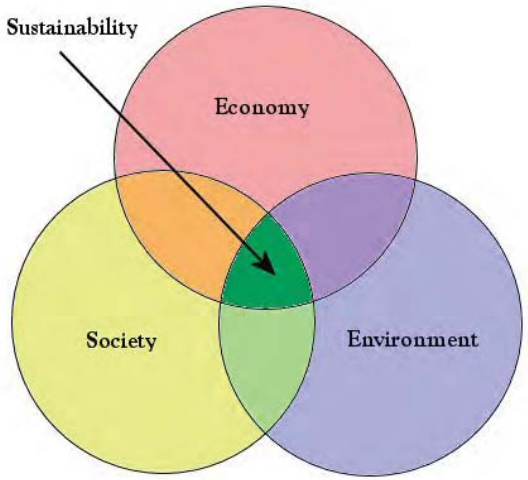
# Appendix Q

## Sustainability Plan
## Hookuleana, LLC
## November 2012

# Kaloko Makai Sustainability Plan




## November 2012



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**Introduction: Kaloko Makai Sustainability Plan**

This Kaloko Makai Sustainability Plan is a comprehensive set of goals, strategies and actions focused on improving environmental quality, economic strength and social benefit within the Kaloko Makai project, as well as the broader community.

This Plan serves as a roadmap guiding Kaloko Makai toward a more sustainable future, with implementation of actions through a comprehensive, inclusive stakeholder process.

Before discussing the global context of "sustainability," we explore the Hawaiian view of " *'āina* " – core to the term "sust*aina*bility."

In a traditional Hawaiian context, nature and culture are one and the same; there is no division between the two. The wealth and limitations of the land and ocean resources gave birth to and shaped the Hawaiian worldview. In Hawaiian culture, natural and cultural resources are one and the same.

All forms of the natural environment, from the skies and mountain peaks, to the watered valleys and lava plains, and to the shoreline and ocean depths are believed to be embodiments of Hawaiian gods and deities. (Maly)

**'Āina – That Which Sustains the People**
(Context, here, primarily provided from writings of Kepa Maly)

The *'āina*, that which feeds, nourishes and sustains life (in English referred to as "land"), *wai* (water), *kai* (ocean), and *lewa* (sky) were the foundation of life and the source of the spiritual relationship between people and their environs. Hawaiian *mo'olelo*, or traditions, express the attachment felt between the Hawaiian people and the earth around them.

In any discussion of Hawaiian land - 'āina, that which sustains the people - and its place in culture, it is also appropriate to briefly discuss traditional Hawaiian land terms, as the terms demonstrate an intimate knowledge of the environment about them. In the Hawaiian mind, all aspects of natural and cultural resources are interrelated. All are culturally significant.

Hawaiian culture revolves around the value of "aloha 'āina" or love of the land. This love is not a passing sentiment, a summer fling or a fair weather affair. It is a deep-seated commitment to the wellbeing of the earth, which sustains us like a parent.

The Hawaiian concept of malama 'āina (literally, caring for or living in harmony with the land,) demands conservation, sustainable use and enhancement of the local, regional and global environment. By simply taking care and respecting the land, it will sustain life. This straightforward relationship has been honored for thousands of years, since the Polynesians followed the stars to the shores of Hawaii.

The traditional land use in the Hawaiian Islands evolved from shifting cultivation into a stable form of agriculture around 1200 AD (Kirch, 2000). Stabilization required a new form of land use. It is widely believed 'Umi a Līloa, the ruler of the Island of Hawai'i, was the first ruler to create the ancient Hawaiian land division, according to a chiefly management system, nearly 600 years ago.





This was the *ahupua'a* land use system, which consisted of vertical landscape segments from the mountains to the near-shore ocean environment, and into the ocean as deep as a person could stand in the water.

For hundreds of years since, on the death of all *mō'ī* (kings or queens), the new monarch re-divided the land, giving control of it to his or her favorite chiefs. The common people never owned or ruled land.

In the term *ahupua'a*, the words *ahu* (stone altar or stone mound) and *pua'a* (pig) are combined. The *pua'a* was a carved wooden image of a pig head. These stone altars served as border markers and deposition places for offerings to the agricultural god *Lono* and a high chief (*ali'i nui*), who was the god's representative.

Each *ahupua'a* in turn was ruled by a lower chief, or *ali'i 'ai*. He in turn appointed a headman, or *konohiki*. The *konohiki* served as general manager responsible for the use of an *ahupua'a* as a resource system. He in turn was assisted by specialists, or *luna*. For example, the *luna wai* was responsible for the fresh water flow and irrigation system.

Manageable parcels of land would typically run *mauka* (upland) to *makai* (toward to ocean) and would be marked with stonewall alignments. Tenants cultivated smaller crops for family consumption, to supply the needs of chiefs and provide tributes.

*Kapu* (restrictions/prohibitions) were observed as a matter of resource and land management among other things. Access to resources was tied to residency and earned as a result of taking responsibility to steward the environment and supply the needs of *ali'i*. The social structure reinforced land management.

**Sustainability – United Nations Context**

In 1983, the United Nations Secretary General invited Norwegian Prime Minister Gro Harlem Brundtland to chair a World Commission on Environment and Development. The Report of the Brundtland Commission, Our Common Future, was transmitted to the General Assembly as an Annex to document A/42/427 - Development and International Co-operation: Environment, in 1987

Chapter 2, "Towards Sustainable Development" of the Brundtland "Our Common Future" defines "sustainable development" as:

> Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:
>
> - the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and
> - the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.
>
> In its broadest sense, the strategy for sustainable development aims to promote harmony among human beings and between humanity and nature.

**Sustainability in Hawai'i (Hawai'i 2050)**

The following definition, vision and guiding principles are incorporated in the Hawai'i 2050.

**Definition:**
A Hawai'i that achieves the following:

- Respects the culture, character, beauty and history of our state's island communities
- Strikes a balance between economic, social and community, and environmental priorities
- Meets the needs of the present without compromising the ability of future generations to meet their own needs

**Vision:**
Living responsibly and within our own means is top-of-mind for all individuals and organizations. We learn about the virtues and values of a sustainable Hawai'i. As a result, our goals of economic prosperity, social and community well-being and environmental stewardship are in balance and achieved.

**Hawai'i 2050 Guiding Principles of Sustainability**

- We balance economic, social, community and environmental priorities.
- We respect and live within the natural resources and limits of our islands.
- We must achieve a diversified and dynamic economy.
- We honor the host culture.
- We make decisions based on meeting the present needs without compromising the needs of future generations.
- The principles of the ahupua'a system guide our resource management decisions.
- Everyone — individuals, families, communities, businesses and government — has a responsibility for achieving a sustainable Hawai'i.

**Sustainability in Kona Community Development Plan (Kona CDP)**

One of the vision statements for Kona's future in the Kona CDP is "A more sustainable Kona characterized by a deep respect for the culture and the environment and residents that responsively and responsibly accommodate change through an active and collaborative community."

Smart growth refers to the management of growth to make it possible "for communities to grow in ways that support economic development and jobs; create strong neighborhood with a range of housing, commercial, and transportation options; and achieve healthy communities that provide families with a clean environment."

In the Kona CDP, the term "sustainability" has special meaning in an island context, where our resources are limited and the consequences of our actions have a more immediate impact.



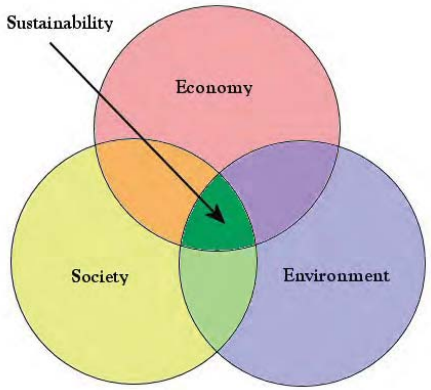


Sustainability in Hawai'i means achieving a quality of life that achieves the following goals:

- It emphasizes respect for the culture, character, beauty and history of our state's island communities.
- It strikes a balance between economic prosperity, social and community well-being, and environmental stewardship.
- It meets the needs of the present community without compromising the ability of future generations to meet their own needs.

Typically, "sustainability" is depicted in a three-themed Venn diagram (noted below,) highlighting the economy, environment and society. The achievement of sustainable development requires integration of these components at all levels. With respect to Kaloko Makai, sustainable development is achieved when it is:

- economically feasible in order to be successful as a development, while also providing for economic opportunities for future generations who reside, work or visit Kaloko Makai
- protecting and preserving the environment, for today and tomorrow, serving as a model for others to follow
- addressing the needs of a wide variety of people, including their cultural values, as well as providing opportunities for people to interact, grow and learn together




Sustainability is not contradictory to growth, profit and development. Sustainability means that we plan to our limits; sustainable community development draws from and gives back to local strengths, resources and uniqueness. Local development can become more sustainable by having a better environmental, economic and social balance.

Ultimately, a goal is to meld Hawaiian traditional wisdom with modern sustainability concepts and take an integrated approach in the design and operation at Kaloko Makai.

This plan was created to highlight the actions of the Kaloko Makai development in terms of sustainability.

In developing this plan, a variety of recognized programs and plans were reviewed, summarized and their recommendations were incorporated into this plan. These include:

- Kona Community Development Plan (Kona CDP)
- Smart Growth
- SmartCode
- Hawai'i 2050 Sustainability Plan
- OEQC Sustainable Building Design Guidelines
- Hawaii BuiltGreen Program
- US Green Building Council Leadership in Energy and Environmental Design (LEED)
- Energy Star Program
- Whole Building Design Guide (WBDG,) of the National Institute of Building Sciences
- EPA Low Impact Development
- One Planet Living

Further discussion on these programs and plans follow in the next Chapter of this Kaloko Makai Sustainability Plan. Following this are chapters addressing issue-specific sustainability concerns. These include:

- **Natural and Cultural Resources:** Protecting and preserving archaeological sites, trails and dryland forest, for present and future generations
- **Land Use:** Focuses on consistency with local land use planning, fulfilling the community's vision for development in the future
- **Design Features:** Incorporating design features to fit development into natural features, protecting the resources, while taking advantage of natural elements
- **Transportation:** Focuses on sustainable modes of transportation and an improved infrastructure including: multi-modal bicycle, pedestrian and vehicular infrastructure, complete streets, etc
- **Economic Opportunities:** Encourages a vibrant economy through diversity of employment and sustainable business opportunities
- **Open Space and Parks:** Encourages protection of urban open spaces by focusing on the urban landscaping, green spaces and mixed-use development and recreational opportunities
- **Water Management**: Focuses on reducing and conserving water use, as well as minimizing impacts to nearby ecosystems from source to stormwater systems
- **Energy Management:** Encourages energy conservation, energy efficiency and renewable energy
- **Health:** Encourages healthy lifestyles through places to walk and recreate, as well as provide state of the art medical facilities to address community needs
- **Education:** Encourages understanding and practice of sustainable lifestyles, as well as providing opportunities for life-long learning
- **Housing:** Responds to the market and demographic trends and community needs, providing a broad range of housing types and price points





Anticipated beneficial impacts from the Kaloko Makai project include the following:

- Provision of 5,000 homes
- Increased housing choices, including affordable housing
- Increase housing inventory to meet future demands
- Support approximately 4,200 FTE project related jobs on-site
- Generate approximately $10.8 million in additional county revenues
- Contribute approximately $5.6 to $8.7 million per year net additional state revenues during building out, with net additional revenues of some $4.1 million per year after 2040
- Preservation of 150-acre Native Dryland forest
- Preservation of Kaloko-Kohanaiki historic trail
- Preservation of identified Native Hawaiian Burials and archaeological sites
- Planned growth in an area designated for urban growth by the Kona Community Development Plan
- Provision of a pedestrian and transit-friendly community

Kaloko Makai will be a sustainable community and will incorporate the following:

**Sustainability Programs and Plans:** Kaloko Makai will incorporate the core principles of the various sustainability programs and plans.

**Natural and Cultural Resources:** Kaloko Makai will work to preserve the 150-acre native Dryland forest, Kaloko-Kohanaiki historic trail and identified Native Hawaiian Burials and archaeological sites.

**Land Use:** Kaloko Makai is consistent with local land use plans including the County of Hawai'i General Plan and the Kona Community Development Plan.

**Design Features:** Kaloko Makai will include sustainable design features including strategies to reduce solar heat gain through roofs, walls and windows; using site planning and landscaping to improve natural ventilation; daylighting design; and energy efficient light fixtures.

**Transportation:** Kaloko Makai will incorporate provisions of a pedestrian and transit-friendly community; multi-modal interconnected roads; and complete streets design.

**Economic Opportunities:** Kaloko Makai proposes commercial and industrial uses which will provide a variety of job opportunities; construction and construction-related employment will have direct beneficial impact on the local economy during construction.

**Open Space and Parks:** Kaloko Makai proposes open space and open greenway areas encompassing the project.

**Water Management**: Kaloko Makai will install water efficient fixtures, appliances and high efficiency toilets to reduce indoor water use.

**Energy Management:** Kaloko Makai will incorporate energy conservation and efficiency measures; solar energy for water heating; encourage photovoltaic systems and other renewable energy sources.

**Health:** Kaloko Makai's layout and design will create an opportunity for both residents and the community to have a positive effect on their health through walkable and bikable transportation options. The setting aside of land for a new hospital will increase health services to the community.

**Education:** Kaloko Makai will coordinate with the DOE to ensure that the facility assessment policy is addressed. Kaloko Makai proposes land for two elementary schools and one middle school within the project.

**Housing:** Kaloko Makai offers increased housing choices, including affordable housing to meet future demands.

**Social:** Kaloko Makai promotes social sustainability through socially-focused actions that will support quality of life, sense of place and community livability for all residents and the community.





**Sustainability Programs and Plans**

In developing this Kaloko Makai Sustainability Plan, a variety of recognized sustainability programs and plans were reviewed, summarized and incorporated into this plan. In part, the recommendations from these programs and plans serve as guides to the sustainability actions noted in this Plan.
These include:

- Kona Community Development Plan (Kona CDP)
- Smart Growth
- SmartCode
- Hawai'i 2050 Sustainability Plan (Hawai'i 2050)
- OEQC Sustainable Building Design Guidelines
- Hawaii BuiltGreen Program
- US Green Building Council Leadership in Energy and Environmental Design (LEED)
- ENERGY STAR Program
- Whole Building Design Guide (WBDG,) of the National Institute of Building Sciences
- EPA Low Impact Development
- One Planet Living
- Complete Streets

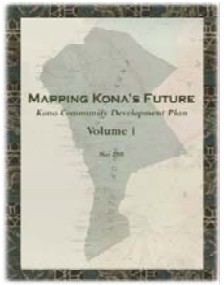
In this chapter, these various programs and plans are summarized.

As you will see, there are several consistent principles and themes that run through the various programs and plans. While some are broad-based and include several of these, others are focused on single issues.

Following are some of the consistent messages found in these programs and plans:

- Soft touch on the land
- Respect and protection of natural and cultural resources
- Use of natural elements (shading, ventilation, lighting, etc)
- Diversity of land uses, housing types, prices
- Live, work, play, shop and learn
- Walking, bicycle and transit transportation focused
- Reuse and minimization of waste
- Renewable and efficient electric
- People and community focused

Kaloko Makai will implement, to the extent feasible and practicable, measures to promote energy conservation, sustainable design, environmental stewardship and protection of the natural and cultural resources into the project. These actions are in part, based on the recommendations noted in the following sustainability programs and plans.




**Kona Community Development Plan (Kona CDP)**

One of the vision statements for Kona's future in the Kona CDP is "A more sustainable Kona characterized by a deep respect for the culture and the environment and residents that responsively and responsibly accommodate change through an active and collaborative community."

In order to achieve this vision, eight Guiding Principles were derived and are the foundation for the goals, policies and implementation actions.

These principles include:

1. Protect Kona's natural resources and culture
2. Provide connectivity and transportation choices
3. Provide housing choices
4. Provide recreation opportunities
5. Direct future growth patterns toward compact villages
6. Provide infrastructure and essential facilities concurrent with growth
7. Encourage a diverse and vibrant economy
8. Promote effective governance

These foregoing eight Guiding Principles are consistent with the principles of "smart growth" and "sustainability." As noted in the Kona CDP, Smart Growth refers to the management of growth to make it possible "for communities to grow in ways that support economic development and jobs; create strong neighborhood with a range of housing, commercial, and transportation options; and achieve healthy communities that provide families with a clean environment."

The following 10 smart growth principles are incorporated into the Kona CDP's Guiding Principles:

1. Protect and preserve open space, natural beauty, agricultural lands, cultural and environmental resources;
2. Utilize compact building design;
3. Create a range of housing opportunities and choices;
4. Create walkable communities;
5. Foster distinctive, attractive communities with a strong sense of place;
6. Mix land uses;
7. Strengthen and direct development towards existing communities;
8. Provide a variety of transportation choices;
9. Make development decisions predictable, fair and cost effective; and
10. Foster community and stakeholder collaboration in development decisions.

The term "sustainability" has special meaning in an island context, where our resources are limited and the consequences of our actions have a more immediate impact. Sustainability in Hawai'i means achieving a quality of life that achieves the following goals:

- It emphasizes respect for the culture, character, beauty and history of our state's island communities.
- It strikes a balance between economic prosperity, social and community well-being, and environmental stewardship.
- It meets the needs of the present community without compromising the ability of future generations to meet their own needs.





**Smart Growth Network**

In 1996, the U.S. Environmental Protection Agency joined with several non-profit and government organizations to form the Smart Growth Network. The Network was formed in response to increasing community concerns about the need for new ways to grow that boost the economy, protect the environment, and enhance community vitality.

Smart growth refers to the management of growth to make it possible "for communities to grow in ways that support economic development and jobs; create strong neighborhood with a range of housing, commercial, and transportation options; and achieve healthy communities that provide families with a clean environment." (Smart Growth Network)

There are 10 accepted principles that define Smart Growth

1. Mix land uses
2. Take advantage of compact building design
3. Create a range of housing opportunities and choices
4. Create walkable neighborhoods
5. Foster distinctive, attractive communities with a strong sense of place
6. Preserve open space, farmland, natural beauty, and critical environmental areas
7. Strengthen and direct development towards existing communities
8. Provide a variety of transportation choices
9. Make development decisions predictable, fair, and cost effective
10. Encourage community and stakeholder collaboration in development decisions

**SmartCode**

The SmartCode is a form-based code that incorporates Smart Growth and New Urbanism principles. It is a unified development ordinance, addressing development at all scales of design, from regional planning on down to the building signage.

The SmartCode is also a transect-based code. A "transect" is usually seen as a continuous cross-section of natural habitats for plants and animals, ranging from shorelines to wetlands to uplands. It is based on the rural-to-urban transect rather than separated-use zoning, thereby able to integrate a full range of environmental techniques.

The SmartCode is a model transect-based planning and zoning document based on environmental analysis. It addresses all scales of planning, from the region to the community to the block and building. The SmartCode is distributed by the nonprofit Center for Applied Transect Studies (CATS.) SmartCode principles have been incorporated into the Kona CDP.

Kaloko Makai has incorporated the SmartCode principles and transects into its layout and design.

**Hawai'i 2050 Sustainability Plan (Hawai'i 2050)**

The Hawai'i State Plan, embodied in Chapter 226, Hawai'i Revised Statutes (HRS), serves as a guide for goals, objectives, policies, and priorities for the State.

The Hawaii State Planning Act (HRS 226) states that the State shall strive to improve the quality of life for Hawaii's present and future population through the pursuit of desirable courses of action in six major areas of statewide concern which merit priority attention: economic development, population growth and land resource management, affordable housing, crime and criminal justice, quality education and principles of sustainability.

In 2005, the legislature authorized the creations of a task force to review the Hawaii state plan and the State's planning process and to prepare the Hawai'i 2050 Plan. The creation of the Hawaii 2050 sustainability plan raises questions about the long-term limits of growth in the State and highlights the need to begin planning and acting to assure Hawaii's future. Thus, the objectives of the Hawaii 2050 sustainability plan focuses on the revitalization of the State's long-term planning process to better guide the future development of Hawaii.

The Plan offers detailed strategic actions and indicators to serve as a guide towards meeting the Plan's sustainability goals. The Plan incorporates tangible targets and benchmarks. Priority actions for 2020, to be addressed immediately, include:

1. Increase affordable housing opportunities for households up to 140% of median income.
2. Strengthen public education.
3. Reduce reliance on fossil (carbon-based) fuels.
4. Increase recycling, reuse and waste reduction strategies.
5. Develop a more diverse and resilient economy.
6. Create a sustainability ethic.
7. Increase production and consumption of local foods and products, particularly agriculture.
8. Provide access to long-term care and elderly housing.
9. Preserve and perpetuate our Kanaka Maoli and island cultural values.

In 2011, the State established sustainability as a state priority by incorporating the Hawaii 2050 sustainability plan definitions, guiding principles and goals, into chapter 226, Hawaii Revised Statutes (the Hawaii state planning act).

"Sustainability" definition was added to the Planning Act as: "achieving the following:

(1) Respect of the culture, character, beauty, and history of the State's island communities;
(2) Striking a balance between economic, social, community, and environmental priorities; and
(3) Meeting the needs of the present without compromising the ability of future generations to meet their own needs."

The Act also added "principles of sustainability" as one of the six major areas of statewide concern which merit priority attention, economic development, population growth and land resource management, affordable housing, crime and criminal justice, quality education and principles of sustainability."





**OEQC's Sustainable Building Design Guidelines**

The Environmental Council, as part of a "Planner's Checklist," adopted Guidelines for Sustainable Building Design in Hawai`i (October 13, 1999.) These guidelines do not constitute rules or law. A sustainable building is built to minimize energy use, expense, waste and impact on the environment. It seeks to improve the region's sustainability by meeting the needs of Hawai`i's residents and visitors today without compromising the needs of future generations. Compared to conventional projects, a resource-efficient building project will:

1. Use less energy for operation and maintenance
2. Contain less *embodied* energy (i.e. locally produced building products often contain less *embodied* energy than imported products because they require less energy-consuming transportation.)
3. Protect the environment by preserving/conserving water and other natural resources and by minimizing impact on the site and ecosystems
4. Minimize health risks to those who construct, maintain and occupy the building
5. Minimize construction waste
6. Recycle and reuse generated construction wastes
7. Use resource-efficient building materials (e.g. materials with recycled content and low embodied energy, and materials that are recyclable, renewable, environmentally benign, non-toxic, low VOC (Volatile Organic Compound) emitting, durable, and that give high life cycle value for the cost.)
8. Provide the highest quality product practical at competitive (affordable) first and life cycle costs.

In the design and construction of Kaloko Makai, SCD – TSA Kaloko Makai, LLC will seek to implement feasible measures to conform to these general guidelines.

**Hawaii BuiltGreen Program**

The Hawaii BuiltGreen Program is a statewide program to "incentivize" the designing and building of energy and resource efficient homes in Hawaii. Originally developed in 2000 by a public/private partnership between the State Dept. of Business, Economic Development & Tourism (DBEDT), USDOE and five other partners. Now promoted by the State, BIA, Hawaii utility companies and other organizations.

Hawai'i BuiltGreen is a self-certification program administered by the Building Industry Association of Hawai'i, which is a professional trade organization affiliated with the National Association of Home Builders. This is a local initiative based on homegrown knowledge of professionals familiar with the unique conditions of Hawaii. The Hawaii BuiltGreen program focuses on design choices through:

- Protecting Site Features and Functions
- Energy Performance and Comfort
- Health and Indoor Air Quality
- Durability and Materials Conservation
- Environmentally-Friendly Home Operations

**US Green Building Council**
**Leadership in Energy and Environmental Design (LEED)**

The US Green Building Council's Leadership in Energy and Environmental Design (LEED) program is a voluntary green building certification system, providing third-party verification that a building or community was designed and built using strategies aimed at improving performance across all the metrics that matter most: energy savings, water efficiency, $CO_2$ emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts.

Specific LEED programs include: (from Kona CDP)

- Homes
- Neighborhood Development
- New Commercial Construction and Major Renovation projects
- Existing Building Operations and Maintenance
- Commercial Interiors projects

*LEED for Homes* is a voluntary rating system that promotes the design and construction of high performance "green" homes. A green home uses less energy, water and natural resources; creates less waste; and is healthier and more comfortable for the occupants.

*LEED for Neighborhood Development* is a collaboration between the U.S. Green Building Council, the Congress for the New Urbanism and the Natural Resources Defense Council. The LEED for Neighborhood Development Rating System integrates the principles of smart growth and green building into the first national standard for neighborhood design. LEED for Neighborhood Development recognizes development projects that successfully protect and enhance the overall health, natural environment and quality of life of our communities. The rating system encourages urban smart growth best practices, promoting the design of neighborhoods that reduce vehicle miles traveled and communities where jobs and services are accessible by foot or public transit.

**ENERGY STAR Program**

ENERGY STAR is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy.

In 1992, the US Environmental Protection Agency (EPA) introduced ENERGY STAR as a voluntary labeling program designed to identify and promote energy-efficient products to reduce greenhouse gas emissions. Computers and monitors were the first labeled products. Through 1995, EPA expanded the label to additional office equipment products and residential heating and cooling equipment. In 1996, EPA partnered with the US Department of Energy for particular product categories.

The ENERGY STAR label is now on major appliances, office equipment, lighting, home electronics, and more. EPA has also extended the label to cover new homes and commercial and industrial buildings.



Kaloko Makai Sustainability Plan

**National Institute of Building Sciences**
**Whole Building Design Guide (WBDG)**

The goal of 'Whole Building' Design is to create a successful high-performance building by applying an integrated design and team approach to the project during the planning and programming phases. The WBDG program is a collaborative effort among federal agencies, private sector companies, non-profit organizations and educational institutions. In buildings, to achieve a truly successful holistic project, these design objectives must be considered in concert with each other:

- Accessible: to address the specific needs of disabled people.
- Aesthetics: the physical appearance and image of building elements and spaces
- Cost-Effective: weighing options during concepts, design development and value engineering
- Functional/Operational: spatial needs and requirements, system performance durability and efficiency
- Historic Preservation: whereby building elements and strategies are classifiable into preservation, rehabilitation, restoration or reconstruction.
- Productive: physical and psychological comfort—including air distribution, lighting, workspaces, systems, and technology.
- Secure/Safe: physical protection of occupants and assets from man-made and natural hazards.
- Sustainable: Pertains to environmental performance of building elements and strategies.

**Land Use and Development Practices - Low Impact Development (LID)**

Land use practices can improve air quality, reduce stormwater runoff, increase energy efficiency and reduce greenhouse emissions to improve the quality of life for citizens. LID is a land development approach that allows land to be developed but in a manner that helps lessen potential environmental impacts. LID employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treat stormwater as a resource rather than a waste product.

By implementing LID principles and practices, water can be managed in a way that reduces the impact of built areas and promotes the natural movement of water within an ecosystem or watershed. LID has been characterized as a sustainable stormwater practice by the Water Environment Research Foundation and others.

In general, implementing integrated LID practices can result in enhanced environmental performance while at the same time reducing development costs when compared to traditional stormwater management approaches. LID techniques promote the use of natural systems, which can effectively remove nutrients, pathogens and metals from stormwater.

Conservation designs can be used to minimize the generation of runoff by preserving open space. Examples of Conservation Design include:

- Cluster development
- Open space preservation
- Reduced pavement widths (streets, sidewalks)
- Shared driveways

**One Planet Living**

One Planet Living is a vision of a sustainable world, in which people everywhere can enjoy a high quality of life within the productive capacity of the planet, with space left for wildlife and wilderness. Organizations around the world are using the one planet living approach to take measurable steps towards genuine sustainability. From zero carbon buildings to procurement policies that support the green economy, one planet living solutions are cost-effective, creative, inspirational and replicable.

- Zero Carbon - Making buildings more energy efficient and delivering all energy with renewable technologies
- Zero Waste - Reducing waste, reusing where possible, and ultimately sending zero waste to landfill
- Sustainable Transport - Encouraging low carbon modes of transport to reduce emissions, reducing the need to travel
- Sustainable Materials - Using sustainable and healthy products, such as those with low embodied energy, sourced locally, made from renewable or waste resources
- Local and Sustainable Food - Choosing low impact, local, seasonal and organic diets and reducing food waste
- Sustainable Water - Using water more efficiently in buildings and in the products we buy; tackling local flooding and water course pollution
- Land and Wildlife - Protecting and restoring existing biodiversity and natural habitats through appropriate land use and integration into the built environment
- Culture and Heritage - Reviving local identity and wisdom; supporting and participating in the arts
- Equity and Local Economy - Creating bioregional economies that support fair employment, inclusive communities and international fair trade
- Health and Happiness - Encouraging active, sociable, meaningful lives to promote good health and well being

**Complete Streets**

Complete Streets are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and transit riders of all ages and abilities must be able to safely move along and across a complete street. Complete Streets make it easy to cross the street, walk to shops and bicycle to work. They allow buses to run on time and make it safe for people to walk to and from train stations.

By adopting a Complete Streets policy, communities direct their transportation planners and engineers to routinely design and operate the entire right of way to enable safe access for all users, regardless of age, ability or mode of transportation. This means that every transportation project will make the street network better and safer for drivers, transit users, pedestrians and bicyclists – making your town a better place to live.





**Natural and Cultural Resources**

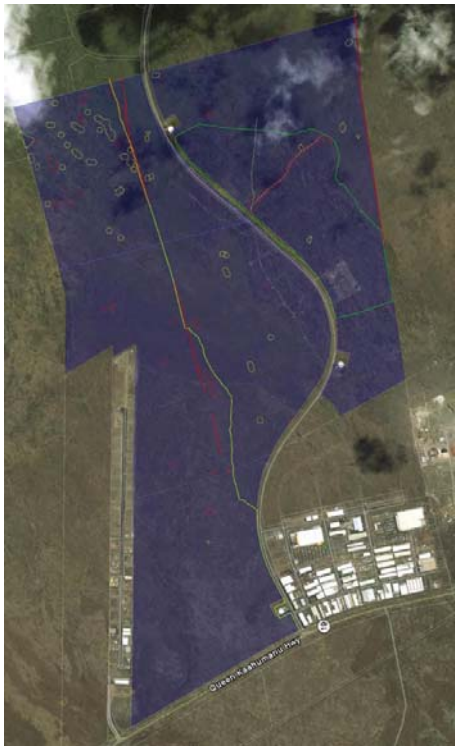
The preservation of the natural and cultural resources is essential for a prosperous and sustainable future. Kaloko Makai holds respect for the culture and the environment and will interlink natural features and cultural features as core components of the community. Significant natural, archaeological and cultural sites at Kaloko Makai, which include archaeological preservation areas, historic trails and native forest, will be integrated into the master plan. Archaeological and cultural sites will be protected and maintained with appropriate treatment and buffers from adjacent uses, as necessary.

**Archaeological/Cultural Sites**

A total of 341 archaeological sites were identified in the course of the archaeological inventory survey work for Kaloko Makai. Sites in the project area include permanent and temporary habitation structures, agricultural features, at least 65 burials located in approximately two dozen burial sites, ahu (stone markers), trails, petroglyphs, ahupua`a boundary walls, papamū (traditional gaming site) and others.

Of the 341 sites, eighty (80) sites are subjected to a program of data recovery to address scientific and informational concerns and a total of seventy-two (72) sites be preserved (a majority of the preservation sites are burials or probable burials.) The remaining 189 sites are not recommended to undergo further research.

There are a total of sixty-five (65) confirmed burials at more than thirty sites. All of the confirmed and suspected burials will be preserved pursuant to a burial treatment plan prepared in consultation with recognized descendants and the Hawai'i Island Burial Council. The other preservation sites will be treated in accordance with a preservation plan submitted to and approved by State Historic Preservation Division (SHPD) prior to final subdivision approval. There were no specific ongoing traditional cultural practices identified relative to the land within the project area.



Kaloko Makai Noting Various Preservation Areas

**Kohanaiki Trail**

The historic Kohanaiki Trail (Road to the Sea) runs through (mauka-makai) the entire length of the project; it will be restored and will interconnect the communities within the project.

The trail parallels the nearby Kaloko/Kohanaiki ahupua'a wall. Kaloko Makai will incorporate the Kohanaiki Trail as an integral component of the project. Kaloko Makai has located two school sites and multiple parks near the trail. Likewise, Kaloko makai will also be incorporating two trails that run through the dryland forest (one also connects to another school site and park – these will connect through the project to the Kohanaiki Trail).

The trail entirely traverses pāhoehoe and is generally well defined throughout the eastern portion of the parcel, except near the *makai* parcel boundary where extensive bulldozing and grading has nearly destroyed the ahupua'a wall and eliminated any definitive sign of the trail.

Whenever possible, pāhoehoe will be embedded in the roadway paving as the means to mark where the original trail footprint is located. To the extent practical, pāhoehoe retrieved from other areas within Kaloko Makai shall be used in the paving.

Whenever existing rock walls must be removed, the rocks from these walls will be set aside and reused in the construction of new screen, buffer and retaining walls built within Kaloko Makai. Whenever feasible, rocks from Kaloko Makai will be used for such walls (minimize importation of rock from offsite).

Where the Kohanaiki Trail intersects with Hina Lani Drive, Kaloko Makai will realign the remaining lower portion of the Trail from that point to run parallel with and adjoining the Hina Lani Street right-of-way down to Queen Ka'ahumanu Highway. Since the integrity of the historic trail is lost at that point, due to Hina Lani road construction, the adjoining industrial subdivision and the water tank, Kaloko Makai will realign the trail and have it run down the southern boundary of the property (fronting Hina Lani,) from the point of intersection with Hina Lani down to Queen Ka'ahumanu Highway. This alignment gives the users of the trail easy access to cross Queen Ka'ahumanu or Hina Lani at the bottom, as there are crosswalks with crossing signals at that point.

Kaloko Makai will incorporate the Kohanaiki Trail as an integral component of the project. The trail and buffers will be approximately 30-feet wide. Kaloko Makai will also incorporate two trails that run through the dryland forest.

**Greenbelts**

According to the Kona CDP, Greenbelts are undeveloped areas that surround the developed areas. Greenbelt is a strategic planning tool to prevent urban sprawl by keeping land permanently open. The purpose of the Greenbelt is to prevent urban sprawl of the TODs/TNDs, prevent neighboring towns from merging into one another, and to preserve the setting and the character of the TODs/TNDs.

Greenbelts are also used to set aside and protect important features. Significant archaeological sites are found in the northwest section of the property. In order to preserve and protect these features, the area will be left in a natural state, with pockets of low-density residential interspersed in the area. This open space also helps to serve as a mauka greenbelt (GB1) to the Kaloko Makai TOD.





From Ane Keohokālole Highway down to Queen Ka`ahumanu Highway, Kaloko Makai will set aside a 100-foot buffer that fronts Hina Lani Street. This open space also helps to serve as a greenbelt (GB1) to the Kaloko Makai TOD.

**Dryland Forest**

The Hawai'i County General Plan designates a 150-acre portion of the Kaloko Makai site as "Conservation." This area is identified as a dryland forest area.

The Kaloko Makai development is home to one of the largest remaining areas of dryland forest in the Hawaiian Islands. The Kaloko dryland forest is unique in that it has not been heavily impacted by ungulates, and therefore, has minimal impact from alien plant species.

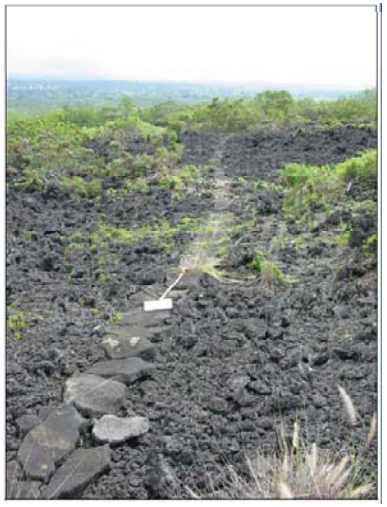
The 150-acres Kaloko Makai Dryland Forest Preserve contains the best habitat for reproduction of native species and is one of the last remaining Dryland Forest ecosystems on the island.

The 150-acres will be set aside and preserved as a Dryland Forest preserve in perpetuity, thus ensuring the continuation of this Dryland Forest ecosystem.

Kaloko Makai has determined that the Kaloko Makai project will not take any listed plant species. The project layout has been revised and buffers included so that the two listed species present on site, outside of the Dryland Forest Preserve, ('aiea and hala pepe) will not be impacted and will in incorporated into appropriate landscaping.

The preservation of these 150-acres is the single most important step in preserving the Dryland Forest ecosystem at Kaloko Makai.

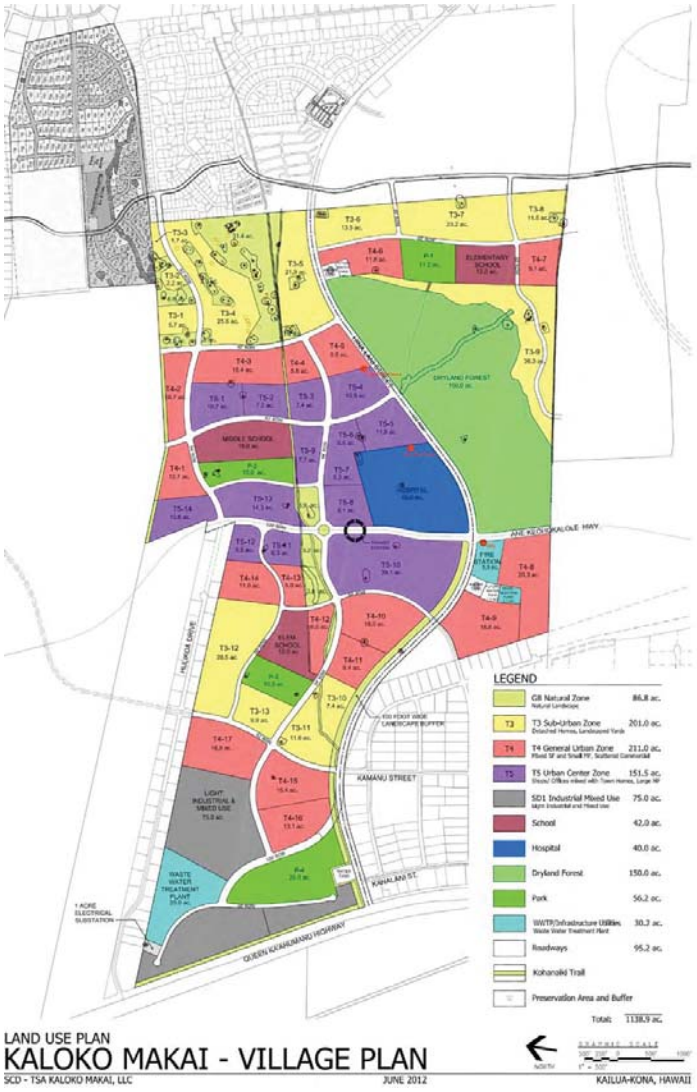
Preservation of the 150-acre Dryland Forest will also result in the preservation of two additional listed species (ma'oloa and uhiuhi) which are found within the Dryland Forest Preserve.



Kaloko Makai will also incorporate two trails that run through the dryland forest (one noted above)

Since the Kaloko Makai Dryland Forest Preserve will border housing developments, building setbacks will be developed to keep housing an appropriate distance from the Dryland Forest Preserve. Kaloko Makai has planned single-family uses to adjoin the Kaloko Makai Dryland Forest Preserve. It is believed that this use has less risk compared to multi-family or commercial uses. Appropriate landscaping will also be employed within the housing developments to act as a barrier if fire was to occur.

Significant archaeological and cultural sites, which include historic trails, and preservation and greenbelt areas will be integrated into the master plan. Archaeological and cultural sites and natural resources will be set aside with appropriate treatment and buffers from adjacent uses, as necessary.








**Consistency with Regional Land Use Planning**

Consistency with local land use planning documents is an essential element of sustainability. The local plans articulate and illustrate the community's vision. Without consistency with that vision, a development project cannot be sustainable.

With respect to local planning in Kona, the Hawai'i County Planning Department recognized that only with broad public input can the Kona residents take ownership of this plan, by which they may embrace the vision and commit to a better future.

Initiated in September 2005, the Kona Community Development Plan (Kona CDP) is the result of an extensive public process, culminating in County Council's adoption of the Plan in 2008.


Mapping the Future Workshop, February 2006.


First meeting of the 109 small group meetings. *Soteru Agoot*


March 2006 Charrette.


June 2006 Charrette

Images from the Kona CDP

Two primary planning documents address land use development in Kona, the Hawai'i County General Plan and the Kona CDP. Following are brief summaries of each.

**Hawai'i County General Plan (General Plan)**

The Hawai'i County General Plan is the policy document for the long-range comprehensive development of the island of Hawai'i. 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 that embody the expressed goals for present and future generations.

The purposes of the General Plan are to:

- Guide the pattern of future development in this County based on long-term goals;
- Identify the visions, values, and priorities important to the people of this County;
- Provide the framework for regulatory decisions, capital improvement priorities, acquisition strategies and other pertinent government programs within the County organization and coordinated with State and Federal programs.
- Improve the physical environment of the County as a setting for human activities; to make it more functional, beautiful, healthful, interesting and efficient.
- Promote and safeguard the public interest and the interest of the County as a whole.
- Facilitate the democratic determination of community policies concerning the utilization of its natural, man-made, and human resources.
- Effect political and technical coordination in community improvement and development.
- Inject long-range considerations into the determination of short-range actions and implementation.

The General Plan represents the first level and encompasses long-range goals, policies and standards for the entire County. The General Plan also provides the legal basis for all of the other elements of the County's planning structure. As such, the General Plan is the highest order, or "umbrella" plan. It establishes the outer limits or boundaries within which the County must operate.

The General Plan designation for the Kaloko Makai site is "Urban Expansion" and Conservation (for the area of the dryland forest.) The "Urban Expansion Area "allows for a mix of high density, medium density, low density, industrial, industrial-commercial and/or open designations in areas where new settlements may be desirable, but where the specific settlement pattern and mix of uses have not yet been determined".

Kaloko Makai is consistent with the Hawai'i County General Plan.

**Kona Community Development Plan (Kona CDP)**

The County of Hawai'i General Plan section 15.1 (February 2005, as amended) established and called for the preparation of Community Development Plans (CDPs) to translate broad General Plan goals, policies, and standards into implementation actions as they apply to specific geographical regions around the Island. The General Plan requires CDPs be adopted as an "ordinance," giving the plans force of law.

On September 25, 2008, *Mapping the Future: Kona Community Development Plan Volume 1* (Kona CDP) was adopted by the County Council (Ordinance 08-131,) subject to later amendments. The planning area for the Kona CDP encompasses the judicial districts of North and South Kona.





The Kona CDP is a long term plan with a planning horizon to year 2020, consistent with the General Plan. The plan consists of two volumes—Volume 1 is adopted by County Council; Volume II contains more detailed or technical material for informational purposes.

The purposes of the Kona CDP are to:

- Articulate Kona's residents' vision for the North and South Kona districts
- Guide and accommodate regional growth and development
- Provide a feasible plan to improve existing infrastructure and support future growth
- Direct growth to appropriate areas
- Create a partnership plan of action where to improve the quality of life in Kona
- Monitor the progress and effectiveness of the plan

The Kona CDP responds to the effects of rapid growth in the community. Encompassing the North and South Kona districts, the Kona CDP addresses the need to plan better to deal with traffic congestion, affordable housing and loss of open space. Residents taking part in the planning process repeatedly voiced these needs.

The eight guiding principles of the Kona CDP were derived from public meetings and working groups. These principles are the foundation for the goals, objectives, policies and implementing actions.

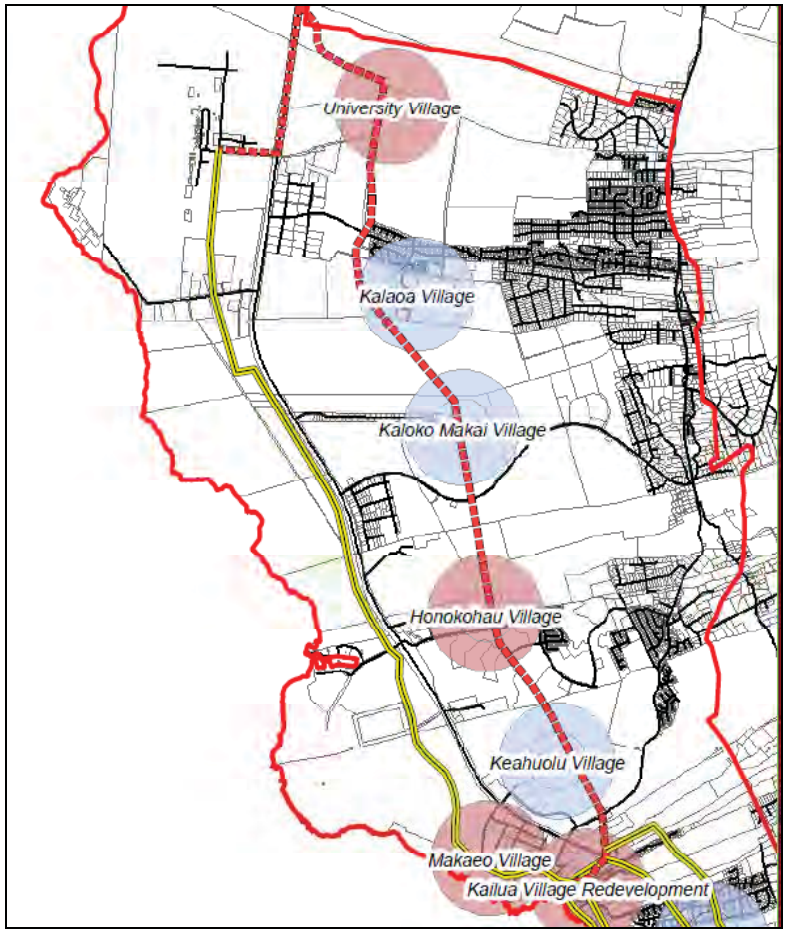
1. Protect Kona's natural resources and culture
2. Provide connectivity and transportation choices
3. Provide housing choices
4. Provide recreation opportunities
5. Direct future growth patterns toward compact villages
6. Provide infrastructure and essential facilities concurrent with growth
7. Encourage a diverse and vibrant economy
8. Promote effective governance

The Land Use section of the Kona CDP serves as policy guide for County decisions regarding physical development. It establishes a physical framework for future growth by identifying the County's major policies concerning the type and location of future development in order to meet the goals and objectives of the Kona CDP.

Most of the future growth in Kona will be directed to the Urban Area (UA.) Within this Kona Urban Area, growth would be directed to compact villages located along proposed transit routes or to infill areas within, or adjacent to, existing development. The general locations of these villages are within the Transit-Oriented Developments (TODs). The Official Kona Land Use Map defines the Kona Urban Area and the general locations, spacing and type of TOD Villages.

Transit-Oriented Development (TOD) is defined in the Kona CDP as the development of compact, mixed-use villages that would integrate housing, employment, shopping and recreation opportunities. Villages would be designed around transit stations/stops that would reduce the need for daily trips and financially support the expanded transit system. TOD Urban Villages are located a minimum of one mile apart, between major transit stations, along Keohokālole Highway trunk route in order to preserve the transit efficiency of this route.

To encourage growth towards the Transit-Oriented Developments (TODs,) the Kona CDP promotes Design Flexibility, Streamlined Permit Processing, Increased Range of Permitted Uses and Densities, prioritized Essential Infrastructure, Public Financing of Infrastructure, Concurrency Requirements and Vested Rights. (As an incentive, the TODs substantially increase the permitted uses and densities.)




**Portion of the Kona CDP "Official Land Use Map" Noting a TOD Designation for Kaloko Makai**





The Kona CDP incorporates several "official" maps: Official Kona Land Use Map, Official Concurrency Map, Official Transportation Network Map (Proposed Roads and Transit, Pedestrian and Bike Paths) Official Public Facilities and Services Map (Public Safety, Community Facilities and Waste Management. The "official" maps distinguish "policy" layers from "information" layers and are meant to be legally binding.

Per the Kona CDP, most of the future growth in Kona will be directed to the Urban Area (UA) – this is generally the area from Kailua-Kona to the Kona International Airport. Within this Kona Urban Area, growth would be directed to compact villages located along proposed transit routes or to infill areas within, or adjacent to, existing development. The general locations of these villages are within the Transit-Oriented Developments (TODs) or Traditional Neighborhood Developments (TNDs.) The Official Kona Land Use Map defines the Kona Urban Area and the general locations, spacing and type of TOD Villages.

TODs and TNDs are compact mixed-use villages, characterized by a village center within a higher density urban core, roughly equivalent to a 5-minute walking radius (1/4 mile), surrounded by a secondary mixed-use, mixed-density area with an outer boundary roughly equivalent to a 10-minute walking radius from the village center (1/2 mile).

TODs and TND's are further organized by Transect Zones. Transect Zones organize the density, complexity, and intensity of the land use within the TND or RCD village. The operating principle is that there is an urban core with a main center focus such as a transit station and plaza.

This urban core area, which is spatially defined based on walkable distances called Pedestrian Sheds, has the highest density, complexity and intensity of uses. Land use density is specific to spatial proximity to the urban core area; the further from the urban core, the more land use density is reduced.

The Transect Zones that correspond to the urban core, secondary area, and greenbelt referred to in the Kona CDP are as follows:

1. Urban Core
    a. T-5 Urban Center
    b. T-4 General Urban
2. Secondary Area: T-3 Suburban
3. Greenbelt: GB Greenbelt
4. Special District: SD1 Mixed Use Industrial

The development of compact, mixed-use villages integrates housing, employment, shopping and recreation opportunities. Villages are designed around transit stations/stops that will reduce the need for daily trips and financially support the expanded transit system.

TODs/TNDs may be surrounded by more auto-oriented, lower-density areas called "Secondary Areas." The Secondary Areas are within a half-mile of the TOD/TND urban core. These Secondary Areas take advantage of the services within the Urban Core through an interconnected street system with easy access to transit by foot, bike or car.

Secondary Areas will be primarily comprised of standard single-family and multi-family neighborhoods. These areas may also provide more land-extensive uses that serve TOD/TND residents, such as schools and community parks. Because of their proximity to the Urban Core, Secondary Areas are ideal for bicycle travel.

The Greenbelt is an undeveloped area surrounding the Secondary Area. The Greenbelt is a strategic planning tool to prevent urban sprawl by keeping land permanently open. The purpose of the Greenbelt is to prevent urban sprawl of the TODs/TNDs, prevent neighboring towns from merging into one another, and to preserve the setting and the character of the TODs/TNDs. The Greenbelt may also serve multi-purpose uses, such as for drainage (e.g., flow ways or retention basins), sensitive resource preserves or wildfire protection buffers.

The Kaloko Makai site is designated as one of the Neighborhood TODs on the Official Kona Land Use Map of the Kona Community Development Plan (Kona CDP). As noted, Kaloko Makai also proposes to incorporate a regional hospital into the development. Consistent with the Kona CDP economic policy ECON-1.1, the Neighborhood TOD at Kaloko Makai would automatically be designated a Regional Center TOD, upon receiving a commitment by a hospital developer/operator.

Transit-Oriented Development (TOD) is defined in the Kona CDP as the development of compact, mixed-use villages that would integrate housing, employment, shopping and recreation opportunities. Villages would be designed around transit stations/stops that would reduce the need for daily trips and financially support the expanded transit system. TOD Urban Villages are located a minimum of one mile apart, between major transit stations, along Keohokālole Highway trunk route in order to preserve the transit efficiency of this route.

Kaloko Makai will be a compact, mixed-use village that integrates diverse housing offerings, mixed-use commercial and retail growth and employment opportunities, and a range of community services and facilities (inclusive of medical, lodging, and civic uses as well as recreational opportunities).

Kaloko Makai will be a "Transit Oriented Development" (TOD) and "Traditional Neighborhood Design" (TND) community consistent with the Guiding Principles and Elements of the Kona Community Development Plan.

The central TOD village is designed around a transit station and made up of three neighborhoods, centered on venues of community-wide importance (such as the potential regional hospital and/or schools/parks). An additional mauka TND neighborhood is linked to the TOD through interconnecting roads and trails. A Special District light industrial area is at the makai portion of the property.

Kaloko Makai has also been planned to conform to the County of Hawaii's draft Kona Village Design Guidelines, with its compact residential settings in a transit-ready, mixed-use community. As noted, the urban core of this community would be centered on the new "mid-level" Ane Keohokālole Highway, and residential densities and other specific development characteristics have been developed in conformance to the various "transect zones" define in the Design Guidelines.

Kaloko Makai is consistent with the Kona CDP. In later sections of the Kaloko Makai Sustainability Plan, specific sustainability themes from the Kona CDP will be further reviewed.





**Sustainable Design Features**

Thoughtful planning of site, neighborhood and improvements design, incorporating mixed-use land uses, walkable streets, encouraging walking, bicycling and public transportation, and respect for the natural and cultural features creates opportunities for more environmentally-responsible and sustainable development. These sustainable neighborhoods are beneficial to the community, the individual and the environment.

Several sustainability programs and plans (noted previously in Chapter 2) identify and address a wide variety of design features that may be incorporated into a development project to enhance its sustainability. These items design features include:

- **Site Planning**
  - Respect for the Land – Work with topography
  - Siting - Proximity to mass transit, shopping, employment centers, recreation, schools
  - Interconnectivity – Connection with neighbors, Multi-modal transportation (to be discussed in another section of this Plan)
  - Intensity of Layout – Village Center; Clustering into compact villages
  - Natural/Cultural Resources – Protection of natural and cultural resources (to be addressed in another section of this Plan)

- **Improvements Planning**
  - Alternatives – Provide a range of housing options at various price levels (to be discussed in another section of this Plan)
  - Orientation – Ventilation; Take advantage of natural air flow
  - Shading – Eve overhang; Vegetation
  - Landscaping – Native plants; Low irrigation
  - Energy Efficiency – (to be discussed in another section of this Plan)

The objectives of Kaloko Makai are to create an attractive master-planned residential community with a variety of housing opportunities and mixed uses, as well as abundant recreational resources.

<u>Site Planning</u>

As a mixed-use community, the objectives of Kaloko Makai are to:

- Create a diverse, sustained community of mixed uses, including residential, retail and commercial spaces, light industrial areas, recreational spaces, and open space.
- Cultivate intrinsic respect for the land and natural surroundings, develop an inherent Hawaiian sense of place and nourish a sustaining living environment.
- Provide housing for the working families of Hawai'i nearby areas of workforce demand, resultantly improving overall quality of life through the reduction of commuting and facilitation of everyday function.
- Openly embrace a diversity of people and activities through offering mixed uses and housing types.
- Contribute to the social fabric of the community by providing infrastructure and facilities, and by including school, hospital, recreational, and civic sites.
- Engender and incorporate intelligent, planned sustainability by design.
- Emphasize non-vehicular transit for mainstream community-wide travel

Kaloko Makai is strategically located along the major regional traffic corridor Queen Ka'ahumanu Highway, between the town of Kailua-Kona and the Airport. Likewise, it is centrally located on Ane Keohokālole Highway, also known as the Mid-Level Road, which will run through the development; this is the major transit corridor called for in the Kona CDP. The area also has a long-standing and growing residential base.

This area will continue to be the focus of such development as the Island's population grows, given its proximity to the Airport and other existing infrastructure. This region is also the commercial and industrial heart of West Hawaii, serving the Airport and the needs of the visitor, agriculture, ranching, technology and other industries of the western half of the Island.

The project is designed support non-vehicular travel (key elements of the Kona Community Development Plan). Project objectives include developing health care facilities in Kona that provide a range of health care services and creating opportunities for on-site employment in retail, commercial, light industrial uses to reduce peak hour traffic impacts and provide higher quality of life for Kaloko Makai residents.

Kaloko Makai is a compact, mixed-use, master-planned community offering a wide range of housing types and affordability, and a variety of businesses and employment opportunities, focused around an initial urgent care medical facility with land available for a new Kona regional hospital. Kaloko Makai has been designated as a Neighborhood Transit Oriented Development (TOD) in the Official Kona Land Use Map of the *Kona Community Development Plan* (County Ordinance No. 08-131, September 2008).

Kaloko Makai will be a residential community, with supporting retail, commercial, hospital, lodging, light industrial, infrastructure, educational, recreational and open space uses.

Kaloko Makai will include the proposed development of up to 5,000 new single- and multi-family residential lots and units at a variety of densities, centralized commercial and neighborhood centers, recreational facilities (e.g. parks, trails, open spaces), urgent care medical facility, hospital, lodge and business center, three school sites, and associated infrastructure (e.g., new roadways, utilities, drainage, wastewater and potable water distribution systems). Affordable housing will be provided in accordance with County of Hawai`i requirements.

The properties' soil class ratings of Class VIIs and Class VIII mean that the soils are not suitable for cultivation and use is generally restricted to non-agricultural use. Additionally, the project area is rated D, E and unclassified by the LSB Detailed Land Classification. With only 6 percent of the project site designated "Other" and the remainder of the project site not classified in the ALISH system, Kaloko Makai will not have an impact on agriculturally significant lands and will not reduce the inventory of agricultural significant lands.

Construction of the proposed development will involve grading, excavation and trenching of presently undeveloped areas within the project site. The project will require alteration of existing landforms to create more efficient land development areas. Appropriate engineering, design and construction measures will be undertaken to minimize potential erosion of soils during construction.

Mitigation measures will be instituted following site-specific assessments, incorporating structural and non-structural BMPs such as minimizing soil exposure and implementing erosion control measures such as silt fences and sediment basins.





Following construction, erosion is anticipated to decrease since the soils will have been graded, built over, paved over or landscaped. Landscaping in turn will provide erosion control. Mass grading of the development areas will be in compliance with the County of Hawai'i's grading ordinance requirements and will require NPDES permit from the State DOH for storm water construction activities, including BMPs to minimize off-site impacts.

Kaloko Makai will be transit-ready and is located along Ane Keohokālole Highway, a key alignment for regional transportation. Ane Keohokālole Highway will function as the primary transit route connecting Kailua Village with the Kona International Airport and constitutes a significant influence on the shaping of Kaloko Makai; a transit station will be incorporated into the TOD village near the central part of the property.

As the primary transit route, there will be future allowance for dedicated transit-way and a transit station will be located within the TOD. Internal roads, trails and paths will interconnect within the various neighborhoods and will allow residents, whether in vehicles, pedestrians and on bicycles, a variety of choices in travelling throughout the project.

In addition, multiple interconnections with adjoining properties are included in the Kaloko Makai master plan. At the request of the Hawai'i Department of Transportation, the project layout and uses on the makai side of the property allow for future development of an interchange intersection with Queen Ka'ahumanu Highway.

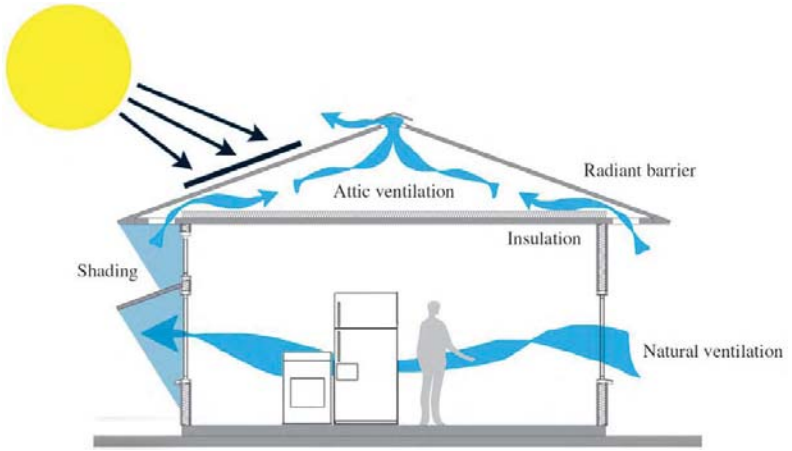
Improvements Planning

There are three major sources of unwanted heat in homes: direct solar impacts on a building and through windows and skylights; heat transfer and infiltration, of exterior high temperatures, through the materials and elements of the structure; and the internal heat produced by appliances, equipment and inhabitants.

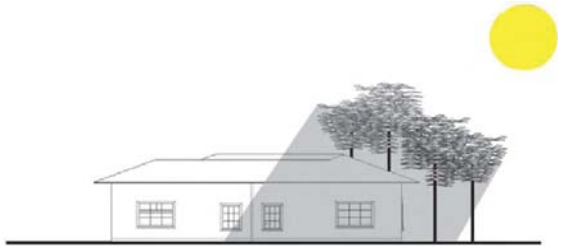
The DBEDT Field Guide for Energy Performance, Comfort and Value in Hawai'i Homes provides a number of recommended ways to incorporate effective design options to address home temperatures. These items to be considered in the development of Kaloko Makai are summarized and illustrated below:

Design for Comfort and Value

A. Control Heat Gain: Use strategies to reduce solar heat gain through roofs, walls and windows.
   1. Orient and arrange building to control heat gain
   2. Landscape and design outdoor surfaces to reduce air temperatures and glare; minimize paving area and use grassed and planted areas to provide lowered site temperatures, shade and evaporative cooling
   3. Shade roofs, walls and windows with:
      a. Architectural elements such as eaves, awnings and carports, and
      b. Window treatments such as blinds and shutters
   4. Use insulation and/or radiant heat barriers in roofs and walls exposed to the sun
   5. Use high performance windows (Low-e, spectrally selective, or tinted glazing) to keep solar heat out of interior spaces while admitting daylight
   6. Use light colored roofing and wall finishes
   7. Shade or insulate materials with high thermal mass, such as concrete floors, to avoid heat build-up and uncomfortably hot surface temperatures




B. Use Natural Ventilation: Provide ample fresh air ventilation for living spaces and areas where hot air and humidity accumulate, such as attics, high ceiling spaces, kitchens, bathrooms and laundry areas.
   1. Orient buildings to maximize the cooling potential of prevailing winds and minimize morning and afternoon heat gain
   2. Design floor plans and opening placement and type to provide effective cross ventilation with good air circulation throughout room areas and at body level
   3. Provide generous screened openings well protected from the rain
   4. Use architectural design elements such as vents and casement windows to improve interior air circulation
   5. Enhance natural ventilation with fans as needed:
      a. Use ceiling and whole house fans to provide comfort on warm, humid or still days
      b. Use solar powered attic vent fans when appropriate and economically feasible



Shaded areas stay cooler

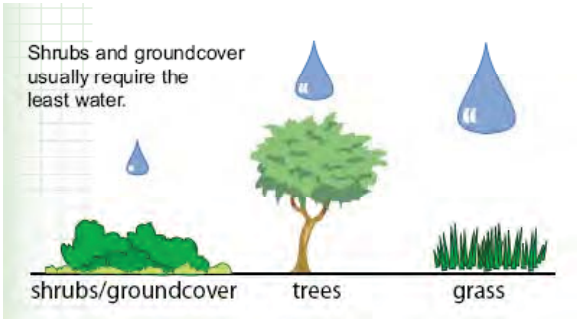




Consistent with the principles and recommendations noted in the DBEDT publication *Hawaii Homeowner's Guide to Energy, Comfort & Value*, to the extent feasible and practical, Kaloko Makai will incorporate the following:

**Site Planning and Landscaping**
Orientation of homes is important. Try to minimize the area of east- and west-facing walls and windows because they are difficult to shade from the sun.

Landscaping and the design of outdoor surfaces can reduce air temperatures and glare. Landscaping minimizes paving area provides lowered site temperatures, shade and evaporative cooling.

***Low impact landscaping***


Selection and distribution of plants must be carefully planned when designing a functional landscape. Aesthetics are a primary concern, but it is also important to consider long-term maintenance goals to reduce inputs of labor, water and chemicals. Properly preparing soils and selecting species adapted to the microclimates of a site greatly increases the success of plant establishment and growth, thereby stabilizing soils and allowing for biological uptake of pollutants. Dense, healthy plant growth offers such benefits as pest resistance (reducing the need for pesticides) and improved soil infiltration from root growth. Low impact landscaping can thus reduce impervious surfaces, improve infiltration potential and improve the aesthetic quality of the site.

Protect and retain existing landscaping and natural features. Select plants that have low water and pesticide needs, and generate minimum plant trimmings. Use compost and mulches. This will save water and time.

<u>Examples of Low Impact Landscaping</u>
- Planting native, drought tolerant plants
- Converting turf areas to shrubs and trees
- Reforestation
- Encouraging longer grass length
- Planting wildflower meadows rather than turf along medians and in open space

**Control Heat Gain**
By using strategies to reduce solar heat gain through roofs, walls and windows, a house can stay cool. Roofs, walls, windows and outdoor flooring can be shaded with architectural elements such as eaves, awnings and carports, and shutters.

***Walls***

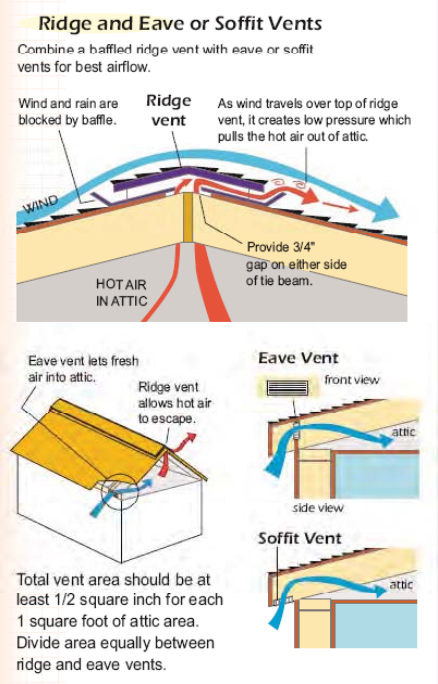
Unshaded walls can get very hot and make your home uncomfortable. The best "cool wall" strategy is shading with overhanging eaves, lanais, or landscaping. If complete shade isn't feasible, use insulation or radiant barriers in the exposed walls. Use a white exterior finish to improve cool wall performance.

***Windows***

The use of high performance windows (Low-e, spectrally selective, or tinted glazing) helps keep solar heat out of interior spaces while admitting daylight. Overhangs, awning and trees can keep the sun from striking windows directly.

***Roofs and Roofing Material***

A cool roof is essential for a comfortable home. Insulation keeps roofs and homes cool by blocking heat on the roof thus, the attic, the ceiling and the rest of the house stay cool and comfortable. Installing a white roof will keep a home cooler.




Ventilation is another tool for keeping homes cool. For houses with attics good ventilation is recommended. Ridge and Eave or Soffit Vents work as well. If a ridge vent is not feasible, use a solar powered vent fan in combination with eave or soffit vents, to push warm air out of the house and attic.

**Solar Water Heating**

Minimizing the energy required for water heating is the most important energy saving step for a Hawaii home. Conventional water heating is a big expense and accounts for about 40% of the utility bill in a Hawaii house.

Hawaii was the first state in the nation to require solar water heaters in new home construction. Act 204 SLH 2008, requires all building permits for single-family homes issued after Jan. 1, 2010, to include solar water heaters. Exceptions are allowed where homes have poor sunlight; if it is cost-prohibitive after 15 years; when the dwelling has a substitute renewable energy source; or if there is an approved tankless water heater and another appliance, both powered by gas.

Additionally insulating hot water supply lines and pipes with at least ½" foam or 1" fiberglass insulation and setting heater thermostats adjustable for 120˚ F or less, can add additional energy savings to a homeowner.





**Photovoltaic systems**

Consider alternative energy sources such as photovoltaics and fuel cells that are now available in new products and applications. Renewable energy sources provide a great symbol of emerging technologies for the future.

**Lighting**

***Energy Efficient Light Design***

Energy efficient light design features help minimize electric lighting energy demand and heat gain. An efficient lighting system uses fluorescent lamps as the primary light source and may selectively use incandescent (also halogen, a type of incandescent) for accent lighting and for applications where the light is usually off (like exterior lights on motion sensor controls). Modern fluorescent lighting can provide excellent color rendering and be free of flicker and hum. Additionally, start up is nearly instantaneous with electronic instant-start and rapid-start ballasts. Fluorescent lamps last 10 to 20 times longer than incandescents, saving energy all the while, so the lifetime cost is much lower and fluorescent lights do not emit as much heat as incandescents.

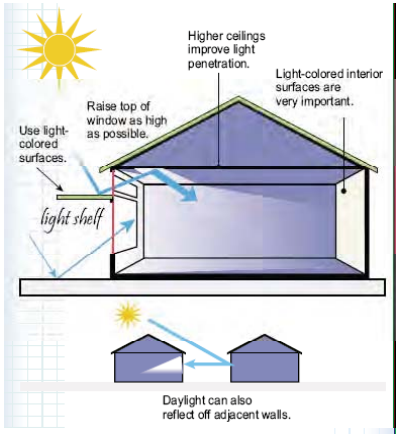
Providing controls such as timers, dimmers, sensors and separate fan/light controls to limit power use to the times and levels needed, also helps reduce lighting power consumption.

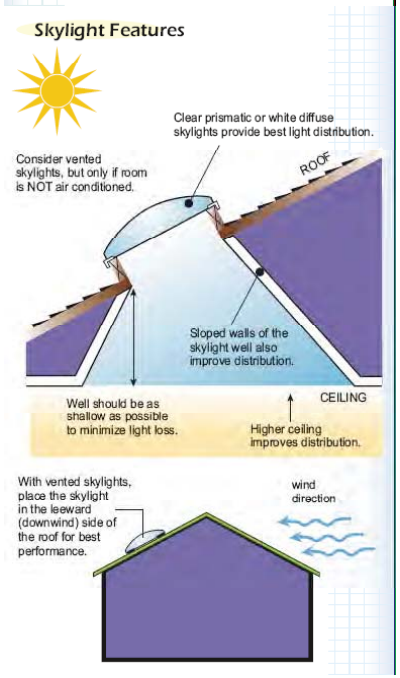
The use of solar powered landscape lighting when economically feasible is another energy saving design feature which can be used for both residential homes, as well as, business and civic buildings and spaces.

***Daylighting***

Daylighting is the use of natural sunlight to light interior spaces. Using controlled, filtered and indirect daylighting to light interior spaces reduces electric lighting loads. The effectiveness of daylighting can be increased with generous wall openings, open floor plans and light colored interior finishes.

Windows are usually a home's main source of daylight. Blocking direct sunlight and bouncing light on to the ceiling helps facilitate daylighting.



Additionally, minimizing areas of east- or west-facing windows and using blue or green glass help.

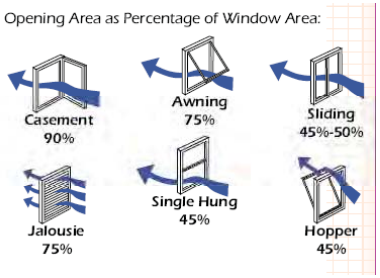
Skylights (traditional, vented, tubular) can provide significant daylighting opportunities.

Light-colored interior finishes are critical for good light distribution thus, white ceiling is recommended.

Rooms with higher ceilings and narrow floor plans are easier to daylight. Consider several smaller skylights instead of one larger skylight for better light distribution.

**Natural Ventilation**

Kaloko Makai will optimize air-flow by designing homes that capture cooling breezes to keep homes comfortable. Utilizing natural ventilation also helps reduce health hazards such as mold and mildew.




Buildings should be oriented to maximize the cooling potential of prevailing winds and minimize morning and afternoon heat gain. Floor plan design will include effective cross ventilation with good air circulation throughout room areas and at body level.

Providing generous screened openings and using architectural design elements such as vents and casement windows will improve interior air circulation.

Ceiling fans are a great way to enhance natural ventilation. Use ceiling and whole house fans to provide comfort on warm, humid or still days.





**Transportation**

The Kona CDP notes that future growth should connect communities with movement alternatives such as sidewalks, trails and bike lanes. The community needs 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.

There are several other major strategies that embody the Guiding Principles expressed in the Kona CDP. They relate to transportation, housing, land use and infrastructure that need to be integrated and incorporated into Kona's long-term transportation policies as Kona's population continues to grow in the years ahead. These strategies include the following:

1. **Mass Transit.** A major expansion of the County's public mass transit service in Kona would provide significant alternatives to individual automobile use.
2. **Multi-Modal Transportation.** Taking advantage of Kona's consistently mild climate, a network of interconnected bike lanes, trails and sidewalks within and outside road right-of-ways would provide a healthy and green alternative to automobile use.
3. **Transit-Oriented Development (TOD).** The development of compact, mixed-use villages that would integrate housing, employment, shopping and recreation opportunities. Villages would be designed around transit stations/stops that would reduce the need for daily trips and financially support the expanded transit system.
4. **Multi-Purpose Design.** Beyond getting us from one place to another, our transportation corridors are major public spaces that must safely accommodate uses other than vehicular travel.
5. **Safety and Aesthetic Qualities.** Safety and aesthetic qualities need to play a larger role in improving existing and designing future roadways, in order to contribute to Kona's quality of life and tourism appeal.
6. **Affordable Housing.** Affordable housing located near major employment centers would serve to decrease the number of people who fill the roadways commuting long distances to work every day. (to be addressed in another section of this Plan)

Kaloko Makai is committed to Transit-oriented, Interconnected and Concurrent Transportation for its residents and community.

**Development of a Transit Station to Facilitate Mass Transit Use and Accessibility**

Kaloko Makai has been designated as a Neighborhood Transit Oriented Development (TOD) in the Official Kona Land Use Map of the Kona Community Development Plan. A transit station and TOD community on Ane Keohokālole Highway is an integral part of the multi-modal transit corridor called for in the Kona CDP.

Kaloko Makai is strategically located along the major regional traffic corridor of Queen Ka'ahumanu Highway, between the town of Kailua-Kona and the Airport. Likewise, it is centrally located on Ane Keohokālole Highway, which will run through the development; this is the major transit corridor called for in the Kona CDP.

Consistent with the policies and goals stated in the Kona CDP, Kaloko Makai will utilize TOD and Traditional Neighborhood Development (TND) to promote transit-oriented and pedestrian oriented development, decreasing vehicular transit use and facilitating the management of traffic congestion.

A transit station and compact TOD Village on Ane Keohokālole Highway is an integral part of the multi-modal transit corridor called for in the Kona CDP

The County of Hawai'i Mass Transit Agency provides an island-wide public bus transit system called Hele-On Bus. The Hele-On Bus currently provides bus service along Queen Ka'ahumanu Highway.

Kaloko Makai will incorporate a transit station at the center of the Kaloko Makai TOD on Ane Keohokālole Highway. To enhance efficiency of the transit station and allowing the ease of flow of the transit buses, component parts of the transit station will be constructed on either side of Ane Keohokālole Highway (across from each other.) Placement near the Kohanaiki Trail and new mauka-makai road will enhance accessibility of residents within Kaloko Makai.

The mauka component of the transit station will serve north-bound transit on Ane Keohokālole Highway; it will be situated in the Middle School/Park Neighborhood in the TOD between the Kohanaiki Trail and the new mauka-makai road through the Kaloko Makai project.

The makai component of the transit station will serve south-bound transit on Ane Keohokālole Highway; it will be situated in the Makai Elementary School/Park Neighborhood in the TOD between the Kohanaiki Trail and the new mauka-makai road through the Kaloko Makai project. A pedestrian crossing or crosswalk will be incorporated into the intersection of the new mauka-makai road and Ane Keohokālole Highway as a designated point to assist pedestrians wishing to cross.

The transit station will be a structure where buses stop to pick up and drop off passengers. It will be larger than a typical bus stop. A Park and Ride facility will be incorporated into the vicinity of the transit station; this will include storage for bicycles. Since Kaloko Makai is not a designated transit hub (a hub includes a major park and ride facility for commuters (primarily resort workers,)) the Park and Ride will be a reduced scale.

The transit station will be designed to accommodate safe and easy access for the various methods people will use to use the station including, walking, biking, driving and parking, kiss and ride, and other transit. Since this is a core central place for residents within Kaloko Makai, as well as those travelling to and through the community, public open spaces will be incorporated into the design, including parks, squares and plazas, streets and sidewalks.

**Multi-modal Interconnected Roads and Streets**

The TOD and TND within Kaloko Makai are compact mixed-use villages, characterized by a village center within a higher-density urban core, roughly equivalent to a 5-minute walking radius (1/4 mile), surrounded by a secondary mixed-use, mixed-density area with an outer boundary roughly equivalent to a 10-minute walking radius from the village center (1/2 mile).

Kaloko Makai incorporates multiple road interconnections with neighbors and Kaloko Makai is committed to concurrent construction of the Ane Keohokālole Highway and Kamanu Street realignment/extension through the project.





Kaloko Makai will incorporate a system of interconnected roads that will provide residents alternative transportation routes within the project. The internal circulation pattern will provide safe and convenient choices for drivers, bicyclists and pedestrians. Neighborhoods will be interconnected to popular destination and neighborhood cores (such as the transit station, hospital, shopping, schools and parks,) as well as the surrounding secondary areas.

The transit station will be a structure where buses stop to pick up and drop off passengers. A Park and Ride facility will be incorporated into the vicinity of the transit station; this will include storage for bicycles. Additionally bike racks of uniform design may be placed around the development to encourage alternative transportation.

Through recent legislation, the State of Hawaii Department of Transportation (HDOT) and county transportation departments are required to ensure the accommodation of all users of the road, regardless of their age, ability, or preferred mode of transportation. In addition, the concept of "Complete Streets" is prioritized where:

> "(T)ransportation facilities ... are planned, designed, operated and maintained to provide safe access and mobility for all users, including bicyclists, pedestrians, transit riders, freight and motorists".

In addition to providing vehicle access, roadway networks are a vital part of the livability of our communities. Complete streets will provide an ease of use and access to destinations by providing an appropriate path of travel for all users, and enhance the ability to move people and goods throughout the state and its counties. Additionally, complete streets principles will help contribute to a clean and secure energy future for Hawaii by offering flexibility and better accommodation for safe transit, walking, bicycling and alternate fuel vehicles that together, will decrease demand for imported oil.

Complete Streets are streets for everyone. They are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and public transportation users of all ages and abilities are able to safely move along and across a complete street. Complete Streets make it easy to cross the street, walk to shops, and bicycle to work. They allow buses to run on time and make it safe for people to walk to and from train stations.

The Kaloko Makai master plan integrates the natural features of the area, including the preservation of a historic Kohanaiki Trail as an interconnecting neighborhood pedestrian way, which starts outside of the project area and traverses through the Kaloko Heights project, through Kaloko Makai, down to Queen Ka`ahumanu Highway. The historic trail runs in the east-west (mauka-makai) direction through the project area and is an integral component of the project. Two school sites and multiple parks are proposed near the trail. Kaloko Makai will also incorporate two trails that run through the dryland forest into the pedestrian access ways.

**Economic Opportunities**

Kaloko Makai provides significant, on-going economic and fiscal benefits for residents of Hawai'i, as well as for the County and State governments. Development of facilities would generate employment and consequent income and taxes. In addition, by attracting new residents to the Island of Hawai'i and generating additional real estate sales activity, the Project is expected to support long-term impacts, including additional consumer expenditures, employment opportunities, personal income and government revenue enhancement.

During its first 20 years, Kaloko Makai's development is estimated to generate employment for some 1,000 to 1,200 full-time equivalent (FTE) persons annually, including positions created directly and indirectly by its development activities. In the final eight years or so of the Project's build out, after most of its major infrastructure would have been completed, Kaloko Makai is expected to support 800 FTE development-related jobs per year. All of these jobs would be located throughout the State, with greatest concentration on Island of Hawai'i.

The new development-related positions are expected to be associated with total personal earnings of some $1.66 billion over the Project's initial build-out, or $49 to $68 million per year. The earnings represent an average of about $58,000 per FTE job, including direct construction-related jobs as well as indirect and induced opportunities created throughout the economy.

By the time of its expected completion in 2045, the Project could be expected to have generated some 4,200 direct FTE jobs on-site at its retail, office, industrial, lodge and medical-related facilities. Because these on-site jobs would all be supported at Project components, they are all direct impacts; there are assumed to be no indirect or induced employment impacts on-site.

Personal earnings from the new operational positions will increase over time as more facilities and establishments are opened. New personal earnings are projected to total about:

- $28 million per year from late 2012 to late 2022,
- $86 million per year from late 2022 to late 2032,
- $119 million per year from late 2032 to late 2040, and
- After 2040, some $115 million per year on an ongoing basis.

Opportunities created by Kaloko Makai, particularly its professional, technical and managerial career opportunities, will create incentives for some neighbor islanders or former Hawai'i residents to move back to the State and/or to the Island of Hawai'i.

In addition, some of Kaloko Makai's homes could be expected to attract some households that previously lived off-island or out-of-state. These could include retirees as well as younger households.

The influences described above are estimated to result in perhaps 360 persons living on the Island of Hawai'i who might not otherwise have lived on the island (in-migration to the County) by late 2022, or up to 1,040 after Project completion in late 2045. Of this total, some 280 and 760 persons, respectively, might be persons who had previously lived out-of-state.





**On-Site Employment Generators**

The purpose of the Kaloko Makai project is to create a compact, mixed-use, master-planned community offering a wide range of housing types and affordability, and a variety of businesses and employment opportunities, focused around an initial urgent care medical facility with land available for a new Kona regional hospital. A Lodge and Business Center will support the commercial needs within the Transit Oriented Development (TOD) including the Hospital.

Hospital

Policy ECON–1.1 of the Kona CDP states that a hospital serves as a stimulus for the healthcare industry. It further states that Kona needs a new hospital to replace its existing outdated and out-of-place facility, and that the hospital should be located on Keohokālole Highway (Mid-Level Road) for optimum accessibility by automobile or transit. The Kona CDP encourages the private sector to negotiate a site for the hospital by granting any TOD designated as a Neighborhood TOD, automatic Regional TOD status.

Kaloko Makai is strategically located to incorporate the new hospital into its master plan and is actively pursuing a hospital developer/operator for the new facility. The Kaloko Makai development seeks to have a hospital developed within the project on a 40-acre site along Ane Keohokālole Highway. The site will also have access to Queen Ka'ahumanu Highway via Hina Lani Street and interconnecting roads (possibly also through adjoining Kohanaiki Business Park). A new regional hospital for Kona is projected to need approximately 100-150 total beds (with 150 targeted - which will include between 50-70 beds for medical surgery) to serve the growing West Hawai`i population.

Lodge and Business Center

The 120-unit Lodge and Business center will encompass approximately 5-acres of land. The Lodge and Business Center will be located at the TOD village core and cater to the business market. It's location within the core provides convenient walking access to the uses and activities, including the transit station.

The Kaloko Makai Lodge and Business Center will provide accommodations, restaurant services and business services in conjunction with the general business/leisure demands generated by the uses in the Kaloko Makai TOD and the surrounding community.

In addition, families and friends of patients, as well as visiting physicians and others associated with the Hospital, will have easy and convenient access to lodging near the Hospital. This can include out-of-town visitors, as well as local residents who want to be immediately near their loved ones in the hospital.

Whether or not the hospital is located in Kaloko Makai, its uses are anticipated in the region and the Kaloko Makai Lodge and Business Center will serve its needs.

Commercial Area

Kaloko Makai proposes up to 600,000-square feet of gross leasable area of various commercial uses at Kaloko Makai, including retail and office. This will include spaces in shopping centers, retail and office uses and mixed-use developments; approximately 75-acres are proposed for industrial use. The first finished commercial or industrial building products are assumed to be available for use in about 2015.

In addition to the primary uses noted above (Hospital and Lodge,) Kaloko Makai proposes several areas for commercial uses that, ultimately, will serve to promote and provide a variety of job opportunities. Together, the proposed developments would create a substantial residential, civic and employment center, generating myriad opportunities for community life as well as employment in professional, business, service and retail fields for island residents.

Considering the Project's direct, indirect and induced impacts statewide, Kaloko Makai could alternatively be seen to have generated some 2,300 permanent, on-going FTE jobs. These are positions that might not have existed had the Project not been developed. These "net new" jobs could include shares of the professional, technical, managerial and other staff positions at the new hospital, other medical facilities, office and retail areas; sales and marketing positions supported by the on-going resales and releasing of property at the Project; positions generated at the business and kama`aina-oriented lodge; and myriad other positions generated throughout the economy.





**Open Space and Parks**

Kaloko Makai holds respect for the environment by interlinking natural features, open space and cultural features as core components of the community; the historic Kohanaiki Trail runs through the entire length of the project and will be incorporated as an integral component of the project, interconnecting the neighborhoods; a dryland forest preserve will protect and preserve endangered plants in perpetuity.

There will also be generous open space features including approximately 279-acres of parks and open space consisting of 72-acres of open space, 58-acres of parks, and preservation of the 150-acre Kaloko Makai Dryland Forest Preserve.

Numerous active and passive recreational areas are incorporated into the Kaloko Makai project. Neighborhood and District-scale parks provide opportunities within the residential-oriented TODs.

The residential-focused Kaloko Makai TOD neighborhoods are centered and focused on schools, each school site has its own DOE-scaled playground; in addition, approximately 10-acres of added recreational space adjoin each of the Kaloko Makai School sites. This additional area will be available for community recreation, meeting and other uses.

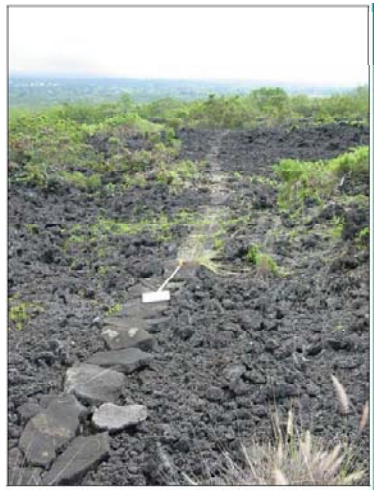
Varied active and passive uses include soccer fields, baseball fields, community meeting areas, tot lots, daycare centers, senior centers, among others will be included in these additional parks adjoining each school site.

To further complement the recreational opportunities, Kaloko Makai will include a makai district-scale park that will include playfields, multi-purpose building, courts (basketball, tennis, volleyball), tot lot, etc.

Approximately 58-acres of park space is planned, including the 30-acres of park space adjoining each of the Kaloko Makai school sites.

The Kaloko Makai master plan integrates the natural features of the area, including the preservation of a historic Kohanaiki Trail as an interconnecting neighborhood pedestrian way.

The historic Kohanaiki Trail starts outside of the project area and traverses through the Kaloko Heights project, through Kaloko Makai, down to Queen Ka`ahumanu Highway. The historic trail runs in the east-west (*mauka-makai*) direction through the project area.



Kaloko Makai will also incorporate two trails that run through the dryland forest (one is shown above)

Other significant archaeological features are found in the northwest section of the property. In order to preserve and protect these features, the area will be left in a natural state, with pockets of low-density residential interspersed in the area. This open space also helps to serve as a mauka greenbelt (GB1) to the Kaloko Makai TOD.

The Kaloko Makai master plan also integrates a 150-acre preservation area for a native dryland forest located on the southern portion of the project site. This open space will also serve as a southern greenbelt (GB1) to the Kaloko Makai TOD.

From Ane Keohokālole Highway down to Queen Ka`ahumanu Highway, Kaloko Makai will set aside a 100-foot buffer that fronts Hina Lani Street. This open space also helps to serve as a greenbelt (GB1) to the Kaloko Makai TOD.

Significant archaeological and cultural sites, which include historic trails, will be integrated into the master plan. Archaeological and cultural sites will be protected and maintained with appropriate treatment and buffers from adjacent uses, as necessary.





**Water Management**

As an overarching philosophy in all source alternatives, Kaloko Makai is committed to water conservation strategies to reduce consumption, conserve resources and minimize water use. The goal is to reduce the total water use through a combination of water saving equipment and strategies.

A number of measures may be implemented to facilitate end-user conservation, including water restrictions during drier periods, public education and more efficient landscaping practices. Consumption could be significantly reduced through end-user conservation.

Efficient fixtures and appliances will reduce indoor water use. The water distribution system will be maintained to prevent water loss and homeowners and businesses will be encouraged to maintain fixtures to prevent leaks. Landscaping will emphasize climate-adapted native and other appropriate plants suitable for coastal locations. Best management practices will be designed and implemented to minimize infiltration and runoff from daily operations.

**WaterSense**

WaterSense, a partnership program by the U.S. Environmental Protection Agency, seeks to protect the future of our nation's water supply by offering people a simple way to use less water with water-efficient products, new homes and services. WaterSense brings together a variety of stakeholders to:

- Promote the value of water efficiency.
- Provide consumers with easy ways to save water, as both a label for products and an information resource to help people use water more efficiently.
- Encourage innovation in manufacturing.
- Decrease water use and reduce strain on water resources and infrastructure.

The program seeks to help consumers make smart water choices that save money and maintain high environmental standards without compromising performance. Products and services that have earned the WaterSense label have been certified to be at least 20 percent more efficient without sacrificing performance.

If one in every 10 homes in the United States were to install WaterSense labeled faucets or faucet accessories in their bathrooms, it could save 6 billion gallons of water per year, and more than $50 million in the energy costs to supply, heat, and treat that water!

**Water Efficient Fixtures**

Water is a finite resource—even though about 70 percent of the Earth's surface is covered by water, less than 1 percent is available for human use. Each American uses an average of 100 gallons of water a day at home. We can all use 30 percent less water by installing water-efficient fixtures and appliances. The average household spends as much as $500 per year on their water and sewer bill and can save about $170 per year by installing water-efficient fixtures and appliances.

Water-efficient fixtures reduce water and sewer costs, reduce demand on water supplies and treatment facilities, and reduce heating energy consumption and associated greenhouse gas emissions.

***High efficiency toilets:*** (HETs) reduce flush volumes by no less than 20% compared to conventional ultra-low flow (ULFT) toilets. Dual-flush HETs allow users to choose one of two flushes: liquids or solids. In actual operation, dual-flush HETs average about 1.2 to 1.4 gpf. Pressure-assist HETs use a pressurized tank that creates for a more forceful flush with less water.

***Faucets:*** Water flow is reduced by ***Flow limiters*** which are built into the faucet or are installed as after-market fittings. Aerators or laminar flow devices are types of flow limiters.

- Aeration injects air into the stream of water, displacing much of the water content.
- Laminar flow uses multiple small diameter parallel streams of water that are not aerated.

***Flow control valves*** can limit water flow down to 1.5 to 0.5 gpm per side (hot and cold).

***Showerheads:*** Federal law since 1994 mandates that all showerheads sold in the United States use 2.5 gpm or less. Despite this, some showerheads actually use much more than 2.5 gpm, and shower towers that include multiple showerheads or jets can total 12.5 gpm or more. A better option is a good quality low-flow showerhead designed to use 2.0 gpm or less while providing a satisfying shower.

**Groundwater**

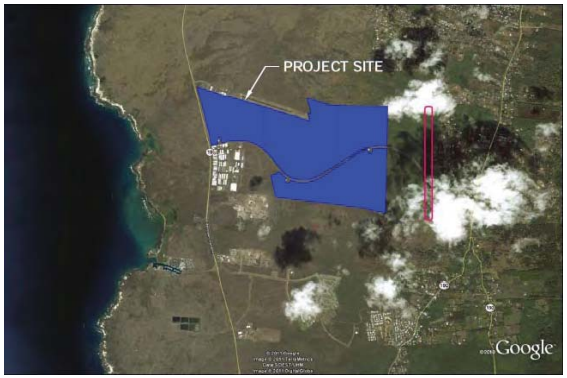
The preferred alternative for potable water for Kaloko Makai is via mid-elevation on-site wells situated at approximately the 750-foot elevation. These wells will be drilled to tap into freshwater that is found at depth, through the traditional basal lens, as well as through the underlying seawater below the brackish lens, to a layer of fresh water below these two layers.

An underlying fresh water layer was found in the State's monitor well, as well as apparent evidence from the recently drilled well at Kamakana Villages project, to the south of Kaloko Makai. In the event treatment is required, as an extension of the preferred alternative, an on-site treatment facility will desalinate the water to potable standards.

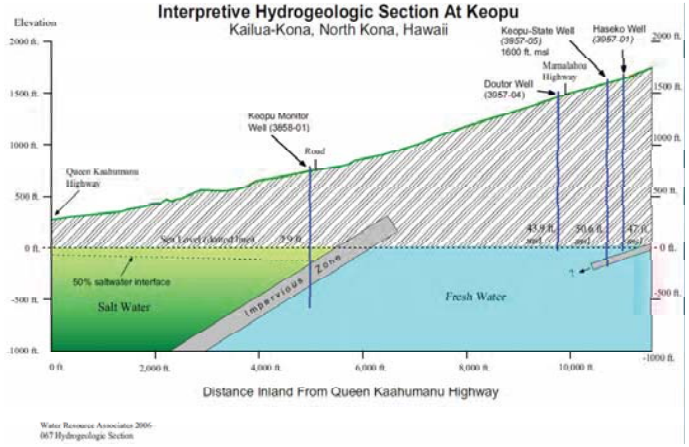
Three to four mid-level on-site wells will be drilled at an elevation of approximately 750-feet, on the project site. These wells will be drilled to tap into freshwater that is found at depth, through the traditional basal lens, as well as through the underlying seawater below the brackish lens, to a layer of fresh water below these two layers.








While potable water is expected from these on-site mid-level wells, in the event the water does not meet DOH standards for domestic use (i.e. too saline,) then the groundwater will be desalinated in an on-site desalination facility; this is an extension of the preferred alternative for water source for the Kaloko Makai project.




The proposed water system will be subject to regulation as a public water system and will meet conditions of the State Department of Health, including HAR Chapter 11-20, 11-21 and 11-25. The desalination water system will have no impact on potable or brackish groundwater. Likewise, it will not affect nearshore waters and will not affect groundwater used by neighboring projects or anchialine pools and fishponds in the area, including nearby Kaloko-Honokōhau National Park.

**Storm and Surface Water Runoff**

The project's proposed drainage system will be designed to minimize impacts to near shore coastal waters. Water quality treatment and detention basins will be built to prevent runoff and sedimentation from impacting groundwater resources.

Prior to the occupancy of any residential or commercial unit within the project, Kaloko Makai shall implement and maintain storm and surface-water runoff BMPs, subject to any applicable review and approval of the State DOH, designed to prevent violations of State water quality standards as a result of storm-water discharges originating from the project. These BMPs will be documented in a declaration of covenants, conditions and restrictions that will be recorded against the property and will run with the land.

The drainage system along Hina Lani Street consists of roadside swales with disposal in drywells. Kaloko Makai proposes a 100-foot wide natural greenbelt that will adjoin the north side of Hina Lani Street, from Ane Keohokālole Highway to Queen Ka'ahumanu Highway. In addition, the makai district-scale park may serve as a collection basin for any excess water.

Potential water quality impacts during construction of the project will be mitigated by adherence to State and County water quality regulations governing grading, excavation and stockpiling. The County's grading ordinance includes provisions related to reducing and minimizing the discharge of pollutants associated with soil disturbing activities in grading, grubbing and stockpiling.

Construction BMPs will be utilized in compliance with County ordinances pertaining to grading, grubbing, stockpiling, soil erosion and sedimentation during construction. BMPs will also be implemented for long term development and operation of activities occurring on the site as part of pollution prevention measures.

BMPs include storm water runoff and non-storm water sources control measures and practices that will be implemented to minimize the discharge of erosion and other pollutants from entering into the receiving State waters. The erosion control plan for the proposed project include temporary and permanent control measures BMPs that will be implemented in accordance with Chapter 10 of the Hawai'i County Code.

Post construction BMPs to prevent erosion and storm water runoff after construction is completed includes the installation of drain inlets and shallow drywells within the project site, and landscaping and grassing of disturbed areas.

Prior to occupancy, Kaloko Makai will implement and maintain storm and surface-water runoff BMPs, subject to any applicable review and approval of the DOH. Those BMPs will be designed to prevent violations of State water quality standards as a result of storm-water discharges originating from the Project.

Kaloko Makai will develop a pollution prevention plan ("PPP") that provides BMPs, including structural BMPs, for pollution prevention that address all categories of permitted uses within the project, and will address environmental stewardship and the non-point sources of water pollution that can be generated from any uses allowed within the Project.





There will be an emphasis on BMPs that prevent or limit pollutants arising out of the permitted uses within the Project from reaching the groundwater and ocean.

Kaloko Makai will be consistent with the Kona CDP Policy PUB–4.7: Urban Stormwater Management, by developing a Stormwater Management Program and Stormwater Management Guidelines that will regulate development and establish standards for public projects. The evolution of this program shall consider the following:

(a) a connected hierarchical overflow system where overflows from 10-year storm facilities (e.g., drywells) are directed to higher-capacity flood management systems, so that the total system can safely accommodate a 100-year storm;
(b) use of natural drainageways and retention areas to the extent possible to maximize infiltration (groundwater recharge), filtration, and settling;
(c) multi-purpose use of the higher-capacity (e.g., 25-year, 50-year, 100-year) flood management facilities for recreation or other uses since these areas will flood infrequently;
(d) engineered "natural" flow ways to direct the sheetflow runoff into more defined drainageways;
(e) onsite retention measures, such as rainwater harvesting methods;
(f) street standards that minimize runoff and transport of sediment and contaminants;
(g) watershed management system perspective;
(h) Based on the Stormwater Management Program, existing and proposed Stormwater management flow ways and facilities shall be shown on the Official Public Facilities and Services Map, especially those maintained by the County.

**Wastewater**

Kaloko Makai will construct and operate an on-site Wastewater Treatment Plant (WWTP) within the project. The WWTP will be designed to reduce the concentrations of the following compounds in the effluent of the Private WWTP to: Total Nitrogen ("TN") to a concentration of <5 mg/l, and Total Phosphorous ("TP") to a concentration of <2 mg/l (aerobic nitrification processes combined with anoxic/anaerobic sand filters to perform denitrification, or comparable technology). The WWTP will be subject to conditions of approval by the DOH, including any lower concentrations of TN and/or TP in the effluent, and HAR Chapter 11-62.

Effluent disposal for the Private WWTP shall be in accordance with all applicable laws. Monitoring of the WWTP will be pursuant to the annual reporting requirements of the DOH, Wastewater Branch, and shall include a monthly summary of concentrations of TN and TP in the effluent, the volume of recycled water used, the volume of recycled water stored, the volume and location of any recycled water spills, volume of any reject wastewater, and details on the irrigated areas including water budgets, precipitation, evaporation, application rates and monitoring of best management practices.

An on-site WWTP will be self-sufficient, water efficient and environmentally sound. The Kaloko Makai facility will treat the wastewater to provide recycled (R-1) water for general irrigation within Kaloko Makai and thus lessen demand for potable water for irrigation needs. This reuse of treated wastewater is consistent with the Kona CDP which has an action designating the area below Ane Keohokālole as a reclaimed wastewater zone (Action TRAN–3.3a: Designates the reclaimed wastewater zone (Wastewater Re-use Area) on Figure 4-10c Official Public Facilities and Services Map.)

Kaloko Makai will develop a groundwater monitoring plan, to detect contaminants in the groundwater below the Project. The groundwater-monitoring plan will include monitoring wells and a sampling and analysis plan.

Parameters to be analyzed will include pH, temperature, salinity, nitrate, ammonia, dissolved organic nitrogen, TDS, TN, phosphate, dissolved organic phosphorus and TP and any other parameters required by the DOH. The sampling frequency shall begin prior to the start grading activity, and shall be conducted quarterly for two years, or as required by the DOH.





**Energy Management**

At full build out, the annual electrical demand for Kaloko Makai is expected to reach a maximum of approximately 204 million kilowatt-hours. This is an estimated figure that does not account for potential demand reductions corollary to energy efficiency and conservation measures, such as the use of solar photo-voltaic systems.

HELCO has specified that the current nearby Kaloko substation will not satisfy the needs of the project, and the demands of the project will require an extension of an existing 69,000 volt transmission line along Queen Ka'ahumanu Highway to a new on-site substation. Further, on-site distribution line extensions and easements will be required to service the projects anticipated load. Kaloko Makai will collaborate directly with HELCO to determine, plan, and execute any facility expansion requirements. Subterranean electrical distribution systems are expected to be standard throughout Kaloko Makai.

Pursuant to Chapter 344 (State Environmental Policy) and Chapter 226 (Hawai'i State Planning Act), HRS, all Kaloko Makai activities, buildings and grounds will be designed with a significant emphasis on energy conservation and efficiency. Efficient design practices and technologies will be the cornerstone of Kaloko Makai's design phase.

Buildings within Kaloko Makai will further comply with the County of Hawai'i Energy Code (Hawai'i County Code, Section 5, Article 2). Furthermore, solar water heaters will be utilized as made requisite under Section 196-6.5, HRS. Kaloko Makai will confer with HELCO in regards to suggestions and proposals for customized demand-oriented management programs offering rebates for the installation of alternative energy efficient technologies and measures

Kaloko Makai is committed to renewable energy and energy efficiently as ways to reduce environmental harm and self sufficiency. Kaloko Makai will continue to improve programs and create new programs as the development is initiated.

Residents of the State of Hawaii pay the highest electricity rates in the US. The average American paid 10.5 cents/kWh in 2010. In the state of Hawaii, Oahu currently has the lowest residential electricity rates, while Lanai has the highest. Residential rates on Hawaii Island average between 37-40 cents/kWh. Hawaii relies on imported oil for approximately 76% of its total electricity production. The price variation across the state is largely a result of difference in power plant efficiencies, power purchasing agreement and other infrastructure.

The Hawaii Electric Light Company ("HELCO") is the sole electric utility on Hawaii Island. Its power grip is not connected with that of any other island but is part of the Hawaiian Electric Company (HELCO), which also owns the utilities on Oahu, Maui, Lanai and Molokai. HELCO provide electricity for approximately 77,000 customers on the island. Most of the system's electricity generation (69%) comes from fuel oil and naphtha.

Over 70% of electricity generation and virtually all transportation fuel currently use imported petroleum products. Gasoline prices are among the highest in the nation. Kona has one power plant, the Keāhole Power Plant, which currently uses imported petroleum diesel.

In 2009 the State Legislature codified the need for energy efficiency by enacting the statewide energy efficiency portfolio standard with a target of reducing energy consumption by 30% of forecasted energy consumption by 2030 (4,300 GWh) and beginning the process for separating efficiency from the existing renewable portfolio standard.

The Energy section of the Kona CDP identifies that objectives, policies and actions that will guide Kona toward energy sustainability. Energy is a key component for achieving a sustainable community, which is a guiding principle of the Kona CDP. In that regard, it supports other sections of the Kona CDP, particularly Housing; Transportation; Land Use; and, Public Facilities, Infrastructure and Services.

Energy policies have a pervasive influence on other related policies:

Housing

- Energy policies can lower residents' energy costs for housing and commuting, thereby providing more funds for home financing or renting;

Transportation and Land Use

- Transportation and Land use policies that reduce dependence on the automobile through compact, walkable, mixed use, villages and expansion of the transit system also reduce fuel consumption;

Environment

- Global warming - Energy policies that support energy conservation and replacement of fossil fuels with renewable energy sources reduce greenhouse gas emissions;
- Open space - Energy policies provide further justification to preserve forests and other natural open spaces that lower air temperature and remove ("sequester") carbon dioxide;

Economy

- Energy policies can stimulate new local business opportunities (e.g., solar water heater installers, 3rd party distributed energy providers). Additionally, savings from energy conservation measures translate into more disposable income for individuals and working capital for businesses. The dollars from new local businesses, disposable income spending, and working capital re-circulate in the local economy, thus creating more economic benefit than importing from foreign sources.

The overall strategy for the Kona CDP energy policies is to reduce per capita demand and move toward renewable energy sources. Kaloko Makai will support this strategy by employing the following where feasible:

**Energy Efficiency in Transportation**

- Creating compact, mixed use walkable communities which in turn reduce transportation fuel usage.
- Integrating mass transit station within the Kaloko makai development to help facilitate the expansion of the County's mass transit system.





**Energy efficiency in homes and buildings**

- Hawai'i Revised Statutes section 46-19.6 requires all county agencies to place a "priority on processing of permit applications for construction projects incorporating energy and environmental design building standards."

To reduce net energy consumption and demand, Kaloko Makai will consider the implementation of elements of the United States Environmental Protection Agency (EPA) Energy Star Program; including efficient insulation, high performance windows, compact construction, efficient ventilation systems, and energy efficient lighting elements and appliances. Kaloko Makai will furthermore seek to harness energy conservations and technologies to facilitate the possibility of net energy metering in building design to empower residents and tenants to reduce their electricity costs and provide energy back to the grid.

Energy conservation and efficiency measures will be implemented and emphasized where applicable in the design of Kaloko Makai. Energy-efficiency technologies to be considered include:

- Solar energy for water heating
- Photovoltaic systems, fuel cells, biofuels and other renewable energy sources
- Optimal utilization of daytime sunlight
- High efficiency light fixtures
- Roof and wall insulation, radiant barriers and energy efficient windows
- Optimized air-flow
- Installation of heat resistant roofing
- Intelligent Landscaping to provide for shading, dust control, and heat-mitigation
- Portable solar lighting (i.e. parking lots)

**Health and Active Lifestyles**

Through the layout and design of Kaloko Makai, there is an overall opportunity for a positive effect on the health of its residents. Communities that make it easy and safe to walk and ride bikes are opening the door to a wide range of health benefits for their residents. They are reducing barriers to being physically active and helping individuals integrate physical activity into their daily lives.

Active living is a way of life that integrates physical activity into daily routines. For individuals, the goal is to get a total of at least 30 minutes of activity each day by, for example, walking, bicycling, playing in the park, working in the yard, taking the stairs or using recreation facilities. For communities, the goal is to provide opportunities for people of all ages and abilities to engage in routine physical activity and to create places and policies that encourage better physical health.

The burden of physical inactivity:

The Problem:

- 25% of adults are sedentary
- 60% of adults not active enough

The Outcome:

- Obesity, cardiovascular disease, cancer, diabetes, depression
- Physical inactivity is a primary factor in over 250,000 deaths annually.
- Medical costs associated with physical inactivity and its consequences may exceed $76 billion annually. (hawaii.gov/health/healthy-lifestyles)

Walkable and bikable communities increase active living. Active living can improve health by:

- Reducing the risk of dying prematurely.
- Reducing the risk of dying from heart disease.
- Reducing the risk of developing diabetes, colon cancer and high blood pressure.
- Reducing feelings of depression and anxiety.
- Helping control weight.
- Helping build and maintain healthy bones, muscles and joints.
- Promoting psychological well being. (Michigan Department of Community Health)

Growing body of evidence:

- San Diego study: 70 minutes more physical activity/week among residents in walkable neighborhood; 35% vs. 60% overweight (Saelens, Sallis, et. al. 2003)
- 6 lb weight difference in sprawling vs. compact counties
- King County study: 5% increase in neighborhood's "walkability index" correlated with 32% increase in active transportation; 0.23 point reduction in BMI (Frank, Sallis, et. al. 2006) (hawaii.gov/health/healthy-lifestyles)

Community Design Policies Work! The Task Force on Community Preventive Services concluded that:

- Community-scale policies & design are effective
  - Zoning for compact, mixed-use development
  - Transit-oriented development
  - Policies related to street design & connectivity





- Street-scale policies & design are effective:
  - Traffic calming
  - Street lighting
  - Improving street crossings (hawaii.gov/health/healthy-lifestyles)

**Health Care Facilities**

Kona Community Hospital (KCH) is the primary health care facility serving West Hawai'i. KCH is a 94-bed full-service medical center; including 49-beds Acute, 34-beds Skilled Nursing/Long Term Care, and an 11-bed Psychiatric Unit. It is located in Kealakekua, Kona, 18 miles south of Kona International Airport.

KCH is part of the State of Hawai'i's public hospital system, operated by the Hawai'i Health Systems Corporation (HHSC). HHSC is a public benefit corporation governed by a 13-member Board of Directors whose responsibility is to develop policies, procedures, and rules necessary to plan, operate, and manage the 13 facilities included in the State's public hospital system.

KCH employs approximately 475 employees. There are a little over 60 active medical staff members representing a wide variety of medical specialties. Approximate annual workload consists of over 4,000 acute inpatient admissions, nearly 500 births and over 15,000 emergency room visits.

In 2010, KCH was designated a Level III emergency center. Under this program, first responders alert the emergency room to the arriving trauma patients; a trauma announcement is made at the hospital and team members assemble in the emergency room prior to the patient's arrival.

Another medical facility in the region is the North Hawai'i Community Hospital in Waimea. The hospital has 50 beds and provides a full spectrum of acute care services, including a 24-hour emergency room, medical/surgical care, obstetrical/gynecological care, cardiac care and long-term care.

Kaloko Makai has offered to provide 40 acres of land located along Ane Keohokālole Highway for the development of a regional hospital. Applicant will not be developing the hospital, but several entities have been approached to undertake the development. Applicant will continue to pursue a hospital developer, and will continue dialog with those entities on the potential development of the new regional hospital/medical center at Kaloko Makai.

The proposed project will increase the demand on the existing medical and emergency services in the North Kona region. Kaloko Makai is strategically located to incorporate the new hospital into its master plan and is actively pursuing a hospital developer/operator for the new facility. The Kaloko Makai development seeks to have a hospital developed within the project on a 40-acre site along Ane Keohokālole Highway. The site will also have access to Queen Ka'ahumanu Highway via Hina Lani Street and interconnecting roads (possibly also through adjoining Kohanaiki Business Park). A new regional hospital for Kona is projected to need approximately 100-150 total beds (with 150 targeted - which will include between 50-70 beds for medical surgery) to serve the growing West Hawai'i population.

Since the existing hospital in Kona (Kona Community Hospital) is under the direction and control of HHSC, Kaloko Makai representatives have been in regular discussions with management of that facility and leadership within HHSC. Kaloko Makai initiated discussion with HHSC because development and operation of a new hospital will affect the Kona Community Hospital.

The intent is to work with HHSC and Kona Community Hospital in a collaborative, rather than competitive, approach for the new Hospital. Kaloko Makai will continue dialog with Kona Community Hospital and HHSC leadership and others on the future planning for the new regional hospital/medical center at Kaloko Makai.





Part of these discussions led to a May 23, 2011 letter from Stanford Carr to Bruce Anderson, President and CEO of HHSC where land was offered to HHSC for a new hospital. In part, the letter states, "This letter is to confirm that SCD - TSA Kaloko Makai LLC is willing to convey to the State, HHSC or other appropriate entity, at no cost, 40-acres of land within the Kaloko Makai project for a new regional acute care Hospital."

The letter from Stanford Carr to Bruce Anderson, offering the land to HHSC, goes on to state: "As noted in the recently adopted Kona Community Development Plan (Kona CDP,) Kona needs a new hospital to replace its existing outdated and out-of-place facility. The Kona COP states that the new hospital should be located on the Ane Keohokālole Highway (midlevel road) for optimum accessibility by automobile or transit in this future growth area."

"Given Kaloko Makai's placement on Ane Keohokālole (the region's primary trunk transit corridor,) designation as a Transit Oriented Development (TOD) in the Kona CDP (with a rebuttable presumption of land use conformity,) available land for Hospital use, as well as available surrounding land that is planned for commercial office and related uses that can support a Hospital medical complex, the Kaloko Makai site is an excellent choice for a new Kona acute care Hospital."

"As was discussed with our representatives, the Kaloko Makai project layout positions the Hospital complex on Ane Keohokālole Highway. In addition, our proposed layout surrounds this site with supporting commercial uses. We have discussed these uses with the Hawai'i County Planning Department and others within the Kona Design Center and have received favorable comments regarding our project layout and proposed uses."

In response to this letter, HHSC CEO Bruce Anderson stated in a July 20, 2011 letter to Stanford Carr:

"On behalf of the Hawai'i Health Systems Corporation Board of Directors, I want to express our appreciation and assure you that we are taking your offer seriously and are excited about the prospect of a future new facility at Kaloko Makai."

"The need for a new facility is recognized in the West Hawai'i Region HHSC Strategic plan. The suggested start date for planning such a facility in this plan is 2012. The proposed site is also consistent with the Kona Community Development Plan. Therefore, pursuant to your offer, the HHSC West Hawaii Regional System Board has directed its Strategic Planning Committee to evaluate your offer and the proposed site for a new hospital."

"We agree with you that a new regional hospital at Kaloko Makai would likely replace some of the services that are presently provided at Kona Community Hospital. It is envisioned that the existing facility will remain open, transitioning from providing mostly acute care to long-term care, as well as providing other medical services to the South Kona community."

"We appreciate the time your staff has given us in describing the project and the proposed hospital site and we look forward to continued discussions on this exciting opportunity."

Kaloko Makai representatives have met with and presented information on the Kaloko Makai project to the HHSC West Hawai'i Regional Board and the West Hawai'i Regional Board Strategic Planning Committee. Those discussions are on-going.

Kaloko Makai will continue dialog with Kona Community Hospital and HHSC leadership and others on the future planning for the new regional hospital/medical center at Kaloko Makai.

The new hospital construction at Kaloko Makai will very likely be done in phases with the possibility of developing an urgent care/out-patient emergency center first, then phasing, over time, into a full hospital/medical center facility with associated medical services, including long-term care. Ultimate build-out and operation of a hospital will likely involve a public-private partnership.

Ultimately, Kaloko Makai intends to continue discussions with HHSC and KCH concerning the new hospital at Kaloko Makai. Any new hospital may impact the future operations of KCH. A transition plan needs to be developed for the ultimate use of the KCH.

A new regional hospital at Kaloko Makai will likely replace some of the services (primarily the acute care medical surgery) that are presently performed at KCH. It is envisioned that KCH will remain open, transitioning out of acute care and into a long-term care facility. In addition, the existing KCH emergency room, some outpatient services, oncology and imaging will remain at KCH.





**Education**

Schools servicing the project area include Kealakehe Elementary, Kealakehe Intermediate and Kealakehe High Schools located approximately two (2) miles to the southeast.

The elementary school's capacity is 1,064 students, and the 2009/2010 school year enrollment was 946 students (Department of Education, 2010a). Kealakehe Intermediate School, with facilities for 1,078 students, has an enrollment of 850 students (Department of Education, 2010b). Kealakehe High School opened in 1997, and currently has a student body numbering 1,610 (Department of Education, 2010c).

The proposed project will generate increased demand on student enrollment within the region. The Applicant will dedicate land to the DOE for three sites in selected locations, anticipated to be comprised of two elementary schools and one middle school, as well as provide for all required offsite infrastructure.

Based on the proposed components within the Kaloko Makai project, full build-out (after the 30-year development and marketing period) population estimates indicate that approximately 12,000 to 15,000 people will live at Kaloko Makai.

Applying DOE criteria for student generation estimates, after the 30-year build-out (the year 2040), the 5,000-units proposed in Kaloko Makai will generate an estimated stabilized student body of approximately 1,207 school-aged children. This is broken down as approximately 641-Elementary School, 275-Middle School and 291-High School students.

In 2009, the Board of Education adopted a policy on School Design Enrollment Guidelines. In that policy, the following enrollment and land area guidelines were established:

**BOE Policy on School Design Enrollment Guidelines**

| School Type | Enrollment | Usable Land Area |
|---|---|---|
| Elementary (K-5) | 400 - 750 | 8 - 15 |
| Middle (6 - 8) | 500 - 1,000 | 15 - 20 |
| High (9 - 12) | 800 - 1,000 | 50 |

Given these parameters, Kaloko Makai generates the need for an Elementary School but falls short of the BOE suggested guidelines for a Middle and/or a High School.

School campuses can and should be the center of a community. The core focus of the Kaloko Makai neighborhoods are its schools and adjoining parks which serve as civic spaces, neighborhood centers and gathering places for arts, culture, education and recreation.

Several schools are proposed within Kaloko Makai, each within the neighborhood pedestrian shed and easy walking distance for neighborhood residents. Kaloko Makai is setting aside approximately 42-acres for three schools, proposed to be two elementary schools and one middle school.

School sites include buildings and facilities, plus school-associated playgrounds It is envisioned that each school, in conjunction with the adjoining park, will serve as a draw to bring the community into a multi-generational learning center that provides life-long learning opportunities and interaction of the residents within the community.

Consistent with the policy on education within the Kona CDP (Public Facilities – PUB-6.3a,) Kaloko Makai will seek cooperation with the State Department of Education (DOE) for joint use of school facilities for recreational and community uses.

The goal is to draw all segments of the community to the school, throughout the day, rather than limit their use for the children during the weekday school hours.

Rather than stand-alone, children-based facilities that tend to serve only a portion of the population, Kaloko Makai schools will seek to encourage community access and use for all of the schools, after the DOE school day. This will make for more efficient use of limited public resources, as well as bring the community together into central, core facilities.

While the scale of fixtures and equipment in elementary schools may not be applicable for adult use, school cafeterias may serve a dual role as community gathering place and meeting halls. Likewise, school libraries and other meeting rooms may further drive wider community use.





**Housing**

Kaloko Makai is planned to respond to the market and demographic trends as well as the community needs across the region. It will serve a County population that is changing rapidly in terms of size, geographic dispersion, age profile and lifestyle. It will deliver needed homes in a diverse, planned community.

The majority of homes at Kaloko Makai would be offered in compact or multifamily settings, in adherence with the draft Kona Village Design Guidelines. The conceptual plan shows the maximum proposed inventory of 5,000 units, of which approximately 4,014 could be multifamily products and about 986 a range of single-family products.

Unit types and market focus include lots, single-family, live-work and multi-family, available to market, gap group, worker housing and affordable. The exact mix of units by type will be determined upon finalizing agreements with government agencies and during the years of build-out, as market conditions and preferences materialize.

The North Kona area is appropriately seeing urban infill development and proposals, consistent with the 2008 Kona Community Development Plan and the 2010 draft Kona Village Design Guidelines. Kaloko Makai is strategically located along the major regional traffic corridor Queen Ka'ahumanu Highway, between the town of Kailua-Kona and the Kona International Airport.

This rapidly developing area comprises the northwestern portion of the North Kona District and is the residential, commercial and industrial heart of West Hawai'i. The area has a long-standing and growing residential base and will continue to be the focus of residential and related development as the Island's population grows.

Currently entitled projects are estimated to yield up to 8,200 of the potential demand for 17,800 housing units in the market area by 2045, if they are built out within this time frame and developed to the maximum levels of their respective current plans and entitlements.

Despite an assumed strong and sustained rate of new home production, entitlements within the market area account for only about half the projected need. Therefore, without further land entitlement, the area could still face an approximately 9,600-unit shortage by 2045.

Kaloko Makai will include the proposed development of up to 5,000 new single- and multi-family residential lots and units at low- and medium-densities, centralized commercial and neighborhood centers, recreational facilities (e.g. parks, trails, open spaces), urgent care medical facility, two elementary schools, a middle school and associated infrastructure (e.g., new roadways, utilities, drainage, wastewater and potable water distribution systems). Affordable housing will be provided in accordance with County of Hawai'i requirements.

The project will serve a County population that is changing in terms of size, geographic dispersion, age profile and lifestyle. Over the course of approximately 30 years Kaloko Makai will deliver the anticipated needed homes in a diverse, planned community.

Furthermore, Kaloko Makai will respond to varying spectrums of demand for housing within the North Kona/South Kohala area by providing a wide range of housing opportunities inclusive of affordable housing alternatives. Kaloko Makai will seek to create and sustain a mixed-income community allowing for unparalleled social diversity.

The first residential product at Kaloko Makai is projected to be available for sale in 2015. Thereafter, it is anticipated that the 5,000 maximum proposed units, homes and lots could be absorbed over approximately 30 years at an average rate of 170 units per year.

The production and pricing of affordable units at the Project would be set in accordance with County and/or State guidelines to be determined in consultation with government agencies. The Project is expected to have 1,000 affordable for-sale housing units. The units would be priced with specific shares catering to households earning less than 80%, 80 to 100% and 100 to 120% of the County median income. Average affordable unit sales price (in 2010 dollars) would be $284,500.

The balance of homes at Kaloko Makai will be its 4,000 "market" homes, ranging from traditional single-family homes to mixed use, mid- and higher-density multifamily units. Average home sales price for market units (in 2010 dollars) would be $396,000.

**Anticipated Buyer Markets**

The proposed products respond to the market opportunities identified above as follows:

**Entry-level markets** – Those units designated as affordable units, as well as many of the multifamily market units are conceived to appeal to entry-level markets, typified by the rapidly increasing 25- to 34-year-old Echo Boom cohort in the 2010 to 2020 period.

**Move-up markets –** Kaloko Makai's single-family products could appeal to move-up markets and growing families.

- The first level move-up market, typified by persons aged 35 to 44, is projected to grow particularly rapidly in the 2020 to 2030 period as the Echo Boomers mature.
- A more affluent move-up market could also be attracted to the views, convenient location and lifestyle offerings at Kaloko Makai.

**Downsizers** – Kaloko Makai's more compact single-family and some of its multifamily units are seen to appeal to the Baby Boomer cohort that is looking to simplify its lifestyle, lessen homeowner commitments and enhance access to town amenities. This market may overlap with the retiree segment described below.

**Retirement/senior markets** – All of the multifamily units and some of the single-family product could appeal to retiree markets. The age 70+ population will be a rapidly increasing age classification especially towards the latter years of Kaloko Makai's marketing.

Based on the Project location, development concept and the comparison projects surveyed, some 75% of Kaloko Makai residents are anticipated to be long-term Island residents. However, some product types could also appeal to second home buyers, relocating retirees or others that may come from off-Island.





**Social Sustainability**

A community is composed of people, as well as places where they live; it is as much a social environment as a physical development. Thus, communities must not only be environmentally sustainable, they must also be socially sustainable.

A socially sustainable development supports more equitable distribution of resources, supports diversity within the community, meets the basic needs of residents and invests in social and human capital, thereby sustaining the quality of life and community livability for all residents into the future.

Socially sustainable development includes the following:

- recognizes, respects and values cultural and social diversity;
- preserve and maintains a high quality of life for all of its residents;
- meets basic needs of food, shelter, education, work, income and safe living and working;
- is equitable, ensuring that the benefits of development are distributed fairly across society;
- promotes education, creativity and the development of human potential;
- preserves our cultural and biological heritage, thus strengthening our sense of connectedness to our history and environment;
- is democratic, promoting citizen participation and involvement;
- promotes the context of "Live Aloha," with people living together harmoniously and in mutual support and respect for each other

We saved the concept of Social Sustainability for the end of the analysis, to serve as a summary of the many socially-focused actions suggested in prior sections of this Sustainability Plan. Following are just a few of the issues previously mentioned:

- Affordable housing will be incorporated within the development, allowing for a diversity and mix of housing types and options
- Complete streets with walkways and bile lanes, allowing for slow movement through the neighborhoods for easy social interaction
- Allocation for commercial spaces, affording project residents the opportunity to work near where they live
- Proximity to the elementary and middle schools affords multi-generational interaction and learning
- Project layout and design will create an opportunity for both residents and the community to have a positive effect on their health through walkable and bikable transportation options.
- Consistency with long range planning documents, implementing the community's vision for the future

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