statewide in a manner that provides increased opportunities for Hawai'i's people to pursue their physical, social, and economic aspirations while recognizing the unique needs of each county.*

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- (2) *Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires*
- (3) *Promote increase opportunities for Hawai'i's people to pursue their socio-economic aspirations throughout the islands.*
- (4) *Encourage research activities and public awareness programs to foster an understanding of Hawai'i's limited capacity to accommodate population needs and to address concerns resulting from an increase in Hawai'i's population.*
- (7) *Plan the development and availability of land and water resources in a coordinated manner so as to provide for the desired levels of growth in each geographic area.*

Discussion

Kamakana Villages is consistent with the State's goals to provide economic vitality, stability and growth for present and future generations. The requested change from the Agricultural District to the Urban District will contribute to the government's desire to direct population growth to areas with the greatest economic benefit and to provide housing near employment centers. Kamakana Villages will provide a diversity of housing options, including affordable housing, along with retail and civic spaces, in a location specifically designated by the County for urban development. Additionally, Kamakana Villages will contribute to employment opportunities by creating construction-related jobs during the project's development and other long-term employment to support the schools, commercial/retail areas, and overall maintenance within the project site.

b. Section 226-6 Objective and policies for the economy--in general.

- (a) *Planning for the State's economy in general shall be directed towards achievement of the following objectives:*
 - (1) *Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawai'i's people.*
 - (2) *A steady growing and diversified economic base that is not overly dependant on a few industries.*
- (b) *To achieve the general economic objectives, it shall be the policy of this State to:*
 - (6) *Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.*
 - (9) *Foster greater cooperation and coordination between the government and private sectors in developing Hawai'i's employment and economic growth opportunities.*
 - (10) *Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.*
 - (11) *Maintain acceptable working conditions and standards for Hawai'i's workers.*
 - (12) *Provide equal employment opportunities for all segments of Hawai'i's population through affirmative action and nondiscrimination measures.*
 - (13) *Encourage businesses that have favorable financial multiplier effects within Hawai'i's economy.*
 - (14) *Promote and protect intangible resources in Hawai'i, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.*

Discussion

North Kona is one of the fastest growing regions in Hawai'i County. The area needs affordable housing opportunities to support employees of the visitor industry and service sectors. Kamakana Villages is ideally situated to help fulfill West Hawai'i's employee housing demand.

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c. Section 226-8 Objectives and policies for the economy—visitor industry.

(b) To achieve the visitor industry objective, it shall be the policy of this State to:

(3) Improve the quality of existing visitor destination areas.

(4) Encourage cooperation and coordination between the government and private sectors in developing and maintaining well-designed, adequately serviced visitor industry and related developments which are sensitive to neighboring communities and activities.

(5) Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawai'i's people.

Discussion

West Hawai'i is a high growth visitor destination, however the current housing opportunities available are not sufficient to support the employment of the district. The provision of new affordable housing will have a beneficial impact on visitor industry workers by reducing commute times which is important to workers' well being and quality of life. The health of the County's economy is influenced by the availability of affordable housing in reasonable proximity to job centers.

d. Section 226-9 Objectives and policies for the economy—federal expenditures.

(b) To achieve the federal expenditures objective, it shall be the policy of this State to:

(4) Increase opportunities for entry and advancement of Hawai'i's people into federal government service.

Discussion

Increasing the availability of housing may impact existing and potential Federal workers by helping to provide housing opportunities in reasonable proximity to West Hawai'i's job centers.

e. Section 226-10 Objectives and policies for the economy—potential growth.

(a) Planning for the State's economy with regard to potential growth activities shall be directed towards achievement of the objective of development and expansion of potential growth activities that serve to increase and diversify Hawai'i's economic base.

(b) To achieve the potential growth activity objective, it shall be the policy of this State to:

(1) Facilitate investment and employment in economic activities that have the potential for growth such as diversified agriculture, aquaculture, apparel and textile manufacturing, film and television production, and energy and marine-related industries.

(2) Expand Hawai'i's capacity to attract and service international programs and activities that generate employment for Hawai'i's people.

(3) Enhance and promote Hawai'i's role as a center for international relations, trade, finance, services, technology, education, culture, and the arts.

(6) Provide public incentives and encourage private initiative to attract new industries that best support Hawai'i's social, economic, physical, and environmental objectives.

Discussion

Kamakana Villages will support and facilitate overall growth in the West Hawai'i region. The State has collaborated on projects like the new Palamanui/University of Hawai'i Center at West Hawai'i College which will bring higher educational, research and information facilities, and residential and commercial complexes. While these types of efforts contribute to the diversification of the economy and creates numerous growth opportunities in the region, the overall success requires the availability of affordable housing in reasonable proximity to job centers. Kamakana Villages

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will have a beneficial, indirect impact upon economic diversification by contributing much needed housing opportunities. Additionally, Kamakana Villages will contribute to employment opportunities such as construction-related jobs and employment to support the schools, commercial/retail areas, and overall maintenance within the project site.

f. Section 226-10.5 Objectives and policies for the economy—information industry.

- (a) *Planning for the State's economy with regard to the information industry shall be directed toward the achievement of the objective of positioning Hawai'i as the leading dealer in information businesses and services in the Pacific Rim;*
- (b) *To achieve the information industry objective, it shall be the policy of this State to:*
 - (1) *Encourage the continued development and expansion of the telecommunications infrastructure serving Hawai'i to accommodate future growth in the information industry;*
 - (2) *Facilitate the development of new business and service ventures in the information industry which will provide employment opportunities for the people of Hawai'i;*
 - (4) *Ensure that the development of new businesses and services in the industry are in keeping with the social, economic, and physical needs and aspirations of Hawai'i's people;*
 - (7) *Assist in the promotion of Hawai'i as a broker, creator, and processor of information in the Pacific.*

Discussion

As is the case with other segments of the economy, the availability of affordable housing in reasonable proximity to employment centers will have a beneficial impact upon the information industry's ability to attract and keep workers. As a new affordable housing development, Kamakana Villages may also attract a younger population of workers that could help to facilitate the development of new businesses and services in the information industry.

g. Section 226-11 Objectives and policies for the physical environment—land-based, shoreline, and marine resources.

- (a) *Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:*
 - (1) *Prudent use of Hawai'i's land-based, shoreline, and marine resources.*
 - (2) *Effective protection of Hawai'i's unique and fragile environmental resources.*
- (b) *To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:*
 - (1) *Exercise an overall conservation ethic in the use of Hawai'i's natural resources.*
 - (2) *Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.*
 - (3) *Take into account the physical attributes of areas when planning and designing activities and facilities.*
 - (4) *Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.*
 - (6) *Encourage the protection of rare or endangered plant and animal species and habitats native to Hawai'i.*
 - (7) *Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion.*
 - (8) *Pursue compatible relationships among activities, facilities, and natural resources.*

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- (9) *Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.*

Discussion

Kamakana Villages is about one mile upslope and away from the coastline. The development of Kamakana Villages will not have a significant adverse impact on land-based, shoreline or marine resources. The Kamakana Villages site has been carefully surveyed to ensure that no significant habitats are present and that no endangered, threatened or candidate species will be affected by the proposed development. The present environment, comprised of lava flows of various ages covered mostly by alien dominated scrub vegetation, provides for a limited range of habitats in the area. The location of Kamakana Villages is consistent with sound planning principals for the prudent use of land-based resources.

h. Section 226-12 Objectives and policies for the physical environment—scenic, natural beauty and historic resources.

- (a) *Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawai'i's scenic assets, natural beauty, and multi-cultural/historical resources.*
- (b) *To achieve the scenic, natural beauty, and historic resources objective, it shall be the policy of this State to:*
- (1) *Promote the preservation and restoration of significant natural and historic resources. A*
 - (3) *Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.*
 - (4) *Protect those special areas, structures, and elements that are an integral and functional part of Hawai'i's ethnic and cultural heritage.*
 - (5) *Encourage the design of developments and activities that complement the natural beauty of the islands.*

Discussion

Kamakana Villages will be a beautiful new community and will include native landscaping throughout the site. Significant archaeological sites will be preserved and/or mitigated per the archeological mitigation plan. Such preserve areas will be incorporated as elements of open space throughout Kamakana Villages. The concept plan for Kamakana Villages includes numerous neighborhood parks and archeological preserve areas. Urban design controls, to be implemented in a manner consistent with the Kona CDP, will consider the overall visual effects of the proposed development as seen from off-site locations. From vantage points located mauka and makai of the site, the property will appear as a continuation of the development in the Kailua- Kona area. The project will become an attractive addition to the overall community visual setting.

i. Section 226-13 Objectives and policies for the physical environment—land, air and water quality.

- (a) *Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:*
- (1) *Maintenance and pursuit of improved quality in Hawai'i's land, air, and water resources.*
 - (2) *Greater public awareness and appreciation of Hawai'i's environmental resources.*
- (b) *To achieve the land, air, and water quality objectives, it shall be the policy of this State to:*
- (2) *Promote the proper management of Hawai'i's land and water resources.*

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- (3) *Promote effective measures to achieve desired quality in Hawai'i's surface, ground, and coastal waters.*
- (4) *Encourage actions to maintain or improve aural and air quality levels to enhance the health and wellbeing of Hawai'i's people.*
- (5) *Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.*
- (6) *Encourage design and construction practices that enhance the physical qualities of Hawai'i's communities.*
- (7) *Encourage urban developments in close proximity to existing services and facilities.*
- (8) *Foster recognition of the importance and value of the land, air, and water resources to Hawai'i's people, their cultures and visitors.*

Discussion

Forest City will comply with applicable State, Federal and County regulations relating to land, air and water resources in developing Kamakana Villages. The development of Kamakana Villages will include the development of off-site and on-site infrastructure that will benefit the region, including roadways, wastewater transmission lines, and potable water supply, transmission lines and reservoir(s). The project will implement best management practices and other measures such as storm drain filtration devices, ground stabilization with landscape and hardscape, educational warning signs to prevent non-point source pollution and other impacts to coastal resources. Landscaping will minimize water use and reduce heat-island impacts, and resident training programs will be provided to optimize savings of energy and limit waste which will lead to the development of a community-wide lifestyle of sustainability.

Despite volcanic emissions (vog), the air quality around Kamakana Villages is relatively good and well within State and National air quality standards (see Section 4.6 of the Keauholu Affordable Housing Project EIS). The Kamakana Village's site is not in an area subject to significant natural or man-made hazards. The subject property, located approximately one mile mauka of Kailua-Kona, is in close proximity to existing services and facilities.

j. Section 226-14 Objectives and policies for facility systems—in general.

- (a) *Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.*
- (b) *To achieve the general facility systems objective, it shall be the policy of this State to:*
 - (1) *Accommodate the needs of Hawai'i's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.*
 - (2) *Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.*
 - (3) *Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.*
 - (4) *Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.*

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Discussion

Preliminary planning for Kamakana Village's infrastructure systems has resulted in coordination discussions with State and County agencies and private landowners in the area. Future development of these systems will require ongoing coordination. In addition, Forest City will be incorporating LEED ND design principles in the development of Kamakana Villages, including features to conserve energy and water usage.

k. Section 226-15 Objectives and policies for facility systems—solid and liquid wastes.

- (a) *Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:*
 - (1) *Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.*
 - (2) *Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.*
- (b) *To achieve solid and liquid waste objectives, it shall be the policy of this State to:*
 - (1) *Encourage the adequate development of sewerage facilities that complement planned growth.*
 - (2) *Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.*
 - (3) *Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes.*

Discussion

The project is in a location designated for urban growth. The sewer requirements of the proposed project will require additional capacity at the Kealakehe STP. The development of the project will include wastewater system design to meet sewer requirements. The proposed project will also incorporate green design principles which include re-use and recycling as practicable to reduce solid wastes.

l. Section 226-16 Objectives and policies for facility systems—water.

- (a) *Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities.*
- (b) *To achieve the facility systems water objective, it shall be the policy of this State to:*
 - (1) *Coordinate development of land use activities with existing and potential water supply.*
 - (2) *Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.*
 - (3) *Reclaim and encourage the productive use of runoff water and wastewater discharges.*
 - (4) *Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.*
 - (5) *Support water supply services to areas experiencing critical water problems.*
 - (6) *Promote water conservation programs and practices in government, private industry, and the general public to help ensure adequate water to meet long-term needs.*

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The potable water wells needed to support the project are identified in water source development plans approved by the County (State Well No. 3957-05 and No. 3957-02). The project will support the development of the potable water system, including a well(s), reservoir(s), and transmission lines. Construction of the system will enhance service to the surrounding area as well by improving water supply, storage capacity and connectivity.

m. Section 226-17 Objectives and policies for facility systems—transportation.

- (a) *Planning for the State's facility systems with regard to transportation shall be directed towards the achievement of the following objectives:*
- (1) *An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.*
 - (2) *A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.*
- (b) *To achieve the transportation objectives, it shall be the policy of this State to:*
- (2) *Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives;*
 - (3) *Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties;*
 - (5) *Promote a reasonable level and variety of mass transportation services that adequately meet statewide and community needs;*
 - (6) *Encourage transportation systems that serve to accommodate present and future development needs of communities;*
 - (9) *Encourage the development of transportation systems and programs which would assist statewide economic growth and diversification;*
 - (10) *Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawai'i's natural environment;*
 - (11) *Encourage safe and convenient use of low-cost, energy-efficient, non-polluting means of transportation;*
 - (12) *Coordinate intergovernmental land use and transportation planning activities to ensure the timely delivery of supporting transportation infrastructure in order to accommodate planned growth objectives; and*
 - (13) *Encourage diversification of transportation modes and infrastructure to promote alternate fuels and energy efficiency.*

Discussion

Kamakana Villages will contribute to improvements in the regional roadway network by providing roadway connections to existing and future developments on adjacent lands, which will help improve regional traffic circulation through the use of alternate routes to Queen Ka'ahumanu and Mamalahoa highways. *Section 5.5* provides additional information on the proposed roadway system for the project. In 2009, a traffic study was prepared for Kamakana Villages, and is included as *Appendix D*. In addition, the project design incorporates TOD strategies and will accommodate multiple transit stops (bus or other modes) along the planned Ane Keohokalole Highway.

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n. Section 226-18 Objectives and policies for facility systems—energy.

- (a) *Planning for the State’s facility systems with regard to energy shall be directed toward the achievement of the following objectives, giving due consideration to all*
 - (2) *Increased energy self-sufficiency where the ratio of indigenous to imported energy use is increased;*
 - (4) *Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use.*
- (b) *To achieve the energy objectives, it shall be the policy of this State to ensure the provision of adequate, reasonably priced, and dependable energy services to accommodate demand.*
- (c) *To further achieve the energy objectives, it shall be the policy of this State to:*
 - (1) *Support research and development as well as promote the use of renewable energy sources;*
 - (4) *Promote all cost-effective conservation of power and fuel supplies through measures including: (A) Development of cost-effective demand-side management programs; (B) Education; and (C) Adoption of energy-efficient practices and technologies;*
 - (7) *Promote alternate fuels and energy efficiency by encouraging diversification of transportation modes and infrastructure;*
 - (8) *Support actions that reduce, avoid, or sequester greenhouse gases in utility, transportation, and industrial sector applications; and*

Discussion

The development of Kamakana Villages supports the HRS, Chapter 226 policies related to conservation of energy, energy efficiency and alternative energy sources. Kamakana Villages will contribute to energy efficiency through the design of the residences, the pedestrian friendly design of the community and the proximity to the future transit hubs. The proposed project’s design incorporates green building standards and incorporates sustainable features to conserve energy and water usage and principles of waste minimization and pollution prevention. With regard to transportation, regional roadway connections that will result from the project will contribute to improved vehicular circulation in North Kona, which translates into less energy consumption. The proposed project design promotes a walkable, bikable community with high-density residential areas within walking radius of proposed transit stops along Ane Keohokalole Highway.

o. Section 226-18.5 Objectives and policies for facility systems—telecommunications.

- (a) *Planning for the State’s telecommunications facility systems shall be directed towards the achievement of dependable, efficient, and economical statewide telecommunications systems capable of supporting the needs of the people.*
- (b) *To achieve the telecommunications objective, it shall be the policy of this State to ensure the provision of adequate, reasonably priced, and dependable telecommunications services to accommodate demand.*
- (c) *To further achieve the telecommunications objective, it shall be the policy of this State to:*
 - (3) *Promote efficient management and use of existing telecommunications systems and services; and*

Discussion

The development of Kamakana Villages will include the installation of required telephone and cable telecommunications systems.

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p. Section 226-19 Objectives and policies for socio-cultural advancement—housing.

(a) Planning for the State's socio-cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:

(1) Greater opportunities for Hawai'i's people to secure reasonably priced, safe, sanitary, and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals, through collaboration and cooperation between government and nonprofit and for-profit developers to ensure that more affordable housing is made available to very low, low and moderate-income segments of Hawai'i's population.

(2) The orderly development of residential areas sensitive to community needs and other land uses.

(3) The development and provision of affordable rental housing by the State to meet the housing needs of Hawai'i's people.

(b) To achieve the housing objectives, it shall be the policy of this State to:

(1) Effectively accommodate the housing needs of Hawai'i's people.

(2) Stimulate and promote feasible approaches that increase housing choices for low-income, moderate-income, and gap-group households.

(3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.

(5) Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, and other concerns of existing communities and surrounding areas.

(7) Foster a variety of lifestyles traditional to Hawai'i through the design and maintenance of neighborhoods that reflect the culture and values of the community.

Discussion

Kamakana Villages will offer a variety of housing opportunities, affordable and market-priced, in a range of densities. Kamakana Village's close proximity to Kailua-Kona and North Kona's employment centers will make it attractive to potential home buyers. Through its design, Kamakana Villages takes into account the physical setting of the area and accessibility to public facilities and services, while fostering a variety of lifestyles traditional to Hawai'i that reflect the culture and values of the community. Kamakana Villages will provide residents the opportunity to interact with their neighbors because of gathering places and daily interactions at common open spaces, facing lanai, alleyways, schools, libraries, bikeways and pedestrian paths.

q. Section 226-20 Objectives and policies for socio-cultural advancement—health.

(a) Planning for the State's socio-cultural advancement with regard to health shall be directed towards achievement of the following objectives:

(1) Fulfillment of basic individual health needs of the general public.

(2) Maintenance of sanitary and environmentally healthful conditions in Hawai'i's communities.

(b) To achieve the health objectives, it shall be the policy of this State to:

(5) Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.

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Discussion

As a pedestrian oriented development, Kamakana Villages will include parks, recreational areas, and a trail and bike system to promote walking and bicycling, and an active and healthy lifestyle for residents. Kamakana Villages will connect to regional infrastructure systems and will be constructed in full compliance with Department of Health (DOH) and County standards and regulations related to environmentally healthful and sanitary conditions. Collectively, the on-site and off-site infrastructure systems will ensure that sanitary and healthful conditions are maintained for the benefit of the area's residents.

r. Section 226-21 Objectives and policies for socio-cultural advancement—education.

(b) To achieve the education objective, it shall be the policy of this State to:

(2) Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.

Discussion

The design of Kamakana Villages includes two school sites for the development of Elementary Schools. The first site is an approximately 8-acre area and the second site is approximately 4-acres. Including school sites within the design of Kamakana Villages is alignment with LEED principles for "Neighborhood Schools" which "promote community interaction and engagement by integrating schools into the neighborhood fabric, and support student health by encouraging walking and bicycling to school" (LEED for Neighborhood Development Rating System, NPD Credit 15: Neighborhood Schools).

s. Section 226-22 Objectives and policies for socio-cultural advancement—social services.

(a) Planning for the State's socio-cultural advancement with regard to social services shall be directed towards the achievement of the objective of improved public and private social services and activities that enable individuals, families, and groups to become more self-reliant and confident to improve their well-being.

(b) To achieve the social service objective, it shall be the policy of the State to:

(1) Assist individuals, especially those in need of attaining a minimally adequate standard of living and those confronted by social and economic hardship conditions, through social services and activities within the State's fiscal capacities.

(2) Promote coordination and integrative approaches among public and private agencies and programs to jointly address social problems that will enable individuals, families, and groups to deal effectively with social problems and to enhance their participation in society.

(3) Facilitate the adjustment of new residents, especially recently arrived immigrants, into Hawaii's communities.

Discussion

By providing these affordable housing opportunities, Kamakana Villages may help to meet the needs of working families and individuals confronted by economic hardships. In addition, affordable and market based housing opportunities in the area may also help to provide homes to new residents of Hawai'i.

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t. Section 226-23 Objectives and policies for socio-cultural advancement—leisure.

(b) To achieve the leisure objective, it shall be the policy of this State to:

(4) Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved.

(4) Ensure opportunities for everyone to use and enjoy Hawai'i's recreational resources.

(10) Assure adequate access to significant natural and cultural resources in public ownership.

Discussion

Kamakana Villages is planned to include neighborhood parks and recreation areas to support leisure activities. The project will also create “third places” such as coffee shops, and other gathering areas that will promote meaningful daily interactions among residents. In addition, the design of Kamakana Villages incorporates the preservation of archaeological sites within designed open space and preservation areas, thereby promoting the natural resources located within the site.

u. Section 226-24 Objectives and policies for socio-cultural advancement—individual rights and personal well-being.

(a) Planning for the State's socio-cultural advancement with regard to individual rights and personal well-being shall be directed towards achievement of the objective of increased opportunities and protection of individual rights to enable individuals to fulfill their socio-economic needs and aspirations.

(b) To achieve the individual rights and personal well-being objective, it shall be the policy of this State to:

(2) Uphold and protect the national and state constitutional rights of every individual.

Discussion

HHFDC, as the State agency charged with affordable housing finance and development, and Forest City, as an employer and developer, fully support the individual rights and personal well-being of the individuals of the State of Hawaii.

v. Section 226-25 Objectives and policies for socio-cultural advancement—culture.

(a) Planning for the State's socio-cultural advancement with regard to culture shall be directed toward the achievement of the objective of enhancement of cultural identities, traditions, values, customs, and arts of Hawaii's people.

(b) To achieve the culture objective, it shall be the policy of this State to:

(1) Foster increased knowledge and understanding of Hawaii's ethnic and cultural heritages and the history of Hawaii.

(4) Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawaii's people and visitors.

Discussion

Development of Kamakana Villages will not adversely affect rights customarily and traditionally exercised for subsistence, cultural and religious purposes. Identified significant archaeological sites will be preserved. Preserved areas will become elements of open space areas throughout the development. The Cultural Impact Assessment concluded that limited cultural activities had been

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practiced at the Kamakana Village's site. (See Keahuolu Affordable Housing Project EIS, Appendix D).

Kamakana Villages is envisioned as a community which promotes Hawaiian culture, natural environment and sustainability. The physical and cultural environment (landscaping, buildings, cultural practices, educational institutions and services) will enhance Hawai'i's culture, traditions, values, and customs, thereby encouraging the essence of the aloha spirit within the daily activities of residents and the community.

w. Section 226-26 Objectives and policies for socio-cultural advancement—public safety.

- (a) *Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:*
 - (2) *Optimum organizational readiness and capability in all phases of emergency management to maintain the strength, resources, and social and economic well-being of the community in the event of civil disruptions, wars, natural disasters, and other major disturbances.*
- (b) *To achieve the public safety objectives, it shall be the policy of this State to:*
 - (2) *Encourage increased community awareness and participation in public safety programs.*

Discussion

Kamakana Villages is within the County Police Department's Kona district which is located at Kealakehe, about 1.5 miles from the project site. Fire protection will be provided by the County's North Kona fire station located in Kailua-Kona, about 0.75 miles from the project site. If warranted, Kamakana Villages may contain a civil warning siren to assist with emergency preparedness and response program of the Civil Defense Agency.

Part III of the HSP establishes the overall priority guidelines to address areas of statewide concern. The priority guidelines provide an overall direction for the state to improve the quality of life for Hawai'i's present and future population through the pursuit of desirable courses of action in areas including economic development, population growth and land resource management, affordable housing, crime and criminal justice, and quality education. Specific priority guidelines of the HSP that pertain to Kamakana Villages are discussed below.

a. Section 226-103 Economic priority guidelines.

- (a) *Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawaii's people and achieve a stable and diversified economy:*
 - (1) *Seek a variety of means to increase the availability of investment capital for new and expanding enterprises.*
 - A) *Encourage investments which:*
 - (i) *Reflect long term commitments to the State;*
 - (ii) *Rely on economic linkages within the local economy;*
 - (iii) *Diversify the economy;*
 - (iv) *Re-invest in the local economy;*
 - (v) *Are sensitive to community needs and priorities; and*
 - (vi) *Demonstrate a commitment to provide management opportunities to Hawaii residents.*

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- (5) *Streamline the building and development permit and review process, and eliminate or consolidate other burdensome or duplicative governmental requirements imposed on business, where public health, safety and welfare would not be adversely affected.*
- (b) *Priority guidelines to promote the economic health and quality of the visitor industry:*
 - (1) *Promote visitor satisfaction by fostering an environment which enhances the Aloha spirit and minimizes inconveniences to Hawaii's residents and visitors.*
- (c) *Priority guidelines to promote the growth and development of diversified agriculture and aquaculture:*
 - (10) *Support the continuation of land currently in use for diversified agriculture.*
- (e) *Priority guidelines for water use and development:*
 - (1) *Maintain and improve water conservation programs to reduce the overall water consumption rate.*
 - (2) *Encourage the improvement of irrigation technology and promote the use of nonpotable water for agricultural and landscaping purposes.*
- (f) *Priority guidelines for energy use and development:*
 - (1) *Encourage the development, demonstration, and commercialization of renewable energy sources.*
 - (2) *Initiate, maintain, and improve energy conservation programs aimed at reducing energy waste and increasing public awareness of the need to conserve energy.*
 - (3) *Provide incentives to encourage the use of energy conserving technology in residential, industrial, and other buildings.*
 - (4) *Encourage the development and use of energy conserving and cost-efficient transportation systems.*

Discussion

Kamakana Villages is consistent with the State's goals to provide economic vitality, stability and growth for present and future generations. Kamakana Villages will provide a mixed use community that includes residential, commercial/retail space, civic open space, school sites, neighborhood parks, archaeological preserve areas, and landscaped buffers and open space. Kamakana Villages will contribute to economic development by creating employment opportunities in the construction field, as well as long-term employment associated with the commercial, civic, and service-related development, which will increase State and County revenues through real property and personal income taxes. Kamakana Villages supports the development of new residential opportunities in North Kona, including housing for residents employed in the West Hawai'i's visitor industry and service sectors.

b. Section 226-104 Population growth and land resources priority guidelines.

- (a) *Priority guidelines to effect desired statewide growth and distribution:*
 - (1) *Encourage planning and resource management to insure that population growth rates throughout the State are consistent with available and planned resource capacities and reflect the needs and desires of Hawai'i's people.*
 - (3) *Ensure that adequate support services and facilities are provided to accommodate the desired distribution of future growth throughout the State.*
 - (4) *Encourage major state and federal investments and services to promote economic development and private investment to the neighbor islands, as appropriate.*
 - (5) *Explore the possibility of making available urban land, low-interest loans, and housing subsidies to encourage the provision of housing to support selective economic and population growth on the neighbor islands.*

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(b) Priority guidelines for regional growth distribution and land resource utilization:

- (1) Encourage urban growth primarily to existing urban areas where adequate public facilities are already available or can be provided with reasonable public expenditures, and away from areas where other important benefits are present, such as protection of important agricultural land or preservation of lifestyles.*
- (2) Make available marginal or nonessential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.*
- (3) Restrict development when drafting of water would result in exceeding the sustainable yield or in significantly diminishing the recharge capacity of any groundwater area.*
- (5) In order to preserve green belts, give priority to state capital-improvement funds which encourage location of urban development within existing urban areas except where compelling public interest dictates development of a noncontiguous new urban core.*
- (6) Seek participation from the private sector for the cost of building infrastructure and utilities, and maintaining open spaces.*
- (9) Direct future urban development away from critical environmental areas or impose mitigating measures so that negative impacts on the environment would be minimized.*
- (10) Identify critical environmental areas in Hawai'i to include but not be limited to the following: watershed and recharge areas; wildlife habitats (on land and in the ocean); areas with endangered species of plants and wildlife; natural streams and water bodies; scenic and recreational shoreline resources; open space and natural areas; historic and cultural sites; areas particularly sensitive to reduction in water and air quality; and scenic resources.*
- (11) Identify all areas where priority should be given to preserving rural character and lifestyle.*
- (12) Utilize Hawai'i's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline, conservation lands, and other limited resources for future generations.*
- (13) Protect and enhance Hawai'i's shoreline, open spaces, and scenic resources.*

Discussion

Kamakana Villages is located within the Kona Urban Area of the Kona CDP. The area has experienced an increase in population over the years. The resident population of West Hawaii is forecast to increase by about 60 percent over the next two decades, reaching some 118,000 persons. In Greater Kailua-Kona, the primary study area stretching from Keahole to Keauhou, the resident population is projected to grow from a current level of just over 23,000 to circa 40,000 persons by 2030.

These additional residents will primarily result from the natural growth of existing Big Island families, with secondary contributors being intra-state migration from other islands, and in-migration of mainland and foreign persons. Non-resident purchasers will also be active in the market.

Combined, these persons will create demand for some 7,560 to 10,162 new housing units in Greater Kailua-Kona during the 2010 through 2030 projection period (mid-point of 8,861 units). About 44 percent of this demand will be for resident/workforce housing units meeting affordable pricing guidelines. Kamakana Villages will support the population growth of the area and will provide affordable housing opportunities for workers who service the visitor and other industry of

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the area. Adequate support facilities are/will be available from developed and/or to-be-developed areas within and adjacent to Kamakana Villages.

Kamakana Villages will utilize largely poor or non-essential agricultural lands. The location of Kamakana Villages is consistent with sound planning principals for the prudent use of land-based resources. The project area has been carefully surveyed to ensure that negative impacts on the environment are minimized and critical environmental areas are protected.

c. Section 226-106 Affordable Housing.

- (1) Seek to use marginal or nonessential agricultural land and public land to meet housing needs of low- and moderate-income and gap-group households.*
- (2) Encourage the use of alternative construction and development methods as a means of reducing production costs.*
- (3) Improve information and analysis relative to land availability and suitability for housing.*
- (4) Create incentives for development which would increase home ownership and rental opportunities for Hawaii's low- and moderate-income households, gap-group households, and residents with special needs.*
- (5) Encourage continued support for government or private housing programs that provide low interest mortgages to Hawaii's people for the purchase of initial owner- occupied housing.*
- (6) Encourage public and private sector cooperation in the development of rental housing alternatives.*
- (7) Encourage improved coordination between various agencies and levels of government to deal with housing policies and regulations.*
- (8) Give higher priority to the provision of quality housing that is affordable for Hawaii's residents and less priority to development of housing intended primarily for individuals outside of Hawaii.*

Discussion

HHFDC selected the subject property for the development of a master-planned, mixed-use affordable housing project. The site is made up of soils with poor agricultural viability and is considered non-essential agricultural land. The soils on the project site are classified as 'a'a Lava Flows (rLV), Pahoehoe Lava Flows (rLW), Kaimu extremely rocky stony peat (rKED), and Punaluu extremely rocky peat (rPYD), by the USDA NRCS (*Figure 4-3*).

The objective of Kamakana Villages is to create an affordable, livable community derived from New Urbanist planning and design principles. The project will offer a variety of affordable and market-priced housing units in a range of densities. HHFDC's selection of Forest City as the developer of Kamakana Villages is the result of a Request for Proposals process initiated by HHFDC in July 2007. The utilization of HRS Section 201H-38 in development of Kamakana Villages necessitates the coordination between various agencies and levels of the government in order to achieve the goal of providing affordable housing for sale and rent to the residents of Hawaii.

3.3 HAWAI'I STATE FUNCTIONAL PLANS

The HSP called for the creation of functional plans to set specific objectives, establish policies, and implement actions for a particular field of activity. Developed in the late 1980s and early 1990s as part of the Statewide Planning System, the State Functional Plans (SFPs) are the primary guidance tools for implementing the HSP. While the HSP establishes long-term objectives for Hawai'i, the purposes of the SFPs are to identify major statewide concerns; define current strategies for the functional area; identify major relationships among functional areas; and to provide strategies for departmental policies, programs, and priorities. The SFPs provide guidance as to State and County roles and the allocation of resources to fulfill identified activities in the areas of agriculture, conservation lands, education, employment, energy, health, higher education, historic preservation, housing, human services, recreation, tourism, transportation, and water resources. The objectives, policies, and implementing actions of SFPs relevant to Kamakana Villages are briefly outlined below.

3.3.1 State Agricultural Functional Plan

The State Agricultural Functional Plan sought to increase the overall level of agricultural development in Hawai'i. At the time the plan was written, the two fundamental objectives were to (1) ensure the continued viability of Hawai'i's sugar and pineapple industries, and (2) encourage the continued growth and development of diversified agriculture throughout the State. The functional plan for agriculture set objectives to convert Hawai'i's crops into potential new value/added products for the local community, visitor industry, and export markets. The Department of Business, Economic Development, and Tourism (DBEDT), large corporations, and other organizations were tasked with implementing actions to develop linkages between the agriculture industry and the tourism industry. The goal was to promote and develop a diverse range of products and programs that focused on marketing, such as agricultural-tourism, and to assist in the development of diversified agriculture.

Discussion

The Kamakana Villages site consists of poor soil types and lands that are unsuitable for agricultural development. The LUC reclassification from the Agricultural District to the Urban District will not have a significant adverse impact on the agricultural industry. The County's land use policy identifies the project site primarily for Urban Expansion and the balance for Low Density Urban, and the entire Kamakana Villages site is within the Kona CDP Urban Area.

3.3.2 State Conservation Functional Plan

The State Conservation Lands Functional Plan addresses the impacts of population growth and economic development on Hawai'i's natural environment providing a framework to protect and preserve pristine lands and shore lands. The objective of the plan is to provide a management program that balances the use of the State's natural resources with the need to protect these resources to varying degrees. The State is responsible to provide the management of conservation areas, while the Counties play a key role in directing urban and agricultural activities, and in retaining open space and cultural sites as lands become urbanized.

Discussion

The Kamakana Villages site is not within the Conservation District. Therefore, the proposed development of Kamakana Villages will have no impact upon the goals of the State Conservation Functional Plan.

3.3.3 State Educational Functional Plan

The State Educational Functional Plan reflects the Department of Education's (DOE) strategy to address the goals, policies, and priority guidelines of the HSP and the goals of the Board of Education (BOE). The Educational Functional Plan outlines actions to be taken by the DOE to improve the public school system and to attend to various societal needs and trends.

Discussion

Kamakana Villages is consistent with the goals and policies of the Educational Functional Plan. The site is within the Kona CDP Urban Area, and designated for Urban Expansion by the County. Therefore, the Kamakana Village's site is appropriate for future residential development. Two sites are proposed for school uses. One site is approximately 4-acres and the second site is approximately 8-acres. These additional school facilities will help to relieve crowding at Kealakehe Elementary.

3.3.4 State Higher Education Functional Plan

The objectives of the State Higher Education Functional Plan are to provide (1) a number of diverse post-secondary educational institutions; (2) quality educational, research, and public services programs; (3) appropriate opportunities for all who can benefit; (4) financing to ensure accessibility; and (5) coordination of educational resources.

Discussion

Kamakana Villages will have a range of affordable and market-priced housing opportunities in response to the existing and future demand for affordable housing in North Kona. This additional housing stock may contribute to the availability of affordable and market priced housing for educators.

3.3.5 State Employment Functional Plan

The State Employment Functional Plan's objectives, policies, and implementing actions address four major issue areas: (1) education and preparation services for employment; (2) job placement; (3) quality of work life; and (4) employment planning information and coordination.

Discussion

Kamakana Villages will contribute to employment by creating construction-related jobs during the period of the project's development. Kamakana Villages will also create long-term employment opportunities to through the development of commercial floor area within the project site. Additionally, the proposed project will indirectly contribute to employment by providing affordable and market priced housing in close proximity to the regional job centers of West Hawai'i. In the first year of development, the "Total Annual Wages Generated" expected to be generated by the development is \$6.5 million, increasing to as high as \$48.3 million by 2030

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(Appendix E). On a stabilized basis, after the completion of construction (year 20 and beyond), the project will generate some 933 permanent full-time equivalent employment opportunities, 654 directly related to on-site activities, and 279 indirect positions throughout the island (Appendix E).

3.3.6 State Energy Functional Plan

The State Energy Functional Plan sought to (1) support the commercialization of Hawai'i's alternative energy resources, (2) implement a wide range of energy conservation and efficiency technologies; (3) prepare for disruptions in the energy supply; and (4) reduce the State's dependence on imported fossil fuels, such as oil, for 90 percent of its total energy needs as opposed to 42 percent nationally. The plan also calls for objectives and courses of action to lessen Hawai'i's dependence on imported fossil fuels through (1) moderate the growth in energy demand through conservation and energy efficiency; (2) displace oil and fossil fuels through alternate and renewable energy sources; (3) promote energy education and legislation; (4) support and develop an integrated approach to energy development and management; and (5) ensure the State's abilities to implement energy emergency actions immediately in the event of fuel supply disruptions, and ensure essential public services are maintained and provisions are made to alleviate economic and personal hardships that may arise.

The State Legislature in 2001 passed a law establishing "renewable portfolio standard" goals for electric utilities of seven percent by December 31, 2003, eight percent by December 31, 2005, and nine percent by December 31, 2010.

Discussion

Kamakana Villages can contribute to energy efficiency through reductions in residential energy consumption and transportation. Renewable energy will be integrated and supported in the community. To the extent possible, the project design and construction will include buildings that incorporate green design standards and features to conserve energy and water usage. The project will also incorporate principles of waste minimization and pollution prevention. In terms of transportation, the regional roadway connections within Kamakana Villages will contribute to improved vehicular circulation in North Kona, which will translate into less energy consumption. Additionally, Kamakana Villages responds to the demand for affordable homes for working families in North Kona and will help to reduce traffic on regional highways caused by residents' traveling long distances between home and work. The conceptual design of the project promotes a walkable, bikable community with high density residential areas within a one-quarter mile walking radius of proposed transit stops along Ane Keohokalole Highway.

3.3.7 State Health Functional Plan

The State Health Functional Plan addressed six issue areas: (1) health promotion and disease prevention; (2) communicable disease prevention and control; (3) special populations with impaired access to health care; (4) healthcare services (acute, long-term, primary and emergent) for rural communities; (5) environmental health and protection; and (6) DOH leadership. The plan also sought to boost the long-term economy by attracting a share of the rapidly developing, affluent, wellness-oriented market. It also sought to develop and implement new environmental protection and health services that would protect, monitor, prevent degradation, and enhance the quality of Hawai'i's air, land, and water. The DOH is responsible for establishing, monitoring, and enforcing Water Quality Standards which are intended to protect the environmental quality of the

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waters of the island and maintain public health. The DOH is also responsible for establishing standards and regulations for noise control, which are uniform throughout the State.

Discussion

Kamakana Villages is relevant to the State Health Function Plan in two ways. First, this community will be constructed following best management practices, and will meet DOH regulations concerning erosion control, fugitive dust, solid waste disposal, and noise controls. Second, the development of Kamakana Villages will include on-site and offsite infrastructure systems that will connect to regional infrastructure systems. Infrastructure will be constructed to applicable State, DOH and County standards, rules and regulations, thereby fulfilling the goal of improving environmental health and protection.

3.3.8 State Historic Preservation Functional Plan

The State Historic Functional Plan identifies issues, policies, and implementing actions that seek to preserve and protect the unsurpassable beauty, history, and culture of the Hawaiian Islands. Hawai'i's natural scenic beauty, clean environment, and rich multi-cultural heritage (including historic/cultural sites) are reasons why so many people have made Hawai'i their home, and why so many visit the State.

Discussion

Kamakana Villages will be a beautiful new community and will include native landscaping throughout the site (*Section 2.7*). An archaeological inventory survey was accepted by the SHPD in 1993 and an archaeological mitigation plan was also approved in 1993. Additional archaeological field work was done in 2007, as a Cultural Impact Assessment pursuant to HRS Chapter 343 and an Archaeological Mitigation Plan Update was prepared in consultation with SHPD, by Haun & Associates in October 2009. The Mitigation Plan Update was completed to determine appropriate archaeological mitigation tasks for subsequently prepared plans for data recovery, burial treatment, site preservation, and monitoring of specific cultural resources present within the Kamakana Villages site. Together, these documents provide a greater understanding of the Kamakana Village site's historic, archaeological and cultural resources. Archaeological sites conforming to the significance criteria established under State and Federal regulations will be preserved in coordination and consultation with SHPD. See *Sections 4.7 and 6.28* for details regarding Archaeological Resources and *Sections 4.8 and 6.29* for details regarding Cultural Resources.

3.3.9 State Housing Functional Plan

The State Housing Functional Plan identified a need to develop affordable housing throughout the State, and found that the housing needs of lower income households would not be adequately met in future residential developments. Obstacles identified to the development of affordable housing include (1) the lack of infrastructure, particularly on the neighbor islands; (2) the high cost of zoned land, high development costs, and the regulatory system (particularly on O'ahu); (3) government policies that have created a shortage of urban land zoned for housing; (4) lack of government funds to develop rental housing; (5) building codes and subdivision standards that constrain innovative, cost-saving technologies; and (6) current labor wages. The Plan recommended increased densities in residential developments where feasible, smaller and basic units, funding for rental developments, and State subsidies.

Discussion

Kamakana Villages is planned in response to the regional needs for housing and the desire to reduce congestion on regional highways due to the County workforce residents' traveling long distances between home and work. Future residents of Kamakana Villages are likely to come from West Hawai'i, ranging from Ocean View in Ka'u to North Kohala. Thus, the proposed project supports the Housing Functional Plan's goals of providing more homes for Hawai'i's growing population, particularly in the North Kona area. Kamakana Villages will directly address the demand for homes near employment centers in West Hawai'i offering the maximum affordable and market-priced housing units in a range of densities. On-site and off-site infrastructure will also be provided with the development of the project.

3.3.10 State Human Services Functional Plan

The Human Services Functional Plan addressed: (1) elder abuse; (2) child abuse and neglect; and (3) spouse/domestic abuse and violence. The plan details statistics, causes, and prevention measures that can help to combat very pressing societal issues.

Discussion

The development of Kamakana Villages will have a negligible effect on the Human Services Functional Plan. The major theme of Koua Aku/Kokua mai will be present in the community in which, by design and management, people interact with one another and have increased opportunities to care for one another. Additionally, as an affordable housing development, Kamakana Villages will help to reduce the cost of living for many residents thereby supporting the personal, social and economic well-being of the community.

3.3.11 State Recreation Functional Plan

The focus of the State Recreation Functional Plan is in six areas: (1) ocean and shoreline recreation; (2) mauka, urban, and other recreation; (3) public access to the shoreline and upland recreation areas; (4) resource conservation and management; (5) management of recreation programs and facilities; and (6) wetlands protection and management.

Discussion

The Concept Plan for Kamakana Villages includes approximately 18-acres of open space and 30-acres for parks. The plans include active and passive parks, and community gardens for outdoor recreational activities. Parks and open space areas are incorporated throughout Kamakana Villages to support the recreational needs of the residents.

3.3.12 State Tourism Functional Plan

The State Tourism Functional Plan focuses on six issues: (1) the positive and negative impacts of tourism growth on the community; (2) physical development in terms of product quality, product diversity, land use planning, adequate infrastructure, and visitor use of public services; (3) environmental resources and cultural heritage; (4) community, visitor, and industry relations; (5) employment and career development; and (6) effective marketing. The plan seeks to strengthen tourism, while developing other industries to diversify the State's economic base.

Discussion

While Kamakana Villages has no direct relationship with the visitor industry, it does have an important indirect role. Kamakana Villages will provide new housing opportunities near the visitor destination areas of North and South Kona. This is vital to the health of the tourism industry because the project will provide employee housing for the region's job centers.

3.3.13 State Transportation Functional Plan

The focus of the State Transportation Functional Plan is to (1) construct facility and infrastructure improvements in support of Hawai'i's thriving economy and growing population base; (2) develop a transportation system balanced with an array of new alternatives; (3) implement transportation Systems Management to maximize the use of existing facilities and systems; (4) foster innovation and use of new technology in transportation; (5) maximize joint efforts with the private sector; (6) pursue land use initiatives which help reduce travel demand; and (7) encourage resident quality-of-life improvements through improved mobility opportunities and travel reduction.

Discussion

Kamakana Villages will become an integral component of the regional transportation network. The Concept Plan for Kamakana Villages provides for transit-oriented development with bus stops parallel to Ane Keohokalole Highway, high density housing within one-quarter mile walking distance from transit stops, and feasible roadway connections to existing and future development on adjacent lands. This provides alternative transportation options, routes and transportation modes to Queen Ka'ahumanu and Mamalahoa Highways, which will reduce congestion on these regional serving arterials.

3.3.14 State Water Resources Development Functional Plan

The State Water Resources Development Functional Plan set objectives to: (1) clarify the State water policy and improve management framework; (2) maintain the long-term availability of freshwater supplies while considering environmental values; (3) improve management of flood plains; (4) assure adequate municipal water supplies for planned urban growth; (5) assure the availability of adequate water for agriculture; (6) encourage and coordinate development of self-supplied industrial water and the production of water-based energy; (7) provide for the protection and enhancement of Hawai'i's freshwater and estuarine environment; (8) improve State grant and loan procedures for water programs and projects; and (9) pursue water resources data collection and research to meet changing needs.

Discussion

The development of Kamakana Villages will conform to many goals of the State Water Functional Plan. Kamakana Villages will include the development of at least one new regional potable water well and storage reservoir. The potable water transmission system will likely be integrated into the County's regional distribution system, significantly improving water supply, storage, and transmission in the vicinity.

3.4 HAWAI'I COASTAL ZONE MANAGEMENT PROGRAM

The Coastal Zone Management Act of 1972 (16 USC Section 1451), as amended through Public Law 104-150, created the coastal management program and the National Estuarine Research Reserve system. The coastal States are authorized to develop and implement a State coastal zone management program. Hawai'i Coastal Zone Management (CZM) Program received Federal approval in the late 1970's. The objectives of the State's Hawai'i CZM Program, Section 205A-2, HRS, are to protect valuable and vulnerable coastal resources such as coastal ecosystems, special scenic and cultural values and recreational opportunities. The objectives of the program are also to reduce coastal hazards and to improve the review process for activities proposed within the coastal zone. Each County is responsible for designating a Special Management Area (SMA) that extends inland from the shoreline. The County Department of Planning administers the SMA in accordance with the County of Hawaii Rules of Practice and Procedure, Rule 9 Special Management Area.

The entire Kamakana Villages site is located outside of the SMA as delineated by the County of Hawai'i. Therefore, no impacts to the coastal zone areas are anticipated. Following is a summary of the project's conformance with the ten objectives of the coastal zone management program.

- 1) *Provide coastal recreational opportunities accessible to the public.*
- 2) *Protect, preserve and, where desirable, restore those natural and man made historic and pre-historic resources in the coastal zone management area that are significant in Hawaiian and American history and culture.*
- 3) *Protect, preserve and, where desirable, restore or improve the quality of coastal scenic and open space resources.*
- 4) *Protect valuable coastal ecosystems from disruption and minimize adverse impacts on all coastal ecosystems.*
- 5) *Provide public or private facilities and improvements important to the State's economy in suitable locations.*
- 6) *Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion and subsidence.*
- 7) *Improve the development review process, communication, and public participation in the management of coastal resources and hazards*
- 8) *Stimulate public awareness, education, and participation in coastal management.*
- 9) *Protect beaches for public use and recreation.*
- 10) *Promote the protection, use, and development of marine and coastal resources to assure their sustainability.*

Discussion

Kamakana Villages is about one mile upslope and away from the coastline. Therefore, Objectives 1, 3, 4, 8 and 9 of the CZM Program are not primarily applicable. In understanding the effects of runoff on coastal areas, drainage systems will be designed to the extent practical to capture much of the runoff contaminants.

The development of Kamakana Villages will not have a significant adverse impact on coastal recreational opportunities, coastal scenic and open space resources, or coastal ecosystem and resources. The project area is outside of the 500-year flood hazard zone and is not in the tsunami inundation zone. The project area is secure from tsunami, storm waves, subsidence or stream

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flooding. To prevent ponding or localized flooding, grading and site design will conform to all regulatory requirements and ensure that storm drainage is retained on site to minimize erosion potential for surrounding properties. As a primarily residential development, the project will not have a significant negative impact on air quality.

Archaeological resources and sites determined to be significant will be preserved within the project area. The project will also include the development of on-site and off-site infrastructure systems which will integrate with regional public and private facilities. The internal roadways of the proposed project are planned to connect with existing and future developments on adjacent lands, which is consistent with regional transportation policies established by the County.

While the coastal element of this objective is not primarily relevant to Kamakana Villages, the public participation aspect is. In accordance with Chapter 343, HRS, the Final EIS for Kamakana Villages was completed in 2008. The Final EIS discussed the potential short-term and long-term impacts of the project on the environment. Throughout the HRS Chapter 343 process, public review and comments were welcomed and incorporated into the overall environmental review and analysis.

In addition to the EIS process, public participation was also sought throughout the planning process for Kamakana Villages. In addition to meeting with State and County agencies, representatives for Forest City made presentations to the public and various community groups. Two planning workshop meetings were held in Kona in 2009 to gather input from the community and build a vision which would set the foundation for the master-planned, mixed-use affordable housing community of Kamakana Villages at Keahuolu.

3.5 WEST HAWAI'I REGIONAL PLAN

In 1989, the Office of State Planning produced the West Hawai'i Regional Plan to guide the development of the region. The State formulated the plan to (1) coordinate State activities in West Hawai'i and respond effectively to emerging needs and critical problems; (2) address areas of State concern; (3) coordinate the Capital Improvements Program; and (4) provide guidance in the State land-use decision-making process. The general goals of *The Vision for West Hawai'i Plan*, and two pertinent sections, *Urban Expansion Planning Areas*, and *Highways and Roadways* are discussed below.

Kamakana Villages is consistent with, and supports the goals of, the West Hawai'i Regional Plan. The master developer of Kamakana Villages is Forest City, working in coordination with HHFDC and OHCD. This project will maximize benefits for Hawai'i's people by providing affordable housing opportunities near the employment center of West Hawai'i. The master-planned mixed-use affordable housing project will include retail space, commercial uses, public and/or private school facilities, archaeological and open space preserve areas, active and passive parks, trail and bikeway system, and support infrastructure and transit stops and centers. The land use components will support local lifestyles and maintain the character of the area while protecting historical resources and providing a wide range of outdoor recreational opportunities. Development of Kamakana Villages will not affect agricultural resources, since the site is not considered to be a valued agricultural resource due to the poor quality of the soil.

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URBAN EXPANSION PLANNING AREAS

Problem: The Urban Expansion Planning Areas are sub-regions that will be planned by the County's Planning Department. The County's planning process will include the State, existing landowners, and affected governmental agencies. As part of this planning effort, infrastructure requirements of all landowners will be determined and "sized" in order to attend to existing and anticipated problems. Opportunities for joint infrastructure financing, economies of scale, and creative urban design will be explored and developed in order to provide an environment that can support the "preferred" quality of life.

Strategy: Concentrate future regional urbanization in designated Urban Expansion Planning Areas and provide for their planning and future development in a manner which optimizes or mitigates sub-regional problems, issues, and opportunities.

Actions: Direct future regional urbanization to designated Urban Expansion Planning Areas at Kailua-Kona to Keāhole and Kawaihae to Waimea.

Discussion

Kamakana Villages is located within the Urban Expansion Planning Area in Keahuolu between Kailua-Kona and Keāhole.

HIGHWAYS AND ROADWAYS

Problem: Increased traffic flow which will occur as a result of workers commuting from support communities to the resort areas is another problem which must be anticipated.

Strategy: Anticipate and provide relief for traffic hazards and congestion on a timely basis.

Actions: Support the DOT's Countywide Transportation Planning Process (CTPP)

Discussion

The development of Kamakana Villages will improve the regional roadway network. It will provide feasible roadway connections to existing and/or future developments on adjacent lands, thereby helping to improve regional traffic circulation and provide alternate routes to Queen Ka'ahumanu and Mamalahoa highways. In addition, as an affordable housing transit-oriented development in closer proximity to West Hawai'i employment centers, Kamakana Villages will reduce commuter traffic. The design of Kamakana Villages promotes a walkable, bikable community with high-density residential areas near the proposed transit stops along Ane Keohokalole Highway.

3.6 COUNTY OF HAWAII GENERAL PLAN

The General Plan (adopted in 2005, as amended) is a policy document for the long-range comprehensive development of the island of Hawaii. The General Plan provides the direction for the future growth of the County. It brings into focus the relationship between residents and their pursuits and institutions, offering policy statements which embody the expressed goals for present and future generations. As a policy document, the General Plan provides the legal basis for all subdivision, zoning and related ordinances. It also provides the legal basis for the initiation and authorization for all public improvements and projects. The General Plan is subject to periodic reviews at approximately 10-year intervals. Included in the General Plan is the LUPAG, which designates land use. Most of the site is designated Urban Expansion and the remainder is designated as Low Density Urban (Figure 1-4).

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Specific objectives and policies of the General Plan that pertain to Kamakana Villages are discussed below.

ECONOMIC DEVELOPMENT

Goals

- *Provide residents with opportunities to improve their quality of life through economic development that enhances the County's natural and social environments.*
- *Economic development and improvement shall be in balance with the physical, social, and cultural environments of the island of Hawai'i.*
- *Strive for diversity and stability in the economic system.*
- *Provide an economic environment that allows new, expanded, or improved economic opportunities that are compatible with the County's cultural, natural, and social environment.*
- *Strive for an economic climate that provides its residents an opportunity for choice of occupation.*
- *Strive for diversification of the economy by strengthening existing industries and attracting new endeavors.*
- *Strive for full employment.*
- *Promote and develop the island of Hawai'i into a unique scientific and cultural model, where economic gains are in balance with social and physical amenities. Development should be reviewed on the basis of total impact on the residents of the County, not only in terms of immediate short run economic benefits.*

Policies

- *Require a study of the significant cultural, social and physical impacts of large developments prior to approval.*
- *The land, water, air, sea, and people shall be considered as essential resources for present and future generations and should be protected and enhanced through the use of economic incentives.*

Courses of Action for North Kona

- *Resort development in the area shall be in balance with the social and physical goals as well as economic desires of the resident of the district. Necessary pollution controls shall be available prior to development.*
- *Other necessary support facilities such as transportation and nursery facilities shall also be provided.*
- *Recognize the natural beauty of the area as a major economic and social asset. This resource should be protected through appropriate review processes when development is proposed.*
- *Increase affordable housing opportunities in the Kailua-Kona area.*

Discussion

Kamakana Villages is primarily a residential community, which also has a commercial mixed-used component. The project's ability to directly influence the economy is through more of a supportive role of providing new housing opportunities in an area designated for Urban Expansion, and thereby supporting the larger economy. The proposed project, using sensible planning principles,

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minimizes the adverse effects on the new growth of the area, and at the same time, strives to expand the variety and quality of residential options available to the community.

ENERGY

Goals

- Strive towards energy self-sufficiency.

Policies

- Strive to educate the public on new energy technologies and foster attitudes and activities conducive to energy conservation.
- Strive to assure a sufficient supply of energy to support present and future demands.
- Provide incentives that will encourage the use of new energy sources and promote energy conservation.
- Strive to diversify the energy supply and minimize the environmental impacts associated with energy usage.
- Encourage the use of solar water heating through the continuation of state tax credit programs, through the Building Code, and in County construction.
- Encourage energy-saving design in the construction of buildings.
- Support net-metering and other incentives for independent power producers.

Discussion

By design, development and lifestyle, Kamakana Village is seen a sustainable community. The plan incorporates principles of sustainability through TOD concepts having a pedestrian focus, and the use of small lots and compact development. The community will be energy efficient and designed according to LEED ND criteria. The infrastructure is likely to include elements for renewable energy, solar hot water, and water conserving strategies such as the use of landscaping to reduce heat-island impacts. Kamakana Villages will also provide programs training residents to optimize savings of energy and limit waste, which will lead to the development of a community-wide lifestyle of sustainability.

ENVIRONMENTAL QUALITY

Goals

- *Define the most desirable use of land within the County that achieves an ecological balance providing residents and visitors the quality of life and an environment in which the natural resources of the island are viable and sustainable.*
- *Maintain and, if feasible, improve the existing environmental quality of the island.*
- *Control pollution.*

Policies

- *Take positive action to further maintain the quality of the environment.*
- *Advise the public of environmental conditions and research undertaken on the island's environment.*
- *Encourage the concept of recycling agricultural, industrial, and municipal waste material.*
- *Work with the appropriate agencies to adopt appropriate measures and provide incentives to control point and nonpoint sources of pollution.*
- *Support programs to prevent harmful alien species from becoming established.*

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- *Review the County grading and grubbing ordinances to ensure that they adequately address potential erosion and runoff problems.*

Discussion

Although the project's development is not able to directly influence governmental policies concerning environmental quality, the project will comply with all applicable regulations.

FLOODING AND OTHER NATURAL HAZARDS

Goals

- *Protect human life.*
- *Prevent damage to man-made improvements.*
- *Control pollution.*
- *Reduce surface water and sediment runoff.*
- *Maximize soil and water conservation.*

Policies

- *Development-generated runoff shall be disposed of in a manner acceptable to the Department of Public Works, and in compliance with all State and Federal laws.*
- *The County and the private sector shall be responsible for maintaining and improving existing drainage systems and constructing new drainage facilities.*
- *Encourage grassed shoulder and swale roadway design where climate and grade are conducive.*
- *Develop drainage master plans from 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.*
- *Where applicable, natural drainage channels shall be improved to increase their capacity with special consideration for the practices of proper soil conservation, and grassland and forestry management.*
- *Consider natural hazards in all land use planning and permitting.*
- *Discourage intensive development in areas of high volcanic hazard.*

Courses of Action for North Kona

- *Establish and maintain appropriate vegetative cover in high rainfall, sediment and debris producing areas.*
- *Encourage the use of natural drainage ways as greenways in the development of the region.*

Discussion

The Kamakana Villages's site is located in flood Zone X which indicates that the area is outside of the 500-year flood hazard zone. The planned storm water drainage system will retain project runoff on-site is an important element of the proposed project. It is anticipated that there will be no adverse effect on off-site drainage conditions as a result of this project.

Due to the project's location, adverse environmental conditions, including floods, tsunami, and unstable soil conditions are not anticipated. See *Section 4.3 and 6.2.4* for additional information on natural hazards.

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HISTORIC SITES

Goals

- *Protect, restore, and enhance the sites, buildings, and objects of significant historical and cultural importance to Hawai'i.*
- *Appropriate access to significant historic sites, buildings, and objects of public interest should be made available.*
- *Enhance the understanding of man's place on the landscape by understanding the system of ahupua'a.*

Policies

- *Agencies and organizations, either public or private, pursuing knowledge about historic sites should keep the public apprised of projects.*
- *Require both public and private developers of land to provide historical and archaeological surveys and cultural assessments, where appropriate, prior to the clearing or development of land when there are indications that the land under consideration has historical significance.*
- *Public access to significant historic sites and objects shall be acquired, where appropriate.*
- *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.*
- *Encourage the restoration of significant sites on private lands.*
- *Collect and distribute historic sites information of public interest and keep an inventory of sites.*
- *Signs explaining historic sites, buildings and objects shall be in keeping with the character of the area or the cultural aspects of the feature.*
- *Develop policies to protect Hawaiian rights as identified under judicial decisions.*
- *Consider requiring Cultural Assessments for certain developments as part of the rezoning process.*
- *Recognize the importance of certain natural features in Hawaiian culture by incorporating the concept of "cultural landscapes" in land use planning.*

Discussion

Kamakana Villages will protect, preserve, and support the restoration of significant historic and cultural resources where feasible. An archaeological inventory survey of this property was accepted by the SHPD in 1993, and an archaeological mitigation plan was also approved in 1993. Additional archaeological field work was completed in 2007, as a Cultural Impact Assessment pursuant to HRS Chapter 343 (Appendix D of the Keahuolu Affordable Housing Project EIS). In addition, in consultation with SHPD, Haun & Associates prepared an Archaeological Mitigation Plan Update in November 2009 (*Appendix B*). The Archaeological Mitigation Plan is a preliminary step to determine appropriate archaeological mitigation tasks to be detailed in subsequently prepared plans for data recovery, burial treatment, site preservation, and monitoring that are tailored to the specific cultural resources present within the Kamakana Villages site. According to the Cultural Impact Assessment, no adverse effects to Hawaiian cultural resources, beliefs and practices are anticipated to result from the development of Kamakana Villages. Appropriate mitigation measures will be carried out as recommended by SHPD. See *Sections 4.7*

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and 6.28 for details regarding Archaeological Resources and Sections 4.8 and 6.29 for details regarding Cultural Resources.

Natural Beauty

Goals

- *Protect, preserve and enhance the quality of areas endowed with natural beauty, including the quality of coastal scenic resources.*
- *Protect scenic vistas and view planes from becoming obstructed.*
- *Maximize opportunities for present and future generations to appreciate and enjoy natural and scenic beauty.*

Policies

- *Increase public pedestrian access opportunities to scenic places and vistas.*
- *Consider structural setback from major thoroughfares and highways and establish development and design guidelines to protect important view planes.*
- *Maintain a continuing program to identify exceptional trees or tree masses.*
- *Protect the views of areas endowed with natural beauty by carefully considering the effects of proposed construction during all land use reviews.*
- *Do not allow incompatible construction in areas of natural beauty.*

Discussion

The conceptual plan for Kamakana Villages is consistent with protecting the natural beauty of the region and ensuring consistency with surrounding communities. The design guidelines will ensure that buildings integrate well with the land and climate. Site planning will create setbacks and buffers to soften the impact of development on the landscape. Colors and building materials will tone down their visual impacts and landscaping will incorporate existing landforms, native plant species and other plant species that are compatible with the climate of the region.

NATURAL RESOURCES AND SHORELINE

Goals

- *Protect and conserve the natural resources from undue exploitation, encroachment and damage.*
- *Provide opportunities for recreational, economic, and educational needs without despoiling or endangering natural resources.*
- *Protect and promote the prudent use of Hawai'i's unique, fragile, and significant environmental and natural resources.*
- *Protect rare or endangered species and habitats native to Hawai'i.*
- *Protect and effectively manage Hawai'i's open space, watersheds, shoreline, and natural areas.*
- *Ensure that alterations to existing land forms, vegetation, and construction of structures cause minimum adverse effect to water resources, and scenic and recreational amenities and minimum danger of floods, landslides, erosion, siltation, or failure in the event of an earthquake.*

Policies

- *Require users of natural resources to conduct their activities in a manner that avoids or minimizes adverse effects on the environment.*

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- *Encourage public and private agencies to manage the natural resources in a manner that avoids or minimizes adverse effects on the environment and depletion of energy and natural resources to the fullest extent.*
- *Encourage an overall conservation ethic in the use of Hawai'i's resources by protecting, preserving, and conserving the critical and significant natural resources of the County of Hawai'i.*
- *Encourage the protection of watersheds, forest, brush, and grassland from destructive agents and uses.*
- *Work with the appropriate State, Federal agencies, and private landowners to establish a program to manage and protect identified watersheds.*
- *The installation of utility facilities, highways and related public improvements in natural and wildland areas should avoid the contamination or despoilment of natural resources where feasible by design review, conservation principles, and by mutual agreement between the County and affected agencies.*
- *Encourage the continued identification and inclusion of unique wildlife habitat areas of native Hawaiian flora and fauna within the Natural Area Reserve System.*
- *Encourage the use of native plants for screening and landscaping.*
- *Develop policies by which native Hawaiian gathering rights will be protected as identified under judicial decisions.*
- *Ensure public access is provided to the shoreline, public trails and hunting areas, including free public parking where appropriate.*
- *Establish a system of pedestrian access trails to places of scenic, historic, cultural, natural, or recreational values.*
- *Preserve and protect significant lava tube caves.*
- *Ensure that activities authorized or funded by the County do not damage important natural resources.*
- *Within the Kona high rainfall/fog-drip belt, ground disturbing activities such as excessive soil compaction and excessive removal of vegetative cover should be minimized and mitigated consistent with management strategies that encourage the retention of existing forested and pasture areas, reforestation, minimal coverage by impervious surfaces and other strategies that encourage effective infiltration to groundwater.*

Discussion

Development of the proposed project will conform with applicable Federal, State and County standards and regulations relating to natural resources and shorelines. The project's plans attempt to minimize adverse environmental effects and depletion of resources caused by development through a variety of mitigation measures (See *Section 6.0*). The project area has been carefully surveyed to ensure that no endangered, threatened or candidate species will be affected. The present environment provides for a limited range of habitats in the area. The Kamakana Villages project is consistent with sound planning principals for the prudent use of land-based resources.

HOUSING

Goals

- *Attain safe, sanitary, and livable housing for the residents of the County of Hawai'i.*
- *Attain a diversity of socio-economic housing mix throughout the different parts of the County.*

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- *Maintain a housing supply that allows a variety of choices.*
- *Create viable communities with affordable housing and suitable living environments.*
- *Seek sufficient production of new affordable rental and fee-simple housing in the County in a variety of sizes to satisfactorily accommodate the needs and desires of families and individuals.*
- *Ensure that housing is available to all persons regardless of age, sex, marital status, ethnic background, and income.*
- *Make affordable housing available in reasonable proximity to employment centers.*
- *Encourage and expand home ownership opportunities for residents.*

Policies

- *Encourage a volume of construction and rehabilitation of housing sufficient to meet growth needs and correct existing deficiencies.*
- *Encourage corporations and nonprofit organizations to participate in Federal, State and private programs to provide new and rehabilitated housing for low and moderate income families.*
- *Support the construction of housing for minimum wage and agricultural workers.*
- *Continue to review codes and ordinances for overly stringent restrictions that may impose unnecessary hardship and adopt amendments if warranted.*
- *Formulate a program for housing that identifies specific mechanisms to implement the housing goals.*
- *Utilize housing powers and programs to accomplish housing goals and seek out new programs and resources to address the housing needs of the residents.*
- *Initiate and participate in activities with the private sector including the provision of leadership and expertise to neighborhoods and nonprofit organizations in the development of housing and community development projects.*
- *Increase rental opportunities and choices in terms of quality, cost, amenity, style and size of housing, especially for low and moderate income households.*
- *Support programs that improve, maintain, and rehabilitate*
- *Investigate, develop, and promote the creation of new innovative and timely financing techniques and programs to reduce the cost of housing.*
- *Encourage the use of suitable public lands for housing purposes in fee or lease.*
- *Encourage the construction of homes for lease or lease with option to purchase.*
- *Promote research and development of methods, programs, and activities including the review of regulatory requirements and procedures as they affect housing, to reduce the costs consistent with the public health, safety and welfare.*
- *Utilize financing techniques that reduce the cost of housing, including the issuance of tax-exempt bonds and the implementation of interim financing programs.*
- *Ensure that adequate infrastructure is available in appropriate locations to support the timely development of affordable housing.*
- *Work with, encourage and support private sector efforts in the provision of affordable housing.*
- *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.*
- *Aid and encourage the development of a wide variety of housing to achieve a diversity of socio-economic housing mix.*

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Courses of Action

- *Encourage the use of innovative types of housing developments, such as cluster and planned unit developments that take advantage of the steep topographic conditions.*
- *Increase affordable housing opportunities in the Kailua-Kona area.*

Discussion

Kamakana Villages will be a viable community with affordable housing and suitable living environments. The primary objective of Kamakana Villages is to provide affordable housing for working families in and around North Kona. Kamakana Villages will offer a variety of residential housing types and densities at a range of prices, all located in close proximity to West Hawai'i employment centers. *Section 3.13* provides additional discussion on Affordable Housing and Chapter 201 H, HRS.

PUBLIC FACILITIES

Goals

- *Encourage the provision of public facilities that effectively service community and visitor needs and seek ways of improving public service through better and more functional facilities in keeping with the environmental and aesthetic concerns of the community.*

Public Facilities Education

Policies

- *Encourage continuous joint pre-planning of schools with the Department of Education and the University of Hawai'i to ensure coordination with roads, water, and other support facilities and considerations such as traffic and safety, and access for vehicle, bicycle, and pedestrian. Encourage master planning of present and proposed public and private institutions.*
- *Encourage combining schoolyards with county parks and allow school facilities for after school use by the community for recreational, cultural, and other compatible uses.*

Public Facilities Protective Services

Policies

- *Encourage the further development and expansion of community policing programs and neighborhood and farm watch programs in urban, rural and agricultural communities.*
- *Educate the public regarding disaster preparedness and response, especially proper responses for sudden impact hazards.*
- *Consider the proximity to fire stations in approving any rezoning to permit urban development.*

Public Facilities Health and Sanitation

Policies

- *Continue to encourage programs such as recycling to reduce the flow of refuse deposited in landfills.*
- *Encourage the full development and implementation of green waste recycling program.*

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Discussion

The project site includes two areas reserved for school uses. The first area is approximately 4-acres and the second area is approximately 8-acres.

The proposed project's compliance with public facility policies are limited to those programs that can be implemented within the project site. These include programs related to solid waste collection, neighborhood watch, and fire prevention.

PUBLIC UTILITIES

Goals

- *Ensure that properly regulated, adequate, efficient and dependable public and private utility services are available to users.*
- *Maximize efficiency and economy in the provision of public utility services.*
- *Design public utility facilities to fit into their surroundings or concealed from public view.*

Policies

- *Public utility facilities shall be designed to complement adjacent land uses and shall be operated to minimize pollution or disturbance.*
- *Provide utilities and service facilities that minimize total cost to the public and effectively service the needs of the community.*
- *Utility facilities shall be designed to minimize conflict with the natural environment and natural resources.*
- *Improvement of existing utility services shall be encouraged to meet the needs of users.*
- *Encourage the clustering of developments in order to reduce the cost of providing utilities.*

Public Utilities – Water

Policies

- *Water system improvements shall correlate with the County's desired land use development pattern.*
- *All water systems shall be designed and built to Department of Water Supply standards.*
- *Water sources shall be adequately protected to prevent depletion and contamination from natural and manmade occurrences or events.*
- *Water system improvements should be first installed in areas that have established needs and characteristics, such as occupied dwellings, agricultural operations and other uses, or in areas adjacent to them if there is need for Urban Expansion.*
- *A coordinated effort by County, State and private interests shall be developed to identify sources of additional water supply and be implemented to ensure the development of sufficient quantities of water for existing and future needs of high growth areas and agricultural production.*
- *The fire prevention systems shall be coordinated with water distribution systems in order to ensure water supplies for the fire protection purposes.*
- *Promote the use of ground water sources to meet State Department of Health water quality standards.*
- *Develop and adopt a water master plan that will consider water yield, present and future demand, alternative sources of water, guidelines and policies for the issuing of water commitments.*

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Courses of Action for North Kona

- *Continue to pursue groundwater source investigation, exploration and development in areas that would provide for anticipated growth and an efficient and economic system operation.*
- *Continue to evaluate growth conditions to coordinate improvements as required to the existing water system in accordance with the North Kona Water System Master Plan.*

Public Utilities – Telecommunications

Policies

- *Encourage underground telephone lines where they are economically and technically feasible.*
- *Work closely with the telephone company to provide all users with efficient service.*

Public Utilities – Electricity

Policies

- *Power distribution shall be placed underground when and where practical. Encourage developers of new urban areas to place utilities underground.*
- *Route selection for high voltage transmission lines should include consideration for setbacks from major thoroughfares and residential areas. Where feasible, delineate energy corridors for such high voltage transmission lines.*
- *Continue to advise the electrical utility companies on the future revisions of their comprehensive Integrated Resource Plans.*
- *Conform to safety standards as established by appropriate regulatory authorities.*

Public Utilities – Gas

Policies

- *Gas storage facilities shall be located to minimize danger to commercial and residential areas*

Public Utilities – Sewer

Policies

- *The “Sewerage Study for All Urban and Urbanizing Areas of the County of Hawai’i, State of Hawai’i,” December 1970, and the “Water Quality Management Plan for the County of Hawai’i,” December 1980, shall be updated and used as guides for the general planning of sewerage disposal systems.*
- *Private systems shall be installed by land developers for major resort and other developments along shorelines and sensitive higher inland areas, except where connection to nearby treatment facilities is feasible and compatible with the County’s long-range plans, and in conformance with State and County requirements.*
- *Immediate steps should be taken to designate treatment plant sites, sewerage pump station sites, and sewer easements according to the facility plans to facilitate their acquisition.*

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- *Plans for wastewater reclamation and reuse for irrigation and biosolids composting (remaining solids from the treatment of wastewater is processed into a reusable organic material) shall be utilized where feasible and needed.*
- *Require major developments to connect to existing sewer treatment facilities or build their own.*

Courses of Action for North Kona

- *Expand the existing sewer collection system.*

Discussion

An analysis of needed infrastructure was prepared to estimate the utility requirements for Kamakana Villages, and to develop a basis for the related infrastructure required to serve the project. *Appendix C* includes an infrastructure summary. Master planning Kamakana Villages enables the provision of utilities to be carefully coordinated in the development of the project, which helps to lower costs and maximize connectivity with the regional system. It is anticipated that the infrastructure for Kamakana Villages will include at least one new regional well, storage reservoir, and transmission system that will not only serve the project but will also provide linkages to the regional system. Wastewater service is planned to be provided by the Kealakehe STP, necessitating the construction of wastewater transmission lines from Kamakana Villages to the Kealakehe STP.

RECREATION

Goals

- *Provide a wide variety of recreational opportunities for the residents and visitors of the County.*
- *Maintain the natural beauty of recreation areas.*
- *Provide a diversity of environments for active and passive pursuits.*

Policies

- *Strive to equitably allocate facility-based parks among the districts relative to population, with public input to determine the locations and types of facilities.*
- *Recreational facilities shall reflect the natural, historic, and cultural character of the area.*
- *The use of land adjoining recreation areas shall be compatible with community values, physical resources, and recreation potential.*
- *Facilities for compatible multiple uses shall be provided.*
- *Provide facilities and a broad recreational program for all age groups, with special considerations for the handicapped, the elderly, and young children.*
- *Coordinate recreational programs and facilities with governmental and private agencies and organizations.*
- *Innovative ideas for improving recreational facilities and opportunities shall be considered.*
- *Develop local citizen leadership and participation in recreation planning, maintenance and programming.*
- *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 islandwide route connecting major parks and destinations.*

Courses of Action for North Kona

- *Increase mauka park lands.*

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Discussion

The Kamakana Villages project includes the development of neighborhood parks, open spaces and green spaces to support recreational needs. Approximately 48-acres will be reserved for parks and open space. Additionally, the proposed project is located near the County's proposed Kailua Park which is currently in the master planning process. The park will consist of a 117-acre project area that includes the existing County-managed Kailua Park and the former Old Kona Airport State Recreation Area.

TRANSPORTATION

Goals

- *Provide a transportation system whereby people and goods can move efficiently, safely, comfortably and economically.*
- *Make available a variety of modes of transportation that best meets the needs of the County.*

Policies

- *A framework of transportation facilities that will promote and influence desired land use shall be established by concerned agencies.*
- *The improvement of transportation service shall be encouraged.*
- *Consider the provision of adequate transportation systems to enhance the economic viability of a given area.*

Transportation - Roadways

Goals

- *Provide a system of roadways for the safe, efficient and comfortable movement of people and goods.*
- *Provide an integrated State and County transportation system so that new major routes will complement and encourage proposed land policies.*

Policies

- *Encourage the programmed improvement of existing roadways by both public and private sectors.*
- *Investigate various methods of funding road improvements, including private sector participation, to meet the growing transportation needs of the island.*
- *Coordinate with appropriate Federal and State agencies for the funding of transportation projects for areas of anticipated growth.*
- *Consider the development of alternative means of transportation, such as mass transit, bicycle and pedestrian systems, as a means to increase arterial capacity.*
- *There shall be coordinated planning of Federal, State, and County street systems to meet program goals of the other elements such as historic, recreational, environmental quality, and land use.*
- *Provisions for on-street parking shall be incorporated into the design of street systems.*
- *Encourage the State Department of Transportation to establish special scenic routes within and between communities.*
- *Transportation and drainage systems shall be integrated where feasible.*

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- *Adopt street design standards that accommodate, where appropriate, flexibility in the design of streets to preserve the rural character of an area and encourage a pedestrian-friendly design, including landscaping and planted medians.*
- *Develop minimum street standards for homestead and other currently substandard roadways that are offered for dedication to the county to ensure minimal levels of public safety.*
- *Encourage the development of walkways, jogging, and bicycle paths within designated areas of the community.*
- *Explore means and opportunities to enhance the shared use of the island's roadways by pedestrians and bicyclists, in coordination with appropriate government agencies and organizations.*
- *The Bikeway Plan for the County of Hawai'i (1979) shall be updated to include the development of a safe and usable bikeway system throughout the island*

Courses of Action for North Kona

- *Develop a roadway network circulation plan in cooperation with the State Department of Transportation and affected communities. Upon adoption of the plan, the plan recommendations shall be incorporated on the zone district maps.*
- *Encourage the State to widen Queen Ka'ahumanu Highway as necessary to accommodate increases in traffic flows, in particular between Kona International Airport and Keāhole and Kailua-Kona.*
- *Widen Palani Road between the proposed Keanalehu (Waena) Drive and the Queen Ka'ahumanu Highway or construct the proposed Palani Bypass Highway.*
- *Construct the following north-south collector roadways from Palani Drive and extending north to the proposed University Drive: 1) Ane Keohokalole Highway (Mid-level Road); 2) Keanalehu (Waena Drive); and 3) Kealaka'a Street.*
- *Support the installation of suitable bikeways and/or jogging paths.*

Transportation - Mass Transit

Goals

- *Provide residents with a variety of public transportation systems that are affordable, efficient, accessible, safe, environmentally friendly, and reliable.*

Policies

- *Improve the integration of transportation and land use planning in order to optimize the use, efficiency, and accessibility of existing and proposed mass transportation systems.*
- *Support and encourage the development of alternative modes of transportation, such as enhanced bus services and bicycle paths.*
- *Incorporate, where appropriate, bicycle routes, lanes, and paths within road rights-of-way in conformance with The Bikeway Plan for the County of Hawai'i.*

Discussion

The Kamakana Villages project accommodates future transit stops along the planned Ane Keohokalole Highway. The project will promote a walkable, bikeable, livable mixed-used community with high density residential development within walking distance of bus stops. The internal roadways will create feasible connections with existing and future developments on adjacent lands. Mitigation of traffic impacts from this project is discussed in the TIAR (*Appendix D*).

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LAND USE

Goals

- *Designate and allocate land uses in appropriate proportions and mix and in keeping with the social, cultural, and physical environments of the County.*
- *Protect and encourage the intensive and extensive utilization of the County's important agricultural lands.*
- *Protect and preserve forest, water, natural and scientific reserves and open areas.*

Policies

- *Zone urban types of uses in areas with ease of access to community services and employment centers and with adequate public utilities and facilities.*
- *Promote and encourage the rehabilitation and use of urban areas that are serviced by basic community facilities and utilities.*
- *Allocate appropriate requested zoning in accordance with the existing or projected needs of neighborhood, community, region and County.*
- *Encourage the development and maintenance of communities meeting the needs of its residents in balance with the physical and social environment.*
- *Develop community development or regional plans for all of the districts or combinations of districts in cooperation with community residents and periodically review and amend these documents as necessary or as mandated.*
- *Encourage urban development within existing zoned areas already served by basic infrastructure, or close to such areas, instead of scattered development.*

Land Use - Agriculture

Goals

- *Identify, protect and maintain important agriculture lands on the island of Hawai'i.*
- *Preserve the agricultural character of the island.*
- *Preserve and enhance opportunities for the expansion of Hawai'i's Agricultural Industry.*

Policies

- *Designate, protect and maintain important agricultural lands from urban encroachment.*
- *Ensure that development of important agricultural land be primarily for agricultural use units.*
- *Discourage speculative residential development on agricultural lands.*
- *Encourage other compatible economic uses that complement existing agricultural and pastoral activities.*

Courses of Action for North Kona

- *Protect important agricultural lands within the Kona Coffee Belt from urban encroachment through the use of zoning and other mechanisms.*

Land Use - Commercial Development

Goals

- *Provide for commercial developments that maximize convenience to users.*
- *Provide commercial developments that complement the overall pattern of transportation and land usage within the island's regions, communities, and neighborhoods.*

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Policies

- *Commercial facilities shall be developed in areas adequately served by necessary services, such as water, utilities, sewers, and transportation systems. Should such services not be available, the development of more intensive uses should be in concert with a localized program of public and private capital improvements to meet the expected increased needs.*
- *Distribution of commercial areas shall meet the demands of neighborhood, community and regional needs.*
- *Encourage the concentration of commercial uses within and surrounding a central core area.*
- *The development of commercial facilities should be designed to fit into the locale with minimal intrusion while providing the desired services. Appropriate infrastructure and design concerns shall be incorporated into the review of such developments.*
- *Applicable ordinances shall be reviewed and amended as necessary to include considerations for urban design, aesthetic quality and the protection of amenities in adjacent areas through landscaping, open space and buffer areas.*
- *Require developers to provide basic infrastructure necessary for development.*
- *Encourage commercial areas to develop on an axis perpendicular to the highway.*

Land Use – Multiple Residential

Goals

- *To provide for multiple residential developments that maximize convenience for its occupants.*
- *To provide for suitable living environments that accommodate the physical, social and economic needs of the island residents.*
- *To enhance the overall quality of life in our residential communities.*

Policies

- *Appropriately zoned lands shall be allocated as the demand for multiple residential dwellings increases.*
- *These areas shall be allocated with respect to places of employment, shopping facilities, educational, recreational and cultural facilities, and public facilities and utilities.*
- *Incorporate reasonable flexibility in applicable codes and ordinances to achieve a diversity of socio-economic housing mix.*
- *Encourage flexibility in the design of residential sites, buildings and related facilities to achieve a diversity of socio-economic housing mix and innovative means of meeting the market requirements.*
- *The rehabilitation and/or utilization of multiple residential areas shall be encouraged.*
- *To assure the use of multiple residential zoned areas and to curb speculation and resale of undeveloped lots only, the County may impose incremental and conditional zoning, which shall be based on performance requirements.*
- *Applicable codes and ordinances shall be reviewed and amended as necessary to include consideration for urban design, and aesthetic quality through landscaping, open space, and buffer areas.*
- *Support the rezoning of those multiple residentially zoned lands that are used for other purposes to a more appropriate zoning designation.*
- *Require developers to provide basic infrastructure necessary for development.*

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Courses of Action for North Kona

- *Re-evaluation of existing zoned areas and re-allocation of lands in appropriate locations shall be undertaken.*
- *Appropriately zoned lands shall be allocated as the need for multiple residential development increases.*

Land Use – Single-Family Residential

Goals

- *To maximize choices of single-family residential lots and/or housing for residents of the County.*
- *To ensure compatible uses within and adjacent to single-family residential zoned areas.*
- *To provide single-family residential areas conveniently located to public and private services, shopping, other community activities and convenient access to employment centers that takes natural beauty into consideration.*
- *To enhance the overall quality of life in our residential communities.*

Policies

- *To assure the orderly use of single-family residential zoned areas and to curb speculation and resale of undeveloped lots, the County may impose incremental and conditional zoning, which would be based on performance requirements. This is to assure that a certain percentage of buildings will be constructed.*
- *Encourage innovative uses of land with respect to geologic and topographic conditions through the use of residential cluster and planned unit development.*
- *Encourage and coordinate with the State in providing fee simple and leasehold single-family residential lots to the residents through State and/or County Housing Programs.*
- *Incorporate reasonable flexibility in codes and ordinances to achieve a diversity of socio-economic housing mix and to permit aesthetic balance between single-family residential structures and open spaces.*
- *Designate and allocate single-family residential zoned lands at varying densities for future use in accordance with the needs of the communities and the stated goals, policies, and standards.*
- *Require developers to provide basic infrastructure necessary for development.*

Courses of Action for North Kona

- *Encourage the development of appropriately located and serviced privately-held and State-owned lands for house lots.*
- *Improve and develop roadways, water and sewerage systems, and other basic facilities necessary to encourage development of lands suitable for residential use.*
- *Encourage the concentration of residential structures to avoid strip residential development.*
- *Encourage the use of more innovative types of housing development, such as zones of mix and cluster and planned unit developments.*

Land Use – Open Space

Goals

- *Provide and protect open space for the social, environmental, and economic well-being of the County of Hawai'i and its residents.*

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- *Protect designated natural areas.*

Policies

- *Open space shall reflect and be in keeping with the goals, policies, and standards set forth in the other elements of the General Plan.*
- *Open space in urban areas shall be established and provided through zoning and subdivision regulations.*
- *Encourage the identification, evaluation, and designation of natural areas.*
- *Zoning, subdivision and other applicable ordinances shall provide for and protect open space areas.*

Land Use – Public Lands

Goals

- *Utilize publicly owned lands in the best public interest and to the maximum benefit for the greatest number of people.*
- *Acquire lands for public use to implement policies and programs contained in the General Plan.*

Policies

- *Encourage uses of public lands that will satisfy specific public needs, such as housing, recreation, open space and education.*
- *Encourage the adoption of State programs for State lands consistent with the General Plan.*
- *Encourage the State to continue the Villages of La‘i ‘Ōpua project at Kealakehe.*

Discussion

The LUPAG Map currently designates most of the project site as Urban Expansion and the remainder as Low Density Urban. The reclassification of the project area from the State Agricultural District to the State Urban District and a change in County zoning would meet the existing and projected needs of the neighborhood, community, region, and the County.

Although the Kamakana Villages project site is classified in the State Agricultural District, the land has limited agricultural productivity because of its poor soil quality. The proposed reclassification of the property from the Agricultural District to the Urban District is not anticipated to result in significant impacts upon agricultural productivity in the region.

Kamakana Villages is intended to be a mixed-use community which includes affordable and market priced housing, commercial/retail space, reserved schools sites, neighborhood parks, an archeological preserve areas, and landscaped buffers and open space. Up to 197,000 square feet of retail space is proposed for Kamakana Villages. Retail/commercial space will be located within three mixed-use areas, which complement the community development and is consistent with the goals, policies of land use commercial development. The project also provides neighborhood parks and open space and archeological preserve areas. These elements are consistent with the intent of the General Plan’s open space policies. The residential component of the project includes a variety of housing unit types and densities with the emphasis on providing the maximum number of affordable housing units. Single-family and Multi-family units will be conveniently located to public and private services and facilities such as commercial areas, schools, and parks. The Kamakana Villages project is consistent with the objectives of the General Plan’s housing policies for the region.

3.7 KEĀHOLE TO KAILUA DEVELOPMENT PLAN

The Keāhole to Kailua Development Plan study (Keāhole Plan) was conducted with the intent of developing the area. The plan serves as an implementing tool for the County General Plan and as a sub-regional plan and developmental framework for the West Hawai'i Plan. The Keāhole Plan was adopted in 1990 and amended 1991 by the Hawai'i County Council to serve as a guide for future infrastructure and land uses in the region.

Goals and Objectives

The goal of the Keāhole Plan was to develop a mixed residential, commercial, resort, industrial, and recreational community, with appropriate shoreline uses, public facilities, and infrastructure, which would be built in phases over the course of 20 years. The objectives were to:

- (1) develop a plan for an integrated community that can be served by the required infrastructure in phases and provide a mix of land uses;*
- (2) develop design guidelines for critical visual aspects;*
- (3) develop an efficient, safe and pleasing road network over the next 10-20 years;*
- (4) identify all areas subject to flood and tsunami inundation and develop a comprehensive flood control system;*
- (5) develop a water system with 6 mgd capacity to serve land uses;*
- (6) develop area-wide system of sewage facilities with 6 mgd capacity;*
- (7) develop adequate solid-waste facilities;*
- (8) develop recreational facilities that would meet the rise of new residents;*
- (9) develop a financing approach that provides infrastructure financing, feasible land development, and feasible level of County capital expenditures.*

Land Use Plan for the Area

The major growth assumptions of the Keāhole Plan were (1) the Keāhole to Kailua area would be the location for a new "Civic and Business Center" having civic and commercial uses; (2) 4,500 new residential units would be built between 1990 and 2010; (3) a number of facilities were planned that would serve a much larger region, including a municipal golf course, a regional sports complex, and the University of Hawai'i - West Hawai'i College; and (4) the project area would accommodate resort development in the range of 1,500 visitor units.

A flexible land use plan was developed for the area to provide a framework for future growth, infrastructure costs, public-private implementation of major infrastructure projects, and State and County action on designating lands for urban development. The plan emphasized four major development themes to guide the planning and development of the area which included: (1) three major development zones; (2) a new civic and business center; (3) major new roadways; and (4) a regional greenbelt system.

Current and Projected Resident Population in West Hawai'i

The resident population of West Hawaii is forecast to increase by about 60 percent over the next two decades, reaching some 118,000 persons. In Greater Kailua-Kona, the primary study area stretching from Keahole to Keauhou, the resident population is projected to grow from a current level of just over 23,000 to circa 40,000 persons by 2030.

According to the County General Plan, West Hawaii, and particularly Kohala and Kona Districts will continue to accommodate the majority of the visitor market within the County. Most resort

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and resort-residential complexes which are currently under construction or are planned for construction in the near future will be developed in these areas. Visitor accommodation units within the County totaled 9,655 units in 1998, up from 8,952 units in 1990 with Bed and Breakfast units, although not a significant part of the total visitor unit count, growing from 55 units in 1990, to 171 units in 1998.

Section 4.13 provides additional discussion the resident population for the County, West Hawai'i and Greater Kailua-Kona.

Discussion

The Kamakana Villages Project is consistent with the Keāhole Plan, which supports a mixed residential, commercial, and recreational community. The project conforms to the goals of the plan by providing a significant number of new residential units in the planning area. Kamakana Villages proposes to develop 2,330 units in a range of housing unit types and densities. The project also includes other land use components including commercial/retail space, school sites, neighborhood parks, archaeological preserve areas, landscaped buffers and open space, and the development of new infrastructure systems that will benefit the region.

3.8 KEĀHOLE TO HONAUNAU REGIONAL CIRCULATION PLAN – COUNTY ACTION PLAN (2006)

Traffic congestion in Kona is a growing problem caused by sprawl-type growth and road networks which lacks connectivity. The traffic congestion and driving commutes are deteriorating Kona's overall quality of life. Road improvements have not kept pace with development occurring in the area. Past development has eliminated or compromised future roadway corridor options and major road improvements require long periods of time to complete and have limited financial resources. This action plan addresses these types of problems through the use of action strategies. Those action strategies which are relevant to the Kamakana Villages Project are discussed below.

Strategy #2: *Improve connectivity with a road network that spreads the traffic rather than funneling all the traffic to the major arterials.*

Strategy #2-F: *Keanalehu/Manawalea Street Extension. The connection of Manawalea to Keanalehu would provide another link between the Kealakehe elementary, middle, and high schools for the residents of La'i 'Ōpua and Kealakehe (in the vicinity of the elementary and middle schools). These roads are nearly "construction-ready" since the EIS has been completed, and the design is almost complete. The County will advance the funds and DHHL will reimburse the County its proportionate share.*

Strategy #2-I: *Ane Keohokalole Extension (aka Henry Street Extension or Mid-Level Road). This project will extend Henry Street from Palani Road to the existing terminus of Ane Keohokalole makai of Kealakehe High School. The 2006 State legislature appropriated \$6 million for this project. Once constructed, this road will enable someone to drive from Kailua village to the Kaloko Industrial Park via Henry Street and the Kamanu Street Extension, without having to drive on Queen Ka'ahumanu Highway.*

Discussion

The proposed project is consistent with this strategy to improve connectivity. The project's internal roadways will make feasible connections to existing and future developments on adjacent lands, which will contribute towards the implementation of this strategy. The Keanalehu/Manawalea Street Extension provides access from the project site to lands and roadways east of the property.

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The planned Ane Keohokalole Highway extension will be along the project site's makai boundary and will therefore provide significant access to the project site.

Strategy #4: *Increase multimodal choices to reduce dependency on the automobile.*

Discussion

The Kamakana Villages Project is consistent with the intent of this strategy. The project design promotes a walkable, bikable community and incorporates TOD strategies and will accommodate multiple transit stops (bus or other modes) along the planned Ane Keohokalole Highway, thereby reducing dependency on automobiles.

Strategy #5: *Reduce commuting needs by directing growth to existing compact urban areas; encouraging affordable housing within these core urban areas; and mixing land uses so that jobs and/or daily requirements are within walking distances.*

Strategy #5-B: *Growth Management Policies. Infill higher density rezoning within the urban core that includes affordable housing and mixed uses, and discourages development in the fringe areas. The Community Development Plan will play a major role to encourage more innovative development concepts that provide mixed uses and higher density in a manner that fits the character of this area, and manages growth in fringe areas in a manner that balances private property rights and furthers public interests in infrastructure management, agricultural/cultural/ecological resource protection, and rural character preservation.*

Discussion

Kamakana Villages is consistent with the intent of this strategy. The proposed project has a mix of land use components which includes residential housing units, commercial areas, school sites, and neighborhood parks. The community development is designed to promote connectivity and the ability for residents to be within walking distances of daily activities. The Kamakana Villages Project directs growth to support existing compact areas such as the employment centers of West Hawai'i. The project proposes mixed-use higher density development within an area designated for Urban Expansion.

Strategy #6: *Implement a concurrency system.*

Strategy #6-A: *Projects that provide affordable housing or increase the infrastructure capacity should be allowed to proceed even if the transportation infrastructure may not be adequate on the basis that such developments reduce demand (i.e., housing closer to jobs thereby reducing commuting) or build important connector roads.*

Discussion

The project supports the concurrency system recognizing that there may be complicated multi-party negotiations in instances where several land owners and/or agencies are involved. Kamakana Villages provides affordable housing and increases infrastructure capacity. The project site will have access onto the Keanalehu Drive expansion, which was completed in 2009.

3.9 COUNTY OF HAWAII ZONING CODE

The Zoning Code, Chapter 25, Hawai'i County Code is applied and administered within the framework of the County General Plan which guides the overall future development of the County. The Zoning Code provide regulations and standards for land development and the construction of buildings and other structures in the County of Hawai'i for the purposes of promoting health, safety, morals and the general welfare of the County.

The 272.063 acres proposed for the development of Kamakana Villages is currently zoned in the Agricultural District by the County of Hawaii (A-5a) (*Figure 1-5*).

Discussion

Kamakana Villages is a mixed-use community development that consists of including single- and multi-family residential housing units, commercial/retail space, civic open space, school sites, neighborhood parks, archaeological preserve areas and landscaped buffers and open space. This mixed-use community development is not a permitted use within the County Agricultural zoning district; however, it is permitted in the Project District.

3.9.1 Project District

Project Districts, Chapter 25, (Section 25-6-40) of the Hawaii County Code, is intended to provide for flexible and creative planning approach rather than specific land use designations for quality developments. It allows flexibility in location of specific uses and mixes of structural alternatives and establishes continuity in land uses and designs while providing for a comprehensive network of infrastructural facilities and systems. A variety of uses as well as open space, parks, and other project uses are intended to be in accord with each project district objective.

Hawaii County Code Section 25-6-41 outlines criteria for establishing a Project District: a Project District may be established whenever the public necessity and convenience and the general welfare require that a comprehensive planning approach for an area should be adopted. Additionally, a Project District may only be established if the proposed district: (1) Is consistent with the intent and purpose of Hawaii County Code Chapter 25 and the County General Plan and (2) Will not result in a substantial adverse impact upon the surrounding area, community or region. Hawai'i County Code Section 25-6-42 established 50-acres as the minimum land area required for a Project District.

Kamakana Villages' conformance to the Hawaii County Code standards for a Project District is detailed below.

Discussion

Kamakana Villages is proposed to be a master planned, mixed-use affordable housing project containing up to 2,330 residential units (fifty percent of which will be provided as affordable housing units), as well as retail space, commercial uses, public and/or private school facilities, archaeological and open space preserve areas, active and passive parks, trail and bikeway system, and support infrastructure and transit stops and centers. The planned development requires flexibility in the location of specific uses to allow for the various land use components. Kamakana Villages supports the public necessity and general welfare of the community by establishing

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residential development in North Kona to provide employee housing near job centers, and to support job growth in West Hawai'i's visitor and other industries.

The County's General Plan LUPAG designates the majority of the subject property for Urban Expansion, and the remainder of the property as Low Density Urban. The project meets the County's pattern of future development by providing the affordable housing opportunities in North Kona to support the population growth of the region. Throughout the planning and design phases of the project, community input was taken to build the vision and to set the foundation for the mixed-use community.

The project will utilize largely marginal or non-essential agricultural lands. The location of the project is consistent with sound planning principals for the prudent use land-based resources. The project area has been carefully surveyed to ensure that negative impacts on the environment are minimized and critical environmental areas are protected. Best management practices will be implemented to mitigate potential adverse impacts. Design criteria will assure that the project will be compatible with and will blend into the surrounding area.

Kamakana Villages meets the criteria for establishing a Project District. The project is consistent with the intent and purpose of Chapter 25 and the County General Plan and will not result in adverse impacts to the surrounding areas, community or region.

3.10 SPECIAL MANAGEMENT AREA

The Special Management Area (SMA) is part of a regulatory system established by the Hawaii CZM Law enacted in 1977 (Chapter 205A, Hawaii Revised Statutes). The SMA provides overarching guidance through State law for managing coastal development. Each County is responsible for designating a SMA that extends inland from the shoreline. The County Department of Planning administers the SMA in accordance with the County of Hawai'i Planning Commission Rules of Practice and Procedure, Rule 9 Special Management Area.

Discussion

The project area is not located within the SMA and is consistent with the objectives and policies of the SMA rules and with Chapter 205A, HRS (*Figure 1-6*). Kamakana Villages will not significantly impact recreation, historic resources, scenic and open space, or coastal and marine ecosystems. The project will not interfere with views to or along the shoreline areas. Design criteria will assure that the project will be compatible with and will blend into the surrounding area. Best management practices will be implemented to mitigate potential adverse impacts.

3.11 KONA COMMUNITY DEVELOPMENT PLAN

The proposed project is part of the Kona CDP which was adopted by the Hawai'i County Council on September 25, 2008, as Ordinance 08-131. In support of the Hawai'i County General Plan, the Kona CDP provides a policy context which helps the County determine how it should distribute funds, pass laws, govern development, provide roads and public facilities, and generally make decisions. The plan reflects a thoughtful and detailed roadmap to address existing deficiencies and proactively support and guide future growth within designated areas and in a sustainable manner honoring the culture and environment of Kona. This is to be accomplished within and through coordination between the community, government and development groups.

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The planning process for the development of the Kona CDP provided forums for gathering and articulating the community's vision for the future development of the Kona area. After well over a hundred small group meetings, charrettes and workshops involving over 800 residents, the Kona CDP is an articulation of residents' visions for the community. To achieve this vision, the guiding principles were established. A discussion of how Kamakana Villages will meet these guiding principles is provided below.

3.11.1 Guiding Principles

- **Protect Kona's natural resources and culture.**
 - A. *Natural resources. The watershed, including coastline, flood plains, important agricultural land, open space, and areas mauka of Māmalahoa Highway shall be protected. Guided by a principle of respect for the land, environment and natural resources shall be preserved and protected to ensure clean air and water, thriving native species, conservation of shorelines and open space, improvements in watershed management and flood control, and reductions in solid waste.*
 - B. *Culture. The multi-ethnic culture is preserved, protected, and restored in a manner that perpetuates all aspects of the aloha spirit.*

Discussion

Kamakana Villages is committed to providing open spaces and cultural features. The project design incorporates landscaped avenues, roadways and walkways that pass from one major open space to another. Approximately 48-acres (18 percent of the total project area of approximately 272-acres) will comprise of open space, including community parks and neighborhood parks.

The development of Kamakana Villages will not have a significant adverse impact on natural and resources, or coastal ecosystems. The development of the proposed project will implement best management practices and other measures such as storm drain filtration devices, ground stabilization with landscape and hardscape, educational warning signs, and coordinating educational programs for project area residents. Drainage systems will contain runoff on-site to prevent non-point source pollution.

Integrated into the open space system are a total of approximately 9-acres of archaeological preserves. The primary preserve which includes several house platforms, agricultural walls and burial sites will be cleaned of invasive vegetation and protected. There will be an interpretive passive park surrounding the protected area which will be landscaped with native vegetation.

- **Provide connectivity and transportation choices.**
 - *Future growth should connect communities with movement alternatives such as sidewalks, trails, and bike lanes. We need an efficient public transportation system for moving people. It should have comfortable and frequent service to key destinations, along prominent commuter routes, and at transfer points that offer connections to alternative modes of transportation.*

Discussion

Situated North of Kailua-Kona, one of the main objectives of Kamakana Villages is to provide employee housing near job centers to support the working community, and thus reduce the need to commute from distant areas like Ka'u, South Kona and North Kohala. This mixed-use compact

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community will include commercial areas and school sites to support community needs, thereby promoting other means of transportation such as walking, biking, or using proposed transit systems.

The project design incorporates TOD strategies and will accommodate multiple transit stops (bus or other modes) along the planned Ane Keohokalole Highway. This planning paradigm is intended to serve not only Kamakana residents but residents of DHHL and QLT developments. The TOD multi-modal concept includes bike and pedestrian paths along with automobile and bus transit. Network of interconnected streets will disperse vehicular traffic throughout the community and connect residential areas to mixed-use portions of the site. A circulation system of linked landscaped avenues, roadways and walks that pass from one major open space to another will provide residents and visitors another option for traveling through the community using mauka-makai trails.

- **Provide housing choices.**

- *Future growth should offer a broad range of mixed housing choices with a variety of types and price ranges that are affordable and available in close proximity to places of work. They should also accommodate populations with special needs, including seniors, disabled persons, and the homeless.*

Discussion

Kamakana Villages is a master-planned residential community with a full range of mixed uses including housing, commercial and retail, civic spaces, parks, archaeological preserves, schools sites, and open spaces. The Kamakana Village project responds to the demand for affordable homes for working families in North Kona. Located near the employment centers of West Hawai'i, the project will provide affordable and market priced housing for a mix of income levels. The project proposes approximately 2,330 dwelling units (du), 50+ percent of which (up to 1,168 units) will qualify as affordable housing units. Anticipated residential product types will include a range of traditional single-family and multi-family detached dwellings to 3-plex and 4-plex multi-family units.

- **Provide recreation opportunities.**

- *Future growth should provide a diversity of recreational opportunities that are well-maintained, attractive, and easily accessible to the entire community.*

Discussion

Approximately 48-acres (18 percent of the total project area of approximately 272-acres) will comprise of open space, community parks, neighborhood parks, and buffer zones. Centrally-located community parks and neighborhood pocket parks will be situated throughout Kamakana Villages and connected by mauka-makai trails. Recreation areas, which also act as gathering places, will support and encourage leisure activities for the residents to participate in and interact with their neighbors. Other recreational projects such as the Kailua Park Master Plan will also be developed near the project to meet the needs of area residents and other surrounding communities.

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- **Direct future growth patterns toward compact villages, preserving Kona's rural, diverse, and historical character.**
 - A. *Compact villages. The majority of future growth should be directed north of Kailua, with some future growth in the Kailua to Keauhou area, in the form of compact villages that offer increased density and mixture of homes, shops, and places to work.*
 - B. *Rural character of Kona. Density in South Kona should be kept low, and its character should remain rural, with most future growth directed around existing villages and towns.*
 - C. *Community character. Diversity, history, and the host culture are celebrated in neighborhoods and communities that incorporate beautification, architectural continuity, and respect for the natural environment, in order to maintain Kona's character and its Hawai'i Island style.*

Discussion

The "village" described in the Kona CDP is a transit-oriented, compact, walkable and mixed-use community oriented around "pedestrian sheds" roughly equivalent to a five-minute walking radius from core elements. Located north of Kailua-Kona, the Kamakana Villages property is generally surrounded by lands in the Urban district. Most of the project site is situated in an area designated as Urban Expansion and the remainder is designated as Low Density Urban in the County of Hawai'i General Plan. The project provides a variety of unit types and densities of affordable and market housing in close proximity to West Hawai'i employment centers. The project site contains commercial areas to service the community and two sites reserved for the development of educational facilities.

Kamakana Village is community that is knit together by design where residents have the opportunity to interact with their neighbors because of gathering places and daily interactions at common open spaces, facing lanai, alleyways, schools, libraries, bikeways and pedestrian paths. The project examined the physical and cultural history of the site and includes approximately 9-acres of archaeological preserve areas thereby promoting the natural resources located within the site.

- **Provide infrastructure and essential facilities concurrent with growth.**
 - *Future growth should occur where infrastructure (roads and utilities) and essential facilities (i.e. police, fire, and schools) are already in place. These facilities should be maintained at a level that will enhance the quality of life for Kona residents.*

Discussion

To improve traffic conditions in the region, the State Department of Transportation is expanding Queen Ka'ahumanu Highway to a four-lane facility in two phases. Phase I involves road widening from Henry Street to Kealakehe Parkway and Phase II involves road widening from Kealakehe Parkway to Keahole Airport. The County Planning Department is proposing three new roadways that would parallel Queen Ka'ahumanu Highway at various points up the slope. The "mid-level" road, Ane Keohokalole Highway is located along the western boundary of the property, and will provide key access to the project site. Roads developed within the project site as connection points between collector roads and Ane Keohokalole Highway will be constructed to County standards and dedicated to the County. The project is committed to providing TOD strategies, including transit stations and related improvements on site.

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Kamakana Villages is committed to working with State and County agencies in the planning and construction of required infrastructure. The project will include the development of infrastructure that will benefit the region, including roadways, wastewater transmission lines, and potable water supply, transmission lines and reservoir(s). Since the project site is designated by the State and the County plans as a reserve area for urban growth some basic services are already available in the immediate area.

- **Encourage a diverse and vibrant economy emphasizing agriculture and sustainable economies.**
 - A. *Agriculture. Agricultural lands should be preserved in a manner that supports family farms, ecotourism, and a self-sufficient agricultural economy that encourages the local use of Hawai'i products.*
 - B. *Sustainable Industries. Diverse and sustainable industries such as ecotourism, agriculture, aquaculture, technology, and health should be enhanced, expanded and marketed to take full advantage of Kona's unique environmental assets and reduce dependence on food and fossil fuel imports. Community collaborations supported in order to meet the needs of businesses, residents and visitors.*

Discussion

Although majority of the project site is currently designated as Agricultural (A-5) by the County, the property has soils with poor agricultural viability. No potentially productive agricultural land is being removed from the inventory with the development of this project.

The proposed project is a master-planned residential community with a full range of mixed uses including market and affordable housing, commercial and retail, schools sites, civic spaces, parks, archaeological preserves, and open spaces. Three commercial areas are envisioned for Kamakana Village to be shared with the rest of the community. The primary area is positioned so that it may be integrated with the future development of the DHHL commercial site. Two other commercial areas will be developed during later phases. These commercial areas will be located at the central entry roadway from the Ane Keohokalole Highway to Kamakana Village and at the primary entry off Palani Road. It is envisioned that the community will have retail, coffee shops, restaurants, shops and offices which provide community services.

- **Promote effective governance.**
 - *An effective and accountable regional government structure that improvise the quality of life for Kona residents should manage the impacts of growth and meet the needs of the Kona community by encouraging cooperation among public, private, and civic partners, ensuring equitable distribution of resources, and instituting policies and regulations in a predictable and consistent manner.*

Discussion

Kamakana Villages is committed to working with the Kona community, a regional government structure, as well as the County of Hawai'i. Community consultation has been an ongoing process for the proposed project. Two planning workshop meetings or charrettes were held with the Kona community in 2009 to discuss the planning, design and overall visions for the proposed of Kamakana Villages Project. Forest City places a high value on meaningful community relations and is available to discuss the proposed project with community members or groups in the future.

3.11.2 Kona CDP Elements

Kamakana Villages Project will be consistent with principles and visions set forth in the Kona CDP, and also with the goals, objectives, policies, and actions which are presented as eight elements. These elements correspond with the thirteen elements of the County of Hawai'i General Plan. The consistency of the proposed project with the goals of the eight elements is discussed below.

Goal - Transportation: *An efficient, safe, and attractive multi-modal transportation system integrated with land use planning that allows movement around and through Kona with minimal reliance on the automobile.*

Discussion

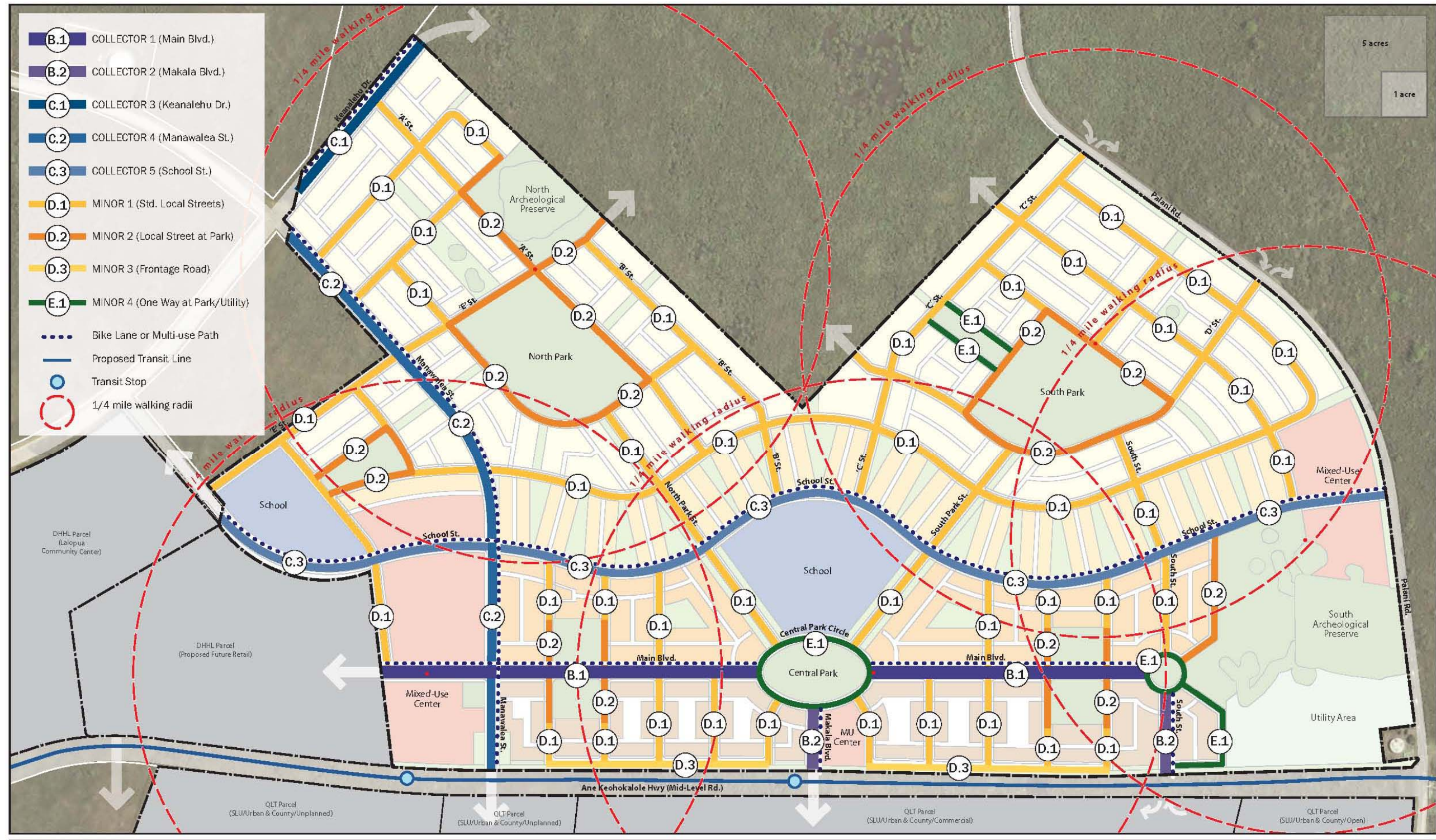
Kamakana Villages is located in an area designated as Neighborhood TOD by the Kona CDP (Figure 2-1). The design for Kamakana Villages integrates an efficient, safe and attractive multi-modal transportation system as shown in Figure 3-1. The project utilizes a network of interconnected streets that will disperse vehicular traffic throughout the residential areas and connect to other mixed use areas within the community. Using TOD strategies, the project design accommodate multiple transit stops (bus or other modes) along the planned Ane Keohokalole Highway and promotes a walkable, bikable community through a layout which creates a system of landscaped areas and greenbelts linked to primary streets.

Goal - Land Use: *Public policies set the foundation and framework within which the community and private sector work collaboratively towards a shared vision of concentrating growth within urban villages in North Kona, preserving rural character and agricultural lands, protecting significant natural and cultural resources, providing a range of housing opportunities, and a process to constructively, efficiently, and fairly achieve these ends with the best practices and quality.*

Discussion

The vision for Kamakana Village is shaped by the land, its physical and cultural history, and aspirations expressed by the community. The mixed-use community will include residential housing units, commercial/retail space, school sites, neighborhood parks, archeological preserve areas, landscaped buffers and open space. As one of the fastest growing regions on Hawai'i County, the project would accommodate the population growth of North Kona and would support current State land use classifications of the surrounding areas of the site which is generally surrounded by lands in the Urban district. The land use components will support local lifestyles and maintain the character of the area while protecting historical resources and providing a wide range of outdoor recreational opportunities.

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STREET SECTION KEY PLAN

KAMAKANA VILLAGES AT KEAHUOLU Kailua-Kona, Hawaii

November 9, 2009

Forest City Hawaii Kona, LLC
Honolulu, Hawaii

Group 70 International, Inc.
Honolulu, Hawaii

Hawaii Housing Finance and Development Corporation
Honolulu, Hawaii

Calthorpe Associates
Berkeley, California



Figure 3-1

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Goal - Environmental Resources: *The natural and cultural resources enhance Kona's character together with the built environment, developed in harmony with ecological principles, where residents and visitors enjoy and interact with nature through a networked system that promotes a healthy active lifestyle, and where the financial and moral commitment reflects the high level of caring that the Kona people have for the land.*

Discussion

Kamakana Villages is committed to integrating natural and cultural resources within the proposed project site. The project design incorporates landscaped avenues, roadways and walkways that pass from one major open space to another with the built environment of school facilities, housing, and commercial spaces. The project contains neighborhood parks and recreation areas to support leisure activities, and includes open space components and archaeological preserve areas to promote the natural resources located within the site. The project area has been carefully surveyed and no significant habitats are present and that no endangered, threatened or candidate species have been discovered.

Goal - Cultural Resources: *The multi-ethnic cultures of Kona are preserved, protected, and restored in a manner that perpetuates those cultures and all aspects of the Aloha spirit.*

Discussion

The Kamakana Villages community is planned as a place that will promote culture, environment and sustainability. The physical and cultural environment (landscaping, buildings, cultural practices, educational institutions and services) will serve as catalysts for preserving, protecting and perpetuating cultures, and all aspects of the Aloha spirit. The proposed project will not adversely affect cultural and religious rights, and will contain preserve sites within the project area.

Goal - Housing: *Diversity of housing choices for all segments of the population close to places of employment and/or daily needs.*

Discussion

The Kamakana Villages Project will offer affordable and market-priced housing units in a range of densities. This will create a variety of housing opportunities for all segments of the population. The project is located in close proximity to Kailua-Kona and North Kona's employment centers, making it accessible to services and daily needs.

Goal - Public Facilities, Infrastructure, and Services: *A community where the public infrastructure and facilities are sustainably built and maintained with innovation and pride, promote sense of community, and support a quality of life where visitors and residents feel safe, healthy, and inspired.*

Discussion

As a compact, TOD mixed-use community, Kamakana Villages will include sustainably designed, and maintained infrastructure and facilities that will benefit the region, including roadways, wastewater transmission lines, and potable water supply, transmission lines and reservoir(s). The infrastructure will be designed to support connectivity and using green design principles. While some basic services are already available to the site, the development of the project will include parks, school sites, and commercial areas that provide support services to the community.

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Goal - Energy: *Establish Kona as a model for sustainability and energy self sufficiency.*

Discussion

By design, development and lifestyle, Kamakana Village is seen a sustainable community. The plan incorporates principles of sustainability from the TOD concept to the pedestrian focus by using compact mixed use designs. The community will be energy efficient and designed to meet LEED ND criteria. The infrastructure will likely include elements for renewable energy, solar hot water and water conserving strategies. Landscaping will minimize water use and reduce heat-island impacts, and resident training programs will be provided to optimize savings of energy and limit waste which will lead to the development of a community-wide lifestyle of sustainability.

Goal – Economic Development: *To foster economic diversification, reduce import dependence, and increase employment opportunities that pay living wages:*

Discussion

The project will contribute to the economic development of the both the County and the State through creating employment opportunities for construction, increasing revenues through taxes, and long-term employment associated with the commercial development. The development of the project will not directly foster economic diversification, but it will have an indirect impact through contributing much needed housing opportunities that will provide the maximum number of affordable and market priced housing units, and commercial floor area for new businesses.

3.11.2.1 Transportation Strategies

Kamakana Villages Project is a TOD project, therefore, transportation strategies are discussed in detail. As a TOD, the project meets the “major strategies” that embody the guiding principles relating to transportation, housing, land use, and infrastructure that should be integrated into Kona’s long-term transportation policies as Kona continues to grow in the years ahead. These strategies include:

- **Mass Transit** - Kamakana Villages is committed to working the State and County agencies on design and construction of transit stations and the proposed transit line along Ane Keohokalole Highway and the proposed extension of Makala Boulevard.
- **Multi-Modal Transportation** – Kamakana Villages will have a network of interconnected streets that will disperse vehicular traffic throughout the residential areas and connect to other mixed use areas within the community. Other modes of transportation, such as walking and bicycling, will also be encouraged through the project’s design and layout which creates a system of landscaped areas and greenbelts linked to primary streets that define open spaces around new mauka-makai trails connecting the parks.
- **Transit-Oriented Development (TOD)** – The proposed project is a transit-oriented, compact, walkable and mixed-use community oriented around “pedestrian sheds” roughly equivalent to a five-minute walking radius from core elements, which would integrate housing, employment, shopping, and recreation opportunities. The project is committed to supporting the expanded transit system by providing a transit-oriented development centered on future northbound and southbound bus stops to be located at the intersection of the proposed Ane Keohokalole Highway.

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- **Multi-Purpose Design** – Kamakana Villages’ network of interconnected streets and circulation system of linked pedestrian trails are public spaces that safely enhance improved quality of life.
- **Safety and Aesthetic Qualities** – By its master planned design, Kamakana Villages contributes to the larger Kona community. The project will provide new roadways within the site integrated with open areas and landscaped buffers. Through integrating TOD strategies, many roadways are designed with a multi-use path and bike lanes, creating a safer environment for multi-modal transportation.
- **Affordable Housing** – The project will provide affordable housing units. Approximately 50+ percent of the 2,330 dwelling units for the project will qualify as affordable housing units.

3.11.2.2 Land Use Policy - LU-2.5 Village Design Guidelines

The Village Design Guidelines (VDG) included as Attachment B to the Kona CDP, apply to the development of master plans for TODs and TND, as well as subsequent projects implementing the master plans. The intent of the Village Design Guidelines is to do the following:

1. Promote transit-oriented and pedestrian-oriented development, to increase transit use, to manage traffic congestion,
2. Encourage mixed-use, compact development that is pedestrian in scale and sensitive to environmental characteristics of the land, and facilitates the efficient use of public services;
3. Have residences, shopping, employment, and recreational uses located within close proximity with each other and efficiently organized to provide for the daily needs of the residents;
4. Provide for a range of housing types and affordability within pedestrian-oriented, human-scale neighborhoods;
5. Incorporate natural features, open space, and cultural features;
6. Provide efficient circulation systems for pedestrians, non-motorized vehicles, and motorists that serve to functionally and physically integrate the various land use activities; and
7. Promote strong neighborhood identity and focus.

Discussion

Kamakana Villages was designed to meet the intent of the VDG. Kamakana Villages is a master-planned compact, walkable mixed-use community with a full range of uses including housing, retail space, commercial uses, public and/or private school facilities, archaeological and open space preserve areas, active and passive parks, trail and bikeway system, and support infrastructure and transit stops and centers. The project is located in close proximity to Kailua-Kona and North Kona’s employment centers, making it accessible to services and daily needs. The project’s conformance to the VDG was assessed and the community design of Kamakana Villages fits with the VDG (*Figures 2-4, 2-12 and 3-1*).

The design for Kamanaka Villages is centered on transit-oriented and pedestrian-oriented development concepts. A network of interconnected streets will disperse vehicular traffic throughout the community and connect residential areas to mixed-use portions of the site. In addition, all of the homes will have direct or easy access to pedestrian and bike pathways that will

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connect to the school sites, neighborhoods, parks and commercial areas. Kamakana Villages is committed to promoting transit use to manage traffic congestion, and will accommodate multiple transit stops (bus or other modes) along the planned Ane Keohokalole Highway.

Kamakana Villages will offer a variety of affordable and market-priced housing units in a range of densities. The land plan proposes 2,330 dwelling units (du), 50+ percent (1,168 units) of which will qualify as affordable housing units. There will also be up to 197,000 square feet of retail space, most of which is to be located within three mixed-use areas. Plans for Kamakana Villages also include two schools sites, totaling approximately 12-acres, reserved for the development of Elementary Schools. The school sites are located near parks, and will be accessible from bike and pedestrian paths.

The plan for Kamakana Villages integrates concepts of culture, natural environment and sustainability. The project design incorporates landscaped avenues, roadways and walkways that pass from one major open space to another. Approximately 48-acres will comprise open spaces, community parks, and neighborhood parks. Archaeological preserve areas (approximately 9-acres) are also provided in Kamakana Villages which increase green spaces throughout the project site.

Kamakana Village is a community that is knit together by design. Residents will have the opportunity to know their neighbors through daily interactions at common spaces throughout the project site, thereby creating a commonality and unity within the community. As a transit-oriented, compact, mixed use affordable housing project, Kamakana Villages will be identified as an affordable, livable community derived from sustainable design principles.

3.12 LAND USE APPROVALS

This section describes the two major land use approvals and permits required for Kamakana Villages: SLUBA and County Project District. This ER was prepared to support both applications.

State Land Use Boundary Amendment (SLUBA): As shown on *Figure 1-3*, most of the site is within the State Land Use Agricultural District (271.865 acres) and a very small portion sits within the Urban District (0.198 acres). The project area is generally surrounded by lands within the Urban District. The proposed residential development is not a permitted use within the Agricultural District; however, it is permitted in the State Urban District. The existing 271.865 acre project area designated as Agricultural requires a SLUBA from Agricultural to Urban.

County Project District: The Zoning Code, Chapter 25 of the Hawai'i County Code regulates and restricts the types, sizes, positioning and densities of construction. The Project District zoning designation is intended to provide for a flexible and creative planning approach rather than specific land use designations, for quality developments. It allows for flexibility in the location of specific uses and mixes of structural alternatives.

The most of the site is zoned Agricultural District (A-5a) (271.865 acres) and a very small portion is zoned Residential (RS-15) (0.198 acres) (*Figure 1-5*). Mixed use community developments, including residential use at the densities proposed for the project is not permitted within the A-5a zone. Forest City and HHFDC will be submitting an application for Project District rezoning, which is subject to approval by the County Council. A petition for Project District will

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demonstrate that the project is consistent with County General Plan, Kona Community Development Plan, and TOD policies.

Affordable Housing - Chapter 201 H, Hawai'i Revised Statutes: HRS Section 201H-38 exempts affordable housing projects from all statutes, ordinances, charter provisions and rules of any governmental agency relating to zoning, planning, construction standards for subdivisions, development and improvement of land and the construction of dwellings. HRS Section 201H-38 also provides for the expedited processing of land use entitlements for affordable housing projects.

At least half of the residential units at Kamakana Villages will be offered for sale or rent to qualified residents whose incomes do not exceed 140 percent of the adjusted median income for the County of Hawaii. In order to develop Kamakana Villages as a mixed-use affordable housing project, Forest City, in coordination with HHFDC, has obtained the support of the County of Hawai'i Office of Housing and Community Development (OHCD), whose overall goal is to provide for the development of viable communities by providing decent housing, suitable living environments and expanding economic opportunities.

HHFDC and Forest City have submitted to the OHCD a list of exemptions from various statutes, ordinances, and rules relating to zoning, planning, subdivision standards. These exemptions are development tools that will allow for greater design flexibility and the cost savings necessary for the development of Kamakana Villages as an affordable housing project. The Hawai'i County Council will be asked to approve the exemptions via a Resolution. However, prior to any Council action, Forest City and HHFDC will seek a SLUBA from the LUC pursuant to the 45-day expedited timeframe provided under HRS 201H-38(a)(4). Upon LUC Urban District reclassification of the Kamakana Villages' land, OHCD will ask the Council to act on the Resolution under the 45-day expedited timeframe provided under HRS Section 201H-38(a)(3)(A).

Other Permits for Construction: Several other approvals will be required from the State or County to implement the proposed action, some of which will include:

- National Pollutant Discharge Elimination System (NPDES) Permit – Storm water (State of Hawai'i,DOH)
- Subdivision Approval (County of Hawai'i, Planning Department)
- Production Well(s) Construction Permit/Pump Installation Permit (County of Hawai'i, DWS)
- Building Permit for Buildings, Electrical, Plumbing, and Sidewalk/Driveway Work (County of Hawai'i, Planning Department)
- Grading, Grubbing and Stockpiling Permit (County of Hawai'i, Planning Department)

4.0 PHYSICAL CHARACTERISTICS AND ENVIRONMENTAL SETTING

4.0 PHYSICAL CHARACTERISTIC AND ENVIRONMENTAL SETTING

This section describes the existing characteristics and environmental setting of the proposed project.

4.1 SITE DESCRIPTION

Location

The Kamakana Villages Project site is located on the western slope of Hualalai mountain in the ahupua'a of Keahuolu and approximately one mile north of Kailua-Kona on the island of Hawai'i (*Figure 1-1*). The site is situated between lands owned by DHHL to the east (mauka) and lands owned by the QLT to the west (makai). Neighboring developments include housing at Kealakehe and the initial increment of DHHL's Villages of La'i 'Ōpua. Some commercial and light industrial land uses are located to the south of the project area and to the west along the Queen Ka'ahumanu Highway corridor. Nearby public facilities include Kealakehe High School to the north, Kealakehe Intermediate and Elementary Schools to the northeast, and the County of Hawai'i STP and police station to the northwest. The planned Ane Keohokalole Highway or mid-level road/highway will be adjacent to the western boundary of the project site.

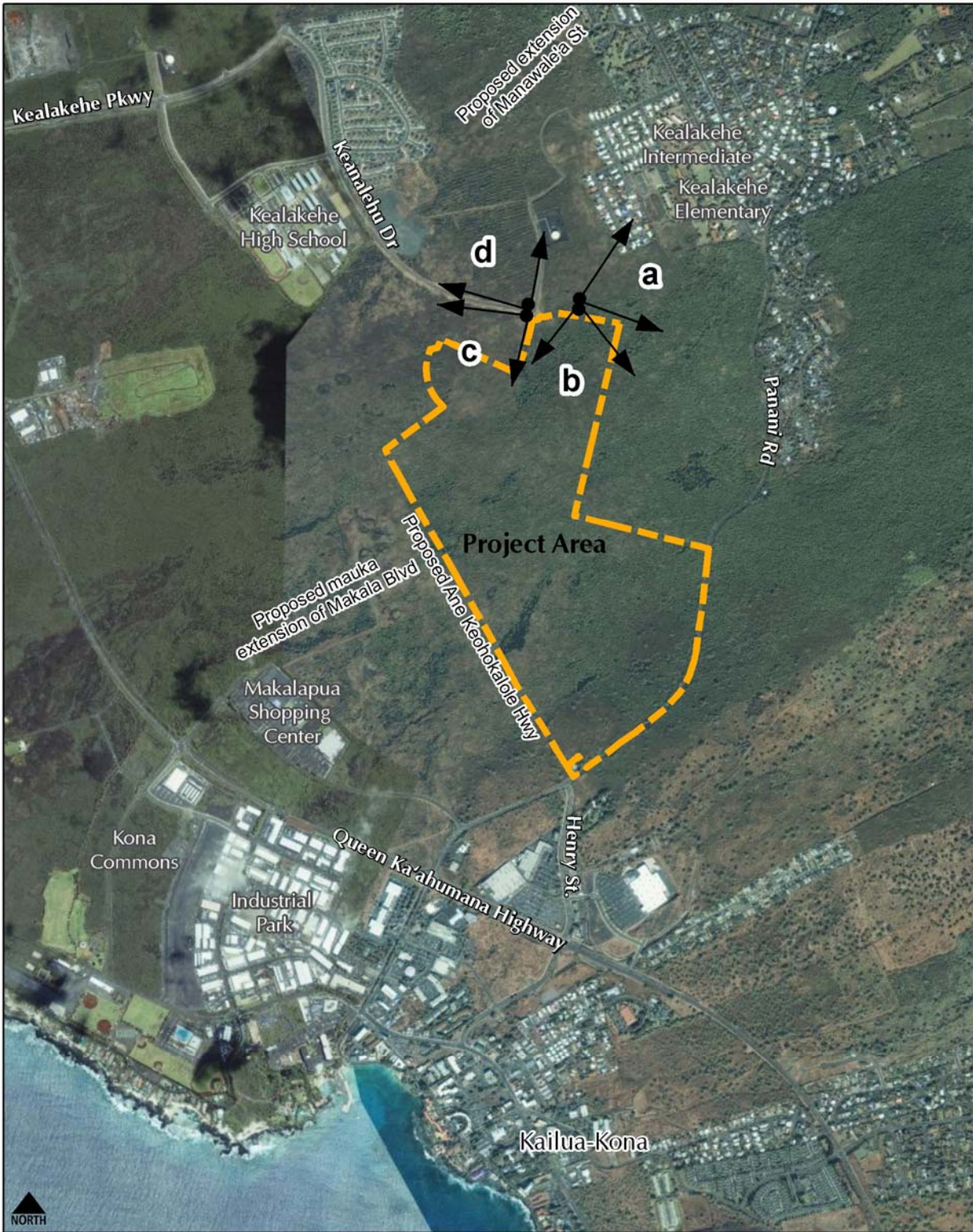
The proposed project area located well away from coastal areas and is not within the SMA of the County of Hawai'i.

Existing Uses

Figure 4-1 is an aerial photo with a key to photos that show views and existing land uses. The proposed project area is vacant and undeveloped and is comprised of lava flows covered by alien-dominated scrub vegetation (*Figures 4-1a through 4-1d*). The 272.063 acre site is an irregularly-shaped property located approximately one mile upslope of Kailua-Kona. The development area slopes downhill from east to west with slopes ranging between 5 and 15 percent. The highest elevation is approximately 580 feet above Mean Sea Level (MSL). The lowest elevation is approximately 300 feet above MSL at the western boundary.

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SITE PHOTO KEY
KAMAKANA VILLAGES AT KEAHUOLU



Figure 4-1

KAMAKANA VILLAGES AT KEAHUOLU

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VIEW FROM NORTHERN BOUNDARY OF PROJECT LOOKING NORTHEAST (MAUKA) Figure 4-1a



VIEW FROM NORTHERN BOUNDARY OF PROJECT LOOKING SOUTH (MAKAI) Figure 4-1b

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VIEW LOOKING SOUTHWEST TOWARDS KEANALEHU DRIVE

Figure 4-1c



VIEW LOOKING NORTH TOWARDS DHHL'S LA'I 'ŌPUA VILLAGES 1 AND 4

Figure 4-1d

4.2 PHYSICAL ENVIRONMENT

4.2.1 Climate

The climate at the project site, on the west (leeward) coast of Hawai'i, is characterized by differences in rainfall over short distances, mild temperatures, and prevailing northeasterly trade winds. Regional temperatures range from the mid-60s in the winter to the mid-80s in the summer. The annual rainfall in the region averages 20 to 40 inches per year. Unlike most areas in Hawai'i, rainfall in Kona is heavier in the summer than in winter.

Northeasterly winds prevail much of the time throughout the State of Hawai'i. Typical wind velocities range from 3 to 14 knots. During the summer months, stronger, more persistent trade winds result from the location of the North Pacific high pressure system. Light and variable westerly "Kona" winds occasionally replace this pattern, most often in the winter. Hualalai and Mauna Loa volcanoes influence the wind pattern on the Kona side of the island of Hawai'i. The prevailing winds blow toward the ocean in the early morning and from the ocean toward the island in the afternoon (HHFDC, 2008).

4.2.2 Geology and Topography

The project site consists of approximately 272-acres extending northward from Palani Road. The elevation of the property ranges between 300 and 580 feet above msl. The Island of Hawai'i is comprised of several volcanoes: Kohala, Mauna Kea, Hualālai, Mauna Loa and Kilauea. Situated on the western slope of Hualalai volcano, the subject properties are composed of prehistoric lava flows estimated to be from 3,000 to 5,000 years old. Hualālai last erupted in 1800-1801 from several vents on the northwest rift zone (HHFDC, 2008).

The lower or western half of the site is easily developable with approximately half of the area in less than 5 percent slopes and the remainder in 5 to 15 percent slopes (*Figure 4-2*). The topography slopes downhill from east to west. The larger portion of the upper or eastern half of the

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site has slopes less than 15 percent, however, this area is also comprised of some steeper area having greater than 15 percent slope. As a result of the topography, the lower (makai) sections of the property will likely be used more intensively for larger footprint uses and higher density residential uses on the more gentle sloped areas. The upper (mauka) sections will likely be used for smaller footprint residential structures that can accommodate grade changes more easily.

4.2.3 Soils and Agriculture

Three studies, which describe the physical attributes of soils and evaluate the relative productivity of different soil types for agricultural production purposes, have been prepared for Hawai'i: (1) the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey, (2) the State Department of Agriculture's (DOA) Agricultural Lands of Importance to the State of Hawai'i (ALISH), and (3) the University of Hawai'i (UH) Land Study Bureau (LSB) Overall Productivity Rating.

The project site consist lands having poor agronomic conditions. The area is characterized by bare 'a'a lava flows and bare pahoehoe lava flows ranging in age from 3,000 to 5,000 years old. Soils have poor agricultural productivity and are extremely rocky. Rainfall in the area is typically low and water is not available for crop farming. Additionally, there are no existing irrigation improvements. Agricultural activities are not taking place on the project site as the overall site is not suitable for agricultural production.

USDA NRCS Soil Survey: The soils on the project site are classified as 'a'a Lava Flows (rLV), Pahoehoe Lava Flows (rLW), Kaimu extremely rocky stony peat (rKED), and Punaluu extremely rocky peat (rPYD), by the USDA NRCS (*Figure 4-3*).

- **'A'a Lava Flows (rLV).** 'A'a lava generally has no soil cover and is almost bare of vegetation except for mosses, lichens, ferns, and a few 'ohi'a trees. The surfaces of 'a'a flows are masses of clinkery, hard, sharp pieces piled in tumbled heaps that are difficult to cross on foot. The clinkery 'a'a surface can be easily moved and crushed into relatively smooth surface cobbles approximately 1 to 4 inches in size. Where higher rainfall occurs, the 'a'a surface contributes substantially to the underground water supply and is used for watershed.
- **Pahoehoe Lava Flows (rLW).** Pahoehoe Lava Flows is a miscellaneous soil type, similar to the 'a'a flows. This Pahoehoe flows has a billowy, glassy surface that is relatively smooth except for some areas where the surface is rough and broken with hummocks and pressure domes. Pahoehoe lava generally has no soil cover and is almost bare of vegetation except for mosses and lichens. Soil is found in cracks and depressions that have been transported there by wind and storm runoff. In areas of higher rainfall, this lava contributes to the groundwater supply through percolation.
- **Punaluu extremely rocky peat (rPYD).** Punaluu extremely rocky peat is found on the lower leeward side of Mauna Loa. Rock outcrops occupy 40 to 50 percent of the structure. In a representative profile the surface layer is black peat about four-inches thick with medium acid and underlain by pahoehoe lava bedrock. The peat is rapidly permeable while the pahoehoe lava is very slowly permeable, although water moves rapidly through the cracks. Runoff is slow and the erosion hazard is slight. Lands with this soil are used for pasture as they are unsuited for cultivation.

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- **Kaimu extremely stony peat (rKED).** Kaimu extremely stony peat is usually found on the lower slopes of Mauna Loa. In a representative profile, the surface layer is very dark brown, extremely stony peat about three-inches thick with neutral reactions and underlain by fragmental 'a'a lava. Permeability is rapid, runoff is slow, and the erosion hazard is slight. Lands with this soil are used for pasture as they are unsuited for cultivation.

Agricultural Lands of Importance to the State of Hawai'i: The ALISH ratings were developed in 1977 by the NRCS, the UH College of Tropical Agriculture and Human Resources, and the State DOA. The ALISH rating characterized the Agricultural lands in the State of Hawai'i according to their importance as follows:

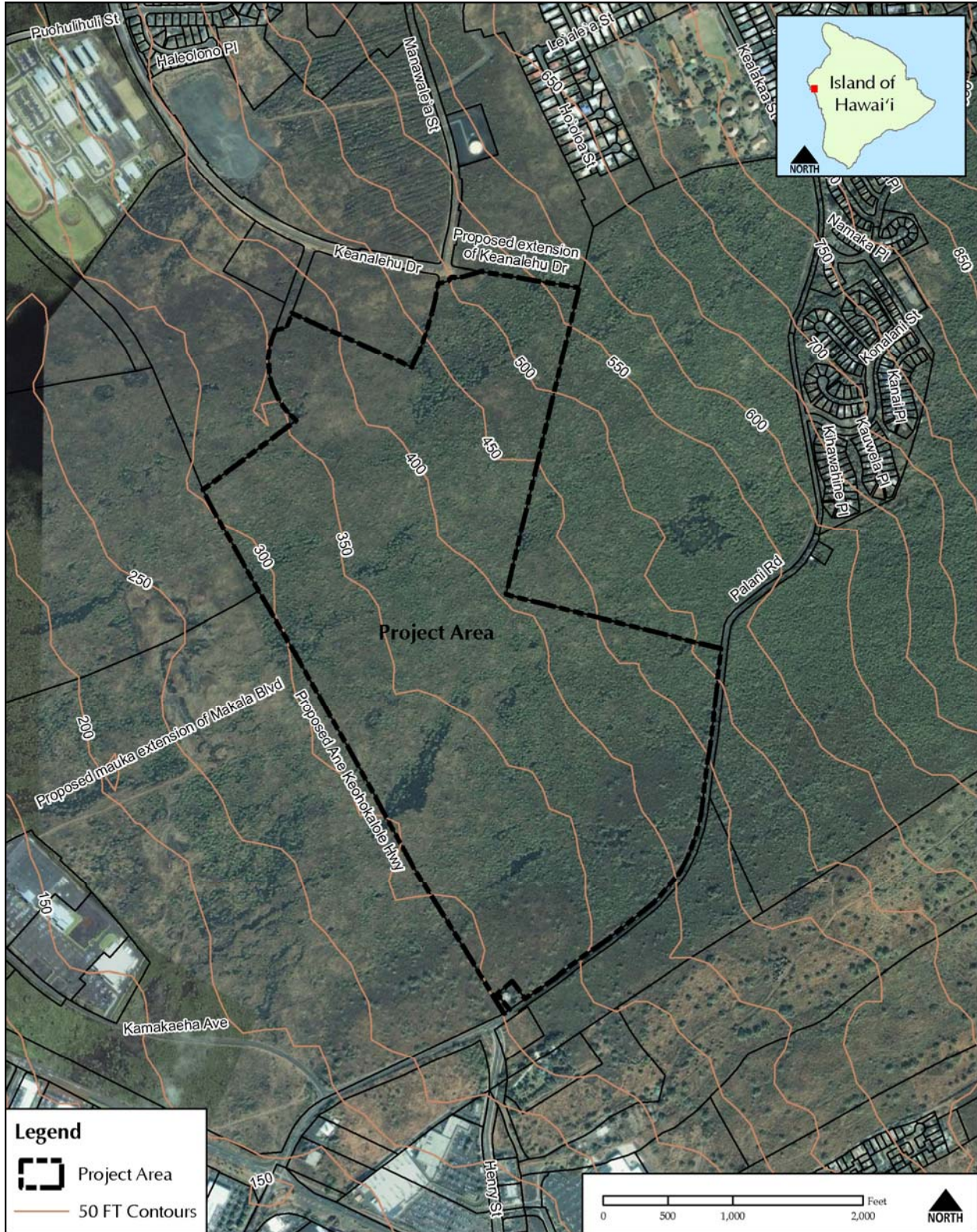
- Prime Agricultural Land - Best suited for the production of crops because of its ability to sustain high yields with relatively little input and with the least damage to the environment;
- Unique Agricultural Land - Non-Prime agricultural land used for the production of specific high-value crops (e.g., coffee and taro);
- Other Important Agricultural Land - Non-Prime and non-Unique agricultural and that is important to the production of crops;
- Unclassified – Lands that are not rated.

Based on the available maps of ALISH, the vast majority of the project site is "Unclassified" and a portion is rated as "Other" (*Figure 4-4*).

Land Study Bureau Detailed Land Classification: In 1972, the UH LSB developed the Overall Productivity Rating which classifies soils according to five levels of productivity - A, B, C, D, and E – with the letter A representing the highest class of productivity. The proposed project site is classified as Class E soils which have the lowest agricultural productivity rating (*Figure 4-4*).

KAMAKANA VILLAGES AT KEAHUOLU

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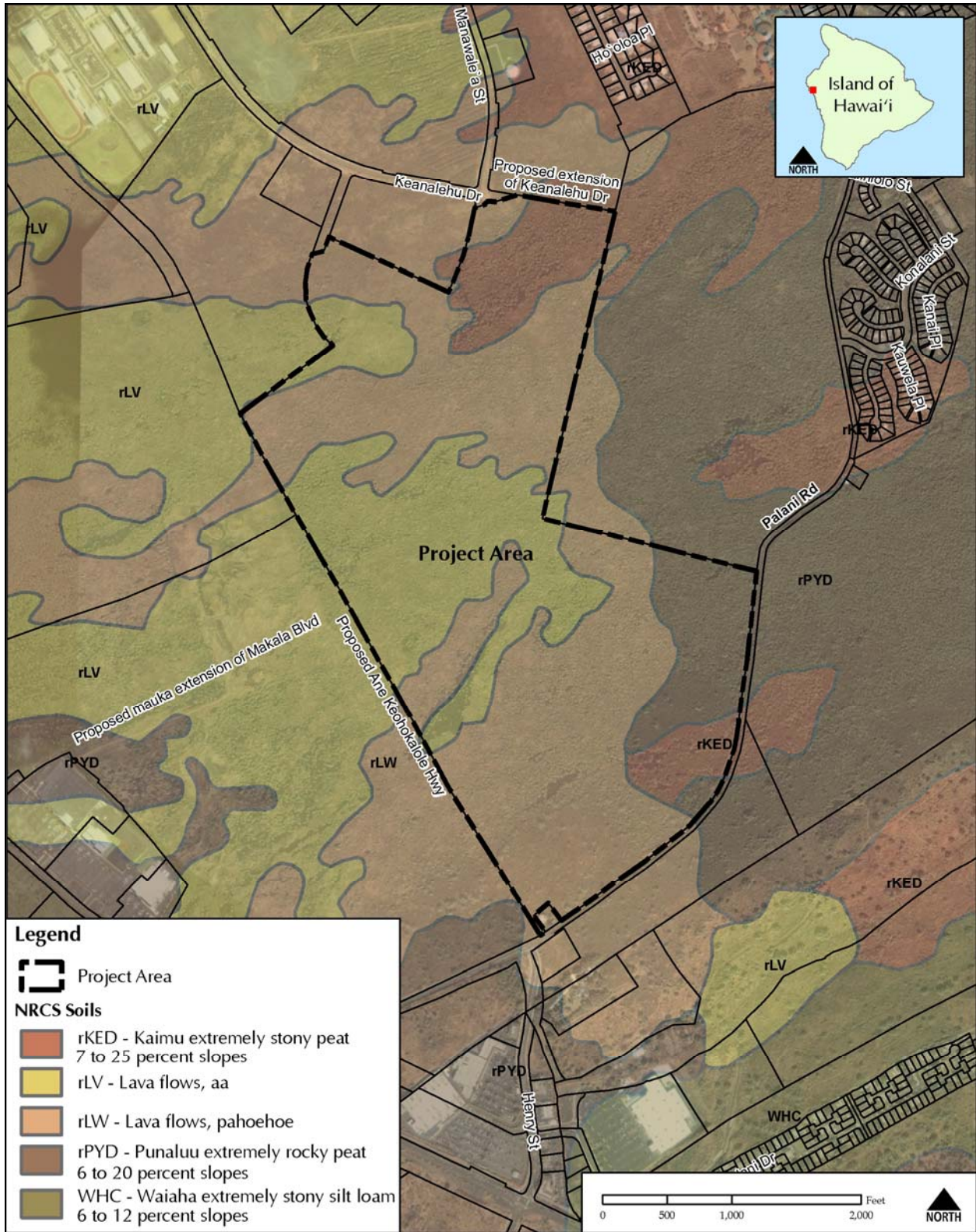


TOPOGRAPHY
KAMAKANA VILLAGES AT KEAHUOLU

GROUP 70
INTERNATIONAL
Figure 4-2

KAMAKANA VILLAGES AT KEAHUOLU

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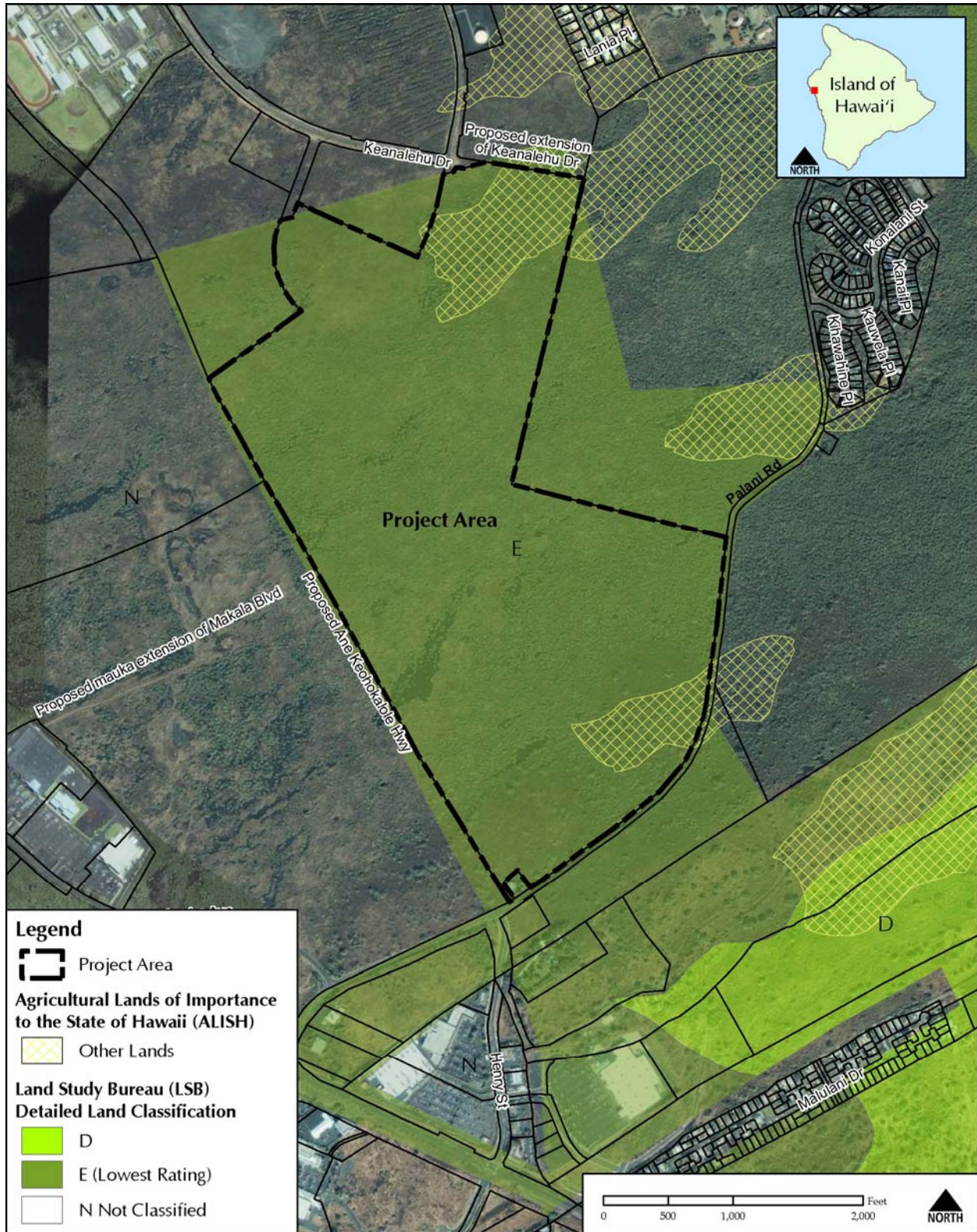


SOILS
KAMAKANA VILLAGES AT KEAHUOLU

GROUP 70
INTERNATIONAL
Figure 4-3

KAMAKANA VILLAGES AT KEAHUOLU

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AGRICULTURAL LANDS OF IMPORTANCE (ALISH) & LAND STUDY BUREAU (LSB)
KAMAKANA VILLAGES AT KEAHUOLU

GROUP 70
INTERNATIONAL
Figure 4-4

KAMAKANA VILLAGES AT KEAHUOLU

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4.3 NATURAL HAZARDS

Seismic Hazards - The County of Hawai'i is one of the most seismically active areas on Earth with more destructive earthquakes than in any other comparably sized area in the United States. The Kona area is subject to earthquakes with intensities up to VIII on the Modified Mercalli Scale. Two fault zones were identified in the Kona region: Kealakekua and Kaloko, both located in South Kona. Because of a history of seismic events on Hawai'i, the County has upgraded its seismic hazard rank from 3 to 4 based on the 1997 Uniform Building Code (UBC). The ranks are 0 through 4, from lowest to highest risk. Under the UBC, Zone 4 could experience severe seismic activity between 0.3 and 0.4 of the Earth's gravitational acceleration (g-force) causing severe damage to poorly designed/built structures. All projects must comply with UBC and County of Hawai'i design standards.

Lava Hazards - The site is within lava flow hazard Zone 3, indicating moderate hazard, based primarily on lava flow history (*Figure 4-5*). Since 1800, 5% of the area within the zone boundaries has been covered by lava flow. There are nine zones for volcanic hazards with Zone 1 having the greatest probability of lava flow hazard (USGS, 1974).

The project site is situated on the west-facing flank of the Hualalai volcano. Of the three active volcanoes on the island of Hawai'i, Hualalai is considered to be the least active. Hualalai is considered by geologists to represent a post-shield stage of Hawaiian volcanism, characterized by a marked decrease in the eruption rate as the volcano drifts off the Hawaiian hotspot. The estimated lava production rate for Hualalai over the past 3,000 years is about two percent of the current rate of Kilauea volcano.

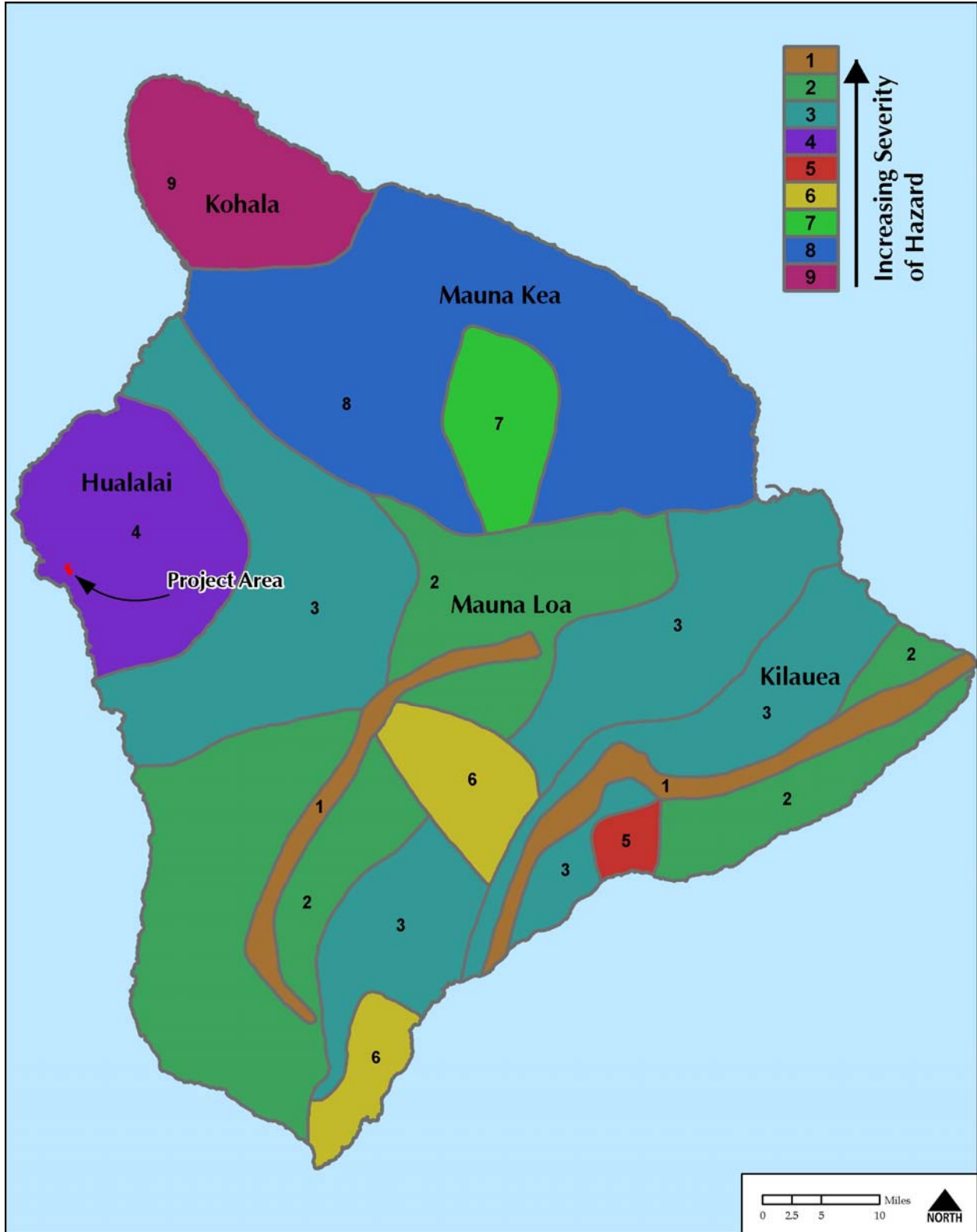
Hualalai volcano is identified as being fully contained in lava flow hazard Zone 4 (*Figure 4-5*). There are nine zones for volcanic hazards with Zone 1 having the greatest probability of lava flow hazard (USGS, 1974). The proposed project site is within lava flow hazard Zone 4. Other direct hazards from eruptions, such as tephra fallout and ground cracking and settling, are not specifically considered on the hazard map; however, these hazards tend to be greatest in the areas of highest hazard from lava flows. Hazard from tephra fall for all of Hualalai Volcano is ashfall-hazard Zone 2, which indicates that tephra falls from lava fountains could be frequent but thin.

Tsunami Hazards - The project site is not located within the Tsunami Inundation Zone and would not need to be evacuated during a tsunami threat. The lowest portion of the Keahuolu project area is about one mile inland from the shoreline and is situated on the west facing slope of Hualalai, with the housing site at elevations ranging from 300 to 580 feet above sea level.

Hurricane - Hawai'i Island has not sustained a direct hit by a hurricane in historic times, but several tropical storms have caused severe damage. The most recent damaging hurricane was Tropical Storm Dora in 1993. In August 2007 Hurricane Flosse made a close brush past Hawai'i Island.

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COUNTY OF HAWAI'I LAVA ZONES
KAMAKANA VILLAGES AT KEAHUOLU


Figure 4-5

KAMAKANA VILLAGES AT KEAHUOLU

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Flood Hazards - In 1988, FEMA prepared Federal Insurance Rate Maps (FIRMs) for the island of Hawai'i to delineate flood hazard zones and base flood elevations lines. The subject property is located approximately 1 mile inland from the shoreline. Based on the Federal Emergency Management Agency's *Flood Insurance Rate Map No. 1551660711C*, the site is located in Zone X, which indicates that the area is determined to be outside the 500-year floodplain (*Figure 1-6*). No floodways or flood zones have been identified in the project area.

4.4 GROUNDWATER, HYDROLOGY, SURFACE WATER AND DRAINAGE

The project site is vacant and undeveloped, and there is no existing water system within the project site. New source wells are required to support the Kamakana Villages. The majority of the site is within the 595-foot-elevation Kealakehe High School reservoir's service zone, which extends from the 495-foot elevation to the 225-foot elevation. A portion of the site, along the extension of Keanalehu Drive, above the 495-foot elevation, would have to be serviced from the 935-foot reservoir system to provide adequate water pressure. The development of off-site water sources to support the proposed project is discussed in *Section 5.6*.

Infrastructure for the existing water system around the project area connects to existing well sites above Mamalahoa Highway. A 16-inch water line in Manawale'a Street from the 595-foot elevation Kealakehe High School reservoir stubs out to the project site and services the 495- to 225-foot-elevation water service pressure zone. There is also a 12-inch water line in Manawale'a Street providing water service above the 495-foot elevation, and an existing 16-inch water line in Palani Road along the project site. A new water line is also being installed with the new Ane Keohokalole Highway construction later this year. The line will be a 16-inch main from Palani Road to Makala Boulevard that will be cost shared between Kamakana Villages and OLT. From Makala Boulevard to Manawalea Street, the water line will be a 12-inch line.

A 1.0-million-gallon (MG) reservoir exists at the Kealakehe High School reservoir site. The site is designed for a second reservoir to be constructed in the future. A PER was also prepared for the proposed project by Lyon Associates in December 2009 (*Appendix C*).

4.4.1 Groundwater and Hydrology

There are three reserve types of regional water resources in Kona: basal groundwater, brackish basal groundwater, and dike-impounded perched groundwater. The rainfall pattern of the region is responsible for the recharge of the basal aquifer that extends from the upper slopes of Hualalai to the shoreline. Brackish water is created as a result of seawater intrusion at the shoreline. Within the Kona region, the brackish water inland is highly variable depending on the character of rainfall tidal fluctuations, specific terrain, and geologic formations, and other seasonal changes. Dike-impounded perched groundwater may exist at higher elevations on Hualalai. The specific configuration of groundwater resources in the project area is currently unknown.

4.4.2 Surface Water and Drainage

The project site has no perennial streams, existing drainage facilities, or defined natural drainage ways. Soil characteristics at the site include rapid permeability which is evident by the absence of natural storm water channels or gullies in the project area. Due to the high permeability of the soil, surface waters drain relatively rapidly. Based on the Flood Insurance Rate Map (FIRM), the site is located in Zone X, which indicates that the area is determined to be outside the 500-year

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floodplain (*Figure 1-6*). The National Flood Insurance Program does not have any regulations for developments within Zone X. No floodways have been identified in the project area.

4.5 AIR QUALITY

In Hawaii, both Federal and State environmental health standards pertaining to outdoor air quality are generally met due to prevalent trade winds and the absence of major stationary sources of pollutant emissions. Regional and local climate together with the human activities generally dictate the air quality of a given location. State and national Ambient Air Quality Standards (AAQS) regulate ambient concentrations of particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, and lead. The State DOH operates a network of air quality monitoring stations, however very limited data is available for the island of Hawai'i, and even less for the Kona area. Monitoring at Kealakekua between 2000 and 2004 showed consistently low concentrations of sulfur dioxide and particulates.

Limited air quality data available from the State DOH indicate that concentrations are well within state and national air quality standards. The air quality in the project area is mostly affected by air pollutants from natural, industrial, agricultural, and/or vehicular sources. Natural sources that may affect the project area include the ocean (salt spray), plants (aeroallergens), wind-blown dust, and volcanoes. Volcanic emissions (vog) consist of sulfur dioxide and persistently hangs over a majority of the West Hawai'i area. Industrial sources of air pollutants in the project area include the Hawaii Electric Light Company (HELCo) operated Keahole Power Plant which consist of mostly of sulfur dioxide and oxides of nitrogen. Motor vehicle-related air pollutants in the project vicinity such as lead, ozone, nitrogen dioxide, carbon monoxide are not specifically measured. Lead, ozone, and nitrogen dioxide are typically regional-scale problems. Concentrations of lead and nitrogen dioxide have not been found to exceed AAQS in Hawai'i County or elsewhere within the state.

4.6 AMBIENT NOISE

Title 11, Chapter 46, of the HAR 11-46 defines maximum permissible sound levels (dBA) which is intended to protect, control, and abate noise pollution from stationary sources and construction, industrial, and agricultural equipment. As detailed below, maximum permissible sound levels in various zoning districts are set for excessive noise sources during the day (7am to 10 pm) and night (10pm to 7am) at the property line where the activity occurs.

- Class A - Residential, conservation, preservation, public space, open space, or similar type zones – 55 dBA (day) and 45 dBA (night)
- Class B - Multi-family dwellings, apartment, business, commercial, hotel, resort, or similar type zones – 60 dBA (day) and 50 dBA (night)
- Class C - Agriculture, country, industrial, or similar type zones – 70 dBA (day) and 70 dBA (night)

Traffic from the area's roadway system, including Palani Road and Queen Ka'ahumanu Highway is the most significant noise sources in the vicinity of the Kamakana Villages Project site. Other noise sources include wind moving through vegetation, birds, and fixed source noise associated with light industrial activities at the industrial subdivision.