A BILL FOR AN ORDINANCE

SECTION 4. This ordinance takes effect upon its approval.

INTRODUCED BY:

Ikaika Anderson (br)

DATE OF INTRODUCTION:

August 31, 2020
Honolulu, Hawaii

Councilmembers

APPROVED AS TO FORM AND LEGALITY:

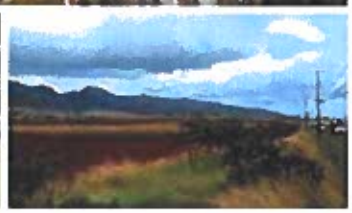
Deputy Corporation Counsel
DUANE W.H. PANG

APPROVED this 23rd day of December, 20 20.

Mayor
City and County of Honolulu

EXHIBIT A

'EWA
DEVELOPMENT PLAN



City and County of Honolulu • Department of Planning and Permitting I July 2013 (Amended 2020)

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PREFACE AND EXECUTIVE SUMMARY

PREFACE

The **'Ewa Development Plan** has been prepared in accordance with the Charter-prescribed requirements for development plans and is to be accorded force and effect as such for all Charter- and ordinance-prescribed purposes.

It is one of a set of eight community-based plans intended to guide public policy, infrastructure investment, and land use decision-making over the next 25 years. Each plan addresses one of eight planning areas of O'ahu, responding to specific conditions and community values of each region. The map on the following page illustrates these planning regions.

The plans for 'Ewa and the Primary Urban Center, as the areas where the **General Plan** says population growth and development activity is to be directed over the next 25 years, are designated as "Development Plans."

Plans for the remaining six areas, which are envisioned as relatively stable regions for which public actions will focus on supporting existing populations, have been entitled "Sustainable Communities Plans" to indicate the intent to focus on retaining and sustaining the unique qualities and characteristics of each of these areas.

THE DEVELOPMENT PLAN FIVE YEAR REVIEW PROCESS

This Plan is a revision of the **'Ewa Development Plan** which was adopted by the City Council in 1997. The 1997 **'Ewa Development Plan** was the first of the eight plans to be revised in response to a 1992 City Charter amendment which changed the nature of

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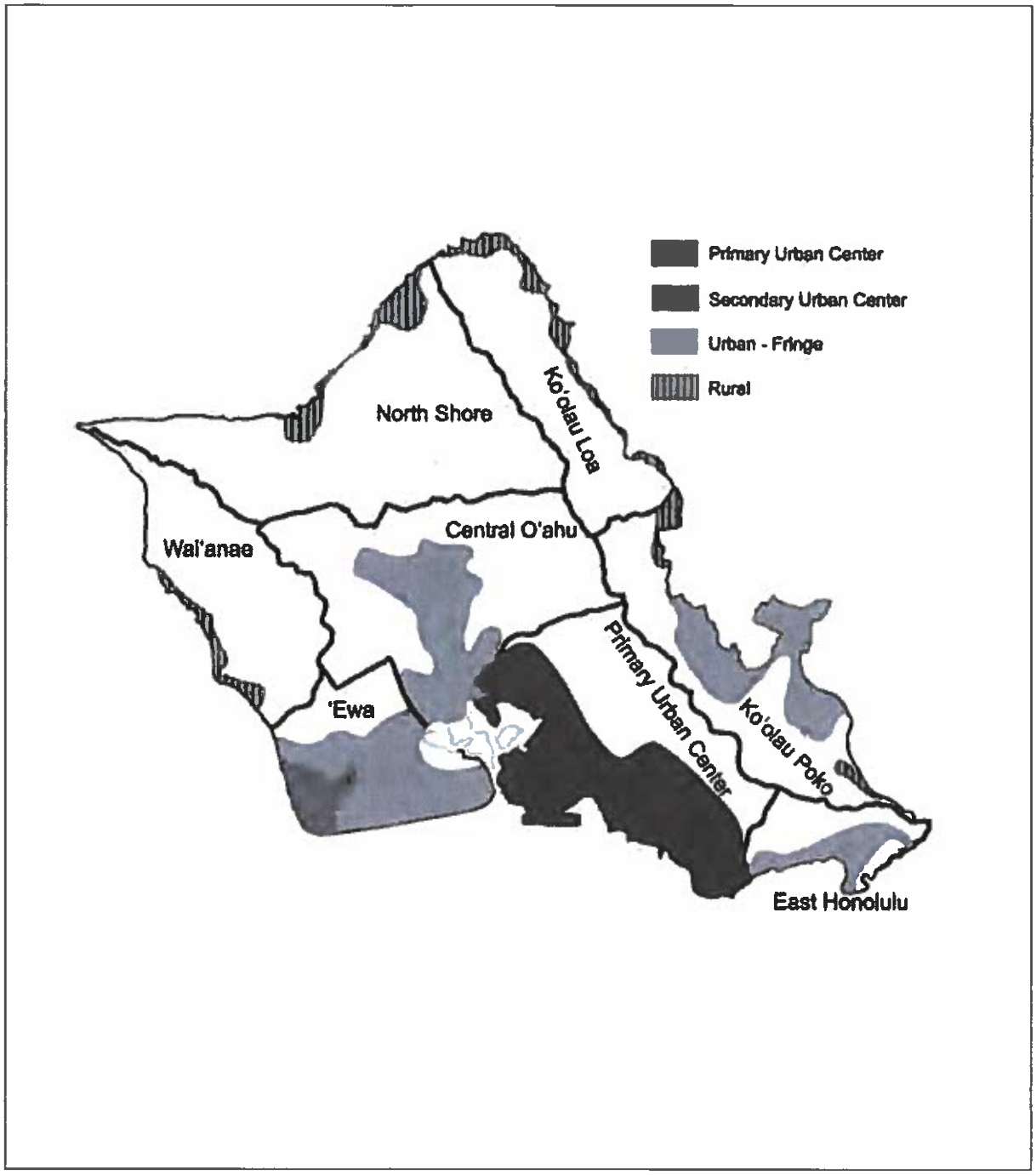
Exhibit ES-1
Development Plan and Sustainable Communities Plan Areas for O'ahu



the Development Plans from relatively detailed, parcel-specific plans to conceptual, visionary plans.

As amended in 2000, the Plan is to be reviewed every five years to determine if:

- The Plan vision, implementing land use and infrastructure policies, and implementation methods are still appropriate;
- The purpose of the Plan's phasing guidelines is being achieved; and
- The phasing priorities in the Plan should be revised.

This document is the culmination of a community-based planning effort led by the Department of Planning and Permitting which involved public meetings and workshops, interviews, focus groups, and numerous meetings over the past six years.

In its final form, the Plan incorporates and responds to comments received from public outreach to community leaders, business and labor representatives, landowners, developers, and public and private agency staff through a variety of formats since 2002.

The **'Ewa Development Plan Review Report** provides documentation of the comments and suggestions received, and details the Department's assessments of what revisions or implementation recommendations should be made as a result.

A SUSTAINABLE FUTURE FOR O'AHU

There has been a recent surge in widespread community discussions, actions and laws adopted to address sustainability. In 2005, the State Legislature convened a statewide group to draft a **Hawai'i 2050 Plan**, whose primary purpose is to provide policy recommendations for creating a sustainable Hawai'i. In 2007, greenhouse gas emissions goals for 2020 were enacted. Public service announcements dealing with conserving water and electricity abound. The concept of buildings that are designed, built and occupied with environmental considerations at the forefront largely did not exist when the current Development Plans and Sustainable Communities Plans were adopted. This setting raises the question of the role of the Development Plans and Sustainable Communities Plans. Are they the City's version of a sustainability plan?

The answer is that they are the land development portion of a larger blueprint for sustainability. As discussed below, the **General Plan** sets long term goals for the City and County of Honolulu, across 11 major elements. Perhaps its most substantive chapter deals with population, and hence land development distribution. It sets the growth management strategy for O'ahu. The Development Plans and Sustainable Communities Plans provide more detail on this land management strategy, assuring that how we use the land now, and in the future, responds to the three major elements of a Sustainable Place: economic health, social equity, and environmental protection.

Since 1977, the City's policy, as adopted by the City Council in the O'ahu **General Plan**, has been to "keep the Country country" by fully developing downtown Honolulu from Pearl City to Kahala, by building O'ahu's Second City in 'Ewa, and by developing surrounding suburban "urban fringe" areas in 'Ewa and Central O'ahu. Millions of dollars of taxpayers' monies have been paid for roadways, schools, sewers, water systems, and other infrastructure to support this pattern of development.

Our most recent projections show that O'ahu will need over 88,000 new homes to meet expected population growth between 2005 and 2035. The **General Plan**, and the Development Plans and Sustainable Communities Plans adopted by the City Council to implement the **General Plan** provide capacity for most new homes to be built either in downtown Honolulu, 'Ewa, or Central O'ahu.

Inevitably, this requires that some prime agricultural land in 'Ewa inside the Community Growth Boundary be used to provide the required single and multi-family housing (even though the 'Ewa Development Plan does protect some 3,000 acres of prime agricultural land outside the Community Growth Boundary). The loss of prime agricultural land in 'Ewa is the cost of insuring that the rural areas in Wai'anae, North Shore, and the Windward side and along Kunia Road in Central O'ahu are protected against development.

The issues addressed either directly or indirectly by these regional plans certainly overlap with other planning responsibilities of other departments, such as water delivery and consumption, crime reduction, increasing public health, and developing responsive transportation systems. Collectively, these efforts comprise the strategy of developing a Sustainable Future for O'ahu.

INTEGRATING PRINCIPLES OF SUSTAINABILITY INTO DECISION-MAKING PROCESSES

A community that can successfully manage change will flourish and prosper in the future. For this plan, this means ensuring that planned growth and development respects and adheres to the principles of sustainability.

These principles of sustainability are intended to promote the long-term health of O'ahu, its people, and its community resources for current and future generations:

- Protect lands designated for agriculture, physical and biological resources, and where appropriate, open spaces and view planes.
- Use resources so they are not depleted, permanently damaged or destroyed.
- Encourage planning, development, and construction technologies that minimize negative environmental impacts.
- Respect the cultural, social and physical resources that shape and reinforce residents' sense of community and quality of life.
- Guide the process of change. Strive to make decisions based on an understanding of the effects such decision will have on the land and community resources.
- Strive for balance between economic prosperity, social and community well-being, and environmental stewardship.
- As an integral part of the planning process, consider the long-term impact of proposed actions and prepare plans that can accommodate the needs of future generations accordingly.

THE HONOLULU LAND USE PLANNING AND MANAGEMENT SYSTEM

The City and County of Honolulu guides and directs O'ahu land use and development through a three-tier system:

- The **General Plan** forms the first tier of this system. First adopted by resolution in 1977, the **General Plan** is a relatively brief document, consisting primarily of one-sentence statements of objectives and policies.

It has been amended several times, but the basic objectives and policies set forth in the 1977 plan remain intact.

- The second tier of the system is formed by the **Development Plans and Sustainable Communities Plans**, which are adopted and revised by ordinance. These plans address eight geographic regions of the island, including the Primary Urban Center, 'Ewa, Central O'ahu, Wai'anae, North Shore, Ko'olau Loa, Ko'olau Poko, and East Honolulu.
- The third tier of the system is composed of implementing ordinances and regulations, including the **Land Use Ordinance** (Honolulu's zoning code), the **Subdivision Rules and Regulations**, and the City's **Capital Improvement Program**. Mandated by the City Charter, these ordinances and regulations constitute the principal means for implementing the City's plans. These ordinances and regulations are required to be consistent with the General Plan, the Development Plans, and each other.

In addition, the Development Plans and Sustainable Communities Plans are supplemented by two planning mechanisms that are not mentioned in the Charter:

- **Functional plans** (such as the **O'ahu Regional Transportation Plan** or the **O'ahu Water Management Plan**), some of which are mandated by state or federal regulations, provide long-range guidance for the development of public facilities and infrastructure; and
- **Special Area Plans** (such as the **Waipahu Town Plan** or the **Wahiawa Urban Design Plan**) give specific guidance for neighborhoods, communities or specialized resource areas.

AUTHORITY OF THE DEVELOPMENT AND SUSTAINABLE COMMUNITIES PLANS

The authority of the Development Plans and Sustainable Communities Plans (hereinafter referred to as "Development Plans" for simplicity) is derived from the City Charter, which mandates preparation of a General Plan and Development Plans to guide "the development and improvement of the city."

Together with the **General Plan**, the Development Plans provide policies to guide land use and budgetary actions of the City and to evaluate progress toward the General Plan objectives.

The Charter provides that "public improvement projects and subdivision and zoning ordinances shall be consistent with the development plan for that area." Although the Development Plans are not themselves regulatory and require implementing ordinances (the "third tier" discussed in the previous section), they provide guidance that decision makers and administrators should follow, to the extent it is sensible, in approving project development and in revising rules and regulations and standard policies. They are policy tools that are to be used, in conjunction with the programs and budgets of the City, to accomplish the objectives of the City and as guides for decisions made by the private sector. Consistent with the Charter's description of the Development Plans as "conceptual schemes" and "a policy guide," the language, maps, and illustrations of the Development Plans should not be deemed to be regulatory.

The plans are also intended to aid decisions made in the private sector by clearly indicating what the City's development priorities are, where development is appropriate, and what kinds of development are appropriate in each location. The 1992 Charter amendments established that the purpose of the Development Plans is to provide:

- "priorities . . . (for the) coordination of major development activities;" and
- sufficient description of the "desired urban character and the significant natural, scenic and cultural resources . . . to serve as a policy guide for more detailed zoning maps and regulations and public and private sector investment decisions."

The revised plan presented in this document conforms to that mandate.

EXECUTIVE SUMMARY

This plan is organized in five chapters and an appendix, as follows:

- Chapter 1: 'Ewa's Role in O'ahu's Development Pattern defines the 'Ewa's role and identity within the overall framework of island wide planning and development;
- Chapter 2: The Vision for 'Ewa's Future summarizes the community-based vision for 'Ewa's future, discusses key elements of that vision, and presents illustrative maps and tables;

- Chapter 3: Land Use Policies, and Guidelines provides the land use policies needed to implement the vision for 'Ewa described in Chapter 2;
- Chapter 4: Public Facilities and Infrastructure Policies and Guidelines provides the infrastructure policies needed to implement the vision for 'Ewa described in Chapter 2;
- Chapter 5: Implementation identifies the means through which the policies will be applied, including zone changes, and infrastructure budgeting and development; and
- Appendix A includes:
  - Four conceptual maps (Open Space, Urban Land Use, Public Facilities, and Phasing) which illustrate the vision and policies of the Plan; and
  - A glossary of terms used on those maps.

The following summarizes the vision, and lists the land use and infrastructure policies of the Plan and the means of implementation.

'EWA'S ROLE IN O'AHU'S DEVELOPMENT PATTERN

- Provides a second urban center for O'ahu with its nucleus in the City of Kapolei and job centers in resort areas, industrial areas, and the University of Hawai'i West O'ahu;
- Provides a wide range of master planned residential areas to relieve developmental pressures on O'ahu's rural areas and to providehousing types not readily provided in the Primary Urban Center (Kahala to Pearl City);
- Protects and promotes diversified agriculture on prime agricultural lands along Kunia Road and in the Explosive Safety Quantity Distance arc around the Pearl Harbor West Loch Naval Munitions Command; and
- Provides resort areas at Ko Olina and at Ocean Pointe.

THE VISION TO 2035

- Population growth from 68,700 in 2000 to over 164,000;
- Addition of over 35,000 new homes to the 20,800 homes in 'Ewa in 2000;
- Job growth from 16,400 non-construction jobs in 2000 to over 87,000;

- Growth of the City of Kapolei to include over 8,000 residents and provide almost 20,000 private and public non-construction jobs;
- Development of the University of Hawai'i West O'ahu campus to serve 7,600 students and employ 1,040 staff and faculty by 2025; and
- Resort development at Ko Olina and at Ocean Pointe to include over 7,200 visitor units.

ELEMENTS OF THE VISION

- *Protect Agricultural Land and Open Space* by containing all urban growth within the existing Community Growth Boundary, and creating an open space network within the Community Growth Boundary by linking together open space areas with greenways;
- *Develop the Secondary Urban Center* to provide jobs at the City of Kapolei, Ko Olina Resort, the University of Hawai'i West O'ahu campus, and industrial and commercial areas throughout 'Ewa so an increasing share of Leeward O'ahu residents will not have to commute to downtown Honolulu;
- *Build Master Planned Residential Communities* that Support Walking, Biking and Transit Use;
- *Protect Natural, Historic, and Cultural Resources*; and
- *Provide Adequate Infrastructure* to meet the needs of new and existing development.

IMPLEMENTING POLICIES AND GUIDELINES

Chapter Three provides **land use development policies and implementing guidelines** for:

- Open Space Preservation and Development;
- Regional Parks and Recreation Complexes;
- Community-Based Parks;
- Historic and Cultural Resources;
- City of Kapolei;
- 'Ewa Villages;
- Ocean Pointe/Hoakalei;

- Existing and Planned Residential Communities;
- Planned Commercial Retail Centers;
- Ko Olina Resort;
- Industrial Centers;
- Kalaeloa;
- Pearl Harbor Naval Station (West Loch); and
- University of Hawai'i West O'ahu

Chapter Four contains **infrastructure policies and implementing guidelines**, including policies on:

- Transportation Systems;
- Water Allocation and System Development;
- Wastewater Treatment;
- Electrical Power Development;
- Solid Waste Handling and Disposal;
- Drainage Systems;
- School Facilities;
- Public Safety Facilities; and
- Other Community Facilities.

Chapter Five describes the **means for implementing** the **'Ewa Development Plan** through:

- Focusing residential and non-residential development to areas within the Community Growth Boundary;
- Guiding development within areas of critical concern with Special Area Plans;
- Incorporating the Plan vision and policies in the review of zone changes and other land use approvals and in establishing conditions for these land use approvals which will help ensure the vision and policies are implemented;
- Incorporating the Plan vision and policies in the review of projects to be added to the Public Infrastructure Map and funded through the Capital Improvement Program budget;

- Evaluating progress made in fulfilling the Plan vision every two years as part of the mandated Biennial Report; and
- Conducting an evaluative review of the Plan vision, policies and implementation five years after the adoption of the revised Plan.

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1. 'EWA'S ROLE IN O'AHU'S DEVELOPMENT PATTERN

'Ewa plays a key role in implementing the directed growth policies of the **General Plan of the City and County of Honolulu** (City). Campbell Industrial Park opened in the early 1960's, bringing industry and jobs to the Leeward Coast, which previously had been predominantly a sugar economy and plantation lifestyle. In the 1970's, residential growth began in 'Ewa with the development of Makakilo and 'Ewa Beach.

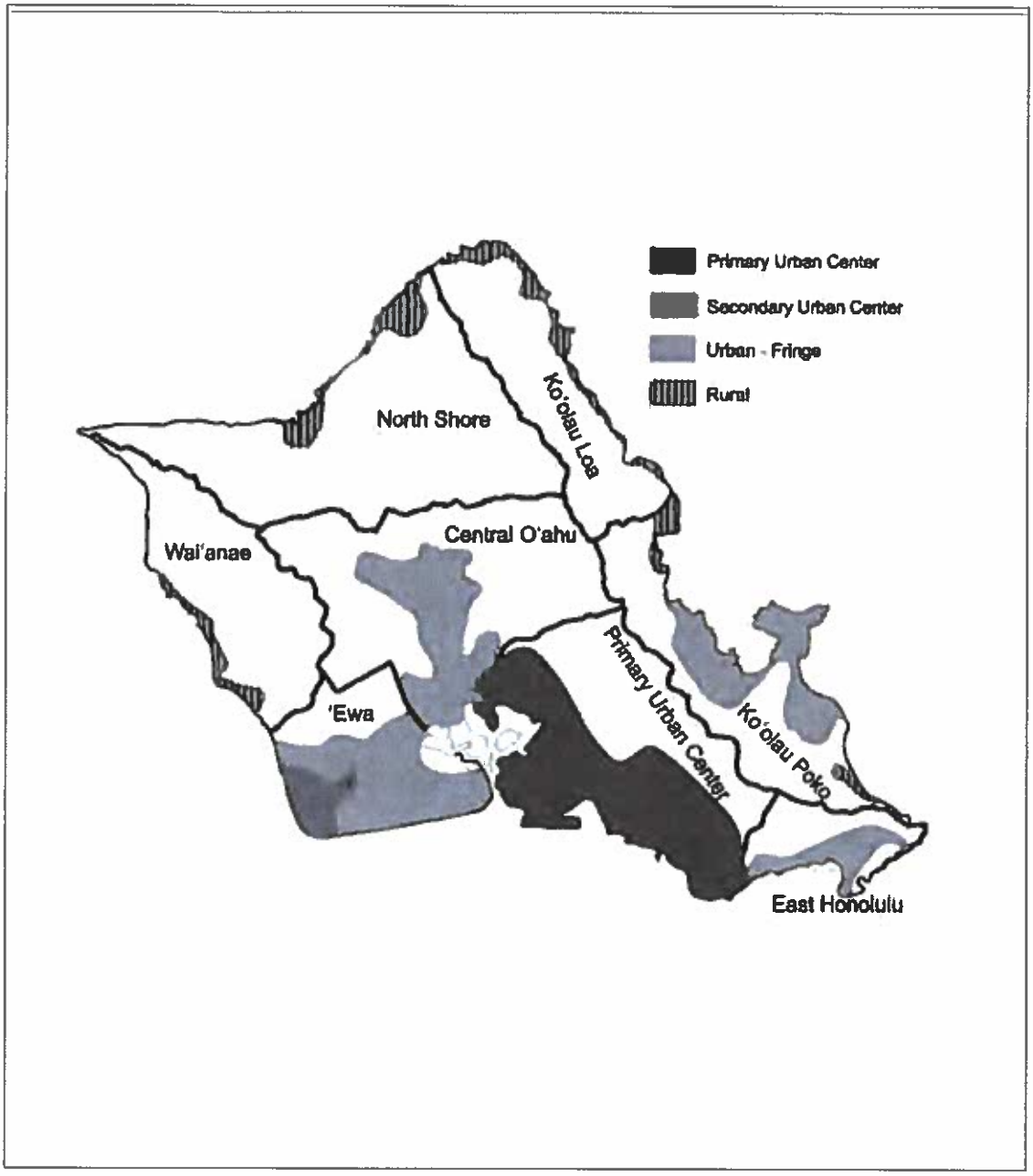
In 1977, the Honolulu City Council approved a new **General Plan**, which designated 'Ewa as the location for a Secondary Urban Center for O'ahu to be centered in the Kapolei area. The Secondary Urban Center was to be the focus of major economic activity and housing development, and a center for government services. While the **General Plan** promotes full development of the Primary Urban Center (PUC), it also encourages development of the Secondary Urban Center at Kapolei, and residential development of the urban fringe areas in 'Ewa and Central O'ahu.

This revision of the **'Ewa Development Plan** reaffirms that role and amplifies how the role can be accomplished. In support of the **General Plan** policies, the **'Ewa Development Plan**:

- Provides a secondary employment center with its nucleus in the City of Kapolei to supplement the PUC and to divert commuter traffic from the PUC;
- Concentrates primary employment activities at industrial and resort areas and at government service and higher education centers around the City of Kapolei so that regional office and retail activities are attracted to the City of Kapolei;
- Provides for significant residential development throughout 'Ewa, consistent with the **General Plan**, to meet the needs of O'ahu's citizens;
- Provides for a variety of housing types from affordable units and starter homes to mid-size and larger multi-family and single-family units;

- Promotes diversified agriculture on prime agricultural lands along Kunia Road and surrounding the West Loch Naval Magazine in accordancewith the **General Plan** policy to support agricultural diversification in all designated agricultural areas on O'ahu;
- Provides a secondary resort area at Ko Olina;
- Helps relieve urban development pressures on rural and urban fringe Sustainable Communities Plan (SCP) areas (Wai'anae, North Shore, Ko'olau Loa, Ko'olau Poko, and East Honolulu) so as to preserve the "country" lifestyle of the rural areas and sustain the stable, low density residential character of the urban fringe areas; and
- Provides, along with the PUC, a focus for directed and concentrated public and private infrastructure investment to support growth.

Exhibit 1.1
Development Plan and Sustainable Communities Plan Areas for O'ahu



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2. THE VISION FOR 'EWA'S FUTURE

This chapter presents a statement of the vision for 'Ewa's future, discusses the key elements of the vision, and presents illustrative maps and tables.

2.1 VISION STATEMENT

This vision for 'Ewa has two horizons. The first horizon extends from the present to the year 2035. This horizon was used to project likely socio-economic change in 'Ewa and to assess the infrastructure and public facility needs that will have to be met over that period.

The Vision to 2035 - By 2035, the 'Ewa Development Plan area shown in Exhibit 1.1 will have experienced tremendous growth, and will have made significant progress toward providing a Secondary Urban Center for O'ahu. Population will have grown from 68,700 people in 2000 to over 164,000. Between 2000 and 2035, over 35,000 new housing units will have been built in a series of master planned communities.

Job growth will be equally impressive, rising from 16,400 non-construction jobs in 2000 to over 87,000 in 2035. O'ahu residents and visitors will be attracted to 'Ewa by a new university campus, the Ko Olina Resort, the Hoakalei Resort, a major super regional park, and a thriving City of Kapolei which has retail and commercial establishments and private and government offices.

Beyond 2035 - In the course of the Development Plan revision in 1995, it became clear that there was value in looking beyond the planning horizon to identify what 'Ewa should look like when "fully" developed.

Such a perspective helped identify where open space should be preserved within the urbanized area, and where to set the limits to development in 'Ewa for the foreseeable

future. As such, this second horizon might be called the "built-out" horizon and is probably 40 to 50 years in the future.

Protect Agricultural Lands and Open Space

Urban growth will be contained within a boundary that will **protect prime agricultural lands** along Kunia Road and within the Pearl Harbor Naval Munitions Command Explosive Safety Quantity Distance (ESQD) arc for diversified agriculture. Preservation of prime agricultural lands *mauka* of H-1 and on the Wai'anae side of Kunia road for use in diversified agriculture will help retain open space and views, in addition to supporting economic diversification.

Within the Community Growth Boundary, 'Ewa will be built around a regional system of **open space and greenways** so that 'Ewa has the feel of a network of communities "within a garden", as opposed to an unbroken suburban sprawl from Ko Olina to 'Ewa Beach.

Residents of these communities will enjoy **easy access to the ocean** through two major marinas, numerous beaches and a shoreline walkway from Ko Olina to 'Ewa Beach. Those interested in boating and ocean fishing will be able to use marina facilities and boat ramps at Ko Olina, Kalaeloa, and Hoakalei.

Residents will be able to easily access beaches, swimming and surfing spots all along the entire 'Ewa coastline by road or a network of pedestrian paths and bikeways. Linear shoreline access will be provided along the coast from Ko Olina to 'Ewa Beach. At its center will be a major new regional park and recreation complex at Kalaeloa (on the former Barbers Point Naval Air Station), which will provide access to the ocean and beaches as well as offering significant active and passive recreation facilities.

A network of **greenways** will link the communities together, with landscaping along major roads such as Kapolei Parkway, Kualaka'i Parkway (formerly North-South Road), and Fort Weaver Road, and pedestrian and bike paths along grassed drainageways and utility corridors. A major pedestrian and bike path will be provided by the Pearl Harbor Historic Trail, which extends about 18.5 miles from the U.S.S. Arizona Visitor Center through the **'Ewa Development Plan** area and on to Nānākuli along the OR&L Railroad right-of-way.

Open space will be preserved in parks, golf courses, and agricultural areas that will help to protect significant public views. Wildlife habitats will be located at Kalaeloa, Hoakalei, and West Loch.

Prime agricultural land loss. Development of jobs in the City of Kapolei and the areas around it and creation of master planned residential communities in the 'Ewa Urban Fringe Areas has been a key element in the City's growth management strategy adopted as part of the 1977 **General Plan** and reinforced by subsequent City actions approving land use plans and infrastructure investments since 1977. It is true that the development of 'Ewa lands within the Community Growth Boundary has resulted in the conversion of thousands of acres of highly productive agricultural land as the sugar plantations closed, and new homes and job centers were developed.

However, this is the cost of protecting agricultural lands and open space in the rural areas of O'ahu. By focusing new job growth and residential development in 'Ewa, Central O'ahu, and Honolulu's core urban area from Pearl City to Kahala, the vision of keeping the Country country can be achieved. Thousands of acres of agricultural lands in the SCP areas are protected by the Community Growth Boundaries in those plans, including 50,000 acres in the Central O'ahu and North Shore SCP areas and hundreds of acres in other SCP areas including Wai'anae, near Kahuku, in Waiāhole/Waikāne, and in Waimānalo.

Develop the Secondary Urban Center

A key component of the vision is the **Secondary Urban Center**, which will provide a wide range of jobs located at visitor units and activity centers in Ko Olina and Hoakalei, in heavy and light industrial areas near the Kalaeloa Barbers Point Deep Draft Harbor, in offices and retail centers located at the City of Kapolei and community and neighborhood centers in residential communities, at the University of Hawai'i West O'ahu (UHWO) campus, and in diversified agriculture activities located along Kunia Road and around the Pearl Harbor Naval Munitions Command.

At the heart of the Secondary Urban Center will be the **City of Kapolei** with an urban mix of retail, office and residential uses. By 2035, it is projected that the City of Kapolei will house over 8,000 residents and provide work sites for over 17,000 private jobs and 2,400 City and State jobs (located primarily at the City's Civic Center and Judicial

Center). The City Center will become a regional commercial center, attracting customers from all parts of O'ahu.

Many of the jobs in the City of Kapolei will be supported by development of the **UHWO campus**, which is expected to have 7,600 students and 1,040 staff and faculty by 2025. Continued expansion of **industrial uses** at Campbell Industrial Park, Kalaeloa Barbers Point Deep Draft Harbor, and Kapolei Business Park; and growth of the **Ko Olina Resort** and the **Hoakalei Resort** to include over 7,200 visitor units by 2035 will also provide basic jobs which will support office and retail jobs in the City of Kapolei.

Build Master Planned Residential Communities That Support Walking, Biking, and Transit Use

Growth in 'Ewa will mean **community building**, not just project development. Substantial residential growth (over 35,500 new units between 2000 and 2035) will occur primarily in master planned communities including the City of Kapolei, East Kapolei (Department of Hawaiian Home Lands East Kapolei, University of Hawai'i West O'ahu, and Ho'opili), 'Ewa by Gentry, 'Ewa Villages, Kapolei West, Ko Olina, Makaīwa Hills, Makakilo, Ocean Pointe/Hoakalei, and the Villages of Kapolei. (See Exhibit 2.3.)

The master plans and design of new developments must demonstrate how they would **create communities that interact with neighboring communities and support the vision** for development of the entire 'Ewa region. Such communities should be designed with identifiable and easily accessible town and village centers or "main street areas" and incorporate a mixture of residential and commercial development. While not every community will have a "main street", all should have a community center.

These communities must be designed to meet the needs of a wide range of families and age groups. **Ample housing** should be provided for families needing affordable units and starter homes as well as for those seeking large multi-family and single-family units. **Housing for persons of all ages** will be needed, including students going to school at the UHWOcampus, young families seeking their first home, and senior citizens wanting a retirement home close to their grandchildren. Such a desirable variety in housing types could be partially achieved through the inclusion of"granny

flats" (small, accessory apartments) and/or "'Ohana" units where infrastructure will support these additions.**Separate identities** should be created for existing and planned communities by using open space, architectural design, streetscape treatments and landscaping which links to the regional open space and greenway network.

Communities Designed to Reduce Automobile Use - 'Ewa will be developed with a transportation system which reduces congestion by providing connectivity, both within and between subdivisions, provides easy access to transit, uses traffic calming design, and encourages people to walk and bike, reducing the need for use of the automobile.

Where allowed by terrain, communities will be designed with multiple street/walkway connections to adjacent communities and collector roads at approximate 1/4 mile intervals, thereby facilitating and encouraging convenient auto, pedestrian and bikeway access to parks, schools, neighborhood shopping and transit corridors. These connections will also reduce congestion on major regional roads by offering multiple alternative routes and facilitate improved neighborhood access for emergency and utility vehicles.

Medium density housing and commercial development will be built along **a rail transit corridor** extending from the City of Kapolei to Waipahū and will support efficient use of buses and other forms of mass transit along the corridor, allowing some residents to minimize automobile use.

An elevated rail transit line will be developed on the rail transit corridor. The first segment of the elevated rail transit line will start near the Salvation Army Kroc Center on Kualaka'i Parkway and continue on to Waipahū along Kualaka'i Parkway and Farrington Highway. Sufficient land will be reserved to allow extension of the elevated rail transit line through Kalaeloa to the City of Kapolei, ending near the intersection of Kapolei Parkway and the planned extension of Hānu'a Street. See Appendix A: Pubic Facility Map, and Phasing Map.

Protect Natural, Historic, and Cultural Resources

The **'Ewa Development Plan** provides a vision for preservation, conservation, and enhancement of community resources.

Natural resources will be conserved through retaining natural drainageways, protecting valuable plant and wildlife habitats, by cleaning up contaminated areas and by efficiently using all water supplies through conservation measures and distribution system leak repair, by developing a dual water distribution system with potable water for drinking and other clean water uses and non-potable water for irrigation and industrial uses, and reclamation of non-potable water from waste-water effluent where feasible.

Cultural and historical resources will be preserved by retaining visual landmarks and significant views, and by preserving significant historic, cultural, and archaeological features from 'Ewa's past, and by conducting surveys to thoroughly assess the historical significance of sites and structures affected by development projects and to identify the appropriate measures to preserve the historic and cultural values of the resources.

Provide Adequate Infrastructure to Meet the Needs of New and Existing Development

Public agencies will work with the community (residents, businesses, developers, and landowners) to address current deficiencies in roads, schools, and parks and to create adequate infrastructure to meet the needs of the residential and working population of the area.

Completion of the first increment of the elevated rail transit line (from East Kapolei to Ala Moana Shopping Center) is critical to the **O'ahu General Plan** policy of relieving development pressure elsewhere on O'ahu by developing the Second City and the Urban Fringe in 'Ewa. It is needed to provide an effective and reliable alternative to commuting by auto for a significant number of commuters by 2020. Without the project, traffic delays for 'Ewa commuters would increase by 46% compared to today according to the **Honolulu High-Capacity Transit Corridor Project Environmental Impact Statement** (p. 3-28).

Where possible and practical, construction of new development that generates increased service demands for public schools, emergency medical services, and roadway capacity, will be coordinated with the provision of needed infrastructure capacity.

Public-private mechanisms for financing infrastructure such as Tax Increment Financing (TIF) and Community Facilities Districts (CFD) should be considered to support timely infrastructure provision.

Public agencies' planning for infrastructure needs will be guided by the Development Plan priorities for residential and commercial development. See the discussion of Planned Regional Development in Section 2.2.10.

2.2 KEY ELEMENTS OF THE VISION

The vision for 'Ewa's future will be implemented through the following key plan elements:

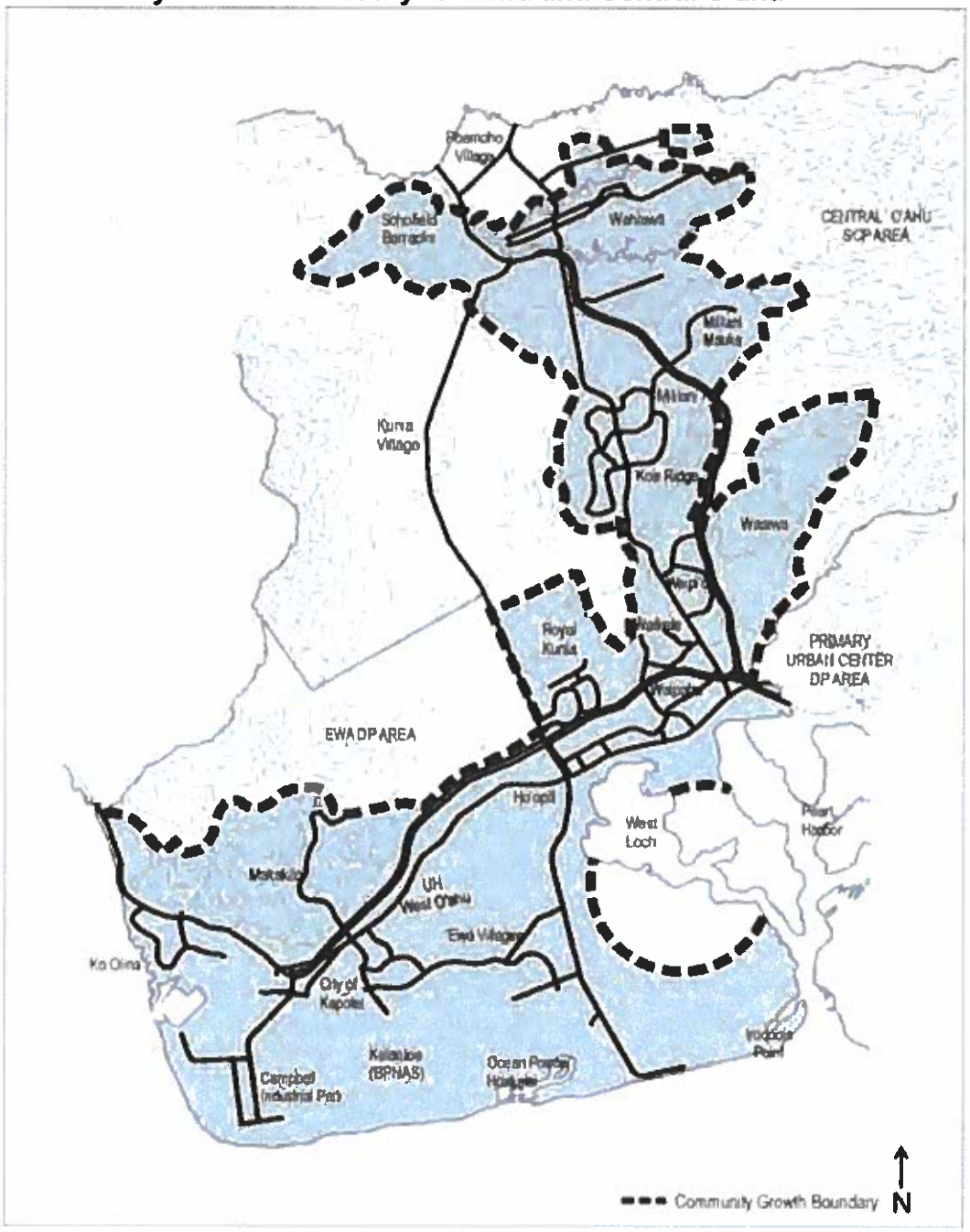
2.2.1 Community Growth Boundary
2.2.2 Retention of Agricultural Lands
2.2.3 Open Space and Greenways
2.2.4 Kalaeloa Regional Park
2.2.5 Secondary Urban Center
2.2.6 Master Planned Residential Communities
2.2.7 Communities Designed To Support Non-Automotive Travel
2.2.8 Conservation of Natural Resources
2.2.9 Preservation and Enhancement of Historic and Cultural Resources
2.2.10 Phased Development

Each of these elements is discussed in the following sections.

2.2.1 COMMUNITY GROWTH BOUNDARY

The Community Growth Boundary for 'Ewa gives long-range protection from urbanization for over 3,000 acres of prime agricultural land and for preservation of open space while providing adequate land for urban development in 'Ewa for the foreseeable future. The Community Growth Boundary for 'Ewa is illustrated in Exhibit 2.1 and shown in greater detail on the four conceptual maps in Appendix A as described below.

Exhibit 2.1
Community Growth Boundary for 'Ewa and Central O'ahu



Boundary Description - The *mauka* portion of the boundary follows the Special Management Area boundary around Kahe Point, runs along the northern boundary of the Makaīwa Hills project and the existing Makakilo development, and then follows the proposed extension of Makakilo Drive to the H-1 Freeway. It then follows the H-1 Freeway to the intersection with Kunia Road and then up Kunia Road to the boundary between the **Central O'ahu Sustainable Communities Plan** and **'Ewa Development Plan** areas.

The *makai* portion of the boundary excludes the Explosive Safety Quantity Distance (ESQD) zone for the Pearl Harbor Naval Munitions Command.

Protection for Prime Agricultural Land - The Community Growth Boundary protects prime agricultural lands on the Wai'anae side of Kunia Road and *mauka* of H-1 freeway from urban development for the foreseeable future, thereby providing an incentive for landowners to give long term leases to farmers. No proposals for urban uses outside the Community Growth Boundary will be considered.

Open Space Network - Within the Community Growth Boundary, significant acreage will be retained in open space in parks, wildlife habitats, golf courses, and natural and grass-lined drainageways. (Of the estimated 23,000 acres within the Community Growth Boundary, 5,000 acres or 22 percent of the acreage will be in open space.)

Capacity for Growth - Even with the amount of land reserved for agriculture, parks, and open space, there is ample capacity within the Community Growth Boundary for residential, commercial, and industrial development extending beyond the 20-year horizon (2035).

As shown in Table 2.1, over 4,100 acres was available for residential development; almost 700 acres for retail and office development; and over 1,600 acres for industrial development as of July 2009. Providing this capacity allows for competition and promotes more affordable residential, commercial, and industrial development.

Over 50 percent of the residential development acreage is already zoned. Developers of these parcels can apply for subdivision, construction permit, and building permit approvals as needed to meet market demand. However, these projects will be subject to

TABLE 2.1: 'EWA DEVELOPMENT CAPACITY AND ENTITLEMENT STATUS

PROJECT AREA [1]	Potential Housing Units	Number of Units which Need LUC [2]	Number of Units which Need ZON [3]	DEVELOPABLE LAND AREA (Gross Acres) Resid.	Resort	Retail	Ind.	Total
A Kalaeloa Barbers Point Harbor & vicinity							210	210
B City of Kapolei								
Mehana at City of Kapolei	1,130			93		2		95
Leihano Senior Community	714			43				43
Kapolei Mixed Use [4]	4,000					91		91
Kapolei Commercial (incl. Kapolei Commons)						91		91
C Ewa by Gentry [5]	658			94			64	158
D Ocean Pointe/Hoakalei	2,095			269	39	45	28	381
E Ewa Villages	590			54				54
F Kapolei Business Park & vicinity							268	268
Kapolei Harborside							339	339
G Kapolei Knolls								0
H Pālailai Residential	350			30		14		44
I Kapolei Shopping Center								0
J Ko Olina Resort	3,286			50	42	16		108
K Makaiwa Hills (Lower)	2,280			424		31		455
L Makakilo C& D1	422			105				105
M Villages of Kapolei	660			28		27		55
N Kapolei West [6]	2,500			234		12		246
O, R Ewa by Gentry Makai: East and West	1,067			172				172
P East Kapolei: Ho'opili [7]	11,750	11,750	11,750	925		145	50	1,120
Q Laulani Commercial						20		20
S Makakilo D2	400	400	400	96				96
T UH West O'ahu Campus [8]	4,040			184		169		353
U Makaiwa Hills (Upper)	2,000			484				484
V DHHL East Kapolei [9]	2,513		NA	341		67		408
W Kapolei North	1,200	1,200	1,200	150				150
Kalaeloa (HCDA) [9]	6,500		NA	267		8	685	960
TOTAL	**48,155**	**13,350**	**13,350**	**4,043**	**81**	**738**	**1,644**	**6,506**
TOTAL ZONED or EXEMPT	*34,805*			*2,872*	*81*	*593*	*1,594*	*5,140*
TOTAL EXEMPT FROM CITY ZONING	*9,013*			*608*	*0*	*75*	*685*	*1,368*

NOTES:

See Exhibit 2.3 for location of projects. Estimated capacity and entitlements of existing projects as of July 2009.

(1) Parts may not sum to totals shown due to rounding.

(2) Project needs State Land Use Commission approval of a Land Use District amendment.

(3) Project needs City Council approval of a zone change (and may need State Land Use District Boundary Amendment).

(4) As of December 2008, included around 84 acres of vacant BMX-3 zoned lands which could provide residential units as well as commercial and office space.

(5) Industrial acreage partly zoned for industrial mixed use.

(6) Formerly Ko Olina Phase II. Thirty seven of the residential acres are for mixed use residential development and may include 100,000 s.f. of commercial space. Twenty seven of the commercial acres include mixed-use residential development of 300 units.

(7) Twenty acres near Farrington/Fort Weaver intersection for community commercial center; remainder intended for neighborhood commercial use. Some residential acreage may also support retail and office uses in mixed use projects.

(8) The 116 retail acres are lands zoned BMX-3 which can include both retail space and residential units. The residential acreage includes lands set aside for student housing.

(9) DHHL and HCDA can exempt themselves from County zoning.

infrastructure capacity requirements established through unilateral agreements and subdivision approval requirements.

An additional 19 percent of the residential development acreage is exempt from County zoning and land use regulations. Almost 1,400 acres are controlled by either the State Department of Hawaiian Home Lands (DHHL) or the Hawai'i Community Development Authority (HCDA) who are developing their lands under master plans approved by the Governor. The timing and conditions of the development of these lands are not subject to review and approval by the City Council.

The remaining residential development acreage which is neither zoned nor exempt will require land use approvals by the State Land Use Commission (LUC) and the City Council before development can proceed. About 1,400 acres of the lands indicated for development are in the State Agriculture Land Use District, and will first have to be approved for transfer to the State Urban District by the LUC and then have urban zoning approved by the City Council before they can be developed.

Table 2.1 shows the projected number of housing units and the approximate gross acreage by land use category for previously approved and proposed projects. These represent general indicators of the land areas involved and possible densities. In determining actual land uses and densities, project planning, design and review of project zoning change applications should be directed by the planning policies and guidelines provided in Chapters 3 and 4.

2.2.2 RETENTION OF AGRICULTURAL LANDS

The closure of the O'ahu Sugar Company in 1995 raised serious questions about how thousands of acres of former sugar lands in 'Ewa should be used in the future. The **'Ewa Development Plan** protects the highest value prime agricultural lands from urban development.

These high value lands are located in two areas: lands *mauka* of H-1 Freeway and on the Waianae side of Kunia Road, and lands in the Explosive Safety Quantity Distance (ESQD) arc around the Pearl Harbor Naval Munitions Command. State agencies

indicated in 1996 that these prime agricultural lands should have the highest priority for retention of all the prime agricultural lands in 'Ewa.

These 3,000 acres of agricultural land, protected by the Community Growth Boundary, have been rated, in the most authoritative studies, as potentially among the most productive lands for diversified agriculture in the State.

The State Department of Agriculture's (HDOA) November 1977 study, **Agricultural Lands of Importance to the State of Hawaii (Revised)**, indicates that the Kunia lands and a portion of the lands within the Navy's ESQD arc are "prime" agricultural lands which generally produce the largest yields and the best quality crops for the least expenditure of energy.

The University of Hawai'i Land Study Bureau's December 1972 bulletin, **Detailed Land Classification - Island of O'ahu**, rated productive capacity of the Kunia lands as either A or B and the lands within the Navy's ESQD as B or C (An A rating was given to the highest productivity lands and E was given to the lowest.)

These high value agricultural lands have unique advantages in weather, soil productivity, infrastructure, and water availability from the Wai'ahole Ditch, and access to the local markets of Honolulu and to export markets through Honolulu International Airport.

Successful agricultural operations are currently being pursued on the former sugar lands in the Kunia area, including seed crops, vegetables, melons, and other truck crops. In addition, the Hawai'i Agriculture Research Center (HARC) at the corner of H-1 and Kunia Road is conducting studies on vegetable crops and forage to help diversified agricultural activities in the area. Agricultural lands along Kunia Road and north of H-1 have recently been sold to agricultural companies committed to maintaining those lands in agriculture. In addition, the Navy currently leases out 1,025 acres for agriculture on its lands surrounding the Pearl Harbor Naval Munitions Command. However, agricultural operations on these lands are limited by military safety restrictions and the brackish water supply.

By protecting agricultural lands from urban development, an opportunity is created for retention and development of diversified agriculture on small farms and agricultural

parks. Public-private partnerships will be needed to solve problems of lease terms and tenure, access to capital, research, and marketing if this vision is to be realized.

2.2.3 OPEN SPACE AND GREENWAYS

A network of Open Space and Greenways will link the Secondary Urban Center and associated employment centers, new master planned residential developments and revitalized established communities, an 'Ewa shoreline park, and a major regional park at Kalaeloa. See the Open Space Map in Appendix A.

Table 2.2 lists the major components of the 'Ewa Open Space and Greenways Network.

The Open Space and Greenways Network:

- connects existing and planned communities through a system of linear greenbelts, consisting of drainage, transportation, and utility corridors, and
- creates separate identities for existing and planned communities through use of landscape buffers, golf courses, wildlife preserves, agricultural lands, regional parks, and other large open spaces at the urban edges.

An important new element in the 'Ewa Open Space and Greenways Network will be an 'Ewa Shoreline Park that will stretch along the 'Ewa coastline from the entrance to Pearl Harbor to Ko Olina. It will be anchored by the Kalaeloa Regional Park planned for Kalaeloa.

The Pearl Harbor Historic Trail, running partly along the Pearl Harbor shoreline and across the 'Ewa Plain on the OR&L right-of-way, will allow bikers and pedestrians to travel as far as Nanakuli to the west. Running east, the path will create a greenbelt linking Ko Olina, Kapolei West, Kapolei Harborside, the City of Kapolei, Kalaeloa, the Villages of Kapolei, 'Ewa Plantation Villages, 'Ewa by Gentry, and West Loch to Rainbow Marina near Aloha Stadium and to the Waipahū Cultural Garden Park.

TABLE 2.2: 'EWA OPEN SPACE AND GREENWAYS NETWORK

Mountain and Agricultural Areas

- Waianae Mountains Conservation District
  - (Including the State's Honouliuli Forest Reserve)
- Pu'u Makakilo
- Pu'u Pālailai
- Agricultural Lands *mauka* of H-1 and Wai'anae side of Kunia Road
- Agricultural Lands in the Pearl Harbor Naval Munitions Command ESQD arc

Natural Gulches and Drainageways

- Honouliuli Stream
- Kalo'i Gulch
- Makalapa Gulch
- Makakilo Gulch
- Awanui Gulch
- Pālailai Gulch
- Makaīwa Gulch
- Keone'ō'io Gulch
- Limaloa Gulch

Shoreline Areas

- 'Ewa Shoreline Park (Lateral Public Access/Easement from Ko Olina to Pearl Harbor)
- Wetlands and Wildlife Habitats
  - Honouliuli National Wildlife Refuge
  - Apoka'a Ponds
  - Batis Salt Marsh at Hoakalei
- Kahe Point Beach Park
- Tracks Beach Park
- Ko Olina Beach Parks (2)
- Barbers Point Beach Park
- One'ula Beach Park
- 'Ewa Beach Park
- Iroquois Point Beach Park (military)
- West Loch Shoreline Park

Continued on next page

TABLE 2.2: 'EWA OPEN SPACE AND GREENWAYS NETWORK
(Continued)

Regional and District Parks
- Ocean Pointe District Park
- Kalaeloa Regional Park
- 'Ewa Mahikō District Park
- East Kapolei District Park (planned)
- Kapolei Regional Park
- Makaiwa Hills District Park (planned)

Golf Courses
- Ko Olina Golf Club
- Kapolei West Golf Course (planned)
- Kapolei Golf Course
- 'Ewa Villages Golf Course
- Coral Creek Golf Course
- Barbers Point Golf Course (military)
- Hoakalei Country Club
- Hawai'i Prince Golf Club
- 'Ewa Beach Golf Club
- West Loch Golf Course

Greenway Corridors
- Farrington Highway
- Kapolei Parkway
- Pearl Harbor Historic Trail / Historic OR&L Railway
- Kualaka'i Parkway
- Fort Weaver Road
- Ali'inui Drive (Ko Olina)
- Kealanui Avenue (Villages of Kapolei)
- Kama'aha Avenue (Villages of Kapolei)
- 'A'awa Drive (West Loch Fairways)
- Keone'ula Boulevard (Ocean Pointe)

See Exhibits 3.1 and 3.2 for locations of Pu'u, parks, wetlands and wildlife habitats.
See Exhibit 4.3 for locations of major natural gulches and drainageways.

2.2.4 KALAELOA REGIONAL PARK

Kalaeloa Regional Park will provide needed open space, recreational opportunities, and access to the beaches and ocean.

Kalaeloa Regional Park is envisioned as a major nucleus of community activity, attracting visitors from all of O'ahu. To be developed on surplus lands at Kalaeloa, itwill feature a regional park with sports and recreation facilities. Taking advantage of its extensive land resources, cultural sites, and spectacular ocean setting, it will offer extensive community-oriented recreation facilities, and public facilities. Ocean recreation areas at Kalaeloa will feature coastal lands providing a setting for ocean sports, beach activities, picnicking and family camping.

2.2.5 SECONDARY URBAN CENTER

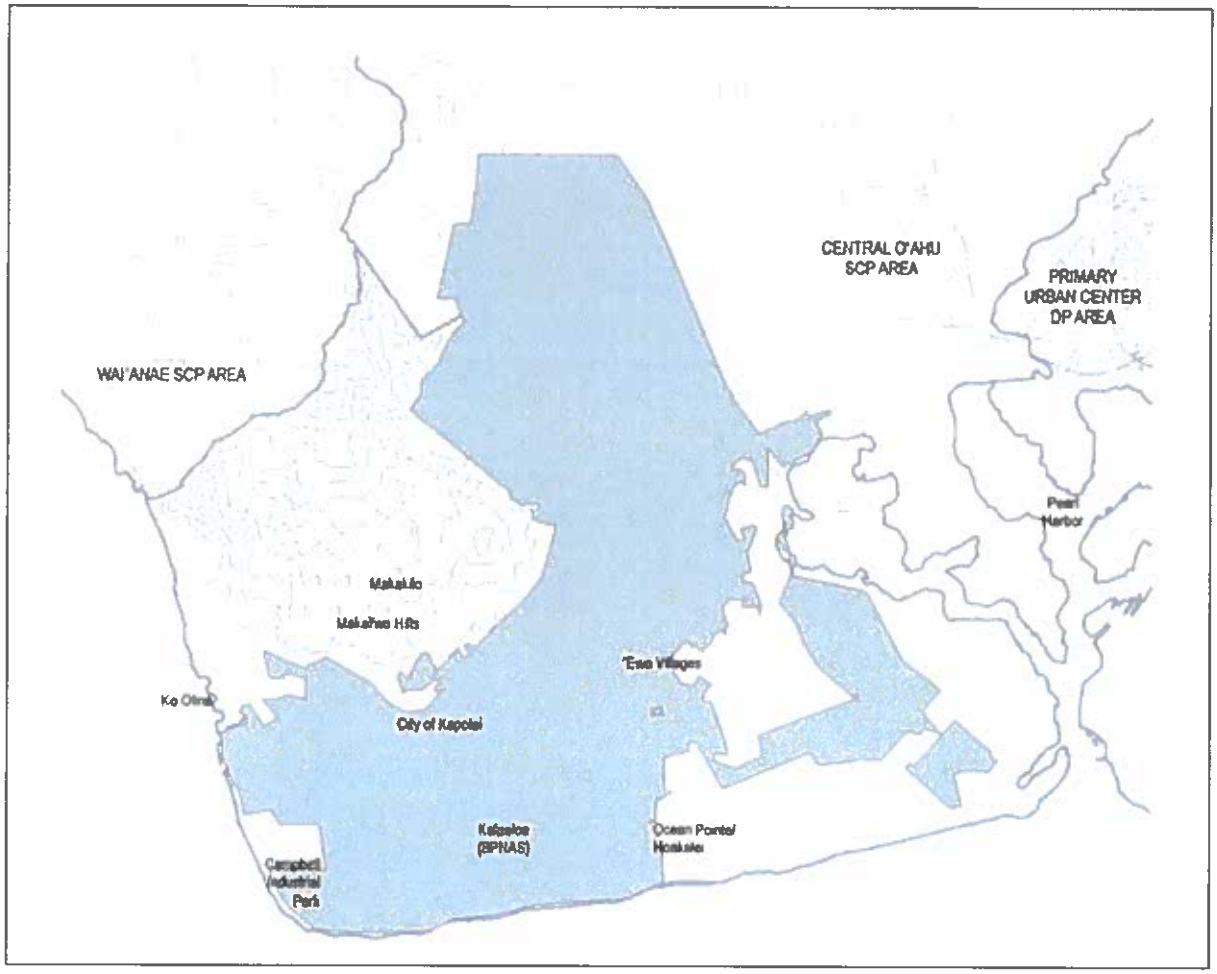
The Secondary Urban Center (See Exhibit 1.1) will provide a wide range of employment opportunities by 2035 and consists of:

- A major office, retail, and residential center at the City of Kapolei (projected to have over 17,000 private non-construction jobs by2035);
- A Secondary Civic Center with main headquarters for some State and City agencies (projected to have 2,600 government jobs);
- A major resort destination area at Ko Olina (projected to have 5,500 hotel and resort condominium units);
- A marina resort/mixed use area at Ocean Pointe (projected to have 950 visitor units);
- A deep draft harbor at Kalaeloa Barbers Point, a major industrial center at Campbell Industrial Park, and civilian reuse of Kalaeloa compatible with the rest of 'Ewa (projected to collectively provide almost 21,000 jobs); and
- The UHWO (projected to have 1,040 faculty and staff and 7,600 students).

See the 'Ewa Urban Land Use Map in Appendix A.

Almost the entire 'Ewa Development Plan area (as shown in Exhibit 2.2) has been approved as an Enterprise Zone by the Honolulu City Council.

Exhibit 2.2
'Ewa Enterprise Zone



Under enabling legislation approved by the City Council in 1995 (Resolution 95-292) and in 2002 (Resolution 02-227), qualifying businesses receive a package of incentives including rebates on City property taxes for two years, and waiver of certain county fees for seven years. In addition, under State law (Chapter 209E, Hawai'i Revised Statures), the businesses may receive exemptions from State excise taxes for seven years, a decreasing State income tax credit for seven years, and a State income tax credit for unemployment insurance premiums.

2.2.6 MASTER PLANNED RESIDENTIAL COMMUNITIES

A network of master planned residential communities will provide a wide variety of housing and accommodate the need for affordable housing. Master plans will guide new developments in the City of Kapolei, East Kapolei (DHHL East Kapolei, UHWO, Ho'opili), 'Ewa by Gentry, Ocean Pointe/Hoakalei, Ko Olina, Makaīwa Hills, Kapolei West (previously part of Ko Olina), and the Villages of Kapolei; the rehabilitation of existing structures and development of new housing in 'Ewa Villages; and the redevelopment of Kalaeloa. (See Exhibit 2.3 for locations.)

These master plans will incorporate planning principles and guidelines to preserve historic and cultural values, establish open space and greenway networks, and create well-designed, livable communities. Such communities should be designed with an identifiable, distinct and easily accessible main street, town center or neighborhood center which may include a mixture of residential and small scale community related commercial development.

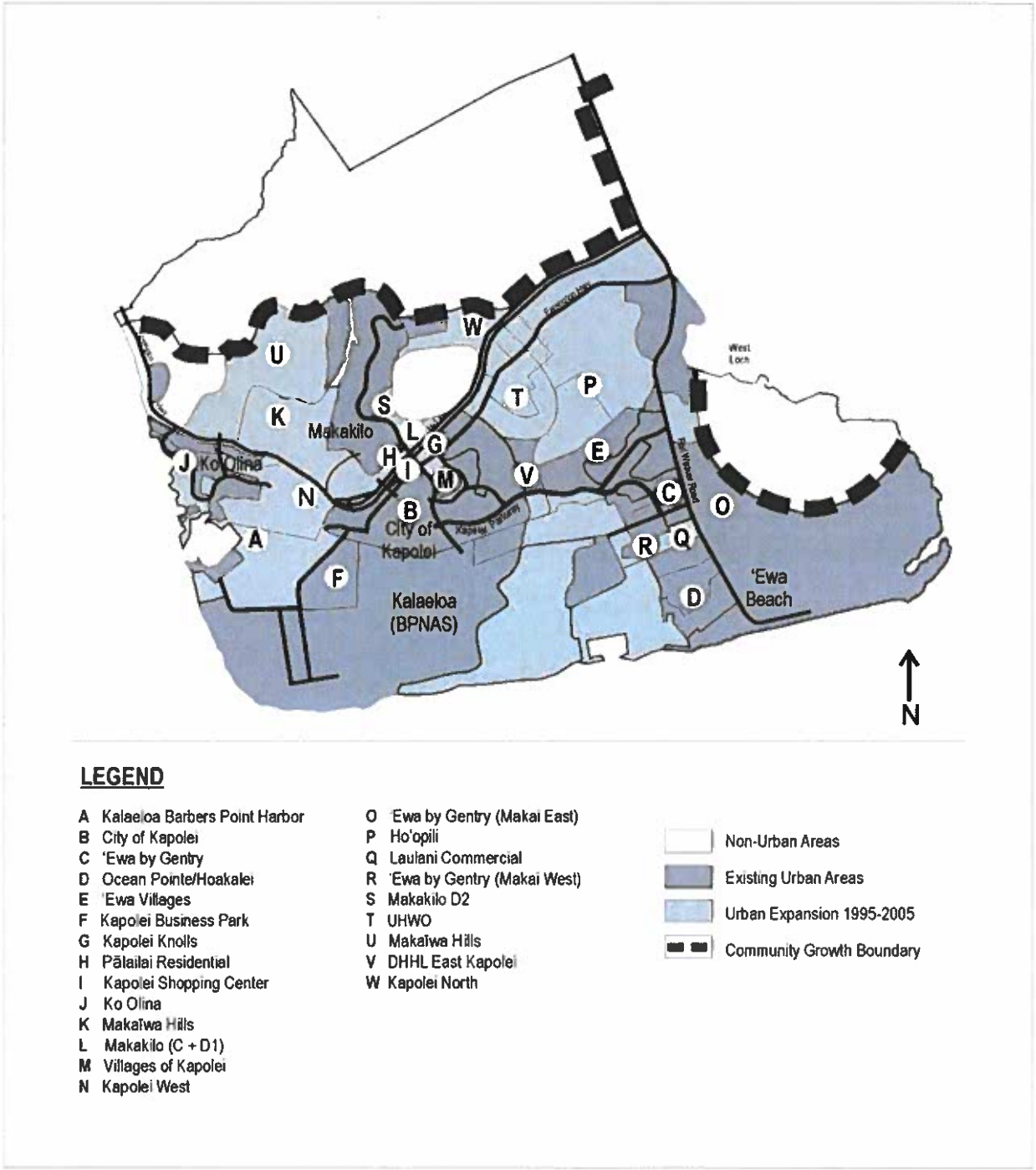
2.2.7 COMMUNITIES DESIGNED TO SUPPORT NON-AUTOMOTIVE TRAVEL

The master planned residential communities will be designed or redeveloped to support **pedestrian and bike use** within the community and **transit use** for trips both within and outside of the community.

Connectivity will be established within subdivisions by use of block and street standards and between subdivisions by establishing and implementing a 1/4 mile collector/ connector master road plan, where permitted by terrain.

The elevated rail transit line built on the east-west **Rail Transit Corridor** will link Kapolei West, the City of Kapolei, the UHWO campus, Waipahū, Leeward Community College, and the PUC. Medium density residential development will be built along the rail transit corridor within walking distance of the rail transit stations.

Exhibit 2.3
Existing and New Master Planned Communities



Medium density residential and commercial mixed-use development will be developed at eight **transit nodes** whose general locations are indicated on the Urban Land Use Map in Appendix A. Transit nodes are meant to be located at activity focal points, which would serve as natural points for transferring from one transportation mode to another. Communities are further supported by these transit nodes as the rail transit stations are developed and the City establishes transit-oriented development plans that encourage rail transit and multimodal transportation

The first segment of the elevated rail transit line will start near the Kroc Center on Kualaka'i Parkway and continue on to Waipahū along Kualaka'i Parkway and Farrington Highway. Sufficient **right-of-way** will be reserved for the extension of the elevated rail transit line, which would extend through Kalaeloa to the City of Kapolei in the west, continuing on to the PUC in the east. Such a system will require a 28-foot to 32-foot right-of way-along the route and a 75-foot right-of-way at the rail transit station sites.

2.2.8 CONSERVATION OF NATURAL RESOURCES

'Ewa Natural Resources, including potable water, coastal water quality, and wetlands and other wildlife habitat, will be conserved by:

- Efficiently using all water supplies through conservation measures and distribution system leak repair;
- Developing a dual water distribution system with potable water for drinking and other clean water uses and non-potable water for irrigation and industrial use;
- Designing the regional drainage and wastewater treatment system to minimize non-point source pollution of the ocean and Pearl Harbor;
- Protecting valuable habitats for endangered water birds located in Batis Salt Marsh at Hoakalei and in the West Loch of Pearl Harbor and for endangered plants located within Kalaeloa (formerly Barbers Point Naval Air Station) and elsewhere;
- Protecting open space outside the Community Growth Boundary from development;
- Requiring surveys to identify endangered species habitat and requiring appropriate mitigations for adverse impacts on endangered species in new development areas;

- Protecting endangered fish and invertebrates present in sinkholds such as Ordy Pond near the east edge of Kalaeloa; and
- Cleaning up contaminated areas that pose hazards to soil and water quality, especially in the Kalaeloa area.

See Exhibit 3.2 in Chapter 3 for a mapping of key natural resources.

2.2.9 PRESERVATION AND ENHANCEMENT OF HISTORIC AND CULTURAL RESOURCES

'Ewa's Historic and Cultural Resources will be preserved and enhanced by:

- Preserving significant historic features from the plantation era and earlier periods, including:
  - The 'Ewa Plantation Villages and other remnants of the plantation era;
  - The OR&L right-of-way and railway stock;
  - The Honouliuli Internment Camp;
  - The 'Ewa Marine Corps Air Station;
  - Pu'u O Kapolei/Fort Barrette;
  - Pu'u Makakilo;
  - Lanikūhonua,
  - Native Hawaiian cultural and archaeological sites;
- Retaining visual landmarks and significant public views and vistas, including:
  - Distant vistas of the shoreline from the H-1 Freeway above the 'Ewa Plain;
  - Views of the ocean from Farrington Highway between Kahe Point and the boundary of the Wai'anae Development Plan Area;
  - Views of the Wai'anae Range from H-1 Freeway between Kunia Road and Kalo'i Gulch and from Kunia Road;
  - Views of nā pu'u at Kapolei, Pālailai, and Makakilo;
  - *Mauka* and *makai* views;
  - Views of central Honolulu and Diamond Head, particularly from Pu'u O Kapolei and Pu'u Makakilo; and by
- Identifying and protecting sites that are important to Native Hawaiian cultural practices.

2.2.10 PLANNED REGIONAL DEVELOPMENT

Planned development of 'Ewa will support the City of Kapolei's development and conserve scarce infrastructure dollars. It will be characterized by:

- **Increased land supply** to support economic development and job creation and to accommodate major residential growth with an emphasis on providing affordable housing and a diversity of housing types;
- **Moderate growth of commercial centers in Urban Fringe Areas** to primarily serve the needs of the surrounding residential communities;
- **Approval of Residential and Commercial development** that supports development of the Secondary Urban Center (See Table 2.1);
- **Adequate Facilities Requirements** adopted as a condition for zoning approval to ensure that infrastructure will be adequate to meet the needs caused by expected development;
- **Coordinated Public-Private Infrastructure and Project Development** that supports the directed growth strategy of the **General Plan**. Examples of project development include construction of the State and City offices in the Kapolei Civic Center, the DHHL headquarters building Hale Kalaniana'ole, and development of the UHWO campus; and
- **Adequate Funding for Infrastructure** through methods such as Tax Increment Financing (TIF) and Community Facilities District (CFD) which provide funding for infrastructure concurrently with, or in advance of, residential and/or commercial development.

Table 2.1 shows the approximate land area and projected number of housing units of projects shown in Exhibit 2.3 and on the Land Use Map and Phasing Map in Appendix A. The projects are categorized by status of land use approvals (fully entitled, need zoning, or need State Urban Land Use District designation and zoning). The estimates of land areas involved and densities for proposed projects are based on proposals and historic behavior. If the proposed project is approved, the actual acreages and densities as well as project design requirements will be determined by Council as part of the approval of the project zone change application.

The capacity for development of 48,100 units in Table 2.1 represents only the **Potential Supply of Housing Units** based upon projects previously approved or proposed. It is important to emphasize that these projects are **not** necessarily expected to be completed within the next 25 years.

It is expected that housing development activities at many projects would continue for ten years or more after the initial zoning approval. The number of units actually produced and sold, and the timing of their production, will depend upon market forces. Absorption of new units is projected to be almost 26,500 units between 2009 and 2035, which would use only around 55 percent of potential supply identified in Table 2.2.

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3. LAND USE POLICIES AND GUIDELINES

The vision for development of 'Ewa described in the preceding chapter will be implemented through application of land use general policies, and guidelines. These policies and guidelines are not regulations, but provide guidance that decision makers and administrators should follow, where sensible, in approving projects and revising rules, regulations, and best practices standards.

3.1 OPEN SPACE PRESERVATION AND DEVELOPMENT

The open space system consists of areas in active use, as well as passive areas. Active areas include parks, golf courses and agricultural fields. Passive areas include lands in the State Conservation District, fallow land in the State Agriculture District, drainage and utility corridors. Shoreline areas may be either active or passive.

3.1.1 GENERAL POLICIES

Use open space to:

- Provide long-range protection for diversified agriculture on lands outside the Community Growth Boundary;
- Protect scenic views and natural, cultural, and historic resources;
- Provide recreation;
- Define the boundaries of communities, by;
  - Using the large expanses of open space beyond the Community Growth Boundary to provide the basic definition of the regional urban pattern, and
  - Using the open space system within the Community Growth Boundary to visually distinguish and physically separate individual communities, neighborhoods, and land use areas;
- Provide a fire safety buffer where developed areas border "wildlands" either in preservation areas within the Community Growth Boundary or in the State Conservation District;
- Promote the accessibility of shoreline and mountain areas (as required by City Ordinance);
- Preserve natural gulches and ravines as drainageways and stormwater retention areas; and
- Create major pedestrian and bikeway linkages between communities, such as the OR&L / Pearl Harbor Historic Trail, through a network of greenways along transportation and utility corridors and drainageways connecting major open space areas.

3.1.2 RELATION TO OPEN SPACE MAP

The following areas shown on the Open Space Map in Appendix A are components of the regional open space system:

Mountain and Agricultural Areas - These are the areas outside of the Community Growth Boundary, including areas within the State Conservation District.

Natural Gulches and Drainageways - Within the Community Growth Boundary, the major gulches, including the Kaloʻi Gulch drainage channel, are shown in preservation uses. (See the listing in Table 2.2.)

Shoreline Areas - The proposed lateral public easement/access along the shoreline is indicated by a dotted line. Nearshore, coastal-dependent uses and features such as beach parks and wetlands are indicated as parks and preservation areas, respectively.

Parks - Only island-wide and regional district parks are shown. Community and neighborhood parks are part of the open space system, but they are generally too small to display on a regional map, and their location is determined more by community design considerations (see Section 3.3) than by their relationship to the regional open space network.

Golf Courses - All golf courses are shown, whether public or private-owned, since their visual contribution to the open space system is the same.

Greenways or Open Space Corridors - These corridors are indicated on the map following certain public right-of-ways that are extensive enough to make a significant contribution to the regional open space network as a linear connector.

3.1.3 GUIDELINES

The following guidelines suggest how the general policies for Open Space Preservation and Development should be implemented:

3.1.3.1 Mountain Areas

- Acquire and maintain a public campground and support public access to hiking trails in the area *mauka* of the Community Growth Boundary on the slopes of the Waiʻanae Range.
- Acquire and maintain public access, including vehicular access from Makakilo Drive, to trail heads and public campgrounds.
- Provide access to mountain trails in the Pālehua Ridge area via Pālehua Road as part of the Makaīwa Hills project.

- Maintain the forest at higher elevations, in the State Conservation District. Plan utility corridors and other uses to avoid disturbance to areas with high concentrations of native species.
- Identify endangered species habitats and other important ecological zones and protect them from threats such as fire, weeds, feral animals and human activity.
- Identify and protect areas that are important to Native Hawaiian cultural practices.

3.1.3.2 Natural Gulches and Drainageways

- Preserve the natural gulches on the slopes of the Waiʻanae Range foothills within the Community Growth Boundary as part of the open space system.
- Integrate planned improvements to the ʻEwa drainage systems into the regional open space network by emphasizing the use of retention basins and recreational access in the design approach. (See Chapter 4, Section 4.6.)
- View drainageways and utility corridors as opportunities to link major open spaces with pedestrian and bike paths along open corridors in order to create the regional open space network.
- Where practical, retain drainageways as natural or man-made vegetated channels rather than concrete channels.

3.1.3.3 Shoreline Area

- Provide public pedestrian access to the shoreline at intervals of approximately 1/4 mile, except where access is restricted by the military for security reasons. To make this access usable by the public, provide adequate parking.
- Where a lateral public easement along the shoreline is available or planned, allow the distance between access points to be increased. However, the intervals should generally not exceed one mile and vehicular parking spaces and limited facilities for waste disposal and potable water supply should be available at the access points.
- Maintain and enhance near-shore wetlands and mangroves, where necessary, as wildlife habitats.

- Identify and protect areas that are important to Native Hawaiian cultural practices.
- Coordinate private and public landowners' efforts to create continuous shoreline easements to ensure the maximum feasible degree of lateral public access.
- Provide lateral shoreline access along the Hoakalei coastline and a pathway providing continuous public access around the Hoakalei Marina.
- Provide, at a minimum, a 60-foot setback along the shoreline, and, where possible, expand the setback to 150 feet where justified, based on historic or adopted projections of shoreline erosion rates.
- Analyze the possible impact of sea level rise for new public and private projects in shoreline areas and incorporate, where appropriate and feasible, measures to reduce risks and increase resiliency to impacts of sea level rise.

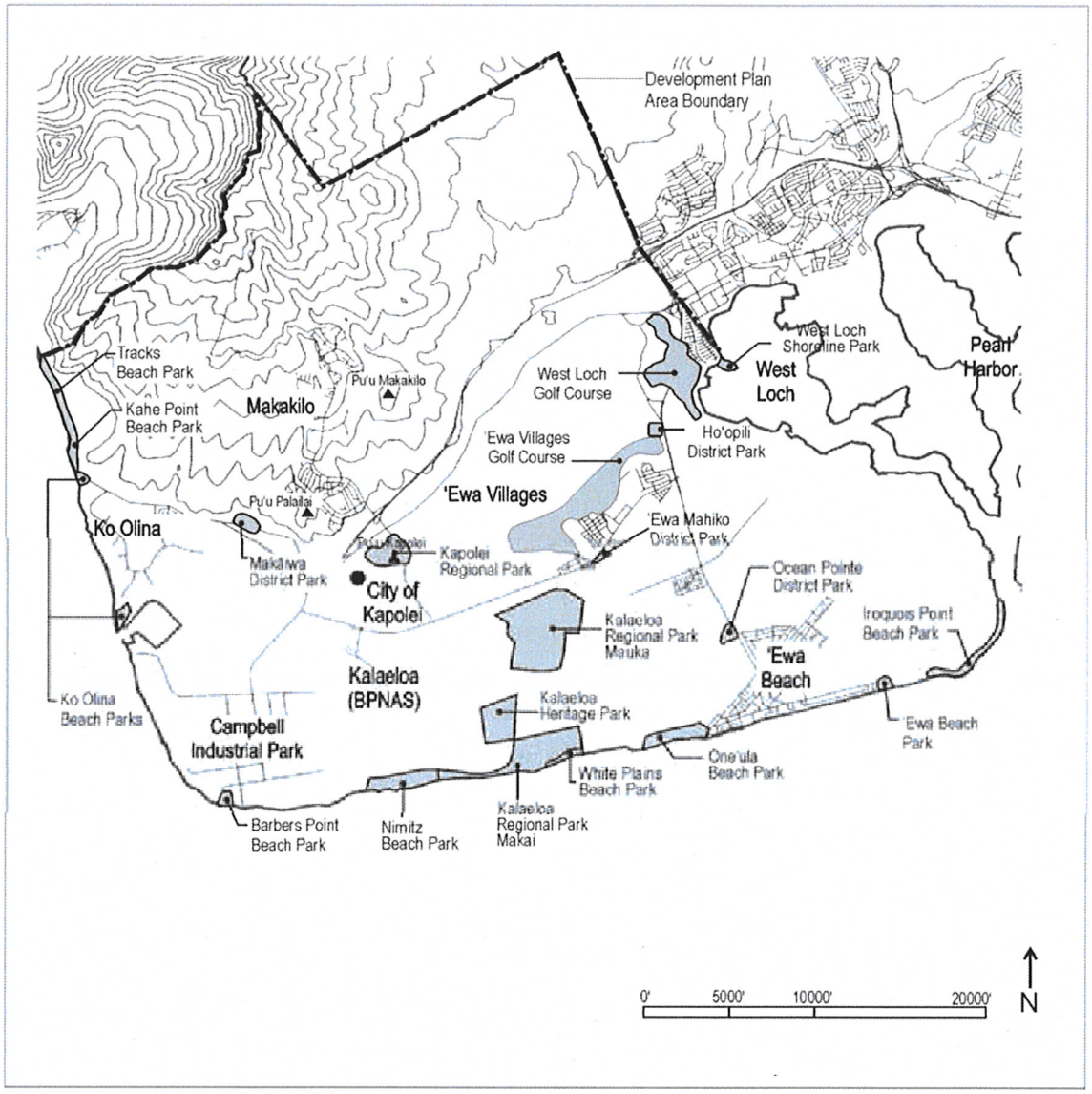
3.1.3.4 Agricultural Areas

- Permit facilities necessary to support intensive cultivation of arable agricultural lands.
- Permit facilities to support limited outdoor recreation use, such as camping, horseback riding, and hiking, in areas where agricultural use is not feasible.
- Permit residential use only to the extent that it is accessory to the agricultural use. Where several dwellings are planned as part of an agricultural use, they should be sited and clustered to avoid the use of more productive agricultural lands and to reduce infrastructure costs.
- Design and locate buildings and other facilities that are accessory to an agricultural operation to minimize impact on nearby urban areas, arterial roads, and major collector streets.

3.1.3.5 Parks

- Develop a major regional park at Kalaeloa that provides beach-oriented recreation and support facilities near the shoreline and active recreation facilities in *mauka* areas, and preserves significant cultural resource areas and wildlife habitats such as wetlands and endangered plant colonies. (See Exhibit 3.1: Parks in the 'Ewa Development Plan Area.)

Exhibit 3.1
Parks in the ʻEwa Development Plan Area



- Locate other beach and shoreline parks throughout the ʻEwa coastline. A beach park at the south end of the Ko Olina shoreline has been built, and it and a shoreline park at the Kahe end of Ko Olina are to be dedicated to the City at some point in the future. Oneʻula Beach Park will be expanded by 9.4 acres as part of the Ocean Pointe/Hoakalei project.
- Maintain prominent landforms at Puʻu O Kapolei and Puʻu Pālailaias natural visual features and regional landmarks.

3.1.3.6 Golf Courses

- Locate and design golf courses to optimize their function as drainage retention areas.
- Consider the impact on existing and proposed regional trails, paths and bike routes in designing new golf courses. Where necessary for these trails, paths and bike routes, provide safe corridors by or through the course.
- Design golf courses to provide view amenities for adjacent urban areas, including public rights-of-way.
- When screening is necessary for safety reasons, use landscape treatment, setbacks, and modifications to the course layout rather than fencing or solid barriers, where feasible.

3.1.3.7 Wildlands - Urban Fire Hazard Setbacks

- As determined appropriate by the Honolulu Fire Department (HFD), require residential or commercial developments that are adjacent either to preservation areas within the Community Growth Boundary or to lands within the State Conservation District to provide a setback to reduce the risk of fire spreading from the "wildlands" to the developed area. Typically, such a setback would be 20 to 30 feet wide and landscaped with low growth, low-burn plantings.

3.1.3.8 Greenways and Open Space Corridors

- Provide additional connectivity for bikers and pedestrians by developing the Pearl Harbor Historic Trail, which will extend for about 18.5 miles from Rainbow Marina near ʻAiea to Nānākuli. The Trail, running west on the OR&L right-of-way across the ʻEwa plain, will allow bikers and pedestrians to connect to the Trail from other access points including City parks, through the addition of scenic shared use paths in ʻEwa and Ko Olina to travel as far as Nānākuli to the west. Running east, the Trail will follow a greenbelt linking a network of shoreline parks stretching from West Loch to Rainbow Marina near Aloha Stadium. Establish the bikeway even in those sections where the railroad itself is not operational.
- Provide sufficient easement width for the major trunk lines and transmission and distribution lines for utility systems, when their alignment is not within a road right-of-way, to permit the growth of landscaping within

and adjacent to the easement, consistent with all applicable operations, maintenance, and safety requirements.

- When overhead or underground transmission and distribution lines are located within or adjacent to a road right-of-way, provide sufficient width to permit the growth of landscaping adjacent to the transmission line, consistent with all applicable operations, maintenance, and safety requirements. The purpose of the landscaping is to divert attention from the overhead lines and, preferably, obscure views of the overhead lines from the travel way and adjacent residential areas. Place new transmission lines underground where possible under criteria specified in State law.
- Permit the use of utility easements for pedestrian and bicycle routes, consistent with all applicable operations, maintenance, and safety requirements.
- Design the rights-of-way for major and minor arterials as landscaped parkways or greenways, complete with a landscaped median strip, landscaped sidewalks, and bikeways. Major arterials should have separate bike paths, and minor arterials should have bike lanes. Suggested width for major arterials, including right-of-way and planting strips, is 120 feet wide and for minor arterials is 100 feet wide.

3.2. REGIONAL PARKS AND RECREATION COMPLEXES

The following section presents general policies, and guidelines for development of regional parks and recreation complexes.

Regional parks and recreation complexes include the Kalaeloa Regional Park proposed for surplus lands at the former Barbers Point Naval Air Station, Kapolei Regional Park, various beach and shoreline parks, and public and private golf courses.

The City and the U.S. Department of the Interior are negotiating the conveyance of the lands for Kalaeloa Regional Park to the City. In the meantime, the Department of Parks and Recreation (DPR) is operating a beach camping area at Kalaeloa under a licensing agreement with the Navy. DPR also operates two Kalaeloa baseball parks on land recently conveyed from the Navy to Ford Island Properties, Inc.

(FIP), and is negotiating an agreement with FIP to continue operating the parks. The Navy operates the Nimitz and White Sands beach parks at Kalaeloa which are open to the public. (The Navy intends to retain the two beach parks.)

Existing City beach and shoreline parks are located at Tracks, Kahe Point, Barbers Point, One'ula, 'Ewa Beach, and West Loch.

Two beach parks at either end of the Ko Olina shoreline have been built and will be turned over to the City at some point in the future as required by ordinance. The larger park at the northern end of the resort provides for picnicking and other passive recreation. A park at the southern end provides direct access to one of the four swimming lagoons. A boat-launching ramp, which is available for public use, is being relocated to the eastern end of the Ko Olina marina.

'Ewa has nine golf courses. In addition, one more course is planned for the Kapolei West development. (See Table 2.2)

The City's courses include the West Loch and 'Ewa Villages golf courses. The 'Ewa Village golf course also provides flood protection and storm water detention for 'Ewa Villages.

Privately owned golf courses include the Hawai'i Prince Golf Club, 'Ewa Beach Golf Club, Hoakalei Country Club, Coral Creek Golf Course, Kapolei Golf Course, and Ko Olina Golf Club. The U.S. military operates a golf course at Kalaeloa. The Coral Creek Golf Course opened in March 1999. The Hoakalei Country Club opened for play in 2008. An 18-hole golf course is planned as part of the proposed Kapolei West project. Plans for golf courses at Makakilo and Makaīwa Hills have been cancelled. Sports and recreation complexes designed to attract visitors from throughout the region and the rest of O'ahu have been proposed for a number of areas in 'Ewa.

3.2.1 GENERAL POLICIES

- Consider using public-private partnerships to build, and maintain new park and recreation complexes in order to sustain economic development.

- Design the built environment to avoid adverse impacts on natural resources or processes in the coastal zone or any other environmentally sensitive area.

Regional Parks

- Develop a new Kalaeloa Regional Park which will feature a large shoreline park with beach recreation and support facilities; a wide range of activity areas including athletic fields in the *mauka* lands; and preserves for historic and cultural resources, wildlife habitats, wetlands, and endangered plant colonies. The Park will encompass mostly undeveloped lands, bordered by the shoreline on the south, the airfield and developed portions of the facility to the north and west, and the existing military golf course and the Hoakalei Country Club golf course to the east. Key elements of the Park are as follows:
  - The Park will include and preserve two wetland areas and an endangered plant preserve that have been recommended for preservation by the U.S. Fish and Wildlife Service.
  - Proposed uses for the *mauka* areas include a Hawaiian cultural park, continuation of the existing riding stable, cabin and tent camping, archery, and various other passive and active recreation uses.
  - The Park will also provide access to a continuous shoreline easement extending from the Ocean Pointe/Hoakalei development to Ko Olina.
- Complete development of Kapolei Regional Park to provide diverse active and passive recreation within easy walking distance of both the City Center and the Villages of Kapolei. The 73-acre park includes the Puʻu O Kapolei and serves as a defining limit for the northeastern edge of the City of Kapolei and as a visual gateway to the City. The park provides diverse active and passive recreation within easy walking distance of both the City Center and the Villages of Kapolei.
- Develop Puʻu Pālailai below Makakilo as a private nature park providing hikers excellent views of the ʻEwa Plain and distant views of downtown Honolulu and Diamond Head.

Golf Courses

- Use golf courses, where appropriate, to provide protection for open space, and help reduce flooding and non-point pollution by helping retain storm waters.

Recreation Complexes

- Design recreation complexes to be compatible with surrounding land uses and environmental features.

3.2.2 GUIDELINES

The following guidelines suggest how the general policies for Regional Parks and Recreation Complexes should be implemented.

3.2.2.1 Appropriate Scale and Siting

- Use architectural elements and siting to heighten the visibility ofmajor recreation events areas as they are approached from principal travel corridors.

3.2.2.2 Environmental Compatibility

- Locate and operate uses that generate high noise levels in a waythat keeps noise to an acceptable level in existing and planned residential areas.
- To retain a sense of place, incorporate natural features of the site and use landscape materials that are indigenous to the area in the design of recreation areas where feasible.
- Use xeriscaping (the use of native landscape materials with low water demand), non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources.

3.2.2.3 Community Integration

- Although the design of recreational attractions may have a distinct identity and entry, link these destinations with surrounding areas using connecting roadways, bikeways, walkways, landscape features or architectural design.

3.2.2.4 Islandwide and Regional Parks

- Develop a major park within Kalaeloa that provides beach-oriented recreation and support facilities near the shoreline, other active recreation facilities in *mauka* areas, and preserves for cultural and archaeological resources and for wildlife habitats such as wetlands and endangered plant colonies.
- Provide facilities for tent and cabin camping within the new park at Kalaeloa in the major recreational area that includes a beach camping area.
- Develop additional beach and shoreline parks along the ʻEwa coastline. Two existing beach parks at either end of the Ko Olina shoreline will be dedicated to the City. Oneʻula Beach Park will be expanded as part of the Ocean Pointe/Hoakalei project.
- Maintain prominent landforms at Puʻu O Kapolei and Puʻu Pālailai as natural visual features and regional landmarks. (See the Parks Map, Exhibit 3.1)

3.2.2.5 Sports and Recreation Complexes

Definition of Use Areas

- Separate uses that attract a high number of people for events as much as possible from residential areas and wildlife habitats.
- Provide amenities and service facilities to accommodate "tailgate" picnics, as well as nearby picnic tables and outdoor grills in parking areas for sporting events.

Transportation Facilities

- Locate bus loading areas, shelters and bicycle parking facilities as close as possible to entry gates for special events areas.
- Locate bus stops at all principal activity areas.

Views

- Locate and design facilities for special events to be readily visible and identifiable from the principal transportation corridors that lead to them.
- Establish the visual identity of the complex through distinctive architecture, landscaping, or natural setting.

Landscape Treatment

- Minimize the visibility of perimeter fencing, loading areas, parking lots and garages and other utilitarian elements through plantings or other appropriate visual screens along roadway frontages.
- In large parking lots, use canopy trees to provide shade. Use special paving or pavement markings to indicate pedestrian routes to destinations and differentiate sections of the parking area.

Natural Environment

- Retain, protect, and incorporate wetland and other wildlife habitat areas as passive recreational resources.

3.2.2.6 Siting

- Island-wide and regional parks and golf courses are shown on the Open Space Map and the Public Facilities Maps in Appendix A.
- Change in the location of an island-wide park or a golf course shall require a City review and approval process, such as the Plan Review Use process, which provides adequate public notice and input, complete technical analysis of the project, and approval by the City Council. Approval of changes in size and configuration may be done administratively.
- Regional sports and recreation complexes may be located in Kalaeloa, on the fringes of the City of Kapolei, and in areas designated for commercial or park use, subject to a City review and approval process which provides public review and complete analysis.

3.3 COMMUNITY-BASED PARKS

The following section provides general policies and guidelines for community-based parks and recreation areas.

Community-based parks (and associated recommended size and service radius) include mini-parks (no size specified and 1/2 mile), neighborhood parks (5 acres and 1/2 mile), community parks (10 acres and one mile), and district parks (20 acres and two miles).

3.3.1 GENERAL POLICIES

- Provide adequate parks to meet residents' recreational needs. The Department of Parks and Recreation (DPR) standard for community-based parks is that a minimum of two acres of community-based parks should be provided per 1,000 residents, with one acre per thousand needed for district parks and one acre needed for community parks, neighborhood parks, and mini-parks. (Even if these standards are met, there may still be unmet park needs due to demographic or other community conditions.) The need for community-based parks can be met either through public parks operated by the City or private community parks and recreation centers operated by home owner associations.
  - Currently, ʻEwa has significantly less district park acreage than the DPR standard indicates is needed for its existing population. To meet the DPR standard, ʻEwa's population of 101,397 in 2010 needed 203 acres with 101 acres needed in district parks. The combined total of ʻEwa public and private community-based parks in 2008 was 140 acres, with only one 25-acre district park, ʻEwa Mahikō.
  - ʻEwa's population is projected to grow to 164,500 by 2035. Based on the DPR standards, 189 more acres of community-based parks should be added to the existing park acreage to meet the needs of the projected 2035 ʻEwa population, including 140 acres at district parks.
  - As shown in Table 3.1, land has been set aside for development of future community-based parks as part of master-planned communities throughout ʻEwa. There are plans to develop 350 acres of new parks, including 162 in district parks.
- Protect and expand access to recreational resources in the mountains, at the shoreline, and in the ocean. Trails to and through natural areas of the gulches and mountains are an important public recreational asset. Some areas are difficult to access because of landowner restrictions.
- Support efforts to expand access to mountain and gulch trails in areas where urban development will not occur.

Table 3.1: 'Ewa Public and Private Parks and Golf Courses

NAME AND TYPE OF PARK	ACRES
Regional Parks	
Kalaeloa Heritage Park [1]	96.2
Kalaeloa Regional Park [2]	409.5
Kapolei Regional Park (1972)	69.4
Regional Park Total	**575.1**
Community Based Parks	
District Parks	
Ocean Pointe District Park [3]	20.0
'Ewa Mahikō District Park (1998)	25.0
Ho'opili District Park [4]	25.0
Kalaeloa Parks (OS-10, 11, & 12) [4]	70.0
Makaīwa Hills District Park [5]	20.0
District Park Total	**160.0**
Community Parks	
Asing Community Park (1996)	12.8
DHHL East Kapolei II [3]	11.0
'Ewa Beach Community Park (1961)	13.3
Geiger Community Park (1996)	10.0
Kamokila Community Park (1977)	5.9
Kapolei Community Park (1999)	12.0
Kapolei West Community Park [3]	12.3
Ko 'Olina Community Park [3]	11.0
Laulani Community Park [3]	16.4
Makaīwa Hills Community Park [3]	10.0
Makakilo Community Park (1977)	8.5
Community Park Total	**123.1**
Neighborhood Parks	
DHHL East Kapolei II Mauka & Makai [3]	10.5
East Kapolei UH WO I & II [3]	11.5
'Ewa by Gentry Area 19C [3]	9.2
Ho'opili Mini-Neighborhood Parks [4]	35.0
Iroquois Point Neighborhood Park [3]	12.1
Kalaeloa Downtown Neighborhood Park[2]	7.0
Kapolei Neighborhood Park [3]	6.0
Kapolei West Neighborhood Park [3]	5.0
Ko 'Olina Neighborhood Park [3]	5.1
Makaīwa Hills Neighborhood Parks I and II [3]	11.5
Makakilo Neighborhood Park (1968)	4.0
Maukalani Neighborhood Park (1976)	4.4
Pālailai Neighborhood Park (1999)	5.0
Pu'uloa Neighborhood Park (1961)	4.3
Neighborhood Park Total	**130.6**
Private Parks and Recreation Centers	
'Ewa by Gentry (1989-2005)	19.0
Ocean Pointe (2001-2004)	4.3
Kroc Center[4]	15.0
Villages of Kapolei (1995-1999)	10.3
Makakilo (1998)	0.4
Makaīwa Hills [4]	15.0
Kapolei West [4]	12.0
Ko Olina (2005)	1.0
Private Parks Total	**76.9**
Community Based Parks Total	**490.6**

Table 3.1: 'Ewa Public and Private Parks and Golf Courses (Continued)

NAME AND TYPE OF PARK	ACRES
Beach Parks	
Barbers Point Beach Park (1964)	7.4
'Ewa Beach Park (1951)	4.9
Iroquois Point Beach Park (military)	2.0
Kahe Point Beach Park (1954)	4.5
Ko Olina Beach Park (1993)[6]	9.0
Makaīwa Beach Park (1993)[6]	18.0
Nimitz Beach Park (military)	21.3
HCDA Nimitz Expansion Shoreline Access[7]	2.0
Kalaeloa Regional Park Nimitz Expansion[2]	4.2
One'ula Beach Park (1969)	30.0
Tracks Beach Park (1988)	14.3
West Loch Shoreline Park (1991)	5.8
White Plains Beach Park (military)	15.4
Beach Park Total	**138.7**
Public & Private Parks Total	**1,204.5**
Golf Courses	
Barbers Point Golf Course (military)	145.0
Coral Creek Golf Course	195.0
'Ewa Beach Golf Club	130.0
'Ewa Villages Golf Course [8]	235.0
Hawai'i Prince Golf Club	270.0
Hoakalei Country Club (Ocean Pointe)	189.0
Kapolei Golf Course	190.7
Kapolei West Golf Course [4]	203.0
Ko Olina Golf Club	170.0
West Loch Golf Course [8]	187.0
Golf Course Total	**1,914.7**
Parks and Golf Course Total	**3,119.2**

Key:

[1] Land conveyed or pending transfer to HCDA which is to be part of a cultural park, endangered plant refuge and wildlife habitat.

[2] Land proposed for conveyance to the City as part of the Barbers Point Naval Air Station closure. As of April 2011, the land had not yet been conveyed. Includes beach camping areas now operated by the City under license from the Navy.

[3] Land set aside for future parks to be developed and dedicated to the City.

[4] Planned.

[5] Land set aside for a future District Park to be developed by the City.

[6] Beachfront parks developed by Ko Olina Resort. Currently, they are owned, maintained, and managed by Ko Olina Resort, but will be dedicated to the City in the future, as required by ordinance.

[7] Land adjacent to Nimitz Beach Park to be transferred to HCDA for development for aquaculture and fisherman's access.

[8] City-owned golf courses.

3.3.2 GUIDELINES

The following guidelines suggest how the general policies for Community-Based Parks should be implemented:

3.3.2.1 Development of Community-Based Parks

- Co-locate Neighborhood or Community Parks with elementary or intermediate schools and coordinate design of facilities when efficiencies in development and use of athletic, recreation, meeting, and parking facilities can be achieved.
- Coordinate the development and use of athletic facilities such as swimming pools and gymnasiums with the State Department of Education (DOE) where such an arrangement would maximize use and reduce duplication of function.
- Where feasible, site Community and Neighborhood Parks near the center of neighborhoods, in order to maximize accessibility.
- Provide accessible pathways from surrounding streets to facilitate pedestrian and bicycle access to parks.
- Use xeriscaping (the use of native landscape materials with low water demand), non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources.

3.3.2.2 Access to Mountain Trails

- Support continuation of controlled access to the Waiʻanae Range mountain trails via Pālehua Road for hiking organizations.
- Provide access to mountain trails in the Pālehua Ridge area via Pālehua Road as part of the Makaīwa Hills project.

3.3.2.3 Siting

- Conceptual locations for district parks are shown on the Open Space Map in Appendix A. Being conceptual, these locations may be revised without needing to amend the Development Plan as more detailed site information and planning analysis is available.
- Community and neighborhood parks are part of the open space system, but their location is determined more by community design considerations than by their relationship to the regional open space network. Siting of

Community and Neighborhood Parks should be reviewed and decided at the time the Project Master Plan is submitted, prior to the granting of a zone change.

3.4 HISTORIC AND CULTURAL RESOURCES

'Ewa contains several different types of historic and cultural sites, which are representative of its history and valuable as historic records and cultural references. In addition, public views which include views along streets and highways, *mauka-maka*i view corridors, panoramic and significant landmark views from public places, views of natural features, heritage resources, and other landmarks, and view corridors between significant landmarks, can be important cultural resources.

This section provides policies, and guidelines for the preservation and development of historic and cultural resources in 'Ewa.

3.4.1 GENERAL POLICIES

- Emphasize physical references to 'Ewa's history and cultural roots to help define 'Ewa's unique sense of place.
- Protect existing visual landmarks, and support creation of new culturally appropriate landmarks.
- Preserve significant historic features from the plantation era and earlier periods.
- Vary the treatment of sites according to their characteristics and potential value.
- Use in situ preservation and appropriate protection measures for historic, cultural, or archaeological sites with high preservation value because of their good condition or unique features, as recommended by the State Historic Preservation Officer. In such cases, the site should be either restored or remain intact out of respect for its inherent value.
- Retain significant vistas whenever possible.
- Where known archaeological and cultural sites have been identified and impact mitigations approved as part of prior development approvals,

assume that the mitigations carry out the Plan vision and policies for preservation and development of historic and cultural resources in 'Ewa.

Exhibit 3.2 indicates the locations of a number of 'Ewa's significant historic and cultural resources, which are also listed in Table 3.1.

3.4.2 GUIDELINES

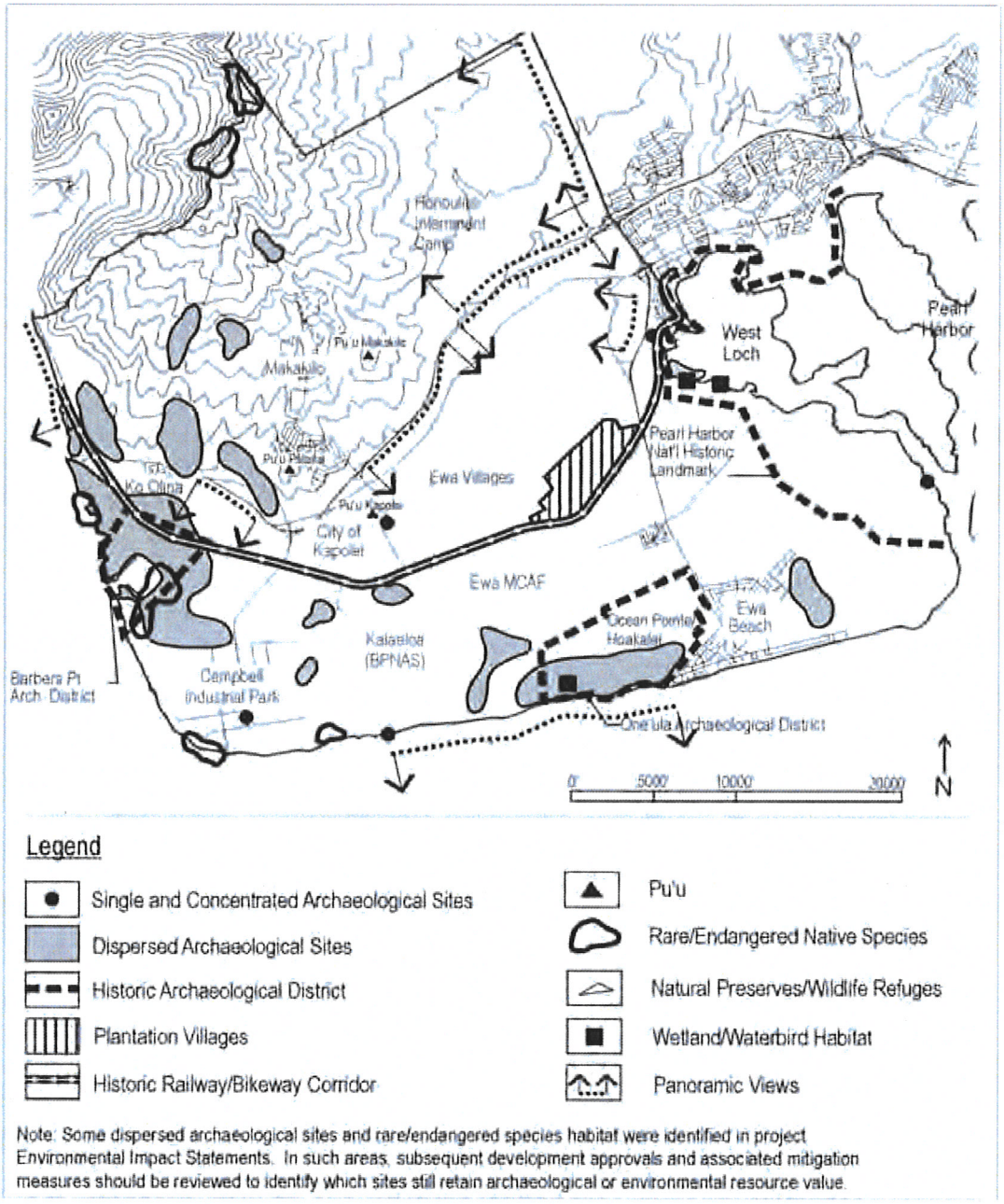
The following guidelines suggest how the general policies for Historic and Cultural Resources should be implemented:

3.4.2.1 Sites Under Review

- **Adaptive Reuse** – Allow historic sites to be converted from their original intended use to serve a new function if it can be done without destroying the historic value of the site, especially if its interpretative value is enhanced.
- **Accessibility -** Public access to an historic site can take many forms, from direct physical contact and use to limited visual contact. Determine the degree of access based on what would best promote the preservation of the historic, cultural and educational value of the site, recognizing that economic use is sometimes the only feasible way to preserve a site. In some cases, however, it may be highly advisable to restrict access to protect the physical integrity or sacred value of the site.
- Protect the Honouliuli Internment Camp site from development until efforts to evaluate it for National Historic Register listing and for inclusion as a satellite site in the World War II Valor in the Pacific National Monument have established the value of the site and its appropriate treatment.
- Protect the 'Ewa Marine Corps Air Field site in Kalaeloa from development while a study is done to establish the condition of the site and the appropriate treatment of historic resources at the site.

Exhibit 3.2

Natural, Historic & Scenic Resources in the 'Ewa Development Plan Area



Note: Some dispersed archaeological sites and rare/endangered species habitat were identified in project Environmental Impact Statements. In such areas, subsequent development approvals and associated mitigation measures should be reviewed to identify which sites still retain archaeological or environmental resource value.

TABLE 3.2: SIGNIFICANT 'EWA HISTORIC AND CULTURAL RESOURCES

SIGNIFICANT HISTORIC FEATURES AND LANDMARKS

'Ewa Plantation Villages
'Ewa Marine Corps Air Field
Honouliuli Internment Camp
Lanikūhonua
OR&L Historic Railway & Railway Stock
Pearl Harbor National Historic Landmark
Pu'u Makakilo
Pu'u O Kapolei/Fort Barrette

NATIVE HAWAIIAN CULTURAL AND ARCHAEOLOGICAL SITES

Barbers Point Archaeological District
'Ewa Beach Midden Site
'Oki'okiolepe Pond
One'ula Archaeological District

SIGNIFICANT VIEWS AND VISTAS

- Distant vistas of the shoreline from the H-1 Freeway above the 'Ewa Plain;
- Views of the ocean from Farrington Highway between Kahe Point and the boundary of the Wai'anae Development Plan Area;
- Views of the Wai'anae Range from H-1 Freeway between Kunia Road and Kalo'i Gulch and from Kunia Road;
- Views of Nā Pu'u at Kapolei, Pālailai, and Makakilo;
- *Mauka* and *makai* views; and
- Views of central Honolulu and Diamond Head, particularly from Pu'u O Kapolei, Pu'u Pālailai, and Pu'u Makakilo.

3.4.2.2 Impacts of Development on Historic and Cultural Resources

- **Compatible Setting -** The context of an historic site is usually a significant part of its value. Plan and design adjacent uses to avoid conflicts or abrupt contrasts that detract from or destroy the physical integrity and historic or cultural value of the site. The appropriate treatment should be determined by the particular qualities of the site and its relationship to its physical surroundings.
- **Public Views -** Design and site all structures, where feasible, to reflect the need to maintain and enhance available views of significant landmarks and vistas. Whenever possible, relocate or place underground overhead utility lines and poles that significantly obstruct public views, under criteria specified in State law.

3.4.2.3 OR&L Historic Railway

Method of Preservation

- Maintain or repair the existing track to the extent feasible in order to permit its use for historic and educational rides.
- Extend the route from ʻEwa Villages to Nānākuli.
- To allow connectivity within the region, accommodate cross-traffic at appropriate intervals along the right-of-way, and at sufficient distances from one another to prevent impeding normal locomotive operations.

Adaptive Reuse

- Encourage use of the railroad to promote the history and culture of the area.
- Develop a parallel paved pedestrian path/bikeway along the length of the rail route, either within or adjacent to the right-of-way as part of the Pearl Harbor Historic Trail, even in those sections where the railroad itself is not operational. The pedestrian path/bikeway should be designed so as not to interfere with historic railway operations.

Adjacent Uses

- Design structures and elements related to the Pearl Harbor Historic Trail to reflect the historic nature of the railway and its surroundings.

- Set back new development a minimum of 50 feet on either side of the OR&L right-of-way, unless it is either directly related to the operation of the railroad, or reconstruction of an historic use, or is consistent with the use of the right-of-way for open space and shared pedestrian path/bikeway purposes in stretches where railroad operation is not feasible, or is otherwise specified in existing land use approvals.
- Provide landscaping along the adjacent shared pedestrian path/bikeway, with occasional rest stops with seating and other amenities.
- Permit railroad station platforms, maintenance and equipment buildings, kiosks and other accessory structures with a historic architectural theme (late 19th Century – early 20th Century), as well as parking and loading areas in the railroad right-of-way and setback area.
- Roadway and transit facilities should be designed to have minimal impact on historic railway operations.

Public Access

- Encourage public use by continuing and expanding the historic railway operations, providing a parallel shared pedestrian path/bikeway, and by providing greater connectivity by connecting the Trail to City parks and other access points through the addition of scenic shared use paths in ʻEwa and Ko Olina.
- Post interpretative signs along the route to explain the historic significance of the railroad and note points of interest.

3.4.2.4 Lanikūhonua

Method of Preservation

- Maintain the appearance of the house and grounds as closely as possible to its present condition.
- Maintain the landscaped character of the grounds and their physical and visual relationship to the shoreline environment.
- Perpetuate the sense of place by using the site for Hawaiian cultural events.

Adaptive Reuse

- Focus use of the site on the landscaped grounds as a location foroutdoor events, particularly those with a Hawaiian cultural theme.
- Limit commercial use of the site to be occasional rather than intensive, and events to low-key entertainment.

Architectural Character

- Require modifications to the existing structures to respect the architectural style of the original dwelling and be limited to repairs, rehabilitation or minor expansions.
- Require coconut palms to be the dominant tree on the grounds, with other complementary coastal vegetation, preferably native species such as *hala* and *'ilima*.
- Maintain the visual relationship between the grounds and the shoreline, particularly the natural cove.

Adjacent Uses

- Maintain a dense growth of landscaping to visually separate Lanikūhonua from the surrounding Ko Olina resort to retain the quiet ambiance and appearance of a remote tropical retreat.
- Maintain the visual identity of Lanikūhonua as a unique site apart fromKo Olina by retaining the dense growth of tall palm trees.
- Provide public access along the shoreline fronting Lanikūhonua, but not in as formal a manner as Ko Olina.

Public Access

- Maintain Lanikūhonua as a private facility with limited public access for scheduled community and cultural events and private parties.

3.4.2.5 Native Hawaiian Cultural and Archaeological Sites

Method of Preservation

- Require preservation in situ for those features that the State Historic Preservation Officer has recommended for such treatment.

- Determine the preservation method, ranging from restoration to "as is" condition, on a site-by-site basis, in consultation with the State Historic Preservation Officer.

Adjacent Uses

- Determine appropriate delineation of site boundaries and setbacks and restrictions for adjacent uses on a site-by-site basis in consultation with the State Historic Preservation Officer.
- Include the sight lines that are significant to the original purpose and value of the site as criteria for adjacent use restrictions.

Public Access

- Determine the appropriateness of public access on a site-by-site basis in consultation with the State Historic Preservation Officer, Hawaiian cultural organizations and the owner of the land on which the site is located.

3.5 NATURAL RESOURCES

This section describes the general policies, and guidelines that are to be applied to protect 'Ewa natural resources.

3.5.1 GENERAL POLICIES

- Conserve potable water.
- Protect valuable habitat for waterbirds and other endangered animals and plants.
- Protect endangered fish and invertebrates in sinkholes.
- Clean up contaminated areas that pose hazards to soil and water quality, especially in Kalaeloa.
- Require surveys for proposed new development areas to identify endangered species habitat, and require appropriate mitigations for adverse impacts on endangered species due to new development.
- Reduce light pollution's adverse impact on wildlife and human health and its unnecessary consumption of energy by using, where sensible, fully shielded lighting fixtures using lower wattage.

3.6 CITY OF KAPOLEI

This section describes the general policies and guidelines that are to be applied to development of the City of Kapolei.

This section incorporates key policies and guidelines for the City of Kapolei from the amended **The City of Kapolei Urban Design Plan** approved by the City Council by resolution in 2008, and the Unilateral Agreements adopted as part of zoning ordinances in 1990 and 2004.

The original Unilateral Agreement required revisions and updates to the Urban Design Plan be submitted for review and approval by the City Council every two years. However, in June 1998, the City Council passed a resolution (No. 98-227) which approved revisions to **The City of Kapolei Urban Design Plan** and stated that no further amendments or revisions to the Urban Design Plan should be made unless they are first recommended by the Kapolei Design Advisory Board, endorsed by Campbell Estate and approved by a City Council resolution.

(Note: The Urban Design Plan applies to Campbell Estate's properties covered by the 1990 Unilateral Agreement and to adjacent areas also covered by unilateral agreements adopted as part of subsequent zone changes.)

Future revisions to **The City of Kapolei Urban Design Plan**, when adopted by the City Council, should take precedence over the following policies, and guidelines in the case of a conflict and should not require an amendment to the Development Plan.

3.6.1 GENERAL POLICIES

- Develop the City of Kapolei as the urban core, or the "downtown" for the Secondary Urban Center. It should accommodate a major share of the new employment in the Secondary Urban Center.
- Allow the City of Kapolei to have a balanced mix of business and residential areas, complemented by the recreational, social and cultural activities of a city. Mixed use should be permitted and encouraged throughout most of the City area, in order to achieve the diversity and intensity of uses that characterize a city.

- Develop the City of Kapolei as a true city, encompassing a full range of urban land uses, and laid out in small blocks connected by a grid system of public streets. Exhibit 3.3 illustrates the street pattern and the planned land uses by district.

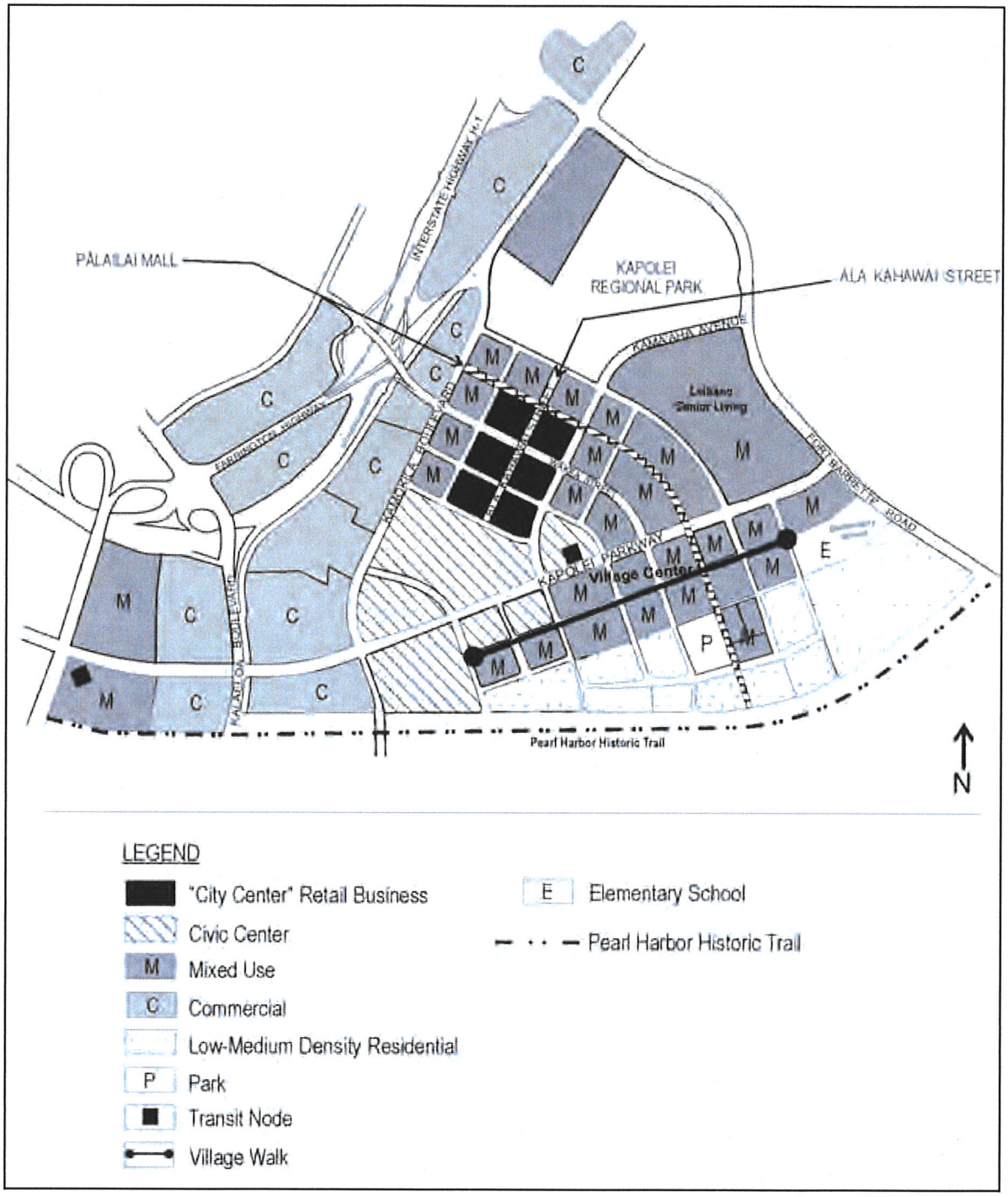
3.6.1.1 Districts

The City of Kapolei should be composed of six different districts that should accommodate the full array of business, commercial, residential, cultural and public uses that characterize a city center. The six districts are described below:

- The **City Center** should be the high-density core of the city. Larger office towers should be the predominant form of development in this district, with shopping and restaurants at ground level. The inclusion of apartments within some of the towers should also be encouraged to establish a more dynamic mix of uses and help to maintain an active urban environment in the area.
- The **Commercial District** should accommodate commercial uses, which require a large lot area for all related activities and convenient off-street parking, with most, if not all spaces, located at ground level. Building spaces should generally cover a relatively small portion of the lot (e.g., 25 percent or less).
    - Examples of possible uses include shopping centers, power centers, theaters, auto dealerships, discount retail outlets, furniture stores, and home improvement centers.
- The **Civic Center** should feature City and State offices in an urban park setting where people and activities are highlighted. The Civic Center should be much like a university campus in the heart of a city, with a balance between built forms and usable landscaped spaces, and between both active and passive uses.
- The **Mixed Use Districts** should be of medium density, with buildings limited to 120 feet next to the City Center, dropping to 90 feet, and then 60 feet farthest from the City Center. Commercial development should be emphasized in the area adjoining City Center, along Kapolei Parkway, and adjoining the Hānu'a Street extension, while residential use should be emphasized *makai* of Kapolei Regional Park and near Fort Barrette Road.

Exhibit 3.3

City of Kapolei Land Use Map



- In the *commercial emphasis mixed-use areas*, retail development (shopping, restaurants, services, etc.) should be encouraged to locate along the street front, with required parking located behind the building or above the ground floor. Offices may also be located on the ground floor, as well as on upper floors. Housing, when provided, should be located above the ground floor. A business hotel to provide short term inexpensive accommodations for business travelers and others who are not seeking resort accommodations could also be allowed.
- In *residential emphasis mixed use areas*, the primary use should be multi-family dwellings. Commercial uses to meet the shopping and service needs of the neighborhood's residents should be encouraged to locate at ground level.

- The **Village Center District** should be the vibrant, pedestrian friendly local shopping dining and entertainment center for residents living in the Mehana District *makai* of the Kapolei Parkway, as well as people living and working in the Mixed Use District on the *mauka* side of the Parkway.
- The **Mehana District**, located *makai* of Kapolei Parkway, should feature multi-family and single-family housing units in a series of distinct neighborhoods tied together by a network of pedestrian and bicycle paths.

3.6.1.2 Key Open Space Elements

Four key open space elements should link together and unify Kapolei's districts into a distinctive, vibrant city. Each of these important spaces is described below:

- **Kapolei Regional Park** should be the major park for both the City of Kapolei and the surrounding region. It should also function as both the *mauka* edge and as a visual gateway to the City of Kapolei. As a strong activity node with a variety of recreational opportunities, it should reinforce the image of Kapolei as a place where people can lead an active, healthy lifestyle.
  - The park should provide opportunities to participate in a diversity of recreational activities. Facilities should be included to allow users to bike, walk, hike and jog, and to play volleyball, soccer, football, baseball, and tennis. Multi-use open space should also be available for picnicking, sunbathing and relaxing.

- Facilities for public concerts and gatherings, such as an amphitheater and pavilions, as well as amenities for broader use and enjoyment, such as a formal garden, restaurants and water features, should also be included to help generate both day and evening activity in and around the park.
- The *makai* edges of the park adjacent to the City of Kapolei's downtown should be designed to ensure a strong relationship between City and park. The various structures in this area and elsewhere in the park should be designed to ensure compatibility and integration with adjacent commercial uses.

- **Ala Kahawai Street** should function as a "Main Street" and major open space axis and amenity within the most central and highest density area of the City. Ala Kahawai Street connects the Regional Park and Civic Center and comprises the central spine for the City Center district.
  - The corridor should be wide enough to provide a genuine sense of open space, yet not so wide as to disconnect developments on opposite sides from each other. Slow moving vehicular traffic should be allowed from Manawai Street to Ulu'ōhi'a Street to allow previewing of the opportunities for shopping, dining and entertainment along the corridor.
  - Canopy shade trees, ample landscaping, seating and water features should be prominent elements of the design in order to create a comfortable atmosphere and promote the idea of Kapolei as a garden city.
- **Pālailai Mall** should provide an open space cross axis to Ala Kahawai Street, extending *mauka-makai* and connecting the City of Kapolei's residential sector to the heart of its business district.
  - Canopy shade trees and benches, etc. should be provided as appropriate to establish the mall's character as a pleasant landscaped path for pedestrian circulation.
  - Extensive interaction between pedestrians and the activities in adjoining buildings, and the establishment of a "shopping promenade" character, should be fostered by encouraging the location of kiosks, sidewalk cafes, retail shops, and other people-oriented activities within and along the edges of the mall.

- **Village Walk** should provide an informal pedestrian spine for the City of Kapolei's residential area, with connections to the Civic Center, the *makai* end of Pālailai Mall, and Mehana Elementary School.
  - Landscaping, seating, and other furniture should be provided and arranged in a manner which establishes a pleasant atmosphere for informal gatherings of neighbors, as well as for movement through the area.
  - Both pedestrians and bicyclists should be accommodated in a manner that minimizes conflicts.

3.6.2 MAJOR THEMES

Seven major themes define key characteristics of the City of Kapolei used in the planning and design of developments in the City of Kapolei.

- **A Hawai'i Garden City -** A city within a garden, in the style of long established Hawai'i communities, is to be created. The garden is distinguished by major parks and boulevards with trees, flowers and abundant ground cover.
- **Healthy Living -** The garden city is to provide the setting for and encourage a healthy, outdoor, and active lifestyle through the interlacing of recreational facilities within the fabric of the entire city. These are to be connected by bike and walking paths.
- **Complete Community Services -** The theme of healthy living is to be supported by medical/health/fitness services and facilities. The City of Kapolei is also to serve the surrounding region with entertainment, cultural, educational and religious facilities, State and City government offices, and other city activities.
- **Easy Access -** Within the garden city, attractive paths for walking and biking should allow for convenient access between homes, jobs and recreational areas.
- **Design Reflecting the Past but Adaptable to the Needs of the Present and Future -** Building design in the City of Kapolei should reflect both the charm and more intimate human scale that characterizes the business districts of traditional Hawai'i towns such as Hilo, and the market forces and functional needs that shape the architecture of present-day and future business centers.

- **Environmental Sensitivity -** Resource conservation should be emphasized in the design of both the overall city center and its individual parts. The network of bike and walking paths, combined with the concentration of uses that make urban life convenient, should encourage people to leave their cars at home. Landscaping should be abundant and make extensive use of drought tolerant and native plant materials (xeriscaping) to the extent possible.
- **Transit Access and Orientation -** A transit node should be located near the Civic Center and City Center, and medium density residential uses should be encouraged within a five minute walking distance (about 1,300 feet) of the node. Uses adjoining the node should be designed so that they face toward the node, encouraging pedestrian traffic to flow to and from the node.
    - As part of the Development Plan vision for a transit corridor linking the City of Kapolei, Waipahū, and the PUC, higher density residential and commercial development should beencouraged around the City of Kapolei transit node and the transit corridor on Kapolei Parkway.

3.6.3 GUIDELINES

The following guidelines suggest how the general policies for the City of Kapolei should be implemented:

3.6.3.1 Urban Form

- Keep block lengths relatively short (300 to 400 feet) in order to provide for flexible, interesting and reasonably direct pedestrian routes between work places, restaurants and shops. Short blocks will encourage people to walk for these trips.
- Permit heights for each of the City of Kapolei districts as specified in the **City of Kapolei Urban Design Plan** (2008) and shown in Table 3.3.

TABLE 3.3 HEIGHT GUIDELINES FOR THE CITY OF KAPOLEI	
DISTRICT	**HEIGHT**
City Center	150 feet
Civic Center	150 feet *mauka* of Kapolei Parkway 90 feet *makai* of Kapolei Parkway
Mixed Use Districts	120 to 60 feet
Commercial Districts	60 feet
Village Center District	60 feet
Mehana District	60 to 25 feet

Source: The **City of Kapolei Urban Design Plan** (November 2007) adopted by Res. 07-372 (January 2008).

3.6.3.2 Natural Environment and Landscaping

- Use non-potable water features and automated irrigation systems wherever possible.
- Use xeriscaping (the use of native landscape materials with low water demand), non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources.
- Use landscaping consistent with the City of Kapolei's image as a green and shaded garden city to provide privacy, screening, shade, and comfort.
- Use landscaping to enhance and complement the City's urban form, provide continuity between the various districts, and enhance and preserve view corridors wherever possible.

3.6.3.3 Public Access and Circulation

- Design the City of Kapolei to provide safe, easy, and efficient access for pedestrian, bicycle, and vehicular movement between each of the districts, the open space areas, and recreational amenities.
- Establish a clear pattern of arterials and local streets to facilitate travel through the City of Kapolei, to and from individual properties. The streets should form a modified grid pattern, providing a variety of routes for circulation. Major streets include Kamokila Boulevard, Kapolei Parkway, Kama'aha Avenue, and

Wākea Street, with Fort Barrette Road and Kalaeloa Boulevard bounding the City of Kapolei on the east and west.

- Vary cross-section design and landscaping schemes with function and to establish distinctive urban images for each type of street.
- Provide for bus pullouts and shelters along major traffic arterials.
- Provide sufficient width in the median of Kapolei Parkway to accommodate a future elevated rail transit line.
- Permit on-street parking along all streets until traffic levels necessitate the use of the entire roadway for vehicular movement. Such parking will be convenient for shoppers, provide a buffer between traffic on the street and pedestrians on the sidewalk, and contribute to the activity level along the City of Kapolei's streets.
- Provide exclusive bike lanes along major roadways within the City of Kapolei which are connected to the region's bikeway system. Where automobiles and bicycles share the same roadway, lane widths should be generous to allow safe usage by both.

3.7 'EWA PLANTATION VILLAGES

This section incorporates key elements for 'Ewa Plantation Villages from the former **'Ewa Development Plan** and the **'Ewa Villages Master Plan** (Department of Housing and Community Development, 1992) to provide guidance in the event that changes are proposed for the Master Plan or zoning in the future. The **'Ewa Villages Master Plan** is scheduled for updating and revision in the near future. When approved, the updated Master Plan policies and guidelines will take precedence over the following in the event of a conflict and should not require an amendment to the Development Plan.

The City acquired the 600 acres surrounding and including Tenney, Renton and Varona Villages in 1993. Subsequently, the City did extensive rehabilitation of housing and community facilities, a City golf course was developed to provide storage for storm waters, and 'Ewa Mahikō District Park was built to provide a needed community-based recreation area. The Villages have been on the Hawai'i Register of Historic Places since 1996.

3.7.1 GENERAL POLICIES

- Preserve and enhance the existing rural form and historic character of the remaining 'Ewa Villages.
- Ensure continued tenancy and ownership opportunities for current residents.
- Use the Master Plan as a vehicle for preservation efforts within the existing villages.
- Rehabilitate or adapt existing village structures in the 'Ewa Villages for reuse.
- Develop related affordable and market housing to create a total of 1,900 units, including the existing housing.
- Develop additional neighborhood parks/open space, and a small shopping center; and make infrastructure improvements.
- Re-establish 'Ewa Villages as a thriving and identifiable community, and a living example of Hawai'i's plantation heritage through the preservation of existing schools and churches, the expansion of parks and public open space areas, and the establishment of community facilities and a market place for local businesses.

3.7.2 GUIDELINES

The following guidelines suggest how the general policies for 'Ewa Villages should be implemented.

Retention of Historic Buildings

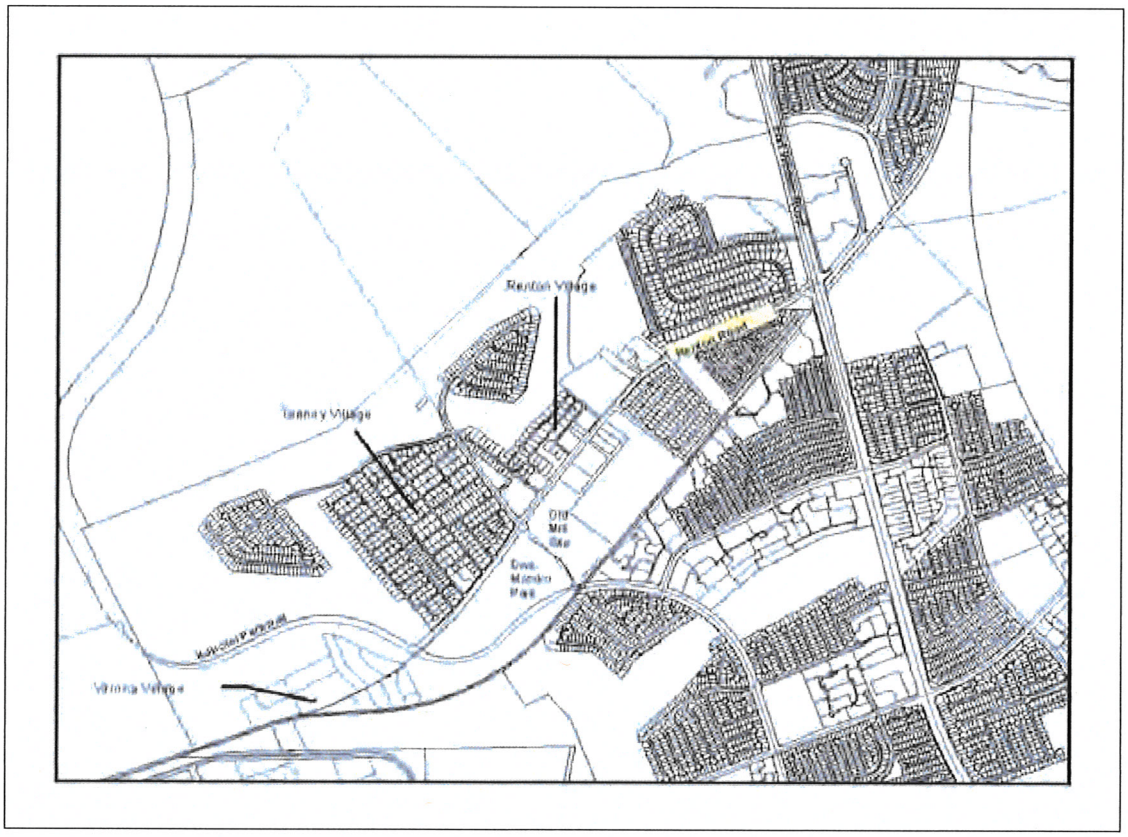
- Preserve and maintain existing buildings of historical, cultural and/or architectural significance through rehabilitation programs and adaptive reuse.

Urban Form

- Develop vacant areas in a style that is characteristic of the historic core.
- Maintain the current grid development pattern in the existing villages and replicate it in new infill developments.
- Require lot sizes for new infill homes in the existing villages to be similar to the existing house lots.

- Rehabilitate existing structures to the extent possible, in a manner that will not change their exterior appearance.
- Design new structures on vacant lots in the existing villages to complement the exterior design of adjacent homes.
- Physically separate new infill "villages" from Tenney, Renton, and Varona Villages. The design, appearance, and placement of structures within them should reflect and complement the existing village's character. (See Exhibit 3.4.)
- Re-establish a neighborhood and commercial services core within the 'Ewa Plantation Villages in order to retain both a focal point of community activities and promote village identity.

Exhibit 3.4:
'Ewa Plantation Villages Location



Circulation

- Prohibit establishment of standard subdivision street hierarchy within the village and maintain the existing grid pattern and extend it into new infill development.
- Locate any new required collector streets outside the existing villages.
- Maintain narrower than standard street widths without sidewalks (in the residential portions) of the existing villages, and establish similar widths within new villages, in order to minimize the impacts on existing yards and structures, and visually maintain a rural village character.
- In keeping with its Historic Register site designation, restrict traffic on Renton Road to two lanes of traffic in each direction during peak hours and one lane of traffic and one lane of restricted parking during non-peak hours.

Open Space/Views

- Where possible, provide open space buffers between the existing villages and new housing development in order to preserve and enhance the integrity and historic character.
- Preserve and expand existing village greens and open promenades, etc., where possible. Preserve and maintain existing landscaping within Renton, Tenney, and Varona Villages, especially existing stands of mature palm, mango, banyan, and monkey pod trees. Where trees have been removed, provide appropriate replacements.
- Provide appropriate canopy trees along all street frontages.
- Maintain principal entry roads to and through the villages as tree-lined boulevards. Highlight entries with additional landscape features.
- Landscape and maintain yards and other open spaces in a manner that preserves and enhances the open space appearance of the villages.

3.8 OCEAN POINTE/HOAKALEI

Ocean Pointe/Hoakalei's development is guided by the **Ocean Pointe/Hoakalei Urban Design Plan** approved by the Department of Planning and Permitting (DPP) in August 2008 and by land use, environmental, and design requirements included in the Special

Management Area Use Permit and in the Unilateral Agreements attached to the zone change ordinances (1985, 1993, 2002, 2004, and 2007).

Development of Ocean Pointe/Hoakalei can proceed under the existing zoning and Unilateral Agreement. This section incorporates key policies and guidelines from the former Development Plan as well as from the **Ocean Pointe/Hoakalei Urban Design Plan**, the Special Management Area Use Permit, and the Unilateral Agreements in order to provide guidance as changes are proposed for the Urban Design Plan or the zoning.

3.8.1 GENERAL POLICIES

- Develop Hoakalei as the region's principal recreational marina destination for local residents and visitors. With over 1,100 acres located between ʻEwa Beach and Kalaeloa, the Ocean Pointe/Hoakalei community should be centered around a marina that should serve as a major recreational resource and visual amenity for the community. The marina should provide recreational boating opportunities, supported by boat slips, marine haul-out and other repair facilities, and a public boat ramp. The marina could also serve as a terminal for a commuter ferry to downtown Honolulu if such service is found to be feasible and if financing can be found for the improvements needed to serve such a ferry.
- A recreational waterfront project (consisting of a lagoon) may be developed where the marina is shown on the map (Exhibit 3.5). Such a waterfront development would similarly serve as a major recreational resource, visual amenity, and economic generator for the community, and is a compatible use that would not preclude eventual development of a marina.
- Develop Ocean Pointe/Hoakalei in ways that ensure environmental compatibility of uses.
- Provide substantial public areas at Ocean Pointe/Hoakalei through shoreline and waterfront access, expansion of Oneʻula Beach Park, and dedication of a District Park on Fort Weaver Road.
- Develop the public waterfront promenade at Hoakalei with a hard edge and a focus on recreational water activities. Provide shoreline parks linked by pedestrian ways for public use along the entire waterway.

- Develop the golf course to provide a major open space and visual amenity while also providing detention basins to receive run-off from light storms.
- On the west, develop a mix of activities around the basin, including a **Waterfront Mixed Use** area with resort and commercial development, a **Medium Density Residential** area, and a **Light Industrial Mixed Use Support** area. Hoakalei is planned to have about 950 visitor units to support its waterfront-oriented activities.

3.8.2 OCEAN POINTE/HOAKALEI LAND USE MAP

The Ocean Pointe/Hoakalei Land Use Map, Exhibit 3.5, illustrates conceptual land uses described above and provides a schematic view of the roadway system within Ocean Pointe/Hoakalei.

The boundaries between the golf course and the Waterfront Mixed-Use and Low- to Medium-Density Residential areas are intended to be flexible. Integration of urban uses with the golf course area is encouraged, as long as the golf course area remains effective in retaining storm water drainage.

3.8.3 GUIDELINES

The following guidelines suggest how the general policies for Ocean Pointe/Hoakalei should be implemented:

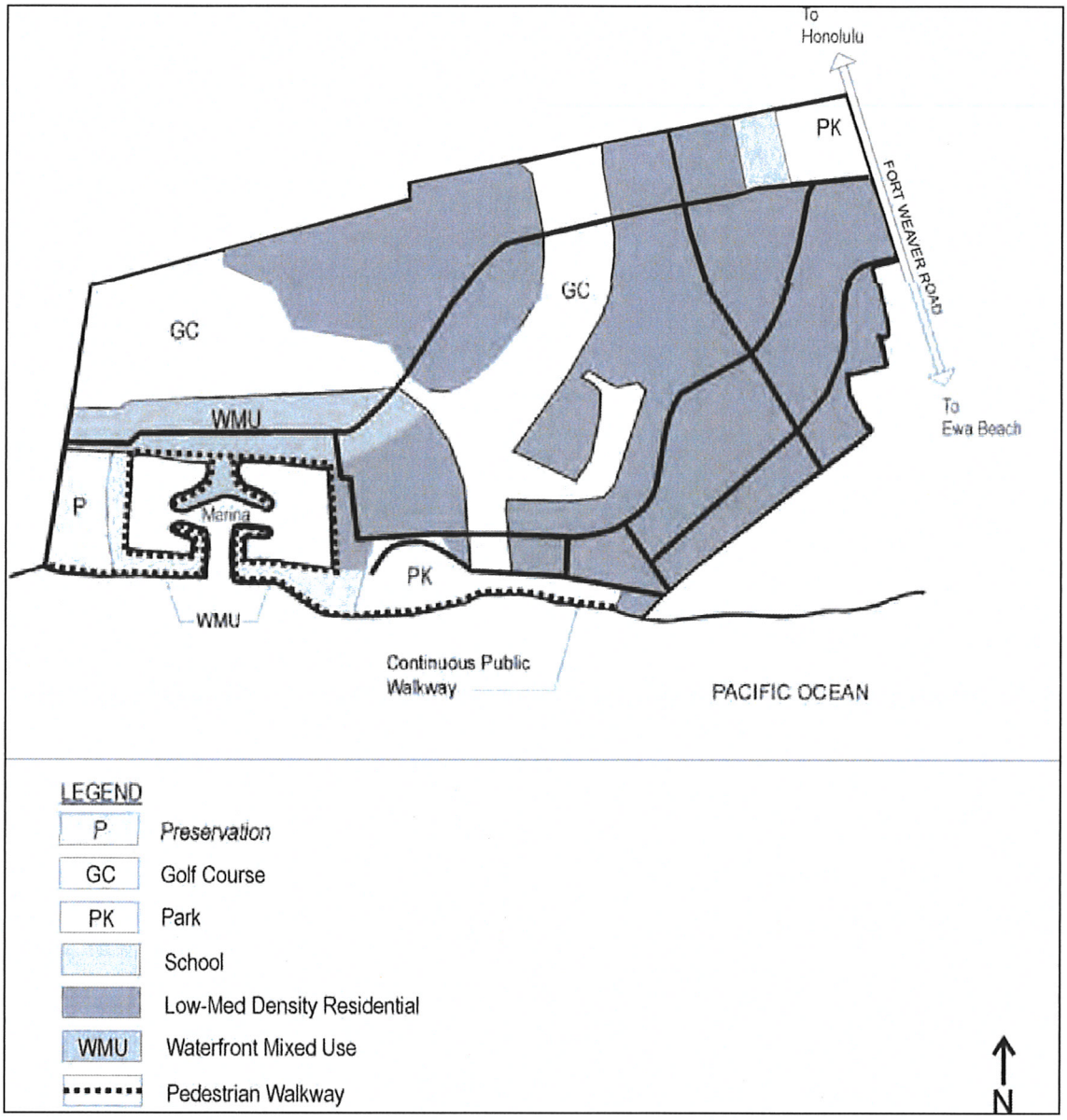
Appropriate Scale and Siting

- Minimize the visibility of large building volumes and elements from waterfront and residential areas through building envelope restrictions, site planning and landscaping.

Environmental Compatibility

- Do not develop residential and apartment units in areas that would expose residents to excessive aircraft noise.
- Since airport operations have continued at Kalaeloa, ensure land uses at Ocean Pointe/Hoakalei are compatible with airport operations and respect restrictions on development within airport approach and clear zones.

Exhibit 3.5
Ocean Pointe/Hoakalei Land Use Map



- Locate and operate uses that generate high noise levels in a way that keeps noise to an acceptable level in existing and planned residential areas.
- Design and develop the built environment to avoid adverse impacts on natural resources or processes in the coastal zone.

- To retain a sense of place, incorporate natural features of the site and utilize landscape materials that are indigenous to the area in the design of hotel and recreation areas, where feasible.

Community Integration

- Although the design of Ocean Pointe/Hoakalei may have a distinct identity and entry, link Ocean Pointe/Hoakalei with surrounding areas, such as ʻEwa Beach and Kalaeloa by using connecting roadways, walkways, landscape and architectural design.

Urban Form

- **Waterfront Light Industrial Mixed Use —** Develop a light industrial mixed use support area adjacent to the basin providing facilities such as repair and storage. Building heights should generally not exceed 60 feet in this area.
- **Waterfront Mixed Use —** Develop a waterfront commercial center with associated visitor units adjacent to the waterfront, featuring a wide public promenade with retail attractions. Hotel and apartment buildings in this area should generally not exceed 90 feet and all other buildings should generally not exceed 60 feet. Buildings with frontage on the interior basin should be limited to 40 feet. Buildings taller than 40 feet should be set back from the basin frontage.
- **Medium Density Residential Area –** Develop a medium density residential area adjacent to the Waterfront Mixed Use area to provide a transition between the mixed uses of the Waterfront Mixed Use area and the Single Family and Low Density Residential area to the east. Building heights in this area should generally not exceed 60 feet.
    - In order to minimize the visual impacts of the Medium Density Residential areas adjacent to Oneʻula Beach Park, the developer should:
        - Maximize *mauka-makai* and other view corridors in the area by orienting the narrow dimension of buildings parallel to the shoreline or predominant view;
        - Maximize open space by minimizing building bulk and using extensive landscaping to create a park-like setting; and

- Provide greater setbacks and/or terraced building setback from the edge of the basin for buildings exceeding 25 feet in height.

- **Single Family and Low Density Residential Area** – Develop a residential community characterized by low-rise apartments and single-family homes in this area. Building heights should generally not exceed 30 feet.
  - There should be a minimum building setback of about 40 feet along the basin's edge to accommodate a public waterfront promenade. Lesser setbacks may be permitted upon design review and approval by the DPP.
- Allow a small portion of the setback area to be covered by low-rise buildings to allow for boat servicing, appropriate commercial uses, storage and clubhouses. The maximum building height at the setback line in these areas should be around 40 feet, rising one foot for each additional foot of setback to a maximum of around 60 feet in the Medium Density Residential area and around 90 feet in the Waterfront Mixed Use area.
- Set back all structures a minimum distance of 150 feet from the shoreline. Lesser setbacks may be permitted upon design review and approval by the DPP. The maximum building height at the setback line along the shoreline should be 40 feet, rising one foot for each additional foot of setback up to the appropriate height limit.

Natural Environment

- Retain, enhance, and protect wetlands and other wildlife habitats.
- Design the golf course to accommodate storm water runoff in a manner that maintains coastal water quality and avoids the use of concrete channels for diversion drainage. Design the waterway to accommodate the runoff of collected storm waters generated by a potential 100-year storm. Channel design should use the most effective means to provide natural flushing of its waters. Develop silting ponds *mauka* of the site to preserve water quality so that use of the near-shore waters for recreational purposes and aesthetic enjoyment is not limited in anyway.
- Avoid the use of breakwaters or jetties at the marina entrance, in order to preserve surf sites.

Public Access

- Provide a continuous pedestrian pathway open to the public along the shoreline and along most of the basin, with the exception of sections where private residential lots directly front the basin.
- Provide access to the entire waterway and ocean shorelines to the public through the internal and peripheral pedestrian pathways.
- Provide public parking, restrooms, and shower facilities at regular intervals for all sandy beach areas.

Views and Vistas

- Preserve and enhance views from public streets and thoroughfares to the mountains and sea wherever possible. In particular, distant views of the Waiʻanae Range and the south coast of Oʻahu toward Honolulu and Diamond Head from the public promenade near the marina entrance channel should be preserved.
- Orient hotel and apartment facilities in relationship to the waterfront so as to preserve and maximize both *mauka* and *makai* views.

Circulation

- Design the street network to provide for a reasonably direct route through Kalaeloa to connect Ocean Pointe/Hoakalei to the City of Kapolei and Kualakaʻi Parkway.
- Design all major roadway corridors to provide for bus pullouts and bus shelters, bike paths, and sidewalks that are separated from the vehicular travel way by a landscape buffer.

Landscape Treatment

- Provide generous landscaping and vegetation throughout the development to promote tropical beauty and provide visual relief and a feeling of spaciousness.
- Design landscaping to provide continuity between residential, resort, waterfront uses, commercial areas, the shoreline, golf course, and parks.
- Design landscaping to provide privacy, screening, shade, and temperature control.

3.9 EXISTING AND PLANNED RESIDENTIAL COMMUNITIES

This section provides general policies and guidelines for the development of new communities and the expansion or renovation of existing communities. Guidelines are provided for three types of residential uses: **Residential**, **Low Density Apartment**, and **Medium Density Apartment**.

- **Residential** areas consist of one and two-story single-family attached and/or detached dwellings with individual entries.
- **Low Density Apartment** areas consist of two- and three-story townhouse or low-rise apartment buildings. Dwelling units may have common entries, but buildings are typically non-elevator structures.
- **Medium Density Apartment** developments take the form of multi-story apartment buildings. They may be located in mixed-use zones, with the ground floor or lower floors occupied by retail and service commercial uses.

3.9.1 GENERAL POLICIES

- **Overall Density -** To achieve the desired compactness and character of development in planned residential communities, develop with the housing density of the aggregate area zoned for residential use (including the streets) in the range of 10 to 15 units per acre. (This average does not include areas zoned for commercial or industrial use.)
- **Higher Density Housing Along the Rail Transit Corridor -** To promote use of the elevated rail transit line, develop higher-density residential use along the rail transit corridor linking Kapolei with Waipahū and PUC communities to the east. Apartment and Commercial uses should be developed at at greater densities at the eight transit nodes. Each transit node will generally cover areas influenced by a rail transit station. See the Urban Land Use Map in Appendix A for the location of the eight transit nodes.
- **Affordable Housing** – Addressing affordable housing needs continues to be a high priority given the persistent shortage. Require that 30 percent of the housing units in new residential developments on lands within existing Unilateral Agreements (UAs) be affordable to low and low-moderate income households. Residential development that occurs on lands

without existing UAs may be subject to affordable housing requirements established by the City.

- **Community Benefits Bonus (CBB)** – To further achieve the desired urban form and character of development in the Secondary Urban Center, developments proposed in transit nodes subject to City-established transit-oriented development plans may exceed the baseline level of floor area ratio (FAR) and/or building height in exchange for providing commensurate community benefits. CBBs for developments proposed in such transit nodes must be in alignment with the vision and general policies and guidelines contained in this Plan.
- **Physical Definition of Neighborhoods -** Make the boundaries of neighborhoods evident through the use of natural features, street patterns, landscaping, building form, and siting. The focus of neighborhood activity should be on the local street or a common pedestrian right-of-way or recreation area.
- **Community Centers –** In the Master Plan for each new residential community, identify where its village center, town center or "Main Street" area is and how that center or Main Street will be established and supported by any existing or planned commercial development.
- **Compatible Mix of Building Forms -** Use a variety of housing types and densities to avoid visual monotony and accommodate a variety ofhousing needs, but avoid sharp contrasts between the exterior appearance of adjacent housing areas.
- **Transit-Oriented Streets -** Design street patterns and rights-of-way to accommodate mass transit service and make it convenient to access for as many households as possible.
- **Connectivity –** Minimize dead end streets, provide for intersections at regular intervals, and connect with adjacent development. Allow roadway cross-sections within new residential developments to be reduced from current standards where higher capacity is provided by multiple alternative routes.

- **Pedestrian and Bicycle Travel** – Encourage pedestrian and bicycle travel, particularly to reach neighborhood destinations such as schools, parks, and convenience stores. At a minimum, provide pedestrian and bikeway connectivity, where roadway connectivity is deemed not feasible, to allow direct travel through the community and to neighborhood districts.
- **Integration of Linear Corridors** – Encourage physical and visual connections between communities through the creative design of transportation and utility corridors and drainage systems.
- **Provision of Community Facilities** – Provide land for community facilities including churches; community centers, and elderly and child care centers.

Table 3.4 gives an overview of the density and height guidelines for planned and existing residential developments.

TABLE 3.4: DENSITY AND HEIGHT GUIDELINES BY RESIDENTIAL DENSITY CATEGORY

Residential Category	Density (Housing Units)	Building Height
Residential	5-12/acre	not over two stories
Low Density Apartment	10-30/acre	not over three stories
Medium Density Apartment	25-90/acre	not over 90 ft [1, 2]

[1] Building heights up to 150 feet allowed in City of Kapolei and Ko Olina.
[2] Building heights up to a bonus height of 120 feet in transit nodes subject to City-established transit-oriented development plans with the provision of community benefits.

Conceptual locations for residential, low-density apartment, and medium-density apartment development are shown on the Urban Land Use Map in Appendix A and in maps of specific developments in Exhibits 3.3, 3.5, and 3.6. See Section 3.9.3 for further discussion of the Urban Land Use Map.

3.9.2 GUIDELINES

The following guidelines suggest how the general policies for Existing and Planned Residential Communities should be implemented.

Residential

Density

- Develop at densities of 5 to 12 units per acre, encouraging more compact, innovative, environmentally sensitive design and alternative layouts.

Building Height

- In general, limit buildings to not exceed two stories, although the height may vary according to required flood elevation, slope, and roof form.

Site Design

- Use features such as varied building setbacks and shared driveways to avoid monotonous rows of garages and driveways along neighborhood street frontages.

Building Form

- Use varied roof forms, exterior colors and finishes, building orientation, floor plans, and architectural details to provide visual interest and individual identity.

Low Density Apartment

Density

- Develop at densities of 10 to 30 units per acre.

Height

- In general, limit buildings to not exceed three stories above grade. Maximum building heights should allow for pitched roof forms.

Building Form

- Use building form, orientation, location of entries and landscape screening to maintain a sense of residential scale and provide greater privacy and individual identity for housing units.

Compatibility

- Ensure that building scale, roof form, and the quality of materials are compatible with those of adjacent low-density residential areas.

Medium Density Apartment

Location

- In general, locate medium-density apartment buildings in large planned residential communities, adjacent to major collector streets, commercial or civic centers.
- Develop medium-density apartment as the predominant form of housing in and near the City of Kapolei and around transit nodes on the rail transit corridor between Waipahū and Kapolei.

Density

- Allow building density of 25 to 90 units per acre.

Height

- Limit building heights to not exceed 150 feet in the City of Kapolei and the Ko Olina Resort, up to 120 feet in transit nodes subject to City-established transit-oriented development plans with the provision of community benefits, and 90 feet elsewhere. Taller building heights are intended to allow higher densities, create variation in the cityscape, give a visual sign of transit nodes, and identify the City of Kapolei's importance as a regional center.

Architectural Character

- Allow building scale, roof form and the quality of materials to reflect an urban character.

Height Setbacks

- Employ building height setbacks and landscaping to reduce the direct visibility of taller buildings from lower density residential areas and from the street front. Allow lower building elements to directly abut the street front.

Circulation System

Master-planned projects should each have a circulation plan or "circulation element" in their Project Master Plan (see Chapter 5).

Connectivity

- Use the circulation plan to define the hierarchy of streets within the project and its relationship to the surrounding transportation network.
- Use a modified grid street pattern (modified as necessary to fit the topography or other limitations) with block lengths of 300 feet by 500 feet or any combination of two sides summing to 800 feet. (See Exhibit 4.2 Street Network Guidelines.)
- Provide pedestrian pass-throughs or mid-block cross walks where blocks exceed 500 feet on a side.
- Connect new residential development to adjacent subdivisions to allow creation of an east-west and *mauka-makai* roadway network at approximately 1/4 mile intervals.

Transit Routes and Facilities

- Show existing and proposed bus routes and specific measures to accommodate efficient bus transit service for as many households as possible on the circulation plan.
- Design the rights-of-way along existing or potential bus transit routes to make provisions for bus shelters, bus pull-outs, and, if applicable, park-and-ride facilities and/or future rail transit stations in accordance with Department of Transportation Services (DTS) design standards.

- Require street patterns showing the alignment of proposed or potential bus transit routes to be submitted to the DTS as part of the subdivision roadway master plan review process.
- Design the circulation plan so that at least 85 percent of all residences will be within a five-minute (or 1/4 mile) walking distance of an existing or potential bus route or rail transit station, unless localized topographic conditions make such a requirement impractical.
- Design the circulation plan so that all commercial development with more than 1,000 square feet and all employment sites with more than ten employees are within 1/8 mile of an existing or potential bus stop or rail transit station.
- Design the circulation plan so that all development is within 1/2 mile of an existing or potential bus or rail transit station, unless localized topographic conditions make such a requirement impractical.
- Design the circulation plan so that potential bus transit routes have two different access points into the proposed development. The route alignment should seek to achieve optimal operational efficiency between the two access points.

Pedestrian and Bicycle Routes and Facilities

- Design the circulation plan to indicate any principal pedestrian and bicycle paths that are physically separated from roadways.
- Design street intersections along these separated paths to have a narrow curb radius and include special signage, and paving to encourage safe and convenient pedestrian and bicycle crossings.
- Allow interior mid-block pedestrian/bicycle routes to be provided as an alternative to paved sidewalks along local streets.

Landscape Treatment

- Include conceptual street tree plans in the circulation plan.
- Identify entries to the community with special landscape treatment.
- Design the rights-of-way for major and minor arterials as landscaped parkways, complete with a landscaped median strip, landscaped sidewalk, and bikeways. Major arterials should have separate bike paths, and minor arterials should have bike lanes. Suggested width for major arterials, including right-of-way and planting strips, is 120 feet wide and for minor arterials is 100 feet wide.

- Plant canopy trees to shade the sidewalk/bike path areas.
- Install landscape treatment along the edges of the project that is appropriate for the natural setting and designed to provide continuity and transition from adjacent developed areas.
- Use xeriscaping (the use of native landscape materials with low water demand), non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources.

3.9.3 RELATION TO URBAN LAND USE MAP

Residential areas are shown on the ʻEwa Urban Land Use Map in Appendix A as follows:

Residential and Low Density Apartment - Areas with this designation should be zoned to allow residential or low density apartment uses, subject to appropriate siting considerations and the General Policy for "Overall Density" provided in Section 3.9.1.

Medium Density Apartment - Areas with this designation should be zoned predominantly for medium density apartment use. Mixed use, with retail activities at the ground level, is encouraged.

City of Kapolei – Areas within the City of Kapolei should be zoned for medium density apartment use. Mixed use with retail and office activities at the ground level and second floor should be encouraged.

The following uses are not specifically designated on the Urban Land Use Map, but are allowed in all residential areas:

- Neighborhood commercial centers;
- Elementary schools;
- Parks;
- Churches;
- Community centers;
- Elderly care centers;
- Child care centers;
- Fire stations; and
- Other public facility and utility uses serving the area.

All residential developments should be compatible with Aircraft Approach and Clearance Zones for Honolulu International Airport and Kalaeloa Airport.

3.9.4 RELATION TO ZONING

Table 3.5 provides guidelines for the zoning that may be appropriate to each of the land use designations indicated in the revised Development Plan.

It is intended for use as a reference, which would permit modification or creation of **Land Use Ordinance** zoning categories and land use regulations in response to changing conditions without needing to amend the Development Plan.

TABLE 3.5 GUIDELINES FOR APPROPRIATE ZONING

Land Use Designation	Appropriate Zoning Districts
Park, Golf Course, Preservation/ Conservation Military Training Area	P-2 if in State Urban or Agriculture District P-1 if in State Conservation District; otherwise P-2 F-1
Agriculture	AG-1 for all areas except where there is a predominant pattern of lots under 5 acres in size AG-2 for areas where lots are under 5 acres in size
Residential and Low Density Apartment	R-5, R-7.5, R-10 for conventional single-family subdivisions R-3.5 if identified by Project Master Plan for innovative small lot site design A-1 for low-rise flats, apartments, and townhouses A-2 if identified by Project Master Plan for medium density apartment development AMX-1, AMX-2 if within a transit node
Medium Density Apartment	A-2, A-3 AMX-2, AMX-3 if within a transit node BMX-3 if within a transit node
Commercial Centers	B-2 with limits on floor area for office use for all types of centers except Neighborhood Commercial Centers B-1 for Neighborhood Commercial Centers (not shown on Urban Land Use Map) BMX-3, Resort for the Ko Olina Marina Mixed Use area
Town Center	B-2, BMX-3 A-1, A-2 I-1, IMX-1 in fringe areas where present use is predominantly service industrial
Resort	Resort
Technology Park	New zoning category designed specifically for this use; for interim, retain the existing IMX-1 and B-2 zoning with use limitations as specified in the UA.
Industrial	I-2 for heavy industrial areas in Barbers Point Industrial Area I-1, IMX-1 for service industrial areas near City of Kapolei and master-planned communities I-3 in vicinity of Barbers Point Deep Draft Harbor and of Hoakalei Marina

3.10 PLANNED COMMERCIAL RETAIL CENTERS

This section provides general policies and guidelines for the development of commercial retail centers in ʻEwa.

These planned commercial centers differ from commercial areas within towns such as Waipahū or the City of Kapolei because they are typically managed as a unit with shared parking and centralized management.

Definitions - Four types of commercial centers can be defined based on size and function:

- **Neighborhood Commercial Center -** (5-10 acres or less, typically located within or adjacent to residential area, up to 100,000 square feet [sq. ft.] of floor area).
  - Neighborhood Commercial Centers have frontage on at least one collector street, and may have up to 100,000 sq. ft. of floor area, which is leased to tenants such as grocery stores, sundries stores and other services and shops catering to common household needs.
  - Single commercial establishments, such as convenience stores or "Mom and Pop" stores, or groupings of stores smaller than five acres in size also fall within this category, provided that they are appropriately located and will not contribute to the evolution of a commercial strip.
- **Community Commercial Center -** (10-30 acres, typically located on an arterial highway or at the intersection of two major collector streets, up to 250,000 sq. ft. of floor area).
  - This type of center principally serves the community in which it is located, providing for basic shopping and service needs on a larger scale than the neighborhood center.
  - Community Commercial Centers may contain up to 250,000 sq. ft. of floor area, and major attractions typically include a large grocery store, a drug store, and/or a department store. The other, smaller tenants in the center are largely dependent on the effectiveness of the major tenants to draw customers.
  - The Kapolei Shopping Center is an example of this type of commercial center.

- **Major Community Commercial Center -** (up to 50 acres, located in communities which are not near an urban center, up to 500,000 sq. ft. of floor area); and
- **Regional Commercial Center -** (more than 50 acres, located with frontage on a major arterial highway and access from freeway interchange, more than 500,000 sq. ft. of floor area).
  - This type of center is typically "anchored" by several major stores and features a wide variety of other tenants, often including entertainment and community facilities.
  - The regional center serves a broad arc of surrounding communities but also attracts business from throughout the island.
  - Examples include Waikele, Pearlridge, and Kāhala Mall.

3.10.1 GENERAL POLICIES

- Develop planned commercial centers, outside of the City of Kapolei, to provide retail shopping and services for the 'Ewa residential communities in which they are located.
- Develop commercial centers outside of the City of Kapolei by concentrating commercial uses in central locations instead ofin continuous commercial strips along arterial roads.
- Emphasize pedestrian and transit access to and within the centers.
- Permit multi-family residential use above the first floor and include it wherever possible in commercial centers.
- Wherever possible, design new commercial centers to help create and/or support pedestrian-friendly village centers, town centers, or "Main Street" areas for their communities.
  - Such centers or Main Streets provide a place where people from the surrounding neighborhoods gather, shop, dine, or play and are akey element that defines a community's identity.
- Limit development of Major Community Commercial Centers orRegional Commercial Centers to the City of Kapolei since the City of Kapolei is intended to provide for most regional shopping needs.
  [Note: The DHHL has notified the DPP that it has exempted itself from City and County planning and zoning to develop a 1.6 million square foot

Regional Shopping Center on 67 acres near the intersection of Kualaka'i Parkway and Kapolei Parkway. Included in the project are two hotels with 300 rooms and two office towers with 100,000 square feet of office space.]

- Allow Neighborhood Commercial Centers to be located within any residential community, and to be reviewed and approved as part of development of master planned residential communities or redevelopment of existing communities.
- Allow Community Commercial Centers at 'Ewa Beach, Laulani, Ho'opili (near the intersection of Farrington Highway and Kunia Road), East Kapolei (near the intersection of Farrington Highway and the Kualaka'i Parkway and near the intersection of Kapolei Parkway and the Kualaka'i Parkway), the Villages of Kapolei, Makaīwa Hills, and Ko Olina Marina as shown on the Urban Land Use Map in Appendix A.
- Allow medium density mixed use commercial development within a quarter-mile radius of proposed transit stations on the rail transit corridor linking Waipahū with the City of Kapolei/Kapolei West.
- Restrict office uses as a principal use in 'Ewa Community Commercial Centers. Offices that provide services to the local community may be included in the centers, but the emphasis should be on retail uses. Offices providing support to functions of the University of Hawaii West O'ahu may be included in the Transit Oriented Development areas around the two transit stations closest to the campus. Locate developments primarily oriented to office uses in the City of Kapolei.

3.10.2 GUIDELINES

The following guidelines suggest how the general policies for Planned Commercial Retail Centers should be implemented.

All Commercial Centers

Orientation to "Main Street" or the Town/Village Center

- Structures in the commercial center should be located and oriented to the street up to the "build to" line along the designated "Main Street" or Town/Village Center frontage.

- Most parking for commercial structures fronting "Main Street" or the Town/Village center should be located behind the structures in joint development parking lots or structures although some on-street parking can be provided on the Main Street or Town/Village Center frontage.
- The main entrance to commercial structures fronting the "Main Street" or Town/Village Center should be located on that street frontage with secondary entrances from parking areas.
- Sidewalks in front of retail uses fronting the "Main Street" or Town/Village Center should be wide enough (12 to 16 feet) to allow window shopping or outdoor dining.

Mix of Uses

- Plan commercial centers primarily for retail uses and for office uses that provide services to the surrounding community. Residential uses may also be incorporated in such commercial centers.

Appropriate Scale

- Design the building mass of the commercial center to be in keeping with its urban and natural setting.

Compatible Style

- Design the architectural character of commercial centers to respect the surrounding urban and natural features, particularly when located adjacent to a residential area or significant natural or historic feature. Neighborhood commercial centers should reflect a residential architectural character.

Accessibility

- Incorporate site design and facilities to promote pedestrian, bicycle and transit access in commercial centers. Pedestrian and bicycle access is more important for smaller, neighborhood centers, while transit access is more significant for community centers. Apply these designs and facilities to the expansion or renovation of existing commercial centers, as well as to new centers.

Neighborhood Commercial Centers

Architectural Character

- Design the project architecture to respect the character of adjacent residential uses.
- Use gable and hip-form roofs to create breaks in the roofline to reduce the apparent scale of large roof plates.
- Use exterior materials and colors that are typically found in neighborhood houses.

Building Siting

- Orient buildings to the pedestrian.
- Orient storefronts to face the street and to the extent possible, be sited close to the sidewalk.
- Place parking and service areas behind the buildings or otherwise visually screened from streets and residential areas.

Building Height and Density

- Design buildings at a residential scale.
- Allow building height limits which allow for gable and hip-formroof elements.
- Limit total floor area for a lot or contiguous lots with common parking to no more than 100,000 sq. ft.

Vehicular Access

- Provide access to the parking and loading areas from a collector street.
- Permit access to a local residential street only if it is for emergency or secondary access and would not encourage through traffic along the local street.

Pedestrian and Bicycle Facilities

- Provide at least one pedestrian access from the public sidewalk or other off-site pedestrian pathway to the entrances of establishments in the commercial center that does not require crossing a traffic lane or parking lot aisle or driveway.

- Design bicycle racks for security, convenience, and visibility from the street entry.
- Provide appropriate signage to indicate the availability and location of bicycle racks.

Visual Screening, Lighting and Signage

- Screen parking and service areas from the street and adjacent residential lots by planting a landscape screen of trees and hedges along street frontages and property lines and by planting shade trees throughout the parking lot.
- Use xeriscaping (the use of native landscape materials with low water demand), non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources.
- Use only low-level or indirect lighting in parking lots.
- Require all signage to either be non-illuminated or indirectly illuminated.

Community Commercial Centers

Architectural Character

- Allow varied architectural character, depending on the context.
- Require commercial center buildings that are visible from adjacent residential areas to reflect a residential character while allowing other facades to have a character more typical of a commercial building.
- Avoid disruptive contrasts between facades and extended blank walls that are visible simultaneously from public areas.

Building Bulk and Massing

- Provide a transition in scale from larger building elements of the commercial center to finer elements near the adjacent use when the building is adjacent to a residential area or a building of historic value.
- Avoid blank facades on portions of buildings visible from a street by using texture, articulation, color, and fenestration to create visual interest.
- Require facades that are close to the public right-of-way to be composed of display windows and pedestrian entrances.

Building Height and Density

- Limit building heights to generally not exceed 45 feet.
- Limit total floor area to no more than 250,000 sq. ft. for a standard Community Commercial Center.

Pedestrian, Bicycle, and Transit Facilities

- Provide street frontage improvements for bus stops, including a bus shelter and a pull-out off a traffic lane, along all abutting streets that have bus routes.
- Provide a pedestrian pathway from the bus stop to an entrance to the main building of the commercial center. The pathway should be clearly indicated with special paving or markings and covered to provide weather protection, if the commercial center building is not directly connected to the bus shelter.
- Design bicycle racks to provide security and be visible from the street entry to the commercial center.
- Provide appropriate signage to indicate the availability and location of bicycle racks.

Visual Screening

- Minimize the visibility of parking and service areas from the street and adjacent residential areas through screening.
- Plant a landscape screen, consisting of trees and hedges, along the street fronting the parking lot or garage.
- Plant shade trees throughout all parking lots.
- Use xeriscaping (the use of native landscape materials with low water demand), non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources.
- Provide landscape planters along the facade of each parking level for parking garages close to and readily visible from a street.
- Visually screen service areas from public and residential areas.

Signage

- Indirectly illuminate signage visible from residential areas.

Regional Commercial Centers

Architectural Character

- Use architectural elements to establish a visual identity and design theme, especially when the theme reflects a cultural, historical, or geographical feature of the area.
- Include public areas to provide for performances and cultural events.

Building Bulk and Massing

- Use varied elevations and building axes to visually differentiate building volumes.
- Avoid blank facades on portions of buildings visible from a street by using texture, articulation, color, and fenestration to create visual interest.
- Require facades that are close to the public right-of-way to be composed of display windows and pedestrian entrances.
- Site buildings to physically define separate sections for parking areas to provide visual relief and easily identifiable references for customers returning to parked vehicles.

Building Height and Density

- Limit building heights to generally not exceed 60 feet, but permit heights up to 90 feet for architectural features expressing a design theme.
- Limit the floor area ratio to no more than 2.0.

Use Allocation

- Limit office and entertainment uses. Office uses should not exceed five percent and entertainment/recreation uses should not exceed 15 percent of gross leasable area.

Pedestrian, Bicycle, and Transit Facilities

- Locate public bus facilities on the grounds of the center, but allow reduction in the number of parking spaces to offset the cost of providing the easement and improvements on-site.
- Directly connect the bus stops to the commercial center's main structure via a covered pedestrian walkway.

- Include well-defined walkways at regular intervals in parking lots to minimize conflicts between pedestrians and moving vehicles.
- Provide appropriate signage to indicate the availability and location of bicycle racks.

Visual Screening

- Plant a landscape screen, consisting of trees and hedges, along parking lot street frontages.
- Plant shade trees throughout all parking lots.
- Provide landscape planters along the facade of each parking level for parking garages close to and readily visible from a public right-of-way.
- Use xeriscaping (the use of native landscape materials with low water demand), non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources.
- Locate or screen loading and other service areas so that they are not visible off-site.

3.11 KO OLINA RESORT

The **'Ewa Development Plan** prior to 1997 included specific development objectives, planning principles, and standards for Ko Olina Resort, under its former name of West Beach. The Unilateral Agreement to the 1986 zoning ordinance for the Resort includes detailed conditions regarding the master plan of the resort, building design, design of the public shoreline area, and public access to the shoreline.

Development of the Resort can proceed based on the existing zoning and Unilateral Agreement. This section incorporates key elements for Ko Olina from the former Development Plan and the Unilateral Agreement.

Ko Olina Resort is designated in the **General Plan** as one of four "secondary" resort destinations, which are part of an overall strategy to relieve growth pressure on Waikīkī. The resort is located on 640 acres between Kahe Point Beach Park and the Kalaeloa Barbers Point Deep Draft Harbor. When developed, Ko Olina Resort should be a water-oriented residential and resort community with at least 4,000 visitor units in hotels and resort condominiums and 5,200 residential units.

Ko Olina is master-planned to incorporate recreational features in addition to visitor accommodations. Recreational facilities include a golf course, a small boat marina, and four man-made swimming lagoons. Development of the golf course and the swimming lagoons, and installation of roads and utilities are completed.

The first hotel opened in 1993 with almost 400 rooms. The first phase of a 750 unit time-share resort began construction in 2001, and by September 2009, over 500 units had been completed. Construction of a third 800 unit hotel/time-share project began in 2008. In addition, over 1,100 homes, second homes, and resort condominiums have been built and sold in recent years.

3.11.1 GENERAL POLICIES

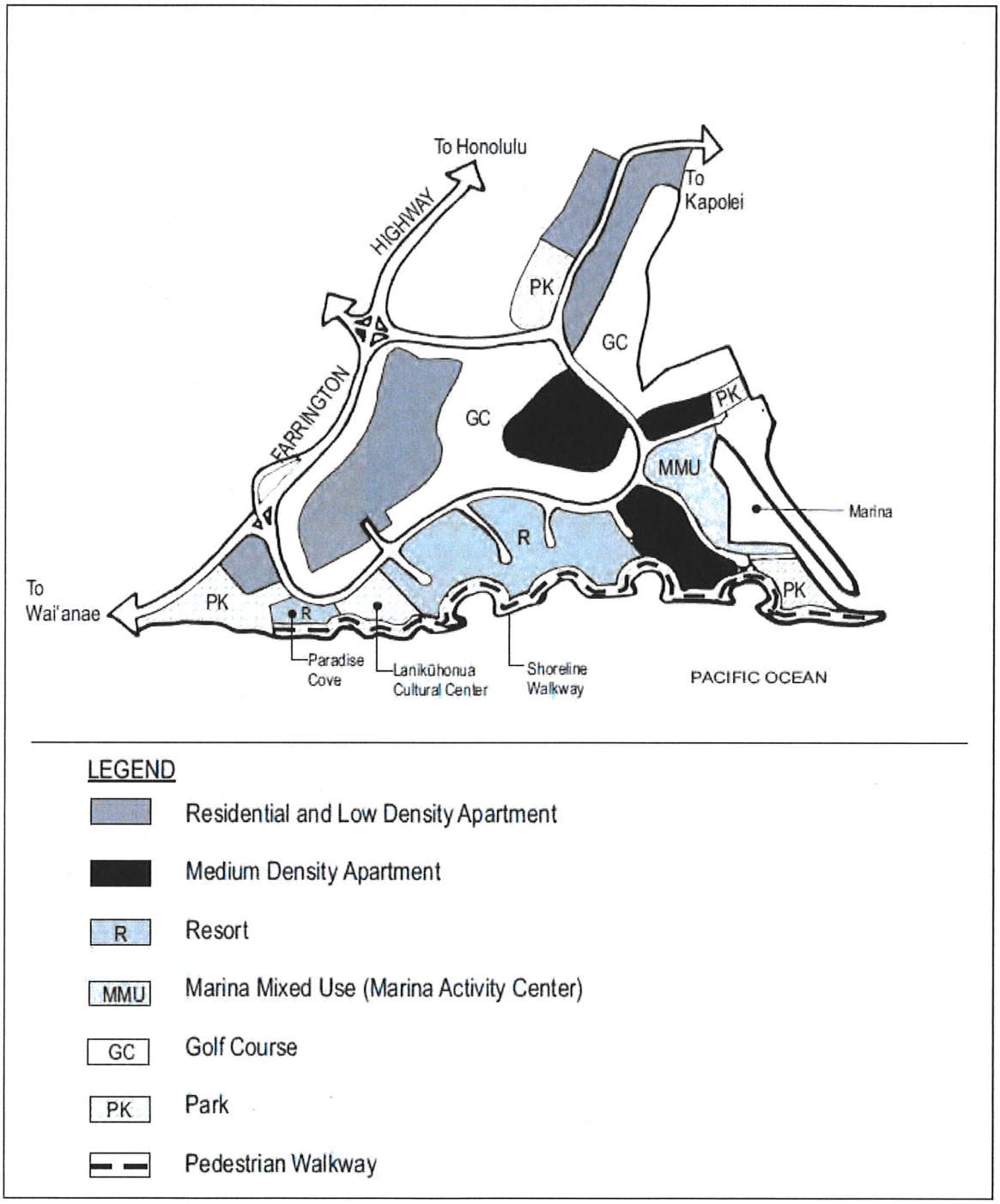
- Develop Ko Olina Resort as an integral part of the Secondary Urban Center.
- Develop Ko Olina to provide substantial waterfront areas for public use. The entire shoreline should be natural open space, softened by landscaping, and should focus on the beach and swimming lagoons.
- Design the built environment to avoid adverse impacts on natural resources or processes in the coastal zone.

3.11.2 KO OLINA LAND USE MAP

The Ko Olina Land Use Map, Exhibit 3.6, shows land uses and a schematic view of the roadway system within the Ko Olina Resort. Land uses include the following:

- **Resort -** Resort sites are located along the shoreline and should have hotels, apartments, and accessory commercial and recreational facilities for resort use. The Lanikūhonua Cultural Center, located at the northern end of the resort area, should be principally open space with accessory structures as needed to support the cultural center use. The Paradise Cove site, located between Lanikūhonua and the park, should be used for resort commercial purposes.
- **Medium Density Apartment -** Medium density apartment uses are located along the shoreline between Mauloa Place and Waipahē Place and near the Marina Activity Center.

Exhibit 3.6
Ko Olina Land Use Map



- **Marina Mixed Use -** The Marina Activity Center is located in this area and should have a mix of commercial and high-density residential uses with Business Mixed Use (BMX) or Resort zoning.
- **Residential and Low Density Apartment -** Two residential and low density apartment areas are located within and adjacent to the golf course.

3.11.3 GUIDELINES

The following guidelines suggest how the general policies for Ko Olina Resort should be implemented:

Urban Form

- **Appropriate Scale and Siting –** Minimize the visibility of large building volumes and elements from waterfront and residential areas through building envelope restrictions, site planning, and landscaping.
- **Marina Activity Center -** Establish a higher density, centrally located hub adjacent to the marina to serve as the activity center for the community and as an attraction that enhances Ko Olina's role as a secondary resort destination area for O'ahu.
    - Permit commercial mixed use development in the area generally bounded by the park at the fourth lagoon, Waipahē Street, Ali'inui Drive, Kekai Place and the marina. This area should consist of marina frontage with public promenade, commercial mall, and low and medium density apartment developments.
    - Limit marina frontage generally to a height limit of 40 feet.
    - Require buildings taller than 40 feet to be set back from the marina frontage.
    - Allow variations in the amount of setback to add visual interest.
    - Limit medium density apartment buildings and commercial buildings in this area to generally not exceed 150 feet.
- **Medium Density Apartment Area -** Two additional medium density apartment areas are located on Kekai Place and on Ali'inui Drive. Limit building heights in these areas to generally not exceed 150 feet.
- **Resort Center -** Allow development of a resort destination area containing at least 4,000 visitor units in the area designated for Resort use on Exhibit

3.6. Limit hotel and apartment buildings in this area to generally not exceed 150 feet.

- Limit building heights at Lanikūhonua and Paradise Cove to no more than 40 feet in height.
- Encourage compatibility of uses and design integration at the boundaries separating different use areas.
- Prohibit designation of land within 1/2 mile of the centers of petroleum and explosives terminals at the Kalaeloa Barbers Point Deep Draft Harbor for Resort, Apartment, Residential, or Commercial use.

Natural Environment

- Locate and operate uses that generate high noise levels in a way that keeps noise to an acceptable level in existing and planned residential areas.
- To retain a sense of place, design the resort and recreation areas to incorporate natural features of the site and utilize landscape materials that are indigenous to the area where feasible.
- Set back all structures a minimum distance of 300 feet from the shoreline. Lesser (or greater) setbacks may be permitted upon design review and approval by the DPP.
- Protect the existing coastal environment against potential negative impacts associated with increased recreational use and public access to the shoreline.
- Discourage further modification to the shoreline, including the man-made lagoons, unless required either to meet the conditions of existing approvals or to address demonstrated deterioration to the quality of coastal resources.

Shoreline Access

- Provide a continuous public walkway along the entire shoreline fronting the resort, anchored at either end by public beach parks. Public access should be provided along the shoreline fronting Lanikūhonua and Paradise Cove, but not in as formal a manner as that provided on the shoreline frontage of the adjacent hotel, apartment, and commercial Ko Olina resort sites.

- In addition to the public parks at each end of the resort, provide a series of privately-owned and maintained parks encompassing a minimum of 20 acres of land along the shoreline. These private parks should be open to use by the general public and accessible from the continuous shoreline public walkway.
- Provide a public access easement, parking lot, restrooms, and showers at each of the four swimming lagoons.

Views and Vistas

- Although the design of Ko Olina may have a distinct identity and entry, link Ko Olina with surrounding areas through the use of connecting roadways, walkways, landscape, or architectural design.
- Preserve and enhance views from public streets and thoroughfares to the mountains and sea wherever possible.
- Orient hotel, commercial, and apartment buildings perpendicular to the shoreline to maximize *mauka* and *makai* views.
- Protect important views of landforms along the Waiʻanae Coast, the ridgeline of the Waiʻanae Range, and the ocean, including but not limited to the following:
  - *Makai* view from Farrington Highway at the entrance to Ko Olina,
  - *Makai* view from Ko Olina coastal roadways *makai* of Farrington Highway,
  - Views of the Waiʻanae Coast from the shoreline at Ko Olina, and
  - *Mauka* and lateral views of Ko Olina from the Small Boat Harbor and the Deep Draft Harbor.
- Allow variation in building heights near the shoreline and along the marina frontage, particularly to preserve long views and minimize the perception of building bulk from the shoreline, beach, and marina frontage.

Circulation System and Transportation Facilities

- Establish an integrated bikeway and pedestrian circulation network throughout the resort, with bicycle lanes and routes and sidewalks along major roadways, lined with shade trees.
- Reserve the OR&L right-of-way for a bikeway and historic railroad train service for historic and educational rides between Nānākuli, Ko Olina,

Kapolei, and 'Ewa Villages, and for a bikeway continuing on from 'Ewa Villages to Waipahū and 'Aiea as part of the Pear Harbor Historic Trail.

Landscape Treatment

- Provide generous landscaped open spaces throughout the resort area to promote tropical beauty and provide visual relief and a feel of spaciousness.
- Use landscaping to provide continuity between residential, resort, marina, and commercial areas and the recreational areas at the shoreline, parks, and golf courses.
- Use landscaping to enhance and preserve view corridors and provide privacy, screening, shade, and comfort.
- Use xeriscaping (the use of native landscape materials with low water demand), non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources.

3.12 INDUSTRIAL CENTERS

This section provides general policies and guidelines for development of industrial centers and industrial uses in 'Ewa.

Industrial centers in 'Ewa include the Barbers Point Industrial Area, Kalaeloa, Honouliuli Industrial Area, Kahe Valley, and an area near the Hoakalei marina.

Barbers Point Industrial Area includes Campbell Industrial Park, Kalaeloa Barbers Point Deep Draft Harbor, Kenai Industrial Park, Kapolei Harborside, and Kapolei Business Park. It is the site of the State's largest heavy industrial area (Campbell Industrial Park) and an important industrial harbor and fuel transfer point.

The Barbers Point Redevelopment Commission approved continuation of the airport at Kalaeloa to provide a reliever airport for Honolulu International Airport, and a site for general aviation operations. As a result, the Pacific Aerospace Training Center, a program of the Honolulu Community College, was established to provide flight training for Hawai'i, Mainland, and international students. A number of opportunities for

aviation-oriented industrial and training developments associated with the Center have been identified.

In 2002, the State Legislature transferred redevelopment responsibility for Kalaeloa to the HCDA. The HCDA prepared a Master Plan for redevelopment of Kalaeloa. The Master Plan (approved in 2006) identifies lands capable of providing over two million square feet of light industrial floor space.

Honouliuli includes 44 acres of land zoned industrial/commercial mixed use in the ʻEwa by Gentry project, the 49-acre Honouliuli Wastewater Treatment Plant, and the 72-acre ʻEwa Industrial Park zoned for intensive industrial uses.

3.12.1 GENERAL POLICIES

- Maintain industrial activity at Barbers Point Industrial Area, Kalaeloa, Honouliuli Industrial Area, and Kahe Valley and permit industrial activity at other dispersed industrial areas, as noted below.
- If a major film studio is developed within industrial areas in ʻEwa, allow accessory uses, such as film production offices, a "back lot" area with commercial uses, and visitor attractions. Overnight accommodations for film crews are allowable as an accessory use to a major film studio.
- Industrial uses will be prioritized in industrial areas within transit nodes before consideration will be given to residential and commercial uses.

Barbers Point Industrial Area/Kalaeloa

- Maintain the Barbers Point Industrial Area as one of Oʻahu's and the State's most important industrial areas.
- Allow construction of an additional electrical power generating plant at the Barbers Point Industrial Area, possibly taking advantage of cogeneration opportunities with other industrial activities. The 138 kilovolt transmission corridor running from the Barbers Point Industrial Area to Waiau could accommodate additional load on the existing poles.
- Develop the northern parts of Kapolei Business Park, Kapolei Harborside, and any Kalaeloa lands designated for industrial use for light industrial uses or compatible commercial uses as a transition between heavy industry at Campbell Industrial Park and the City of Kapolei.

Honouliuli Industrial Area

- Develop Honouliuli as a smaller industrial area, used for wastewater treatment and for light industrial and industrial-commercial mixed uses to serve the surrounding communities.
- Allow a power generation facility to be included if it is dependent on wastewater treatment operations and can be designed so that it is generally not visible from nearby major public rights-of-way, residential areas, and commercial areas.
- Expand the Honouliuli Wastewater Treatment Plant to accommodate additional growth in the region as well as to provide additional facilities for higher levels of wastewater treatment.

Other Industrial Areas

- Allow **service-oriented industrial uses** throughout the region as noted below. Uses requiring larger lots should be located in Campbell Industrial Park. Small-lot uses, including automobile repair shops, contractor's yards, and businesses serving residential and commercial areas, should be allowed to locate near the City of Kapolei in the Kapolei Business Park and on any industrial lands which may be designated within Kalaeloa.
- The **Hawaiian Electric Company generating plant** in Kahe Valley is and should remain the largest source of electrical power on O'ahu. Allow the plant to be expanded to take advantage of available land area, cooling system capacity, and power transmission lines, if needed.
- Allow development of the **industrial area planned for the western edge of Ocean Pointe** to accommodate marine haul-out facilities, repair shops, and related small boat industrial uses.

3.12.2 GUIDELINES

The following guidelines suggest how the general policies for Industrial Centers should be implemented.

All Industrial Areas

Appropriate Scale

- Minimize the visibility of large building volumes and tall building or machinery elements from resort areas, residential areas, commercial and civic districts, and parks through site planning and landscaping.

Environmental Compatibility

- Locate industries and utilities that discharge air or water pollutants, even when treated, in areas where they would impose the least potential harm on the natural environment in case the treatment process fails to perform adequately.
- Locate and operate uses that generate high noise levels in a way that will keep noise to an acceptable level in existing and planned residential areas.
- Use xeriscaping (the use of native landscape materials with low water demand), non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources.

Barbers Point Industrial Area

Coastal Environment

- Set back all buildings a minimum of 60 feet from the shoreline and 150 feet where possible if justified based on historic and projected shoreline erosion data.
- Provide a lateral public access easement along the entire shoreline from the Kalaeloa/Barbers Point Deep Draft Harbor to Kalaeloa.
- Continue to provide the major entry point to the shoreline easement at the Barbers Point beach park and lighthouse area.
- Provide at least one additional minor access, similar to the one at Kenai Industrial Park, at the drainage channel next to Kalaeloa.
- Provide access at other points where public parking on the street is available.

Building Height and Mass

- Limit building heights generally not to exceed 60 feet when they consist of large mass.
- Allow taller, vertical structures when required as part of an industrial operation, but require a view plane study to be conducted for structures over 100 feet in height to determine if they can be sited or designed to minimize visibility from residential, resort and commercial areas, public rights-of-way, and the shoreline.

Use Allocation

- Allow small lots to be provided within the Kapolei Business Park and Kapolei Harborside as sites for small business service uses.

Landscape Treatment

- Require the planting of a landscape screen, consisting of trees and hedges, along street frontages to minimize the visibility of parking, storage, industrial equipment, and operations areas from the street.
- Require special landscape treatment for streets leading to the shoreline access points.

Honouliuli Industrial Area

Building Height and Mass

- Limit building heights to generally not exceed 60 feet, especially for buildings of large mass.
- Allow taller, vertical structures when required as part of an industrial operation, but require a view plane study to be conducted for structures over 100 feet in height to determine if they can be sited or designed to minimize visibility from residential, resort and commercial areas, major public thoroughfares, and the shoreline.

Roadway Setbacks

- Require wastewater treatment structures to be at least 300 feet from the proposed alignments of the Kapolei Parkway, and the Kualaka'i Parkway. Setbacks for other industrial uses should be as given in the zoning standards.

Landscape Treatment

- Require the planting of a landscape screen, consisting of trees and hedges, along street frontages to minimize the visibility of parking, storage, industrial equipment, and operations areas from the street.

Other Industrial Areas

Building Height and Mass

- Limit building heights to generally not exceed 60 feet, especially for buildings of large mass. Developments within transit nodes, subject to City-established transit-oriented development plans, may exceed the baseline FAR and/or building height up to the maximum bonus height with the provision of commensurate community benefits through CBBs.
- Allow taller, vertical structures when required as part of an industrial operation and when commensurate community benefits are provided, but require a view plane study to be conducted for structures over 100 feet in height to determine if they could be sited or designed to minimize visibility from residential areas, resort and commercial areas, major public thoroughfares, and the shoreline.

Separation of Use Areas

- Allow small industrial lots (10,000 sq. ft. or less) for repair services and "incubator" businesses to be located near the commercial core of the City of Kapolei, but not on the principal commercial streets.
- Locate warehousing and other industrial uses requiring larger lots in industrial parks.

Landscape Treatment

- Require use of privacy walls and buildings, with minimal use of landscaping to visually screen small-lot industrial areas, outdoor work and storage areas for vehicles, equipment and supplies from the street and adjacent lots.
- Require use primarily of landscaped setbacks and street trees to provide visual screening in large-lot industrial subdivisions.

3.12.3 RELATION TO URBAN LAND USE MAP

Industrial zoning should generally be limited to those areas shown as "Industrial" on the Urban Land Use Map in Appendix A, provided that industrial zoning may be granted for an individual activity which, because it is a public transportation or utility use or because of its unique characteristics, is unable to locate in a planned industrial area.

Heavy industrial uses should be located at Campbell Industrial Park, transitioning to lighter industrial uses closer to the City of Kapolei.

3.13 KALAELOA

Kalaeloa (formerly Barbers Point Naval Air Station) is designated as a Special Area within the 'Ewa Development Plan Area because of the need to provide strategies for the redevelopment of the area, to coordinate the activities of the many private, City, State, and Federal agencies involved in the area, and to coordinate redevelopment of Kalaeloa with the development of the rest of 'Ewa.

In 1999, the Barbers Point Naval Air Station was closed, and the process of transferring the Navy lands to civilian control for public benefit began. Approximately 1,050 acres was retained by the Navy, and 457 acres were transferred for use by various other Federal Agencies. The balance of 2,180 acres were declared surplus and made available for transfer to various State and City agencies for public use. Table 3.6 lists the acreage retained by Federal agencies, acreage under negotiation for conveyance, and the acreage which has been transferred to City and State agencies.

The **Kalaeloa Redevelopment Plan** was prepared for Kalaeloa in December 2000 by the Barbers Point Naval Air Station Redevelopment Commission and accepted as the **Kalaeloa Special Area Plan** by the City Council (Res. 01-86, April 2001).

In July 2002, the State Legislature transferred responsibility for Kalaeloa to the HCDA. HCDA prepared a **Kalaeloa Master Plan** for redevelopment of Kalaeloa that was approved by the HCDA Board and the Governor in 2006. The **Master Plan** identifies the need to upgrade all major infrastructure systems (roads, drainage, water supply and wastewater) to City standards in order to support the substantial residential, retail, office and industrial development envisioned in the **Master Plan**. The **Master Plan** should be

submitted for acceptance by the City Council as the Special Area Plan for Kalaeloa, replacing the 2000 **Kalaeloa Redevelopment Plan**.

3.13.1 GENERAL POLICIES

- Use Kalaeloa's redevelopment as an opportunity to integrate the circulation system and land use pattern of the 'Ewa Plain.
- Develop a major new regional public park, and provide continuous lateral public access along the shoreline at Kalaeloa.

TABLE 3.6: KALAELOA LAND CONVEYANCE STATUS (in acres)				
		ACREAGE		
AGENCY	PROPOSED USE	retained	conveyed	pending
U.S. Navy	Golf Course, Horse Stables, two beach parks, Landfill, Public Works Center, and Defense Reutilization and Marketing Office	437	0	0
Ford Island Properties	Lands brokered for Ford Island Development	0	492	0
U.S. Coast Guard	Air Wing Headquarters	0	44	14
U.S. Federal Aviation Agency	Navigational Aid Beacon	0	18	0
U.S. Fish & Wildlife	Pearl Harbor National Wildlife Refuge	0	37	0
U.S. Veterans Affairs	Homeless Assistance and Social Services	0	7	0
U.S. Postal Service	Existing Post Office	0	1	0
Hawai'i National Guard	Consolidated Headquarters & Operations	0	148	0
State DOE	Barbers Point Elementary School	0	14	0
State DHHL	Leases for commercial and industrial purposes	0	556	0
State HCDA	Kalaeloa Heritage Park	0	77	19
State HHFDC	Holo Loa'a Shelter	0	12	0
State DOT	Kalaeloa (John Rodgers) Airport	0	752	53
State DOT	Various Roads	0	91	0
UH Honolulu CC	Pacific Aerospace Training Center	0	6	0
City BWS	Reverse Osmosis Facility	0	20	0
City DTS	Various Roads	0	66	0
City Parks & Recreation	Kalaeloa Regional Park, Kalaeloa Downtown Neighborhood Park	0	0	421
Ford Island Housing LLC	On-Station Housing	0	53	0
Carmel Partners	Orion, *Makai*, and Orion Park Housing	0	73	0
State HCDA	Unallocated[1] Parcels	0	0	259
Unallocated[1]	Roads and Easements	0	0	26
TOTAL		**437**	**2,467**	**792**

Notes:

[1] Lands originally assigned to agencies that subsequently withdrew their interest in receiving the lands.

SOURCE: Hawai'i Community Development Authority, "Table 2-1: Kalaeloa Land Conveyance Status," **Kalaeloa Master Plan** (March 1, 2006) and agency updates as of May 2011.

- Create a continuous pedestrian route along most of the 'Ewa Coast by reserving the entire shoreline of Kalaeloa for public access and recreation, and linking to adjacent pathways in Ocean Pointe/Hoakalei and Campbell Industrial Park.
- Require building setbacks from the shoreline.
- Integrate the road network within Kalaeloa with the regional circulation system for all of 'Ewa to provide additional ways for residents and workers to cross 'Ewa from east to west and north to south.
- Provide ample lands within Kalaeloa devoted to uses that will create long-term jobs for 'Ewa's residents.

3.13.2 GUIDELINES

The following guidelines suggest how the general policies for Kalaeloa should be implemented:

- Develop a major regional park at Kalaeloa that provides beach recreation and support facilities near the shoreline, other active recreation facilities in *mauka* areas, and preserves for archaeological and cultural resources, wildlife habitat, wetlands, and endangered plant colonies.

Coastal Environment

- Require a minimum building setback of 60 feet and a lateral public access easement along the entire shoreline, with the entry point at the former military beach recreation center. Where possible, the setback should be expanded to 150 feet where justified by historic or adopted projections of shoreline erosion rates.
- Connect the Kalaeloa shoreline access easement to shoreline access easements at the Barbers Point Industrial Area to the west and to public pedestrian pathways at Ocean Pointe/Hoakalei to the east.

Separation of Use Areas

- Design the road pattern and use landscape buffers to separate and distinguish military support housing, airport/industrial facilities, and recreation/wildlife areas from one another.

Appropriate Scale

- Use site planning and landscaping to minimize the visibility of large building volumes and elements from residential areas, commercial and civic districts, and public rights-of-way and parks.

Circulation System and Transportation Facilities

- Design the circulation system to include major roadways connecting the City of Kapolei to the shoreline recreation center and Ocean Pointe/Hoakalei.
- Upgrade the road system to allow bus stop facilities to be provided at the airport, military housing area, and shoreline recreation area.

Landscape Treatment

- The visibility of parking, storage, and airport/industrial operations from the street should be minimized through the planting of a landscape screen, consisting of trees and hedges, along street frontages.
- Require streets connecting the City of Kapolei to Ocean Pointe/Hoakalei and the shoreline recreation areas to receive special landscape treatment.
- Use xeriscaping (the use of native landscape materials with low water demand), non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources.

3.14 PEARL HARBOR NAVAL BASE (WEST LOCH)

The West Loch Annex of the Pearl Harbor Naval Munitions Command is proposed to be the principal site where U.S. Department of Defense ordnance handling and storage for O'ahu is consolidated. The existing Explosive Safety Quantity Distance (ESQD) arc at West Loch will remain, but would not need to be enlarged. City general policies for these areas are:

- Expand limited public access to the shoreline waters of West Loch beyond the West Loch Shoreline Park.
- Retain and enhance wetland wildlife habitat areas along the Pearl Harbor shoreline.

3.15 UNIVERSITY OF HAWAI'I WEST O'AHU

This section contains general policies and guidelines for development of the University of Hawai'i West O'ahu.

In 1997 at the time when the revised **'Ewa Development Plan** was adopted, the University of Hawai'i West O'ahu campus was planned to be developed on a 991-acre site *mauka* of the H-1 Freeway. In 2004, the Board of Regents decided to move the site of the initial UHWO campus back to a 500 acre parcel at the *makai*-Wai'anae corner of the Kualaka'i Parkway – Farrington Highway intersection. A large portion of the *makai* campus lies within the Kalo'i Gulch watershed.

The City Council approved a zone change allowing development of a campus and a mixed use community within the 500-acre *makai* site in 2008. The 2010 State Legislature approved $48 million in bond financing, allowing construction of the first phase of the campus to begin in the fall of 2010 with first classes on the new campus planned for the Fall of 2012. The University is currently evaluating options for the development of the adjacent residential and residential-commercial mixed use lands, and plans to sell 15 acres to finance a portion of the first phase construction.

The *mauka* site still remains part of the UHWO lands and could be used in the future for university and university-related uses.

Projected size is 4,600 students by 2019, and 7,600 students by 2025. The projected 2025 faculty and staff is 1,040.

3.15.1 GENERAL POLICIES

- Develop the campus to be environmentally and culturally sensitive to the site and reflective of the Hawaiian culture and of the heritage of 'Ewa.
- Develop the campus in combination with an adjacent University Village to evoke a unique sense of place that distinguishes it as an important civic and cultural institution in 'Ewa.
- Provide direct vehicle access to the campus from both Farrington Highway and Kualaka'i Parkway.

- Orient the campus to support pedestrian access to and transit usage from two rail transit stations, one located near the corner of Farrington Highway and Kualaka'i Parkway, and a second located on the Kualaka'i Parkway midway between Farrington and Kapolei Parkway.
- Design the campus to use open space areas for flood detention and retention as part of the Kalo'i Gulch watershed master plan.

3.15.2 GUIDELINES

Place Making

- Establish a clear identity and "sense of place" for the main campus through attentive design and careful integration with the adjacent mixed-use commercial area referred to as "University Village". Major campus buildings surrounding the Great Lawn should serve as one anchor for the University Village "main street" commercial/residential area anchored at the other end by a major transit station near the *mauka* entry from Kualaka'i Parkway (in the vicinity of the Farrington/Kualaka'i Parkway intersection).

Regional Integration

- Design the campus and surrounding mixed-use/residential community to function as a fully integrated community within the context of the broader regional community. The campus and surrounding community should include housing, support services, community and business facilities, in addition to the required academic facilities.

Community Orientation and Service

- Design the campus to be community-oriented and to serve the Kapolei area and West O'ahu as an urban park and cultural center, providing community services, and cultural opportunities.

Functional and Accessible Design

- Design the campus to reflect appropriate functional relationships, internal compactness, and accessibility between academic functions and supporting facilities, providing a pleasant and efficient study environment.

Drainage Impacts

- Incorporate flood detention and retention capability in the campus open space system in order to reduce the downstream impact of major storm events. For example, sports playing fields could be designed to act as flood detention basins during major storm events.
- Design the drainage plans for the campus so as to not increase storm water flows or velocity above the design levels used in designing the water retention areas of the 'Ewa Villages Golf Course and the drainage systems for earlier developments in the Kalo'i Gulch watershed.

Architectural Forms

- Site and design specific activity areas and structures to accommodate required internal academic or support relationships. This would include siting of buildings or facilities to promote academic continuity, provide spatial definition to public areas, and allow easy access to needed support areas (housing, business/food services, recreation, and parking).
- Design buildings and structures to reflect sensitivity to the local environmental conditions, as well as to Hawaiian regional styles.
- Avoid use of structures which visually dominate the site unless required to carry out the building's function. Rather, low-rise academic structures with more emphasis on regional architectural forms and human scale should prevail.

Landscape Forms

- Use trees and other landscape materials throughout the campus to provide welcome shade and visual relief.
- Use street trees and accent plantings to feature gateways, define circulation corridors, or enhance special activity areas. The intensity or selection of landscape treatments should be used to further define, identify, or buffer various campus land uses.
- Use landscape materials which reflect climate conditions, limited water resources, and maintenance issues.
- Use native/indigenous species in landscape treatments to the greatest extent possible.

Circulation

- Design circulation patterns to provide for easily accessed routes to, within, and around the campus. Minimize conflicts between cars, bikes, and pedestrians.
- Highlight the hierarchy of roadway, bikeway, and pedestrian circulation patterns by use of a distinctive design treatment for each element of the system or other appropriate method.
- Use appropriate site design and placement to minimize visual impacts from vehicle corridors and parking lots.
- Make provisions for public transportation with ties to the regional system and transit corridor an integral part of the campus plan.

Open Space/Views

- Integrate and blend open space components throughout the campus in the form of passive landscape areas, courtyards, mall spaces, and multi-purpose recreation fields or community spaces.
- Link the internal campus open space system with the adjoining regional open space systems of the adjacent developments.
- Develop campus gateways and enhance internal view corridors as an integral part of the open space elements within the campus.
- Preserve and enhance *mauka-makai* views within major open spaces and through building siting.
- Use landscape treatments or building design to visually buffer between conflicting or unsightly functions.

4. PUBLIC FACILITIES AND INFRASTRUCTURE POLICIES AND GUIDELINES

This chapter sets forth policies and guidelines to guide planning and construction of proposed public and private public facility projects and infrastructure systems to carry out the vision for future development of 'Ewa, as described in Chapter 2. These policies and guidelines are not regulations, but provide guidance that decision makers and administrators should follow, where sensible, in approving projects and revising rules, regulations, and best practices standards.

Information on timing and phasing of both planned and proposed infrastructure and public facility projects, which was available during the plan revision period, is also included. However, each project proposal is only identified and presented conceptually; not on a site-specific basis. More detailed information on the specific need, route alignment, site boundaries, capacity, and other specifications for each project, as applicable, will be prepared at the master planning stage required before a specific project can be approved. As noted in Chapter 5, existing Unilateral Agreements, Zoning and Urban Design Plans will continue to guide development in the area.

Policies and principles are provided for the following public facilities and infrastructure systems:

4.1 Transportation Systems
4.2 Water Allocation and System Development
4.3 Wastewater Treatment
4.4 Electrical Power Development
4.5 Solid Waste Handling and Disposal
4.6 Drainage Systems
4.7 School Facilities
4.8 Public Safety Facilities
4.9 Other Community Facilities

4.1 TRANSPORTATION SYSTEMS

This section describes the existing conditions, plans, and proposals for development of 'Ewa's roadways, transit system, and bikeways. (See the Public Facilities Map in Appendix A and the Planned and Proposed 'Ewa Roadway Network Improvements listing in Table 4.1.) The section concludes with general policies and guidelines to guide future transportation system development in 'Ewa.

The planned and proposed roadway elements and other transportation system features which are listed as potentially being needed to meet the projected development in 'Ewa were identified through the regional planning and transportation analysis done for the initial 'Ewa Development Plan Revision Program from 1994 to 1997, subsequent revisions of the **O'ahu Regional Transportation Plan (ORTP)**, the **'Ewa Highway Master Plan** and the 2009 **'Ewa Roadway Connectivity Study**.

Because of its generally even, gradually sloping terrain, 'Ewa offers decided advantages for transportation.

- It provides an opportunity to create multiple linkages and routes between the various parts of the region. This advantage was enhanced by the closing of the Barbers Point Naval Air Station, which has allowed for increased road linkages to and across Kalaeloa.
- The terrain allows for relatively less expensive development of a dedicated transit right-of-way. The flat terrain also increases the feasibility of constructing a rail transit system within that right-of-way.
- Both the terrain and the sunny, low rainfall climate enhance bicycling and walking as alternative forms of transportation, as well as for recreation. An improved environment for bicycling and walking also improves the potential for high transit ridership. (See the discussion of the **Kapolei Area Bikeway Plan** in Section 4.1.5.)

Act 54 (May 2009), requires State and County transportation departments to adopt and implement a complete streets policy and establishes a task force to determine necessary standards and guidelines. The intent of a complete streets policy is to create and configure a connected street system that provides for all users; including, but not limited to, pedestrians, bicyclists and transit passengers of all ages and abilities.

Table 4.1
Planned and Proposed 'Ewa Roadway Network Improvements

	'Ewa Hwy Master Plan[2]	ORTP 2035 Project Numbers [3]	ORTP 2035 Phasing [3]
Planned Extensions [1]			
Existing Roads Improvements			
o Widen Farrington Hwy (4 lanes, Ft. Weaver to Golf Course Road)	**2020**	20C	2011-2020
o Widen Farrington Hwy (Kalaeloa Blvd to Kamokila)			
o Widen Ft. Barrette Rd			
[] (4 lanes, Farrington to FDR Avenue)	**2010/2020**	21S	2011-2020
[] (4 lanes, FDR Avenue to Saratoga Avenue)		56C	2011-2020
o Widen Kunia Road/Ft. Weaver Road			
[] (4 lanes, Anonui Street to Kupuna Loop)		71S	(Illustrative)
[] (6 lanes, Kupuna Loop to Farrington Hwy.)		71S	(Illustrative)
[] (6 lanes, Geiger Road to North Road)	**2010**		
o Widen Kalaeloa Boulevard Phase II (Lauwiliwili St. to Olai St.)		17C	2011-2020
o Extend Hānu'a Street to Farrington Hwy.	**2020**	16S	2011-2020
o Widen Farrington Hwy (6 lanes, Kaleloa Blvd. to Hakimo Rd. [Nānākuli])		54S	2021-2035
o H-1 contraflow lane			
o Extend Kamokila Boulevard from Roosevelt Avenue to Saratoga Avenue		55C	2021-2035
New Roads			
o Kapolei Parkway			
[] Aliinui Dr. [Ko Olina] to Kalaeloa Blvd	**2010, 2020**	18C	2011-2020
[] Kamokila Blvd to Kamaaha Ave.	**2010, 2020**	19C	2011-2020
o Kalaeloa East-West Spine Road		S57	2021-2035
o Kualaka'i Pkwy (North-South Road)			
[] Widen to 6 lanes from H-1 to Kapolei Pkwy		22S	2011-2020
[] Extend from Kapolei Pkwy to Keoneula Blvd.	**2020**	23S	2011-2020
o Makakilo Drive extension		35C	2011-2020
o Makakilo Mauka Frontage Road, Makakilo Dr. to Kalaeloa Blvd		58S	2021-2035
Interchange Improvements			
o H-1 Kunia Interchange (Add eastbound lane)		71S	(Illustrative)
o H-1 Pālailai Interchange	**2020**	16S	2011-2020
New Interchanges			
o H-1 Kapolei Interchange	**2010, 2020**	15S	2011-2020
o Makaīwa Hills			

Additional Proposed Elements [4]

- o Develop additional north-south and east-west roads near the City of Kapolei
- o Develop an additional north-south road in East Kapolei
- o Develop an additional east-west road in East Kapolei connecting between Farrington Highway, Kualaka'i Pkwy, and Fort Weaver Road

Notes:

[1] Some projects listed in previous editions of the **O'ahu Regional Transportation Plan (ORTP)** were not listed in the **ORTP 2035** adopted in April 2011. If no number appears, the project was not included in the **ORTP 2035**.

[2] 2010: Project identified in the Ewa Highway Master Plan (2002) as needed by 2010. 2020: Project identified in the Ewa Transportation Impact

[3] The **ORTP 2035** was approved in April 2011. Project Numbers from Table 8 of the ORTP2035. C indicates a City project; S is a State Project. Phasing indicates the period when funding and construction is anticipated for the project. Illustrative projects could be added if additional funding is available.

[4] A number of additional north-sourth and east-west connections needed to provide connectivity as 'Ewa develops are identified on the public facilities map in Appendix A.

4.1.1 EXISTING ROADWAY NETWORK

The major east-west arterials of the 'Ewa roadway system includes:

- The H-1 Freeway, which is the major arterial road connecting 'Ewa with the Primary Urban Center,
- Farrington Highway, which, past Kapolei, is the sole arterial highway connecting the Waianae Coast with 'Ewa, and, between Kapolei and Waipahū, is a secondary east-west route; and
- Kapolei Parkway, which links 'Ewa Beach in the east with the City of Kapolei in the west, and eventually will extend to Ko Olina.

North-south roads distribute traffic onto and off the east-west arterials at several locations. They include:

- Fort Weaver Road which links West Loch, 'Ewa Villages, 'Ewa by Gentry, Ocean Pointe/Hoakalei, and 'Ewa Beach with Farrington Highway and H-1,
- Kunia Road, which connects 'Ewa with Central O'ahu's Schofield Barracks and Wahiawā,
- Kualaka'i Parkway which links Kapolei Parkway with Farrington Highway and the H-1 Freeway;
- Fort Barrette Road, which extends south from the City of Kapolei to Kalaeloa,
- Makakilo Drive, which continues up the hillside from the Makakilo Interchange of the H-1 Freeway, providing the only access to Makakilo, and
- Kalaeloa Boulevard, which provides access to Campbell Industrial Park and Kalaeloa Barbers Point Harbor via the H-1's Pālailai Interchange.

According to the **O'ahu Regional Transportation Plan 2035**, the number of people traveling on H-1, Farrington Highway, and Fort Weaver Road just before the Kunia Interchange is projected to increase from 183,600 trips per day in 2007 to 276,600 in 2035, an increase of 51 percent. Traffic congestion on east-west and north-south collector and connector roadways in 'Ewa is also increasing, even outside the peak commuting hours.

As noted in Section 4.1.6, the substantial development of Secondary Urban Center jobs (from 19,900 jobs in 2000 to over 103,000 jobs by 2035) is expected to increase the number of 'Ewa residents who work in the area. However, even with this substantial job growth, it is projected that the number of commuters traveling to the PUC from 'Ewa and Central O'ahu will still increase, although at a lower rate than would occur if development of the Secondary Urban Center was not supported.

4.1.2 PLANNED EXTENSIONS OF THE ROADWAY NETWORK

Planning and development of major roadways is the shared responsibility of the State Department of Transportation (DOT) and the DTS and use of federal transportation funds is coordinated through the O'ahu Metropolitan Planning Organization (OMPO), a joint City-State agency.

A consortium of landowners and developers working with the DOT and the DTSfunded the **'Ewa Highway Master Plan** which identified major roadway improvements needed to meet projected development in 'Ewa through 2025.

Based on the **Ewa Highway Master Plan**, the City Council, in 2002, adopted Ordinance 02-52 establishing the 'Ewa Highway Impact Fee which is added to all building permits in 'Ewa and in the Royal Kunia and Village Park areas of Central O'ahu. Funds collected from the fees are to be used to provide the local contribution for seven major 'Ewa roadway projects needed by 2010 to meet projected growth. (See Table 4.1 for details.)

The 2002 **'Ewa Highway Master Plan** was recently updated as part of an update to the 'Ewa Highway Impact Fee program. The updated **Plan** identifies eight roadway and intersection projects needed to meet growth in 'Ewa traffic by 2020.

The **O'ahu Regional Transportation Plan (ORTP) 2035** was adopted in April 2011. It is the State and County plan for what transportation projects are needed through 2035 for O'ahu. In order to receive Federal funding, projects need to be listed in the **ORTP**. See Table 4.1 for listings of the 'Ewa roadway projects in the **ORTP 2035** and the 2002 and 2011 versions of the **'Ewa Highway Master Plan**.

The **'Ewa Highway Master Plan** and the **ORTP 2035** show major elements of the future 'Ewa roadway network. These major improvements include:

- Widening of Fort Weaver Road;
- Widening of Farrington Highway;
- Completion of Kapolei Parkway, which is planned as a major east-west corridor, connecting the eastern parts of 'Ewa with the City of Kapolei and employment areas to the west;
- Connection of Kualaka'i Parkway *mauka* of the H-1 Freeway interchange with the extension of Makakilo Drive;
- Widening of Fort Barrette Road;
- Extension of the Kualaka'i Parkway south of Kapolei Parkway into Kalaeloa to provide a direct access to the Regional Park for East Kapolei residents and UH-West O'ahu campus staff and students;
- Extension of Keoneula Boulevard to link Ocean Pointe\Hoakalei with the Kalaeloa Regional Park and the extension of Kualaka'i Parkway;
- Extension of Kamokila Boulevard to Saratoga Avenue to further improve this route between Kalaeloa and the City of Kapolei;
- Extension of Geiger Road to connect with Saratoga Road and provide a direct link between Kalaeloa Boulevard, Kamokila Boulevard, Fort Barrette Road and the Kualaka'i Parkway;
- Improvements to existing H-1 Freeway interchanges at Pālailai, and Kunia;
- Construction of a new H-1 Freeway interchange at Kapolei;
- Widening of Kalaeloa Boulevard;
- Extension of Hānu'a Street parallel to Kalaeloa Boulevard to enhance truck access between Farrington Highway and Barbers Point Industrial Area/Kalaeloa Barbers Point Deep Draft Harbor; and
- Development of a mauka frontage road to connect Makakilo Drive with Kalaeloa Boulevard.

Recognition in this Plan of these major improvements to future roadway networks for 'Ewa in no way implies City Council approval of these projects. Any projects requiring City funding will have to be approved through the Capital Improvements Program process.

4.1.3 ADDITIONAL ELEMENTS OF THE ROADWAY NETWORK

The planned development of East Kapolei and redevelopment of Kalaeloa will eventually open additional areas for use and increase transportation needs beyond the levels planned for the **'Ewa Highway Master Plan** and the **ORTP 2035**.

Additional east-west and north-south roadways will be needed to enhance movement between the various parts of the 'Ewa region and to provide improved access to activity centers such as Ocean Pointe/Hoakalei and the Kalaeloa Regional Park, including:

- Development of an east-west collector-connector roadway system, which connects developments on both sides of Kualaka'i Parkway in an efficient circulation pattern;
- Development of additional north-south roads to improve circulation between the City of Kapolei and the freeway, Makakilo and Makaīwa Hills;
- Construction of a new H-1 Freeway interchange at Makaīwa Hills;
- Extension of Keaunui Road to connect with Renton Road;
- Development of an ad`ditional east-west arterial between East Kapolei and Fort Weaver Road; and
- Development of at least one additional north-south road between East Kapolei and Farrington Highway, east of the Kualaka'i Parkway.

The need for these roads has been established only at the conceptual stage, and further study, planning, and approvals will be required to establish need, appropriate route, capacity, and other characteristics.

DPP has completed a road connectivity study for the 'Ewa region to identify where east-west and *mauka-makai* connector roads should be located to link adjacent subdivisions. Results of the study are used by the Department in the approval of subdivision layouts.

4.1.4 TRANSIT

With population growth, the City should increase transit service in 'Ewa in order to enhance circulation among 'Ewa communities and between 'Ewa and the adjacent Wai'anae and Central O'ahu areas, and to provide suitable service for peak-hour commuting.

4.1.4.1 Bus Service

Bus service is provided through the DTS, which currently contracts with O'ahu Transit Services (OTS) for operation of TheBus and Handi-Van system.

The **Comprehensive Bus Facility and Equipment Requirements Study**, published in 1994 by the Honolulu Public Transit Authority, examined bus system expansion and financing needs for the period 1994 - 2006. This study has not been updated. Currently, there are no plans to expand the bus fleet beyond the current 531 buses. For the fleet to expand its service, public review and Council approval will be necessary.

The DTS has identified and proposed for development two park-and-ride facilities in 'Ewa, one near the Kualaka'i Parkway/Kapolei Parkway intersection, and another near the corner of Kualaka'i Parkway and Farrington Highway. An alternatives analysis will be conducted for a third facility near the civic center area of the City of Kapolei.

Policies, planning principles, and guidelines in this Development Plan support the establishment of transit service throughout 'Ewa and creation of linkages feeding into transit nodes along the rail transit corridor (see Section 4.1.4.2).

4.1.4.2 Planned Rail Transit Corridor

In 2006, the DTS completed a planning Alternatives Analysis to evaluate alternatives that would provide high-capacity transit for the rail transit corridor between the University of Hawai'i at Mānoa, downtown Honolulu, and the fast growing 'Ewa region. On December 22, 2006, the City Council selected, as the Locally Preferred Alternative, a fixed-guideway transit system, now known as the elevated rail transit line, extending from the City of Kapolei to the University of Hawai'i Mānoa with a connection to Waikīkī. This initial phase will begin in East Kapolei near the Salvation Army Kroc Center and the DHHL headquarters, and will end at the Ala Moana Shopping Center.

As shown on the Phasing Map in Appendix A, a rail transit corridor is planned to connect the City of Kapolei with Waipahū, and onward to the PUC. Service on the rail transit corridor could provide a shuttle service between Kapolei West, the City of Kapolei, Kalaeloa, East Kapolei (DHHL East Kapolei, UHWO, Ho'opili), and Waipahū, and an express commuter service to and from the PUC. In peak-hour commuting, the elevated rail transit line will provide high-speed dedicated transit service.

By connecting to the PUC to Kapolei via Waipahū, the rail transit corridor will provide for a future high-speed connection between UHWO, Leeward Community College, Honolulu Community College, and the University of Hawai'i at Mānoa.

The 'Ewa portion of the elevated rail transit line is being constructed from Waipahū through Ho'opili, turning south to run along Kualaka'i Parkway to extend into Kalaeloa where it turns west and runs along Saratoga Road until it turns north and enters the City of Kapolei on Wākea Street, turning west on Kapolei Parkway until reaching its terminus near the Kapolei Commons shopping center.

Developments along the rail transit corridor should set aside appropriate sized right-of-way and space for pedestrian-station interface areas for the establishment, when needed in the future, of an elevated rail transit line. Such a system will require a 28-foot to 32-foot right-of-way along the route and a 75-foot right-of-way for rail transit stations.

Land has been set aside for a rail transit right-of-way in the median of Kapolei Parkway and along the east side of the Kualaka'i Parkway corridor.

DR Horton, Schuler Division, has purchased the former Campbell Estate lands along Farrington Highway between Kualaka'i Parkway and Fort Weaver Road. They have made a commitment to provide a rail transit corridor right-of-way between Kualaka'i Parkway and Fort Weaver Road.

Land has been set aside in the City of Kapolei for a transit station/bus terminal/park-and-ride facility, and provisions should be made for transit stations/park-and-ride facilities at each of the transit nodes along the rail transit corridor.

Medium density apartment and commercial development should be developed at greater densities within transit nodes. These transit nodes should be designed to give priority to pedestrians and areas intended for pedestrian access and circulation. The objective is to create a land use pattern that would allow residents to minimize use of the private automobile and encourage use of transit for longer trips and walking or biking for short trips.

4.1.4.3 Commuter Ferry System

TheBoat, a high-speed commuter ferry system, operated between September 2007 and June 2009, and provided an alternative way to commute to the PUCfrom 'Ewa and West O'ahu. The ferry ran between Kalaeloa Barbers Point Harbor and the Aloha Tower.

Renewal of the service may be possible if an 'Ewa terminus in the 'Ewa Beach area could be obtained.

4.1.5 BIKEWAY SYSTEM

The **Kapolei Area Bikeway Plan (KABP)**, published by Campbell Estate in 1991, establishes a comprehensive bikeway network to serve the 'Ewa Plain. The network would include 56 miles of bikeway facilities, including bike paths (separated from the roadway), bike lanes (four- to six-foot lanes) and bike routes (shared curbside vehicle lane, with minimum 12-foot width).

The **Kapolei Area Bikeway Plan** is part of the **City of Kapolei Urban Design Plan**, which was updated and adopted by the City Council in 2008. The KABP covers all of 'Ewa except for military bases in the area. Elements of the KABP have been adopted by the State Department of Transportation as part of the State bikeway plan, **Bike Plan Hawai'i** (2003), and have been included in draft **O'ahu Bike Plan** maps for 'Ewa which are being reviewed as part of a City update to the 1999 **Honolulu Bicycle Master Plan**.

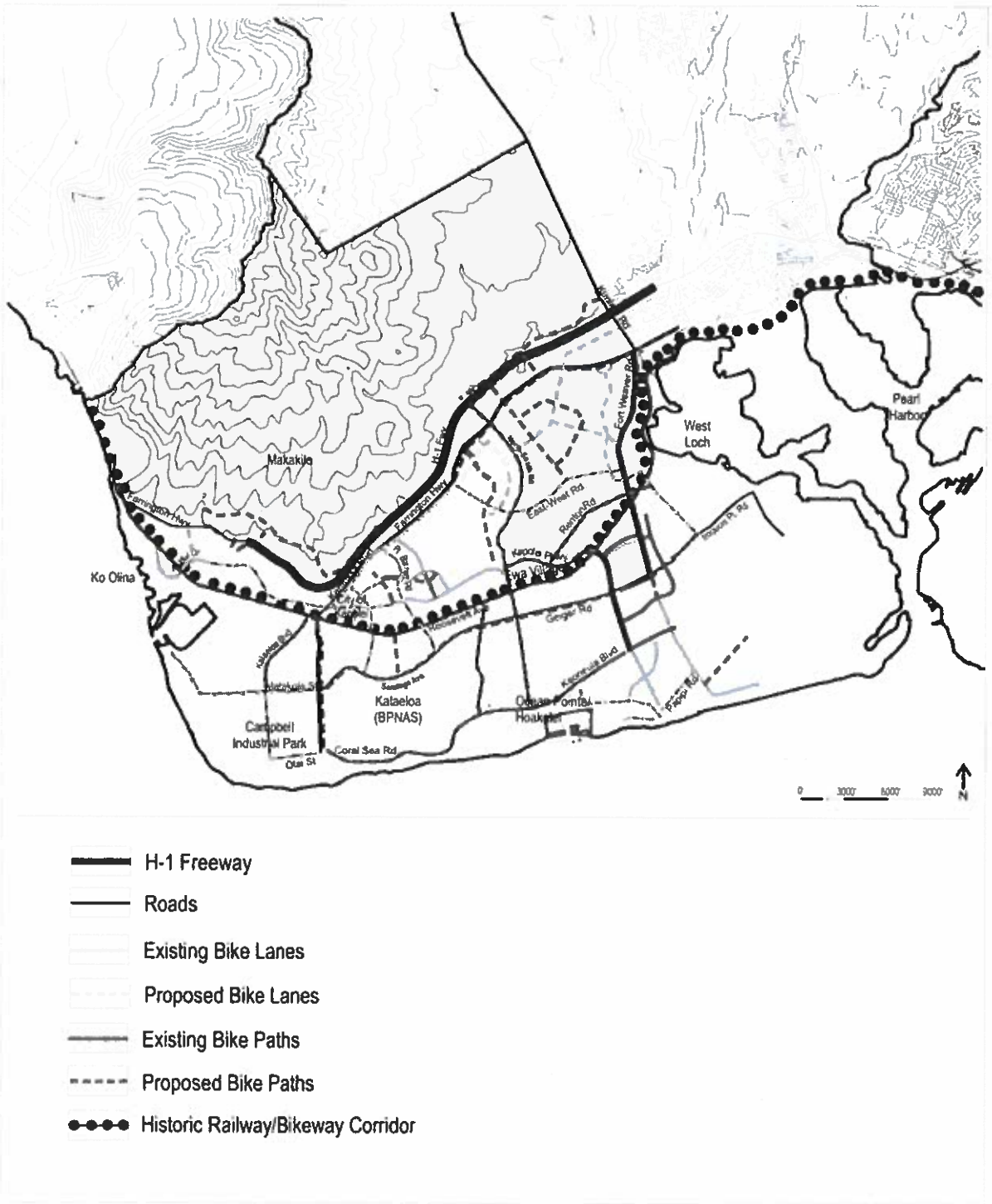
In addition, the DPP has completed the **'Ewa Roadway Connectivity Study** (May 2009) which provides a proposed bikeway facility plan for 'Ewa to be used in evaluating roadway master plans submitted as part of subdivision applications.

The **'Ewa Development Plan** includes all the projects found either in the KABP, in the State's **Bike Plan Hawai'i,** or the **'Ewa Roadway Connectivity Study**. As shown in Exhibit 4.1, major bike paths should run along the OR&L right-of-way, Kapolei Parkway, the Kualaka'i Parkway, and Fort Weaver Road. Bikeways should also be incorporated into other major roadways, and there should be an extensive network of bike lanes within the City of Kapolei and the Villages of Kapolei.

4.1.6 GENERAL POLICIES

- **Transportation System Functions -** To support 'Ewa's role as the site for the Secondary Urban Center and a major growth area for new residential and employment development, its transportation system should:
  - Provide adequate access between residences and jobs, shopping, and recreation centers in 'Ewa as development occurs;
  - Provide improved access to and from adjacent areas, especially Central O'ahu; and
  - Provide adequate capacity for major peak-hour commuting to work in the Primary Urban Center. (Although the share of residents who will both live and work in 'Ewa is projected to increase from 17 percent in 1990 to 46 percent by 2030, a majority of residents will still commute to jobs outside the region.)

Exhibit 4.1
'Ewa Bikeway System



- **Transportation Development Priorities** - Meet demand for peak-hour transportation in 'Ewa by:
  - Increased use of transit; and
  - Transportation demand management through:
    - Provision of improved service on High Occupancy Vehicle (HOV) facilities;
    - Provision of park-and-ride facilities; and
    - Use of other programs which encourage reduced use of the single occupant private automobile.

Comprehensive Roadway Network

- Design and develop the roadway system to provide multiple routes for traveling among the various residential communities and activity centers of 'Ewa, thereby lending variety to travel within the region and promoting communication among its communities. Network designs for communities should take on more of a grid pattern, providing intersections between collector or connector streets at approximately quarter-mile intervals.
- Design and develop the roadway system to increase connections between parallel major collectors and arterials - e.g., between Kualaka'i Parkway and Fort Weaver Road - rather than relying primarily upon loop roads to feed the major roadways. Planning for East Kapolei and for Kalaeloa are important opportunities for creating such connections.

Land Use Planning Anticipating Rail Transit

- Reserve land sufficient for the right-of-way for the Council-identified rail transit corridor prior to development and plan for medium density, high-traffic land uses along the corridor. This strategy will contribute to the feasibility of developing a high-speed transit line and will result in a more mobile, less automobile-dependent community.
- Plan all the communities along the proposed transit corridor on Farrington Highway, on Kualaka'i Parkway, through Kalaeloa, and on Kapolei Parkway to reflect the desire to establish a rail transit corridor with medium density residential and commercial nodes located at regular intervals.

Transit-Oriented Community Street Systems

- Design circulation systems within residential communities and commercial centers to emphasize connections between north-south and east-west streets and accessibility from residential streets to bus routes, parks, schools, and commercial centers.
- Design circulation systems to facilitate bicycle and pedestrian travel, to increase transit use, and to reduce dependence on automobile travel (see Chapter 3, Sections 3.9 and 3.10, for more detailed planning principles and guidelines for circulation in residential communities and commercial centers).
- **Adequate Access and Services** - Before zoning approval is given by the City Council for new residential and commercial development in 'Ewa, the Department of Transportation Services, DPP, and State Department of Transportation, as appropriate, should:
  - Report if adequate transportation access and services can be provided with existing facilities and systems; and
  - If adequate capacity cannot be provided by existing facilities, recommend conditions that should be included as part of the zone change approval in order to assure adequacy, including timing of any necessary improvements.
- **Reduction in Automobile Use** - Reduce reliance on the private passenger vehicle by:
  - Providing circulation systems with separated pedestrian and bicycle paths and convenient routes for public transit service;
  - Designing street systems in new development areas which reduce the length of dead end streets and provide for smaller blocks in order to facilitate bus routes, provide better access for emergency and utility vehicles and encourage walking and biking;
  - Providing supporting facilities and amenities for pedestrian, bicycle, and public transit use, including the use of bike trails, and the provision of bicycle racks at commercial centers, bicycle storage facilities at employment centers and bus shelters at bus stops; and

- Allowing and encouraging medium-density and high-traffic land uses along the Council-identified rail transit corridor, especially within a quarter-mile of centers of the transit nodes.

Roadways

- Develop the roads listed in the **'Ewa Highway Master Plan** and the **O'ahu Regional Transportation Plan** to meet the development anticipated by 2035.
- Develop additional east-west and north-south roadways to enhance movement between the various parts of the 'Ewa region and to provide improved access to activity centers such as the proposed Kalaeloa Regional Park and the Hoakalei marina.
- Design the extension of the Kualaka'i Parkway south of Kapolei Parkway into Kalaeloa to minimize adverse impacts on historic railway operations and historic resources at the 'Ewa Marine Corps Air Field.

Transit

- Increase transit service in 'Ewa to enhance circulation within 'Ewa and between 'Ewa and the adjacent Wai'anae and Central O'ahu areas and to provide suitable service for peak-hour commuting.
- Provide sites for transportation centers and park-and-ride facilities as new communities are developed.
- Develop a rail transit corridor connecting the City of Kapolei with the Primary Urban Center to provide both a shuttle service between Kapolei West, the City of Kapolei, Kalaeloa, DHHL East Kapolei, the UHWO campus , Ho'opili, and Waipahū, and an express commuter service to and from the Primary Urban Center.
- Set aside land in the City of Kapolei and along the rail transit corridor for rail transit stations and park-and-ride facilities.
- Establish a commuter ferry service to downtown Honolulu from Hoakalei Marina if such service is found to be feasible and if sufficient financing can be obtained to construct improvements needed to provide such service from the Marina.

Bikeway System

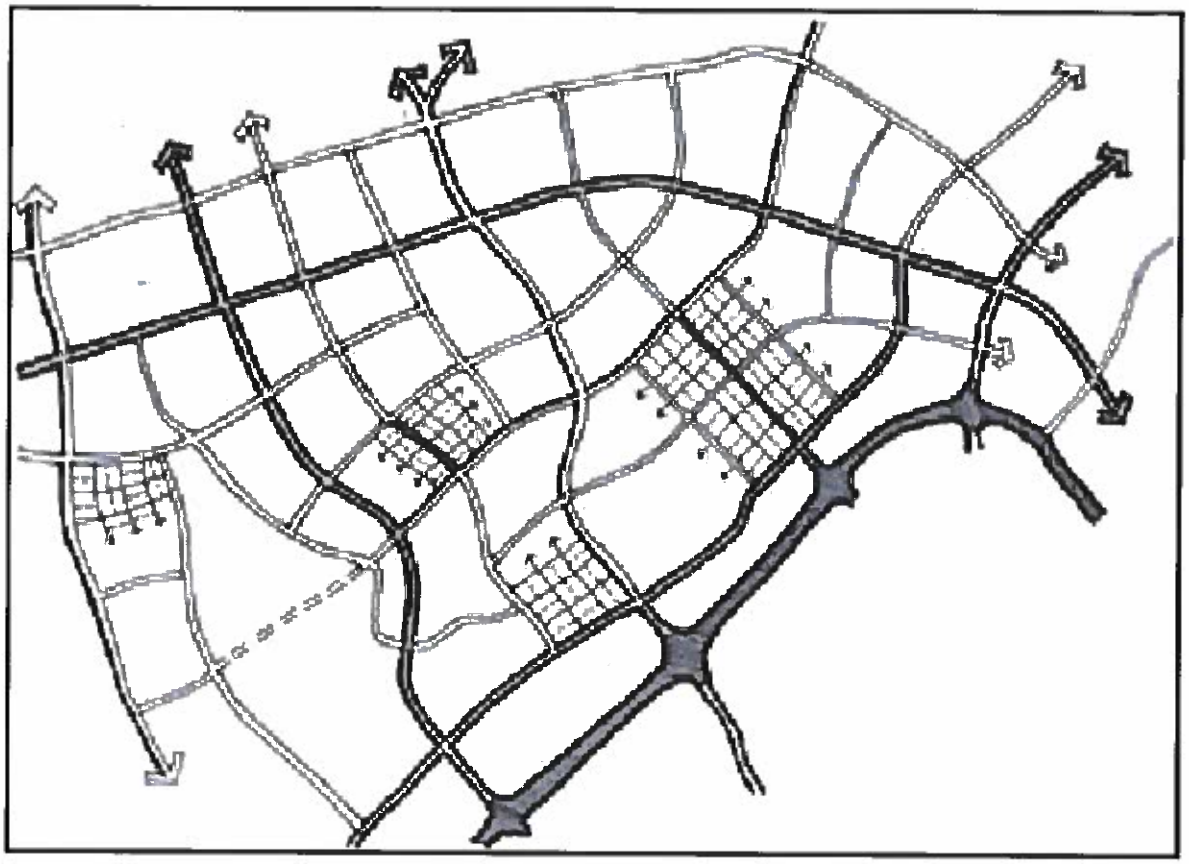
- Develop major bike paths along the OR&L right-of-way, Kapolei Parkway, the Kualaka'i Parkway, and Fort Weaver Road.
- Incorporate bikeways into other major roadways.
- Develop an extensive network of bike lanes within the City of Kapolei and the Villages of Kapolei.

4.1.7 GUIDELINES

The following guidelines suggest how the general policies for transportation system development in 'Ewa should be implemented.

- **Community-Level Street Standards** - Revise standards for public streets within residential communities and commercial centers to support and improve pedestrian and bicycle travel and on-street parking. While average motor vehicle speed may be reduced, safety and enjoyment for pedestrians and bicyclists would be increased and greater efficiency in land use, reduced constructions costs, and improved street function may also be achieved.
- Design the street network to provide multiple options for reaching major amenities such as the Main Street/Village Center shops, schools, parks and community facilities, without needing to access an arterial boulevard.
- Consider view corridors to the mountains, open space, and other local and regional landmarks in the arrangement of streets, commercial centers, and shared spaces within both residential and mixed use districts.
- Provide a circulation network master plan for 'Ewa that is comprised of a loose "grid" of arterials at 1/2-1 mile intervals, collector streets at 1/4 mile intervals and connectors roads between individual developments at regular intervals between collectors, where permitted by terrain. See Exhibit 4.2.
- Connect existing adjacent neighborhoods to new streets, bikeways, paths, and trails.
- Use traffic calming measures to slow traffic making short cuts and support a desirable living environment.

Exhibit 4.2
Street Network



- Use multiple connecting streets within and between residential neighborhoods to knit neighborhoods together, not form barriers.
- Use streets, bikeways, and walkways to create a unifying circulation network that provides convenient routes throughout the community.
- Establish specific connectivity standards (minimum intersection frequency, maximum dead end length, number of dwellings or buildings on a cul-de-sac, and minimum street spacing) for each zoning district.

4.2 WATER ALLOCATION AND SYSTEM DEVELOPMENT

In 1987, the State enacted the State Water Code in order to protect, control, and regulate the use of the State's water resources for the benefits of its people. Under the

Code, the City is responsible for preparing the water use and development plan for the City and County of Honolulu.

This plan, called the **O'ahu Water Management Plan** (**OWMP**), is prepared by the Board of Water Supply with the assistance of the State Commission on Water Resource Management and the DPP, and approved by the City Council following extensive public review and comment. The goal of the **OWMP** is to provide guidance for the sustainable management and use of O'ahu's valuable and finite surface and ground water resources in meeting demands consistent with the City land use plan. The current **OWMP** was adopted by the State Commission on Water Resources and the City Council in 1990.

The Board of Water Supply (BWS) has begun the development of eight district-wide Watershed Management Plans for each of the eight Development Plan and Sustainable Communities Plan areas. The **Wai'anae Watershed Management Plan**, and **Ko'olau Loa Watershed Management Plan** are the first two plans to be prepared. They will be followed by plans for the North Shore and Ko'olau Poko, and then 'Ewa, Central O'ahu, the Primary Urban Center, and East Honolulu. When completed, the eight Watershed Management Plans will be used to update the **O'ahu Water Management Plan**.

Water Reclamation - Under the City's agreement through a Consent Decree with the U.S. Environmental Protection Agency and the State Department of Health, the City established a water reclamation facility at Honouliuli Wastewater Treatment Plant (WTP) to recover nonpotable water for beneficial uses such as irrigating parks and golf courses, providing water for industrial cleaning, and for making steam used in oil processing.

Construction of the secondary treatment unit at the Honouliuli WTP was completed in 1996. The facility is capable of providing 13 million gallons per day (mgd) of non-disinfected secondary treated reclaimed water (R-3 quality). The R-3 quality water receives further treatment known as tertiary treatment at the Honouliuli Water Recycling Facility (WRF) which produces two grades of recycled water: R-1 for irrigation and RO (Reverse Osmosis) demineralized water for industrial uses. The WRF can process up to 12 mgd which is distributed to customers throughout 'Ewa through separate lines for

each grade of water. The Board of Water Supply is planning expansion of the distribution system, in conjunction with expansion of both the Honouliuli WTP and WRF, to provide over 26 mgd of nonpotable water for use in 'Ewa.

Desalination Project - Following the success of a small State of Hawai'i sponsored pilot project, the Board of Water Supply is planning to construct an initial 5 mgd desalination plant on a 20-acre parcel at Kalaeloa. Capacity of the plant could be increased to 15 mgd in future phases. The plant is expected to have an operational life of 30 to 50 years.

The Board of Water Supply evaluated the water development needs of the existing and new residential and commercial (including retail, office, resort, recreational, and industrial) development likely by 2035, as a result of implementation of the **'Ewa Development Plan**.

- The Board of Water Supply forecasts that 27 mgd of **potable** (or drinkable) water will be needed in 'Ewa by 2035 to meet projected growth in residential and commercial demand from the 14.9 mgd needed in 2000.
- In addition, long-term demand for **nonpotable** water for
  - Existing and new urban irrigation and other urban purposes is estimated to be approximately 21 mgd; and
  - The 3,000 acres of agricultural land in 'Ewa protected from development by this plan could be as much as 10 mgd (based on estimates from the **State Agricultural Water Use and Development Plan**).

Potable water system infrastructure has been master planned by the Board of Water Supply to accommodate 'Ewa's planned growth. Ultimately, potable water demands of the remaining lands within the Community Growth Boundary should be met by desalination or additional groundwater sources in Central O'ahu if sustainable yield is determined available.

The demand for nonpotable water for urban irrigation and other urban purposes and for agricultural irrigation for lands over the 'Ewa Plain nonpotable aquifer; will be met with a combination of recycled water, brackish caprock water, and brackish basal water. Infrastructure providing R-1 recycled water connects the Campbell Industrial Park with

Fort Weaver Road, and brackish water systems exist in several developments. Demineralized recycled water is also provided by the Board of Water Supply to refineries and power plants in Campbell Industrial Park for industrial purposes. The demand for nonpotable water for agricultural irrigation of lands over the Pearl Harbor potable water aquifer should be met with low chloride irrigation water such as the Wai'ahole Ditch or freshwater wells.

As shown in Table 4.2, the Board of Water Supply has identified potential sources of potable and nonpotable water to meet the projected demand in 'Ewa through 2035. These sources will be pursued as part of the Board's development and operation of a diversified and integrated island-wide water system.

Strategies in the Watershed Management Plan promote on-going groundwater source development coupled with efforts to increase water delivery efficiency, water conservation, and continued development of alternative sources of water, such as recycled and brackish water and desalination.

The remainder of the section provides general policies and guidelines for water allocation and water system development in 'Ewa.

4.2.1 GENERAL POLICIES

Adequacy of Water Supply

- Before zoning approval is given for new residential or commercial development in 'Ewa, the Board of Water Supply should:
  - Report if adequate potable and nonpotable water is available; and
  - If adequate potable and nonpotable water is not available, recommend conditions that should be included as part of the zone change approval in order to assure adequacy.
- Confirm adequacy of existing capacity at the time of land subdivision or building permit applications for existing lots.

TABLE 4.2 POTENTIAL SOURCES OF POTABLE AND NONPOTABLE WATER FOR 'EWA

POTABLE GROUNDWATER RESOURCES

GROUND WATER SOURCE	Estimated Source Yield (mgd)
1. Kunia Wells III[1]	3.00
2. Waipahū Wells IV[1]	3.00
3. Honouliuli Wells[2]	1.62
4. 'Ewa Shaft	10.00
5. Additional Central O'ahu Wells[3]	
Total	**17.62**

ALTERNATIVE WATER RESOURCES

SOURCE	Available Resource (mgd) Minimum Estimate	Maximum Estimate
POTABLE		
1. Kalaeloa Seawater Desalination Plant	5.00	15.00
2. Kapolei Brackish Desalination Plant	0.20	0.50
Total Potable	**5.20**	**15.50**
NONPOTABLE		
3. 'Ewa Caprock[4]	8.70	9.00
4. Brackish Basal Water[5]	4.00	5.00
5. Recycled Water[6]	12.00	12.00
6. Waiāhole Ditch ('Ewa only)[7]	4.73	6.00
Total Nonpotable	**29.43**	**32.00**

NOTES:

mgd = million gallons per day mg/l = milligram per liter

[1]Portion of the source will supply water for Wai'anae's growth.

[2]Of the 6.72 mgd permitted use, 1.62 mgd remains available for new development.

[3]Unpermitted sustainable yield is available but hydro-geologic analysis must be conducted.

[4]Minimum is existing use July 2005. Maximum was 1996 proposed sustainable yield. 'Ewa caprock is now managed by a chloride limit of 1,000 mg/l.

[5]Based on existing brackish basal sources, EP-2 (1mgd), EP-5&6 (2mgd), EP-10 (1-2 mgd).

[6]Expansion of recycled water supply beyond 12 mgd is possible but not planned at this time..

[7]Minimum estimate is Campbell Estate 3.98 mgd and Pu'u Makakilo 0.75 mgd allocation. Max adds possible unpermitted water.

Allocation of groundwater sources require the approval of the State Commission on Water Resource Management (CWRM).

Source:

Honolulu Board of Water Supply, 2008, Watershed Management Plan

CWRM Database 2005

Water Use Efficiency and Conservation

- Require developments to conserve water resources by implementing water conservation measures, such as low flow plumbing fixtures, drought tolerant landscaping, sub-metering and efficient irrigation systems with soil moisture sensors. Such requirements shall be determined during review of building permit applications. Encourage owners of existing plumbing systems to conduct regular water audits and effect repairs to reduce water loss.
- **Dual Water Lines -** Require developments with large landscaped areas (such as golf courses, parks, or schools), roadway landscaping, and industrial processes to have dual water lines to allow conservation of potable water and use of nonpotable water for irrigation and other appropriate uses. Such requirements shall be determined during review of project water master plans for new developments and approval of zoning applications and construction plans.
- **Development and Allocation of Potable and Nonpotable Water -** The State Commission on Water Resource Management has authority in all matters regarding administration of the State Water Code. By City Charter, the Board of Water Supply has the authority to manage, control and operate the water systems of the City, and therefore should coordinate the development and allocation of potable and nonpotable water sources and systems intended for municipal use on O'ahu as guided by the City's land use plans and the OWMP.

Use of Nonpotable Water

- Develop an adequate supply of nonpotable water for irrigation and other suitable uses on the 'Ewa Plain in order to conserve the supply of potable water and to take advantage of dual water systems constructed by 'Ewa developers.
    - The Pearl Harbor aquifer is the most cost effective and accessible water resource of potable quality on O'ahu, and it is needed to support the existing and future domestic potable water uses described in the development plans.
    - To minimize the risk of impacts to our precious potable water sources, the use of recycled water reclaimed from wastewater effluent and

brackish waters as nonpotable irrigation sources in the coastal caprock area such as the 'Ewa Plain should be given high priority.

- Significant demand exists for nonpotable water for golf courses, landscape irrigation, and industrial uses on the 'Ewa Plain.
- In addition to the compatibility of the source to the demand in the area, the infrastructure to distribute the recycled water in that area is being planned and developed by the Board of Water Supply.
- Recycled water from the Honouliuli Water Recycling Facility and brackish water should, therefore, be used to meet demand in the 'Ewa Plain where there are no adverse consequences to the drinking water resources.

- Require nonpotable water used for irrigation above Pearl Harbor aquifer to be low in chlorides and total dissolved solids to protect the quality of drinking water withdrawn from wells located down-gradient of the application. Experiences with increasing chloride, nitrate, and pesticide contamination of groundwater indicate that activities on the surface of the land can have a detrimental effect on the quality of drinking water.
- **Use of Wai'ahole Ditch Water -** Request that the State Commission on Water Resource Management consider all sources of water in making allocations. A sufficient amount of water is needed to meet the diversified agricultural needs for 'Ewa and Central O'ahu along with providing for high quality recharge of the Pearl Harbor aquifer. A number of potential sources are identified in Table 4.2, including: caprock, surface water, spring waters, Wai'ahole Ditch Water, and recycled water recovered from wastewater effluent. The amount of water available and the potential use of each of these sources vary according to location.

Alternative Water Supplies

- Where practical, develop alternative water supplies using new technologies in water reclamation, membrane and distillation desalination and deep ocean water applications to ensure adequate supply for planned uses.
- Encourage use of technologies conserving water and using renewable energy that could support alternative water supplies, such as seawater air

conditioning, photovoltaics, efficient plumbing and lighting fixtures, wave energy, and bio-fuels.

4.3 WASTEWATER TREATMENT

The City's **West Māmala Bay Wastewater Facilities Plan** (2001) provides estimates that treatment/disposal capacity at the Honouliuli WTP will need to be increased from existing capacity for primary treatment of 38 mgd to almost 51 mgd by 2020 to meet projected population and economic growth in 'Ewa and Central O'ahu resulting from implementation of the Development Plans. In addition, the capacity of specific sewer lines and pump stations will need to be increased.

As noted above, the City is meeting its commitment to the U.S. Environmental Protection Agency and the State Department of Health to reclaim and use, islandwide, up to 10 mgd of recycled water recovered from wastewater effluent.

The remainder of the section provides general policies for wastewater system development in 'Ewa.

4.3.1 GENERAL POLICIES

- Require all wastewater produced by new developments in 'Ewa to be connected to a regional or municipal sewer service system.
- Where feasible, use recycled water recovered from wastewater effluent for irrigation and other uses below the Underground Injection Control (UIC) line of the State Department of Health and the "No-Pass" Line of the Board of Water Supply.
- Locate wastewater treatment plants in areas shown as planned for industrial use and away from residential areas shown on the Urban Land Use Map in Appendix A. Existing treatment plants are shown on the Urban Land Use Map and the Public Facilities Map in Appendix A.
- Use a City review and approval process, which provides adequate public notice and input, complete technical analysis of the project by the DPP, and approval by the City Council, for any major new private wastewater treatment plant. Other system

elements, such as pump stations and mains, should not require such comprehensive review and policy approval.

4.4 ELECTRICAL POWER DEVELOPMENT

The Hawaiian Electric Company (HECO) forecasts that increased demand, the need for different types of generation to help reliably integrate additional renewable energy from intermittent sources, and the possible retirement of the Honolulu Power Plant from service will create a need for additional island-wide power generation capacity by 2025. Potential sites in 'Ewa for additional generating units include Campbell Industrial Park and Kahe Point.

In May 2007, the State Public Utilities Commission approved HECO's proposal to build a 110-megawatt generating plant adjacent to the company's Barber's Point Tank Farm in Campbell Industrial Park. The new generator is planned to come on line in 2009.

HECO has a number of renewable energy initiatives and activities including rebates to help homeowners install rooftop solar water heating systems, funding for biofuels crop research, and support for installations of photovoltaic systems with net energy metering. (Net energy metering allows the owner of the photovoltaic system to receive credit for the export of surplus energy into the island-wide grid.)

The remainder of the section provides general policies for electrical power development in 'Ewa.

4.4.1 GENERAL POLICIES

- Analyze and approve system improvements -- such as development of a new power generating plant and/or major new transmission lines -- based on islandwide studies and siting evaluations.
- Give strong consideration to placing any new transmission lines underground where possible under criteria specified in State law.
- Locate electrical power plants in areas shown as planned for Industrial use and away from residential areas shown on the Urban Land Use Map

in Appendix A. Existing power plants are shown on the Urban Land Use Map and Public Facilities Map in Appendix A. Other system elements, such as sub-stations and transmission lines, are not shown on the map and should be reviewed and approved administratively.

- Consider any proposed major new electrical power plant through a City review and approval process which provides public notification and opportunity to comment and public agency analysis of impacts and mitigations.

4.5 SOLID WASTE HANDLING AND DISPOSAL

Two major solid waste handling and disposal facilities are located in 'Ewa:

- The H-Power plant at Campbell Industrial Park is operating at maximum capacity, receiving over 600,000 tons of solid waste each year. A new boiler now under construction will boost the processing capacity up to 900,000 tons per year and provide a significant reduction of material sent to the landfill for disposal.
- The Waimānalo Gulch Sanitary Landfill, located between the proposed Makaīwa Hills residential development and Kahe Valley, is the major active waste disposal site on O'ahu.

To comply with a 2003 LUC order setting 2008 as the limit for Waimānalo Gulch Landfill operations, a special Advisory Committee was convened to locate new landfill sites. In its December 2003 report, the Advisory Committee recommended four sites for consideration, including Makaīwa Gulch. In December 2004, the City Council adopted Resolution 04-348 which:

a. required the City to develop alternative technologies and extract the maximum recyclable materials, energy, and alternative products to minimize the waste placed in landfills in order "to effectively eliminate, to the extent possible, the need for a landfall by 2008;"
b. selected the Waimanalo Gulch site as the site for the City's landfill; and
c. requested the City administration to immediately contact the Planning Commission, the State Department of Health, and the State Land Use

Commission to satisfy any necessary requirements for continued use of Waimānalo Gulch as the City's landfill site.

In May 2008, the LUC approved an extension of the Waimānalo Gulch Sanitary Landfill land use permit until November 2009.

The Final Environmental Impact Statement (EIS) for proposed expansion of the Landfill by 93 acres was accepted in October 2008. In September 2009, the LUC approved a new Special Use Permit to allow the expansion, but required that after July 31, 2012, only ash and residue from the City's H-Power plant can be deposited in the Landfill. Approval from the Department of Health will also be required before the landfill footprint can be expanded.

In 2009, the City reached agreement on a contract to ship 100,000 tons of waste per year from Kalaeloa Barbers Point Harbor to the Mainland in order to reduce the amount of waste being disposed at the Waimānalo Gulch Landfill. However, the City has cancelled the contract since permit problems and lawsuits have prevented any shipments, and the intent for entering into the contract was to fill the gap until a third boiler was added at the H-Power Plant, which is expected in late 2011.

The **Integrated Solid Waste Management Plan** was updated in 2008 and, following a public hearing and a 60-day public comment period, was submitted to Council for approval.

The remainder of the section provides general policies for solid waste handling and disposal in 'Ewa.

4.5.1 GENERAL POLICIES

- Do not develop the Makaīwa Gulch area identified by the Mayor's Advisory Committee in December 2003 as a landfill. It is in an area planned for residential use and is adjacent to the Ko Olina Resort, which plays an important role in job creation for 'Ewa.
- Analyze and approve siting and/or expansion of sanitary landfills based on island-wide studies and siting evaluations.

- For master-planned communities, plan, in consultation with the Department of Environmental Services, for how solid waste will be handled, to include estimates of solid waste to be generated by the communities, provisions for collection of solid waste, and provisions for and encouragement of recycling.

4.6 DRAINAGE SYSTEMS

Low-lying parts of the 'Ewa Plain are subject to flooding during intense rainstorms. Flood control has typically been provided for urbanized areas through the development of concrete-lined channels to convey storm waters to the ocean. Discharge of stormwater to the ocean, however, is a major source of non-point source pollution of nearshore waters, negatively affecting coral growth, fish populations and use of the shoreline for swimming, surfing, and other types of ocean recreation.

The federal government has initiated a major program to reduce non-point-source pollution, mandating response by the State and the counties. In general, the City requires all residential, commercial, public facilities, and transportation development and redevelopment projects to address storm water quality through the use of best management practices in accordance with the City's Rules Relating to Storm Drainage Standards. In many watersheds, however, undeveloped mountain areas generate a disproportionately large share of the total storm flow, and no party appears to be responsible for mitigating the environmental impact.

Concrete-lined drainage channels can have other negative environmental impacts, including disruption of lateral shoreline access, beach erosion, down drift of channel mouths, and visual blight.

Drainage improvements are planned for:

- A major new system to drain Makaīwa Hills, Kapolei Business Park, and the industrial areas closest to the Barbers Point Deep Draft Harbor;
- Expansion of the channel at the western edge of Kalaeloa to provide additional capacity for the City of Kapolei;

- A system to drain the West Loch Drainage Basin, serving 'Ewa by Gentry and Ho'opili; and
- A system to drain the Kalo'i Gulch Drainage Basin.

The **Makaīwa Hills system** may have detention basins mauka of the H-1 Freeway and a concrete-lined channel to convey storm waters to an ocean outlet just south of Kalaeloa Barbers Point Harbor. It is being planned by Kapolei Property Development LLC (KPD). KPD is also planning to expand the **existing channel on the western boundary of Kalaeloa.**

Drainage improvements in the **West Loch Drainage Basin** need to be constructed to handle storm water runoff from existing and proposed projects located in the basin. These projects include the City's West Loch residential project, Phase I of the 'Ewa by Gentry residential project, and the proposed Ho'opili master-planned community project.

The developer for Phase I of the 'Ewa by Gentry East project had planned to construct a grass-lined drainage channel running immediately east of the project's boundary to terminate at a detention basin immediately makai of the Honouliuli National Wildlife Refuge. However, currently the developer is considering using a large retention pond to hold storm waters, in lieu of constructing the grass-lined channel.

The **Kalo'i Gulch Drainage Basin** is one of the larger drainage basins in the region. It encompasses an area of approximately 7,140 acres, and has a peak design flow of approximately 11,500 cubic feet per second (cfs). Historically, the drainage pattern in this basin has flowed from the Wai'anae Mountain Range above Makakilo through the Kalo'i Gulch toward the ocean terminating at One'ula Beach Park. Floodwaters typically spread out in sheet flows through the former sugarcane fields below Farrington Highway.

Prior to 2000, drainage flow through the Kalo'i Gulch basin was constrained by the elevation of the OR&L right-of-way which formed a man-made barrier that impeded storm water runoff. However, this constriction was addressed by the construction of a new railroad bridge in 2000.

In the interim until an ocean outlet is constructed, the 'Ewa Villages, 'Ewa by Gentry, and Ocean Pointe projects handle drainage within their projects through use of golf courses. The golf courses provide detention of storm waters and meet the DPP drainage requirements for stormwater runoff.

Other development projects in the basin include the UHWOcampus and associated residential and commercial development which has not yet received City approval for its drainage master plan, and the DHHLEast Kapolei project whose drainage master plan has been approved.

The drainage system serving the **Villages of Kapolei**, which consists of golf course retention and disposal of storm water into large pits and a large ditch near the Kalaeloa boundary, may need to be augmented in the future.

Both the regional drainage system and the on-site drainage facilities for Kalaeloa need to be addressed during the redevelopment of **Kalaeloa**. The existing regional drainage channel and box culverts that discharge into the coral pit near the intersection of Fort Barrette Road and Franklin D. Roosevelt Road are inadequate to handle the runoff from the 100-year storm, according to the **Kalaeloa Master Plan**. In addition, the Master Plan notes that the Navy's system of drywells, installed to handle runoff within Kalaeloa, do not conform to City standards.

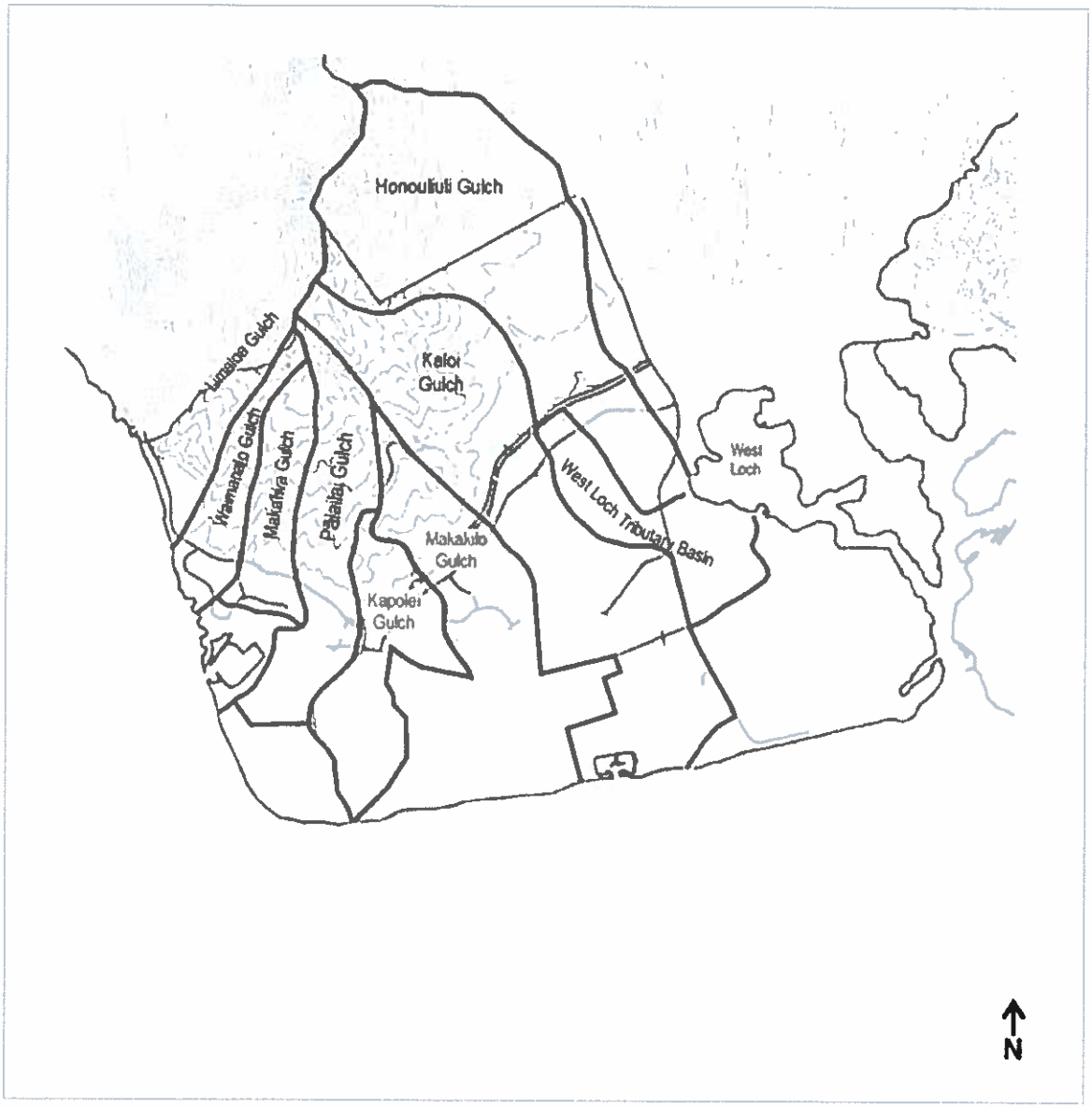
See Exhibit 4.3 for the location of 'Ewa Drainage Basins.

The remainder of the section provides general policies and guidelines for drainage systems in 'Ewa.

4.6.1 GENERAL POLICIES

- Design drainage systems to emphasize flood control and minimization of non-point source pollution and the retention and/or detention of storm water on-site and in appropriate open space and wetland areas.
- Use storm water as a potential irregular source of water for recharge of the aquifer that should be retained for absorption rather than quickly moved to coastal waters.

Exhibit 4.3
'Ewa Drainage Basins Map



- Use natural and man-made vegetated drainageways and retention basins as the preferred solution to drainage problems wherever they could promote water recharge, help control non-point source pollutants, and provide passive recreation benefits. However, concrete-lined channels can be permitted, despite their potential adverse environmental impacts, if there is no other reasonable alternative to meet specific design challenges.

4.6.2 GUIDELINES

The following guidelines suggest how the general policies for drainage systems in 'Ewa should be implemented.

- **Retention and Detention -** Employ methods of retaining or detaining storm water for gradual release as the preferred strategy for management of storm water. Where feasible, use any open space, including parking lots, landscaped areas, mini and community parks, and public and private golf courses, to detain or infiltrate storm water flows to reduce their volume and runoff rates and the amounts of sediments and pollutants transported.
- **Relation to the Regional Open Space Network -** To the extent possible, integrate planned improvements to the drainage system into the regional open space network by emphasizing the use of retention basins, creation of passive recreational areas, and recreational access for pedestrians and bicycles.
- **Preservation of Natural Gulches** – Preserve natural gulches on the slopes of the Wai'anae Range foothills that are within the Community Growth Boundary as part of the open space network.

The following guidelines apply specifically to development within the Kalo'i Gulch drainage basin.

- **Relation to the 'Ewa Village Master Plan and Other Previously Approved Developments in the Basin** – Insure that solutions to handling drainage problems on lands above 'Ewa Villages are compatible with the drainage design of the **'Ewa Villages Master Plan** and other developments in the Kalo'i Gulch drainage basin which have already been

approved. The 'Ewa Villages drainage design assumes that runoff will not exceed levels previously received from sugarcane fields north of the golf course, will enter the 'Ewa Villages golf course water retention areas through a number of dispersed channels, and will not be at velocities which would scour out the golf course water retention areas.

4.7 SCHOOL FACILITIES

Statewide, the DOE faces an enormous shortfall in funding to meet projected needs for new classrooms. Act 245, 2007, established a system for collecting school impact fees from new residential developments.
Developers are required to provide "their proportionate share of the land and the construction cost of new or expanded school facilities needed to serve new residential developments."

DOE is in the process of establishing the school impact districts required under the Act in order to collect land and money from developers. In January 2012, the Board of Education approved creation of a Leeward O'ahu Impact District that includes the Kapolei Complex and Campbell Complex areas in 'Ewa.

As shown in Table 4.3, the DOE has projected a need by 2030 for ten new elementary schools, three new intermediate schools, and two new high schools in 'Ewa. (Needs estimates could change if estimates of housing production and density or school operation policies and funding are revised.)

Conceptual locations of three new intermediate schools and two new high schools are shown on the Urban Land Use Map and the Public Facilities Map in Appendix A. Elementary schools are not mapped because their sites are of community rather than regional concern and should be determined as part of a master planning and design process. Sites have been reserved for all of the planned elementary schools, the three planned intermediate/middle schools, and one high school. (Minimum site size for elementary schools is 8 to 15 acres, for intermediate schools is 15 to 20 acres, and for high schools is 45 to 55 acres.)

TABLE 4.3 EXISTING AND PLANNED PUBLIC SCHOOLS IN THE 'EWA DEVELOPMENT PLAN AREA

School	FY 2011 Enrollment	Capacity	Site Reserved	Opening Date
Elementary Schools				
Campbell Complex				
'Ewa Beach Elementary	507	544	Existing	NA
'Ewa Elementary	1,003	798	Existing	NA
Holomua Elementary	1,382	1,264	Existing	NA
Iroquois Point Elementary	718	995	Existing	NA
Ka'imiloa Elementary	610	716	Existing	NA
Keone'ula Elementary	847	742	Existing	NA
Pohakea Elementary	565	626	Existing	NA
Kaoolei Complex				
Barbers Point Elementary	491	636	Existing	NA
Kaoolei Elementary	1,043	1,233	Existing	NA
Makakilo Elementary	502	627	Existing	NA
Mauka Lani Elementary	563	702	Existing	NA
Total	8,231	8,883		
Planned				
Kapolei II Elementary (Mehana) [1]		400 to 750	X	2014
East Kapalei UH WOC I, II[2,3]		400 to 750	X	N.D.
East Kapolei DHHL[2]		400 to 750	X	N.D.
East Kaoolei Ho'oili I, II, III[2]		1,200 to 2,250	X	N.D.
MakaTwa Hills[2]		400 to 750	X	N.D.
Kapolei West[2]		400 to 750	X	N.D.
Ko Olina[2]		400 to 750	X	N.D.
Total		3,600 to 6,750		
Intermediate/Middle School				
'Ewa Makai Middle (Campbell Complex)	587	700	Existing	NA
'Ilima Intermediate (Campbell Complex)	777	1,330	Existing	NA
Kaoolei Middle (Kapolei Complex)	1,424	1,744	Existing	NA
Total	2,788	3,774		
Planned				
East Kapolei Middle (DHHL)[2]		500 to 1,000	X	N.D.
East Kapolei Middle (Ho'opili)[2]		500 to 1,000	X	N.D.
West Kapolei Middle (Makaiwa Hills)[2]		500 to 1,000	X	N.D.
Total		1,500 to 3,000		
High School				
Campbell High	2,639	2,022	Existing	NA
Kapolei High	2,107	1,841	Existing	NA
Total	4,746	3,863		
Planned				
East Kapolei High I (HHFDC land)[2]		800 to 1,600		N.D.
East Kapolei High II (Ho'opili)[2]		800 to 1,600	X	N.D.
Total		1,600 to 3,200		

NOTES:

[1] Received appropriation for added design and construction funds in FY2012-2013.

[2] No legislative appropriation

[3] Includes a UHWO lab school.

X Site Reserved

NA Not Applicable

N.D. Not Determined

Source: State Department of Education Facilities Development Branch, 2011

Private schools play an important role in Hawai'i with private school graduates averaging around 16 per cent of all graduates for the last 25 years. There were four private schools in 'Ewa with enrollment of almost 1,300 students in the fall of 2008 which, compared with public school enrollment in 'Ewa, is less than half what would be expected based on the statewide average.

The remainder of the section provides general policies and guidelines for school facilities development in 'Ewa.

4.7.1 GENERAL POLICIES

- **Project Review and Approval Assessment -** As new residential developments are reviewed as part of the project application review and approval process, request that the DOE report to the DPP whether the DOE will be able to provide adequate school facilities, either at existing schools or at new school sites, so that needs from the proposed development can be met.
- **Fair Share Provisions -** Require developers to comply with DOE school impact fees requirements and pay their fair share of all costs needed to provide adequate school facilities for the children living in their developments.

4.7.2 GUIDELINES

The following guidelines suggest how the general policies for schools facilities development in 'Ewa should be implemented.

- **Schools as Community Centers -** Because of the difficult financial problems for all sectors, new communities are likely to have fewer churches, private social halls, and recreation facilities. As a result, schools may have to assume important functions as cultural and recreational centers and as meeting facilities. Request that the State DOE design school facilities to facilitate community use during non-school hours and weekends.

- **Co-location with Parks** - Co-locate neighborhood or community parks with elementary and intermediate schools and coordinate design of facilities with the State DOE when needless duplication of parking and of athletic, recreation, and meeting facilities can be avoided.
- **Shared Facilities** - Coordinate the development and use of athletic facilities such as swimming pools and gymnasiums with the DOE where such facilities would maximize use and reduce duplication of function.
- **Fair Share Contribution** - Support the DOE's establishment of impact districts to obtain fair share requirements from developers of residential projects and enforce existing agreements to insure that adequate school facilities are in place at existing and new schools to meet the needs of residents.

4.8 PUBLIC SAFETY FACILITIES

Table 4.4 provides a listing of existing and planned public safety facilities in the 'Ewa Development Plan area.

To meet projected population and economic growth by 2035, the Fire Department estimates 'Ewa will need four new fire stations. They also plan to establish an island-wide training facility at Kalaeloa.

Because police operate primarily in the field and do not have a need for outlying stations, only one substation is projected by the Police Department to be needed to serve the 2035 population of 164,500. A new regional station was built in the City of Kapolei on donated land and became operational in 2001. Land has been offered for a substation in the proposed Ho'opili development.

The expected population growth and development of new communities and community facilities in 'Ewa will result in a need for additional emergency medical service facilities and response units. The State Department of Health has not identified how many new stand-alone emergency medical service facilities in 'Ewa will be needed to meet expected growth.

TABLE 4.4 EXISTING AND PLANNED PUBLIC SAFETY FACILITIES IN THE 'EWA DEVELOPMENT PLAN AREA

Facilities	Site	Service Area	Service Date
Fire Stations			
Makakilo	Makakilo	Makakilo, Ko Olina, Villages of Kapolei	Existing
Kapolei	Kapolei	Campbell Industrial Park, City of Kapolei, Kapolei Business Park	Existing
'Ewa Beach [1, 2]	Ocean Pointe	'Ewa by Gentry, Ocean Pointe, 'Ewa Beach, Iroquois Point	2012
East Kapolei	DHHL East Kapolei	East Kapolei, Villages of Kapolei, UH West O'ahu, Tenney Village, Kalaeloa	2011
Kalaeloa	Old Federal Fire Station Site	Kalaeloa, 'Ewa, and Kapolei	N.D.
'Ewa Villages	Tenney Village	West Loch, 'Ewa Villages, East Kapolei	N.D.
Ko 'Olina	Ko Olina	Ko Olina Resort	N.D.
Makaīwa Hills	Makaīwa Hills	Makaīwa Hills	N.D.
Kalaeloa Tactical Training Facility	Kalaeloa (Former BPNAS site)	Island-wide	N.D.
Ho'opili	Ho'opili	Ho'opili, Ewa by Gentry, Kapolei, Tenney Village, Waipahu, Royal Kunia	N.D.
Police Stations			
'Ewa Plains Regional Station	City of Kapolei	'Ewa Region	Existing
Ho'opili Substation	Ho'opili	East Kapolei, 'Ewa Beach	N.D.
Emergency Medical Services Facilities	DOH has not identified needed sites		

NOTES:

[1] Replaced with new station at Ocean Pointe.

[2] Opened in 2012

N.D. Not Determined.

Population growth will also result in need for additional public emergency shelters. There is a state-wide shortage of shelters, compounded by the fact that around a third of the existing shelters need to be retrofitted if they are to withstand any hurricane strength winds, and few of the existing shelters are capable of withstanding a Category 3 hurricane like Hurricane 'Iwa. Civil defense analysts expect 35 percent of the population will seek public shelter in a disaster. Based on that standard, 'Ewa needed public shelter space for 29,000 residents in 2005, and will need space for 57,600 in 2035. Table 4.5 lists existing 'Ewa shelters and their capacity.

It makes sense to supplement the public shelters with shelters in private buildings since most of the population is not expected to seek a public shelter during a disaster. A State law provides immunity to private organizations which create hurricane resistant shelters that meet State standards. There are no State or City programs providing incentives or support for private organizations who create hurricane shelters or individuals who build hurricane-resistant "safe rooms" in their homes. However, by 2012 at the latest, the building code will require that all new homes either have a safe room or be equipped with hurricane resistant glass.

TABLE 4.5 EXISTING PUBLIC EMERGENCY SHELTERS IN 'EWA, 2009

Shelter Location	Capacity
Barbers Point Elementary	385
Campbell High (S/P)	5,877
'Ewa Beach Elementary	1,966
'Ewa Elementary	2,689
'Ilima Intermediate (S/P)	2,629
Ka'imiloa Elementary	1,748
Kapolei Elementary (S)	1,255
Kapolei High (S)	511
Makakilo Elementary	2,088
Mauka Lani Elementary (S)	874
Pōhākea Elementary	1,165
TOTAL	21,187

NOTES:

S Facility designated to serve as a Special Needs Shelter and General Population Shelter

P Pet Friendly Shelter co-located with General Population Shelter (and, in some cases, Special Needs Shelter).

4.8.1 GENERAL POLICIES

- Provide adequate staffing and facilities to ensure public safety.
- Approve new development only if staffing and facilities will be adequate to provide fire and police protection and emergency medical service when development is completed.
- Survey and retrofit, as appropriate, DOE and other public buildings to make up the shortfall in hurricane resistant shelters.
- Require new City buildings which are "critical facilities used for public assembly and able to perform as shelters" to be designed and built to withstand a Category 3 hurricane.
- Provide incentives for private organizations to create hurricane resistant shelter areas in their facilities and for homes to include hurricane resistant "safe rooms."

4.9 OTHER COMMUNITY FACILITIES

Other existing and proposed community facilities shown on the Urban Land Use Map in Appendix A include hospitals, and colleges. Key facilities include the planned University of Hawai'i West O'ahu campus. Hawai'i Medical Center West is the major medical facility serving the 'Ewa region.

Location of new community facilities should comply with the following policies:

- **Colleges and Hospitals** - In most cases, locate colleges and hospitals in urban areas near transit nodes, commercial centers, or medium density residential areas.
- **Correctional Facilities** - In most cases, locate correctional facilities on industrial or agricultural lands. (However, a youth detention facility was appropriately located within the City of Kapolei as part of a relocated Family Court.) If such a facility is proposed for lands not planned for industrial or agricultural use, a City review and approval process that provides for public review, complete analysis, and policy approval should be used.

Antennas have been around as long as we have had radio and television services. Antennas associated with communication purposes have grown tremendously especially since the U.S. introduction of mobile communication devices in the early 1980s. While the telecommunication industry has provided more convenient communication capabilities for individuals, it has also increased the public agencies' ability to provide faster and more efficient response to those in need, particularly on an emergency basis.

While the benefits of the telecommunications industry cannot be disputed, communities have opposed the antennas due to aesthetic impacts, particularly on public views and on neighborhood character. Their visibility has increased, especially where antennas are mounted on free-standing towers.

The general public has also raised concerns about the environmental effects of electromagnetic field exposure associated with radio transmissions, as evidenced by the presence of antennas. However, the Federal Communications Commission (FCC) is responsible for evaluating the human environmental effects of radio frequency (RF) emissions from FCC-regulated transmitters. The federal guidelines specifically preclude local decisions affecting environmental effects of radio frequency emissions, assuming that the provider is in compliance with the Commission's RF rules.

The following are general principles governing utilization of antennas:

- Encourage co-location of antennas; towers should host the facilities of more than one service provider to minimize their proliferation and reduce visual impacts.
- Mount antennas onto existing buildings or structures so that public scenic views and open spaces will not be negatively affected. However, except for the occupant's personal use, antennas on single-family dwelling roofs in residential districts are not appropriate.
- Use stealth technology (e.g. towers disguised as trees) especially on free-standing antenna towers in order to blend in with the surrounding environment and minimize visual impacts.

5. IMPLEMENTATION

Implementation of the **'Ewa Development Plan** will be accomplished by:

- Limiting urban development to areas within the Community Growth Boundary to support the vision for protection of agricultural lands and open space in 'Ewa;
- Guiding development in areas of critical concern including Kalaeloa through Special Area Plans;
- Guiding public investment in infrastructure through Functional Plans that support the vision, and implement the policies and guidelines of the Development Plan;
- Recommending approval, approval with modifications and/or conditions, or denial of developments seeking zoning and other development approvals based on how well they support the vision for 'Ewa's development and implement the Development Plan's policies, and guidelines;
- Implementing Development Plan priorities through the Public Infrastructure Map amendments and the City's annual budget process;
- Evaluating progress in fulfilling the vision of the **'Ewa Development Plan** every two years and presenting the results of the evaluation in the **Biennial Report**; and
- Conducting a review of the vision, policies, principles, guidelines, and Capital Improvement Program (CIP) priority investments of the **'Ewa Development Plan** every five years and recommending revisions as necessary.

5.1 PHASING OF DEVELOPMENT

Active projects in various stages of the development process are proceeding for all the undeveloped areas in 'Ewa within the Community Growth Boundary.

1. As identified in Table 2.1, residential projects with estimated development capacity of almost 35,000 units either can exempt themselves from County zoning or already have the zoning needed to proceed to apply for subdivision approval, and construction and building permits. These projects, subject to availability of infrastructure, are the projects likely to be developed first. These projects, if subject to County zoning, will have to meet unilateral agreement conditions (if adopted as part of zoning approval for each of these projects), and subdivision approval requirements that help insure that adequate infrastructure is available, and that project development implements key elements of the Plan vision.
2. Finally, there are projects which need the LUC to approve a change from the State Agricultural District to the Urban District and then the City Council to approve a zone change. These projects have an estimated residential development capacity of over 13,000 units.

The City Council, in reviewing and deciding on the zone changes for these latter projects, will have the opportunity to evaluate the availability of infrastructure and require conditions that the developer must meet as a condition of zoning to insure infrastructure adequacy and attainment of key elements of the Plan vision.

However, there are two major projects involving substantial amounts of residential, commercial, and office development which are not required to gain Council approval or incorporate conditions regarding infrastructure adequacy or other elements of the 'Ewa Plan vision.

- The Department of Hawaiian Home Lands (DHHL) currently is developing 630 acres in 'Ewa, located along the Kualaka'i Parkway. Because the DHHL has the power under the State Constitution to exempt itself from all State and County land use laws, rules and regulations, the City has no ability to require DHHL to follow the 'Ewa Plan vision, policies and guidelines. Over 2,600 residential units and a million square feet of retail and office space could be developed under DHHL's plans for the area, as of 2010.
- In 2002, the State Legislature transferred redevelopment responsibility for Kalaeloa to the HCDA. HCDA also has the power, under its establishing statutes, to exempt itself from County land use laws, rules and regulations. The HCDA estimates

that almost 6,500 dwelling units could be developed at Kalaeloa by 2025, and over 116 thousand square feet of commercial space, 725 thousand square feet of office space, 1.8 million square feet of light industrial space, and 470 thousand square feet of light industrial mixed use space.

The City will seek the cooperation of the DHHL and the HCDA in implementing the vision for 'Ewa's development.

5.1.1 PRIVATE DEVELOPMENT PHASING

The **'Ewa Development Plan** provides a clear signal to private landowners and developers as to where development will be supported.

The **Urban Expansion Area** is shown on the Phasing Map in Appendix A. The Urban Expansion Area shows where new urban development is occurring and where applications for new urban development will be accepted for processing.

Projects in the Urban Expansion Area needing zone changes and other development approvals would be eligible for processing with the adoption of the revised Plan and will be supported if:

- The project implements the vision for 'Ewa and relevant policies and guidelines, and
- Adequate infrastructure will be available to meet the demand resulting from the project.

No additional areas should be approved for development beyond the Community Growth Boundary in order to protect agricultural and preservation lands.

5.1.2 PUBLIC FACILITY INVESTMENT PRIORITIES

The regional directed growth strategy requires the cooperation of both public and private agencies in planning, financing, and constructing infrastructure. The City must take an active role in planning infrastructure and coordinating construction of needed infrastructure, such as expansion of Honouliuli Wastewater Treatment Plant and recovery of nonpotable water from its effluent, development of drainage systems for the

Kalo'i Gulch and Kapolei watersheds, provision of recreational open spaces, and development of the regional transportation system, parks, police and fire facilities.

Significant Capital Improvement Projects of the highest priority for the **'Ewa Development Plan** are:

- A dedicated Rail Transit Corridor linking the City of Kapolei, Kalaeloa, the University of Hawai'i West O'ahu Campus, and Waipahū;
- Elementary, middle, and high schools identified by the DOE as needed by 2035, as shown in Table 4.3;
- Additional City offices in the City of Kapolei;
- Additional State offices in the City of Kapolei;
- The University of Hawai'i West O'ahu campus and related development near the intersection of Kualaka'i Parkway and Farrington Highway;
- Uncompleted elements of the **'Ewa Highway Master Plan**, and the East-West arterial between UH West O'ahu and Fort Weaver Road;
- A network of collector / connector roads (at approximately 1/4 mile intervals) where feasible;
- Drainage improvements for Kalo'i Gulch, Kapolei, and West Loch Watersheds;
- New potable and non-potable water sources; and
- Expanded wastewater treatment plant capacity, and recycling of non-potable water reclaimed from wastewater effluent at the Honouliuli Wastewater Treatment Plant.

5.2 SPECIAL AREA PLANS

Special Area Plans provide more detailed policies, principles, and guidelines than the Development Plan for areas requiring particular attention. The form and content of Special Area Plans depends on what characteristics and issues need to be addressed in greater detail for the planning and guiding of development or use within the Special Area.

Special Area Plans can be used to guide land use development and infrastructure investment in Special Districts, Redevelopment Districts, or Resource Areas. Plans for Special Districts would provide guidance for development and infrastructure investment

in areas with distinct historic or design character or significant public views. Plans for Redevelopment Districts would provide strategies for the revitalization or redevelopment of an area. Plans for Resource Areas would provide resource management strategies for areas with particular natural or cultural resource values.

Kalaeloa is the only area in 'Ewa currently identified for Special Area Plan status. Its Special Area Plan is a combination of a Redevelopment District and Resource Area Plan.

The **Kalaeloa Redevelopment Plan**, a Special Area Plan of the **'Ewa Development Plan**, was prepared by the Barbers Point Naval Air Station Redevelopment Commission in December 2000 under guidelines of the Federal Base Realignment and Closure Act (BRAC). It was accepted by the City Council as the Special Area Plan for Kalaeloa in April 2001.

Responsibility for planning for and coordinating redevelopment of Kalaeloa was transferred from the Redevelopment Commission to the HCDA in 2002 by the Hawai'i State Legislature. HCDA has prepared a community-based **Kalaeloa Master Plan** that was approved by the HCDA Board and the Governor in 2006, and should be submitted to the City Council for acceptance as the revised Special Area Plan for Kalaeloa.

5.3 FUNCTIONAL PLANS

Functional Plans are meant to provide guiding principles and strategies, which will be used by the various functional agencies to determine needs, assign priorities, phase infrastructure and facilities development, and secure financing to meet the needs identified in the Development Plan.

City agencies responsible for developing infrastructure and public facilities shall review existing Functional Plans, and in consultation with the Director of the DPP, update the existing Plans or prepare and submit to the Mayor new
long-range Functional Plans for providing facilities and services for 'Ewa to the year 2035.

Agencies with Functional Planning responsibilities (and representative plans) include:

- Department of Planning and Permitting;
- Department of Design and Construction;
- Department of Environmental Services (Solid Waste Management Plan);
- Honolulu Fire Department;
- Honolulu Emergency Services Department;
- O'ahu Metropolitan Planning Organization (O'ahu Regional Transportation Plan);
- Department of Parks and Recreation;
- Honolulu Police Department;
- Department of Transportation Services (O'ahu Regional Transportation Plan); and
- Board of Water Supply (O'ahu Water Management Plan).

The Functional Plans should provide:

- A Resource-constrained Long-Range Capital Improvement Program with priorities;
- A Long-Range Financing Plan, with any necessary new revenue measures;
- A Development Schedule with first priority to areas designated for earliest development; and
- Service and facility design standards, including Level of Service Guidelines for determining infrastructure adequacy.

A resource-constrained program is one that identifies the fiscal resources that can be reasonably expected to be available to finance the improvements.

Level of Service Guidelines for determining adequacy of public facilities and infrastructure to support new development shall be established by the responsible City line agencies as part of their review and update of Functional Plans. Level of Service Guidelines for infrastructure and utilities which are primary State agency responsibilities (such as schools) shall be established by the DPP in consultation with the responsible State agencies.

In preparing the Functional Plans, a proactive public involvement process should be established which provides the public with access to complete information about

infrastructure and public facility needs assessment, alternatives evaluation, and financing. Outreach activities should involve the Neighborhood Boards, community organizations, landowners, and others who might be significantly affected by the infrastructure or public facilities projects to be developed under the Functional Plan.

The process should be characterized by opportunities for early and continuing involvement, timely public notice, public access to information needed to evaluate the decision, and the opportunity to suggest alternatives and to express preferences.

5.4 REVIEW OF ZONING AND OTHER DEVELOPMENT APPLICATIONS

A primary way in which the vision of the **'Ewa Development Plan** will guide land use will be through the review of applications for zone changes and other development approvals. Approval for all development projects should be based on the extent to which the project supports the policies, and guidelines of the Development Plan.

All applications for projects requiring zone changes will be reviewed by the DPP for consistency with the policies, principles, and guidelines of the 'Ewa Development Plan during the Zone Change Application process. Those projects requiring environmental assessments shall follow the provisions of Hawaii Revised Statutes, Chapter 343.

All projects involving significant zone changes will require either an Environmental Assessment or an Environmental Impact Statement (See Section 5.4.1) which must include a Project Master Plan when 25 acres or more are involved (See Section 5.4.2). This is submitted to the DPP for review and acceptance prior to initiation of the first Zone Change Application for the project. (See definition of significant zone change in Section 5.4.1 below, and the definition of Project Master Plan in Section 5.4.2 below.)

5.4.1 ENVIRONMENTAL ASSESSMENT

Projects involving a significant zone change will be required to submit an Environmental Assessment (prepared in compliance with procedures for Chapter 343, Hawai'i Revised

Statutes) to the DPP to help the Department determine whether the project involves a significant environmental impact and if the project is supportive of the vision for 'Ewa's development.

A project will be considered to involve a significant zone change if:

- The application involves a zone change of 25 acres or more to any zoning district or combination of zoning districts, excluding preservation and agricultural zoning districts; or
- The project is more than 10 acres and involves a change from one zoning district to a Residential, or Country zoning district; or
- The project is more than 5 acres and involves a change from one zoning district to an Apartment, Resort, Commercial, Industrial, or Mixed Use zoning district; or
- The project would have major social, environmental, or policy impacts, or cumulative impacts due to a series of applications in the same area.

The Director of the DPP will determine, based on review of the Environmental Assessment, whether an Environmental Impact Statement (prepared in compliance with procedures for Chapter 343, Hawaii Revised Statutes) will be required or whether a Finding of No Significant Impact should be issued.

In applying for a zoning change, the applicant must either:

- Receive a determination from the Director of the DPP that the project does not involve a significant zone change; or
- Submit an Environmental Assessment or Environmental Impact Statement with the zone change application.

Before an application for a significant zone change can be accepted for processing by the DPP, the applicant must either:

- Receive a Finding of No Significant Impact (FONSI) from the Director of Planning and Permitting; or
- Receive an acceptance of a Final Environmental Impact Statement (FEIS) for the project from the Director of Planning and Permitting.

All Environmental Assessments/Environmental Impact Statements (EA/EIS) required for a significant zone change involving 25 acres or more should include a Project Master

Plan (See Section 5.4.2 following). The scope of the EA/EIS must cover, at a minimum, the specific development associated with a particular zone change application, but at the option of the applicant, may cover subsequent phases of a larger project, as well.

Zone change applications for a project already assessed under the National Environmental Policy Act, Hawaii Revised Statutes Chapter 343, Revised Ordinances of Honolulu Chapter 25 (Shoreline Management), or a preceding zoning change application, will not require a new Environmental Assessment so long as the Director of Planning and Permitting determines that the desired zoning and land use generally conform to that described in the existing Environmental Assessment/Environmental Impact Statement.

5.4.2 PROJECT MASTER PLANS

The Project Master Plan is intended solely as a guide to help describe in words and illustrations how a project promotes the vision, policies, and guidelines for 'Ewa.

Projects associated with a significant zone change for 25 acres or more, shall include a Project Master Plan as part of the Environmental Assessment or Environmental Impact Statement submitted to the DPP. The Project Master Plan shall cover all project phases. It shall be reviewed to determine whether the project supports the vision, policies, and guidelines of the **'Ewa Development Plan**. In the event a FONSI or Final EIS has already been accepted by the City for a particular project, a subsequent Project Master Plan will not be required.

The Project Master Plan should be based on the best information available to the applicant at the time the Zone Change Application is submitted to the City.

5.4.2.1 Coverage and Scope

The Project Master Plan should cover all phases of the project and should describe, using narrative and graphic illustration, how the project conforms to the vision for 'Ewa, and the relevant policies, and guidelines for the project site, the surrounding lands, and the region.

5.4.2.2 Key Elements

While the scope and detail will vary according to the scope and complexity of the project, the Project Master Plan should contain the following elements. When a key element enumerated below is adequately addressed elsewhere in an EA/EIS, discussion of related issues should be referenced within the Master Plan portion of the document.

- **Statement of Consistency with the 'Ewa Development Plan Vision -** The Master Plan should indicate how the project supports the vision, policies, and guidelines of the **'Ewa Development Plan**.
- **Site Analysis -** The Master Plan should identify how the proposed development physically relates to prominent existing site features, views identified in Table 3.2 and on the Open Space Map in Appendix A, and surrounding urban or urbanizing areas and should describe any related opportunities and constraints.
- **Land Use -** The Master Plan should indicate the proposed pattern of land uses by general zoning district category.
  - Land uses proposed for lands in any future development phases that are not included in the current Zone Change Application will be considered only conceptual and intended to serve only as a working guide for future development.
  - In larger projects, residential neighborhoods should be designated, and concepts intended to create a sense of neighborhood should be described.
  - The Master Plan should identify where the community's "main street" or village or town center is located and show how any planned commercial development will help create a pedestrian friendly environment for that center.
  - For projects that involve multiple uses, the intended relationship between zoning districts should be described.
- **Open Space -** The Master Plan should discuss open space as a component of the overall land use element, and should indicate how the proposed development promotes the Development Plan open space and guidelines and the vision of an integrated regional open space system.
- **Circulation -** The Master Plan should indicate:

- General street patterns and the application of street and block standards which minimize dead end streets and provide adequate connectivity;
- Intended connections to the regional roadway network and adjacent communities; and
- Potential transit routes and pedestrian and bicycle routes.

- **Design Theme or Character** - The Master Plan should depict, with sketches, photos or descriptions, the intended general urban design of the area. These vignettes should be represented and understood to be conceptual depictions of the potential general design theme of the project.
- **Telecommunications** - The Master Plan should indicate the sites and network conduit facilities that would be provided to meet expected telecommunications infrastructure needs, if applicable.

5.4.2.3 Review Procedures

The DPP shall review the Project Master Plan concurrently with the Environmental Assessment/Environmental Impact Statement and shall determine whether the Project Master Plan supports the '**Ewa Development Plan** vision or whether changes are needed.

5.4.2.4 Modification of Master Plans for Future Phases

Often, projects are developed in phases. As a result, the Project Master Plan is likely to cover more land than the developer is currently requesting for a zone change. The feasibility and desirability of plans for later phases of the Project Master Plan can be greatly altered in light of more detailed study of site characteristics and site planning, or change in market forces or government policies.

As a result, elements of Master Plans covering lands in phases which are not included in a current Zone Change Application should be considered only conceptual and intended to serve only as a working guide for future development. Changes to these parts of a Master Plan can be made by the developer at any time without requiring approval by the City.

If a Master Plan has been revised in planning for a subsequent phase of a project, an updated version of the Master Plan should be submitted with the zone change application for that phase. No new Environmental Assessment or Master Plan review should be required unless there has been a major alteration in the project vision and land uses from that proposed in the original Master Plan.

5.4.3 ADEQUATE FACILITIES REQUIREMENT

All projects requesting zone changes shall be reviewed to determine if adequate public facilities and infrastructure will be available to meet the needs created as a result of the development. Level of Service Guidelines to define adequate public facilities and infrastructure requirements will be established during the Capital Improvement Program.

In order to guide development and growth in an orderly manner as required by the City's **General Plan**, zoning and other development approvals for new developments should be approved only if the responsible City and State agencies indicate that adequate public facilities and utilities will be available at the time of occupancy or if conditions the functional agency indicates are necessary to assure adequacy are otherwise sufficiently addressed.

The DPP will review and summarize any individual agency's findings regarding public facilities and utilities adequacy which are raised as part of the EA/EIS process. The DPP will address these findings and any additional agency comments submitted as part of the agency review of the zone change application, and will recommend conditions that should be included in the Unilateral Agreement or Development Agreement to insure adequacy of facilities.

5.4.4 ZONING APPLICATION REVIEW

Zoning applications will be reviewed by the DPP for consistency with the **General Plan**, the **'Ewa Development Plan**, and any applicable Special Area Plan provisions as part of the Zone Change application review.

The Director of the DPP will recommend either approval, approval with changes and/or conditions, or denial within the prescribed period as set forth in ROH

Section 21-2.40, and the Director's written review of the application shall address the consistency or inconsistency of the project with the **General Plan**, the **'Ewa Development Plan** and any applicable Special Area Plan and shall become part of the zone change report which will be sent to the Planning Commission and the City Council.

5.4.5 UNILATERAL AGREEMENTS

Before the enactment of an ordinance for a zone change, conditions may be associated with the zone change approval. These conditions are set forth in the applicant's Unilateral Agreement which is recorded with the Bureau of Conveyances and/or the Land Court so that the conditions set forth in the agreement run with the land and bind all subsequent owners of the property.

The Director of Planning and Permitting evaluates zone change requests and may initially recommend conditions of approval in a report to the Planning Commission which evaluates the requested zone change and recommends approval, denial or approval with conditions. The Director's recommendations and the Planning Commission recommendations are sent to the City Council which makes the final decision on the proposed development, including what conditions should be included in the Unilateral Agreement.

In the evaluation, the Director of Planning and Permitting evaluates the proposed zone change for consistency with the **'Ewa Development Plan** vision, policies and guidelines. In addition, Project Master Plans submitted for large projects at the time of the zone change application may be referenced as a working guide in formulating conditions of approval.

5.4.6 DEVELOPMENT AGREEMENTS

Before the enactment of an ordinance for a zone change, the City and the applicant may negotiate a Development Agreement. The Development Agreement sets forth mutually acceptable contractual conditions agreed upon by the City and the applicant once an ordinance for a zoning change has been approved. The Development Agreement conditions are recorded with the Bureau of Conveyances and/or the Land Court so that the conditions of the agreement run with the land and bind all subsequent owners of the property.

Development agreements negotiated by the City Council shall be consistent with the Development Plan vision for 'Ewa and should incorporate key conditions that are necessary to implement the Development Plan vision.

5.5 ANNUAL CIP REVIEW

Annually, the Director of Planning and Permitting will work jointly with the Director of Budget and Fiscal Services and the City agencies to review all projects in the City's Capital Improvement Program (CIP) budget for conformance to the purposes of the **General Plan**, the **'Ewa Development Plan**, and other Development Plans, any applicable Special Area Plan provisions, and the appropriate Functional Plans. The Director of Planning and Permitting will make a written report of findings in the budget submittal to the Council, pursuant to Revised Charter Section 6-1503.

Public review of how projects in the City's CIP budget help accomplish the vision of the **'Ewa Development Plan** should be a high priority. Public review should be encouraged both in the screening of agency CIP budget proposals in the preliminary draft CIP Budget (which is available in November), in review of projects included in the Draft CIP Budget (typically completed sometime in January or February), and in the City Council's formal public review and CIP Budget adoption processes.

5.6 BIENNIAL REPORT

Every two years, the DPP prepares the **Biennial Report**. The **Report** is a review of the City in terms of the **General Plan** and the Development Plans.

Each Biennial Report should address the achievements and progress in fulfilling the vision of the **'Ewa Development Plan**.

5.7 FIVE YEAR DEVELOPMENT PLAN REVIEW

The DPP shall conduct a comprehensive review of the **'Ewa Development Plan** and shall report its findings and recommended revisions to the Planning Commission and the City Council five years after adoption and every five years thereafter.

In the Five Year review, the **'Ewa Development Plan** will be evaluated to see if the regional vision, policies, guidelines, and implementing actions are still appropriate.

5.8 DEVELOPMENT PLAN COMMON PROVISIONS AND EXISTING LAND USE APPROVALS

This Development Plan will go into effect upon adoption by ordinance. At that time, the revised Development Plan will become a self-contained document, not reliant on the Development Plan Common Provisions which formerly applied to the **'Ewa Development Plan** as well as all the other Development Plans.

Land use approvals granted under previously approved Development Plan amendments will remain in force and guide zoning decisions unless clearly inconsistent with the vision and policies of the **'Ewa Development Plan**.

Development can proceed in accordance with existing zoning, Unilateral Agreements, and approved Urban Design Plans.

If an Environmental Assessment or Environmental Impact Statement (EA/EIS) was accepted in the course of a Development Plan land use approval for a project, it should be acceptable to meet the requirement for an initial project EA/EIS when zone change applications are submitted for subsequent phases of the project unless the project scope and land uses are being significantly changed from that described in the initial EA/EIS.

5.9 RELATION TO GENERAL PLAN POPULATION GUIDELINES

The **'Ewa Development Plan** implements the **General Plan** population distribution policies (in Population Objective C) as follows:

- 'Ewa's projected share of O'ahu population in 2025 (13.8 percent) willbe slightly above the **General Plan** guideline of 13 percent;
- Development will be encouraged within the secondary urban center at Kapolei and the urban fringe areas in 'Ewa; and
- The recommended land use pattern also implements Population Objective C, Policy 3, which is to limit growth in areas outside the PUC, Central O'ahu, and 'Ewa so that the suburban and country character of these outlying areas can be maintained.

The General Plan population distribution guidelines will continue to be used as a guide to direct the pattern of growth and development in the 'Ewa Development Plan Area. Assessments of this performance will be reported in both the Biennial Report and in the Five Year Reviews of the Development Plan.

Under the **'Ewa Development Plan**, all proposed projects will be evaluated against how well they fulfill the vision for 'Ewa set forth in the Development Plan and how closely they meet the policies, principles, and guidelines selected to implement that vision.

5.10 REVIEW AND REVISION OF DEVELOPMENT CODES

To insure that the vision, policies, and guidelines of the **'Ewa Development Plan** and other Development Plans and Sustainable Communities Plans are implemented, current regulatory codes and standards should be reviewed and revised, as necessary, including the following:

- **Land Use Ordinance** (Chapter 21, Revised Ordinances of Honolulu). Zoning code standards and the zoning map for 'Ewa need to be revised to reflect policies, principles and guidelines in the **'Ewa Development Plan**.
- **Subdivision Rules and Regulations** (Department of Planning and Permitting, pursuant to Chapter 22, Revised Ordinances of Honolulu). Public right-of-way standards used for subdivision and consolidation of

land need to be revised to reflect transportation policies, principles, and guidelines in the Development Plan.

- **Traffic Standard Manual** (Department of Transportation Services, July 1976, as revised). Standards which are applied to local and most collector/connector streets need to be revised to reflect transportation policies, principles, and guidelines in the **'Ewa Development Plan**.
- **State Highways Division Procedures Manual**, Vol. 8, Chapter 5, Section 4 (State Department of Transportation). These State highway standards need to be reviewed to identify provisions which may conflict with the transportation policies, principles, and guidelines in the **'Ewa Development Plan**.
- **Standard Details for Public Works Construction** (Honolulu Department of Public Works with Kaua'i, Mau'i, and Hawai'i County Departments of Public Works, September 1984). Engineering standards for the dedication of public works construction need to be revised to reflect **'Ewa Development Plan** principles and guidelines.
- **Storm Drainage Standards** (Department of Planning and Permitting, January 2000). Standards for the dedication of drainage systems to incorporate grassed swales and retention basins into the design need to be created to reflect the Development Plan policies, principles, and guidelines for open space.
- **Park Dedication Rules and Regulations** (Department of Planning and Permitting, pursuant to Chapter 22, Article 7, Revised Ordinances of Honolulu). Regulations need to be reviewed to determine if passive drainage systems, which are designed for recreation use, should count toward park dedication requirements, especially in cases where the area would exceed the amount of land that would be required under current rules and regulations.
- **Wastewater Management Design Standards** (Department of Wastewater Management Design Standards, Volumes I and II) and the 1990 Revised Ordinance of Honolulu, Chapter 14 (relating to sewer services). These standards and ordinance may require review to further implement Development Plan policies and guidelines.

5.11 IMPLEMENTATION MATRIX

This section provides a summary of the Plan's policies and guidelines from Chapters 3 and 4 to help understand how the Plan will be implemented. This implementation matrix presents the policies and guidelines as generalized and consolidated statements. Chapters 3 and 4 should be consulted for the specific language of each policy or guideline.

For each policy and guideline statement, the matrix identifies:

- The regulatory code or program for effecting implementation,
- Agencies with responsibility for implementation, and
- The role of each agency.

Implementation of the policies and guidelines will depend on each agency's priorities and availability of resources.

The DPP is either a regulator or an implementer for many plan components, while simultaneously acting as the advocate for implementation of all the Plan vision elements and policies.

The key to abbreviations used in the table is found at the end of the table.

Table 5.1: Implementation Matrix

Policies and Guidelines Statements	Programs	Agencies	Roles
OPEN SPACE			
Provide long-range protection for diversified agriculture on lands outside Community Growth Boundary. Protect scenic views and natural, cultural, and historic resources	SLUDBA	LUC DPP	Regulator Advocate/ Regulator
	ZC	DPP	Regulator
Mountain Areas			
Protect and expand access to recreational resources in the mountains. Acquire and maintain a public campground and hiking trails in the area *mauka* of the Community Growth Boundary on the Wai'anae Range. Acquire and maintain public access to mountain trails in the Pālehua Ridge area via Pālehua Road and Makakilo Drive.	State Trails State Parks	DLNR	Implementer / Regulator
	ZC/UA UDP	DPP	Regulator
Maintain the forest at higher elevations in the State Conservation District. Plan utility corridors and other uses to avoid disturbance to areas with high concentrations of native species.	Cons Distr	LUC	Regulator
		DLNR	Implementer
Identify and protect areas that are important to Native Hawaiian cultural practices	Cons Distr	LUC DLNR	Regulator Implementer
	Hist Pres	DLNR	Regulator
Natural Gulches and Drainageways			
Preserve the natural gulches on the slopes of the Wai'anae Range foothills within the Community Growth Boundary as part of the open space system.	ZC	DPP	Advocate
	LUO SUB	DPP	Regulator
Integrate planned improvements to the 'Ewa drainage systems into the regional open space network by emphasizing the use of retention basins and recreational access in the design approach.	Drain MP	DPP	Regulator
View drainageways and utility corridors as opportunities to link major open spaces with pedestrian and bike paths along open corridors in order to create the regional open space network.	Drain MP UDP	DPP	Regulator
Where practical, retain drainageways as natural or man-made vegetated channels rather than concrete channels.	Drain MP	DPP	Regulator

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Table 5.1: Implementation Matrix

Policies and Guidelines Statements	Programs	Agencies	Roles
Shoreline Areas			
Protect and expand access to recreational resources at the shoreline and in the ocean. Provide public pedestrian access, with limited improvements (e.g., parking, potable water supply), except where access is restricted by the military for security reasons.	SMA SUB Shore Stbk	DPP	Regulator
Maintain and enhance near-shore wetlands and mangroves as wildlife habitats.	ESA/MBTA	USFWS/NOAA	Implementer Regulator
		USACE	Regulator
		DLNR	Implementer Regulator
	INRMP	USDOD	Implementer
	ZC	DPP	Advocate
	SMA LUO/UA	DPP	Regulator
Identify and protect areas that are important to Native Hawaiian cultural practices	Cons Distr	LUC DLNR	Regulator Implementer
	Hist Pres	DLNR	Regulator
Coordinate private and public landowners' efforts to create continuous shoreline easements to ensure the maximum feasible degree of lateral public access.	KMP	HCDA	Regulator
	SMA SUB Shore Stbk UDP	DPP	Regulator
Provide, at a minimum, a 60-foot setback along the shoreline, and, where possible, expand the setback to 150 feet where justified, based on historic or adopted projected coastal erosion rates.	SUB Shore Stbk	DPP	Regulator
Analyze the possible impact of sea level rise for new public and private projects in shoreline areas and incorporate, where appropriate and feasible, measures to reduce risks and increase resiliency to impacts of sea level rise.	CZM	OP	Regulator
	SMA SUB Shore Stbk	DPP	Regulator

Table 5.1: Implementation Matrix

Policies and Guidelines Statements	Programs	Agencies	Roles
Avoid the use of breakwaters or jetties at the Ocean Pointe/Hoakalei marina entrance in order to preserve surf sites.	SMA Shore Stbk	DPP	Regulator
Expand limited public access to the shoreline waters of West Loch beyond the West Loch Shoreline Park.	INRMP	DOD	Regulator Implementer
Agricultural Areas			
Permit facilities necessary to support intensive cultivation of arable agricultural lands.	Agric Distr	LUC	Regulator
	LUO	DPP	Regulator
Permit facilities to support limited outdoor recreation use, such as camping, horseback riding, and hiking, in areas where agricultural use is not feasible.	Agric Distr	LUC	Regulator
	SUP LUO	DPP	Regulator
Permit residential use only to the extent that it is accessory to the agricultural use.	LUO	DPP	Regulator
Design and locate buildings and other facilities that are accessory to an agricultural operation to minimize impact on nearby urban areas, arterial roads, and major collector streets.	LUO	DPP	Regulator
Golf Courses			
Locate and design golf courses to optimize their function as drainage retention areas.	UDP Drain MP	DPP	Regulator
Design golf courses to consider public safety and potential impacts on views and recreational resources, and accommodate and incorporate pedestrian paths and bikeways.	UDP LUO	DPP	Regulator
Wildland-Urban Fire Hazard Setbacks			
As determined appropriate by the Honolulu Fire Department, require residential or commercial developments that are adjacent either to preservation areas within the Community Growth Boundary or to lands within the State Conservation District to provide a setback to reduce the risk of fire spreading from the "wildlands" to the developed area.	SUB	DPP HFD	Regulator Advocate
Greenways and Open Space Corridors			
Provide additional connectivity for bicyclists and pedestrians by developing the Pearl Harbor Historic Trail between ʻAiea and Nānākuli.	State CIP City CIP	DOT DDC	Implementer Implementer

Table 5.1: Implementation Matrix

Policies and Guidelines Statements	Programs	Agencies	Roles
Provide sufficient easement width for the major trunk lines and transmission and distribution lines for utility systems to allow landscaping within and adjacent to the easement, consistent with all applicable operations, maintenance, and safety requirements. Place new transmission lines underground, where possible, under criteria specified in State law.	Cons Distr SUB BID/CFD	DLNR DPP PUC BFS HECO DA	Regulator Regulator Regulator Regulator Implementer Implementer
Permit the use of utility easements for pedestrian and bicycle routes, consistent with all applicable operations, maintenance, and safety requirements.	SUB	DPP HECO	Regulator Implementer
Design the rights-of-way for major and minor arterials as landscaped parkways or greenways, complete with a landscaped median strip, landscaped sidewalks, and bikeways.	SUB UDP	DPP	Regulator
REGIONAL PARKS AND RECREATION COMPLEXES			
Consider using public-private partnerships to build, and maintain new regional parks and recreation complexes in order to sustain economic development.	City CIP	DPR DDC	Implementer Implementer
	BID/CFD	DES BFS DA	Implementer Regulator Implementer
Develop a major regional park within Kalaeloa that provides beach-oriented recreation, camping, and support facilities near the shoreline, other active recreation facilities in mauka areas, and preserves for cultural and archaeological resources and for wildlife habitats such as wetlands and endangered plant colonies.	KMP	HCDA	Regulator
	City CIP	DDC DPR	Implementer Implementer
Complete development of Kapolei Regional Park to provide diverse active and passive recreation within easy walking distance of both the City Center and the Villages of Kapolei.	City CIP	DDC	Implementer
	Park MP	DPR	Implementer
Use best practices in the architectural and landscaping design, incorporation of natural features and indigenous plants, siting of facilities, connectivity, and provision of transit for regional parks and recreation complexes.	City CIP	DDC	Implementer
	Park MP	DPR	Implementer
	UDP SUB	DPP	Regulator
Develop additional beach and shoreline parks along the 'Ewa coastline.	City CIP	DDC DPR	Implementer Implementer

Table 5.1: Implementation Matrix

Policies and Guidelines Statements	Programs	Agencies	Roles
Maintain prominent landforms at Pu'u O Kapolei and Pu'u Pālailai as natural visual features and regional landmarks. Develop Pu'u Pālailai Park as a private nature park.	City CIP	DDC DPR	Implementer Implementer
	ZC	DPP	Regulator
	BID/CFD	BFS DA	Regulator Implementer
Retain, protect, and incorporate wetland, and other wildlife habitat and environmentally sensitive areas as passive recreational resources.	ESA/MBTA	USFWS/NOAA USACE DLNR	Regulator Implementer
	INRMP	DOD	Regulator Implementer
	SMA	DPP	Regulator
COMMUNITY-BASED PARKS			
Provide adequate parks and supporting amenities to meet residents' recreational needs.	Park Dedic.	DPP	Regulator
	City CIP	DDC	Implementer
		DPR	Implementer
Co-locate parks with elementary or intermediate schools. Coordinate design, development and use of recreational facilities with the DOE where efficient and effective.	State CIP	DOE	Implementer
	City CIP	DDC	Implementer
		DPR	Implementer
Where feasible, site parks near the center of neighborhoods, in order to maximize accessibility and connectivity. Provide pathways to parks from surrounding streets.	UDP SUB	DPP	Regulator
Use xeriscaping, non-potable irrigation water, and efficient irrigation systems wherever possible.	City CIP	DDC	Implementer
		DPR	Implementer
Support continuation of controlled access to the Wai'anae Range mountain trails via Pālehua Road.	State CIP State Trails	DLNR	Implementer
HISTORIC AND CULTURAL RESOURCES			
Emphasize physical references to 'Ewa's history and cultural roots to help define 'Ewa's unique sense of place. Protect existing visual landmarks, and support creation of new culturally appropriate landmarks. Preserve significant historic features from the plantation era and earlier periods as recommended by the State Historic Preservation Officer. Retain significant vistas whenever possible.	ZC/UA UDP	DPP	Regulator
	Hist Pres	SHPD	Regulator
	City CIP	DDC	Implementer
		DFM	Implementer

Table 5.1: Implementation Matrix

Policies and Guidelines Statements	Programs	Agencies	Roles
Assume that historic, cultural, and archaeological site mitigations approved as part of prior development approvals carry out the Plan vision and policies.	UA UDP	DPP	Regulator
	Hist Pres	SHPD	Regulator
Sites Under Review			
Vary the treatment of sites according to their characteristics and potential value. Use in situ preservation and appropriate protection measures for historic, cultural, or archaeological sites with high preservation value Allow historic sites to be converted from their original intended use to serve a new function if historic value is maintained, especially if interpretive value is enhanced.	Hist Pres	SHPD	Regulator
	LUO	DPP	Implementer
	City CIP	DDC	Implementer
		DFM	Implementer
Protect the Honouliuli Internment Camp site and the 'Ewa Marine Corps Air Field site in Kalaeloa from development while the value and appropriate treatment of the two sites are being determined.	Hist Pres	SHPD	Regulator
	KMP	HCDA	Regulator
		DPR	Implementer
Impacts of Development on Historic and Cultural Resources			
Plan and design adjacent uses to avoid conflicts or abrupt contrasts that detract from or destroy the physical integrity and historic or cultural value of the site.	Hist Pres	SHPD	Regulator
	City CIP	DDC	Implementer
		DFM	Implementer
Design and site all structures, where feasible, to reflect the need to maintain and enhance available views of significant landmarks and vistas. Whenever possible, relocate or place underground overhead utility lines and poles that significantly obstruct public views, under criteria specified in State law.	UA UDP	DPP	Regulator
	BID/CFD	PUC	Regulator
		BFS	Regulator
		HECO	Implementer
		DA	Implementer
OR&L Historic Railway			
Maintain or repair the existing track to the extent feasible to permit historic and educational rides. Extend the route from 'Ewa Villages to Nānākuli. To allow connectivity within the region, accommodate cross-traffic at appropriate intervals along the right-of-way. Set back new development a minimum of 50 feet on either side of the R-O-W. Allow railroad accessory structures, parking, and loading areas in the R-O-W and setback areas.	Hist Pres	SHPD	Regulator
	U&OA DOT	HiRS Regulator	Implementer
	ZC	DPP	Advocate
	LUO SUB	DPP	Regulator

Table 5.1: Implementation Matrix

Policies and Guidelines Statements	Programs	Agencies	Roles
Develop a parallel paved bikeway along the length of the rail route as part of the Pearl Harbor Historic Trail, even in those sections where railroad rides are not operational. Design structures and elements to reflect the historic nature of the railway. Provide landscaping, interpretive signs, and occasional rest stops	State CIP	DOT	Implementer
	BPH	DOT	Implementer
	Hist Pres	SHPD	Regulator
Lanikūhonua			
Maintain the visual identity and unique setting of Lanikūhonua as closely as possible to its present condition through the use of native landscaping, maintenance of the architectural style of the original buildings, and limits on public access and use.	SMA LUO	DPP	Regulator
	Hist Pres	SHPD LCI	Regulator Implementer
Native Hawaiian Cultural and Archaeological Sites			
Determine the appropriate preservation method, site boundaries, setbacks, and restrictions for adjacent uses on a site-by-site basis, in consultation with the State Historic Preservation Officer.	Hist Pres	SHPD	Regulator
	ZC/UA UDP	DPP	Regulator
Determine the appropriate level of public access on a site-by-site basis, in consultation with the State Historic Preservation Officer, Hawaiian cultural organizations, and the land owner.	Hist Pres	SHPD	Regulator
		OHA	Advocate
	ZC/UA UDP	DPP	Regulator
NATURAL RESOURCES			
Conserve potable water by supporting water conservation measures (e.g. non-potable irrigation, xeriscaping).	WUP	CWRM BWS	Regulator Advocate
	SUB	DPP	Regulator
Protect valuable habitat for waterbirds, fish, invertebrates and other endangered animals and plants. Require surveys for proposed new developments to identify endangered species habitat, and require appropriate mitigations for adverse impacts.	ESA/MBTA	USFWS/NOAA	Regulator
		USACE	Regulator
		DLNR	Regulator
	SMA ZC/UA UDP	DPP	Regulator

Table 5.1: Implementation Matrix

Policies and Guidelines Statements	Programs	Agencies	Roles
Clean up contaminated areas that pose hazards to soil and water quality, especially in Kalaeloa.	EPA Act	EPA	Regulator
		DOH	Regulator
		HCDA	Regulator
		DHHL	Implementer
Reduce light pollution's adverse impact on wildlife and human health and its unnecessary consumption of energy by using, where possible, fully shielded lighting fixtures using lower wattage.	ESA/MBTA	USFWS	Regulator
		DLNR	Regulator
		DOT	Implementer
		DTS	Implementer
	BC UDP LUO	DPP	Regulator
MASTER PLANNED COMMUNITIES			
City of Kapolei			
Develop the City of Kapolei as the downtown for the Secondary Urban Center with a balanced mix of business and residential areas, complemented by the recreational, social and cultural activities of a city. Allow development of a business hotel in the Mixed Use District of the City. Create a grid system of public streets and keep block lengths relatively short. Allow buildings up to 150 feet high in the City Center. Use best practices to conserve potable water, make the City a garden city, and encourage walking, biking, and transit usage.	UDP UA SUB TOD	DPP	Regulator
'Ewa Plantation Villages			
Preserve and enhance the rural form and historic character of the Villages. Use the 'Ewa Villages Master Plan as a vehicle for preservation and redevelopment efforts within the existing villages. Rehabilitate or adapt existing village structures in the 'Ewa Villages for reuse. Develop additional neighborhood parks/open space and a small shopping center. Make infrastructure improvements. Establish community facilities and a market place for local businesses.	EVMP/MOA	DPR DFM FmHA ACHP HHF	Implementer Implementer Implementer Advocate Advocate
	City CIP	DDC	Implementer
	Hist Pres	SHPD	Regulator
	201H	DPP	Regulator
	CC&R	AOHO	Implementer

Table 5.1: Implementation Matrix

Policies and Guidelines Statements	Programs	Agencies	Roles
Ensure continued tenancy and ownership opportunities for current residents. Develop or rehabilitate 1,900 affordable and market housing units.	Hist Pres	SHPD	Regulator
	EVMP/MOA	DFM	Implementer
	CDBG/HOME	DCS	Implementer
	201H	DPP	Regulator
	City CIP	DDC	Implementer
	RPT	BFS	Implementer
Ocean Pointe/Hoakalei			
Develop Hoakalei as the region's principal recreational marina for local residents and visitors. Develop the project by following best practices to ensure environmental compatibility. Provide expanded public recreation areas and access to shoreline and waterfront areas. Develop a mix of activities around the marina basin, including a Marina Mixed Use area with resort and commercial development, a Medium Density Residential area, and a Marine Industrial area. Develop the marina as a commuter ferry terminal if feasible and if financing for improvements can be found. Retain, enhance, and protect wetlands and other wildland habitat. Develop the golf course to provide open space and detention basins for run-off from light storms.	UDP UA SUB Drain MP	DPP	Regulator
	ORTP TIP	OMPO	Implementer
	City CIP	DDC DTS	Implementer Implementer
Other Existing and Planned Residential Communities			
Develop suburban residential areas with housing density of 10 to 15 units per acre. Develop residential areas along the rail transit corridor at housing densities of 25 units per acre, and mixed use residential/commercial areas within ¼ mile of transit stations at densities from 25 to 90 units per acre. Require that 30 percent of the housing units be affordable to low and low-moderate income households.	KMP	HCDA	Regulator
	KRMP	DHHL	Regulator / Implementer
	ZC/UA UDP TOD	DPP	Regulator
Develop or redevelop residential communities to have an identified pedestrian-friendly town center or "Main Street" area, and design commercial development to help establish and support that center. Encourage walking and biking and bus transit usage by providing ample path and roadway connectivity both to the town center and throughout the community, and by providing sufficient right-of-way to provide bus shelters and pull-outs.	KMP	HCDA	Regulator
	KRMP	DHHL	Regulator / Implementer
	ZC/UA UDP SUB TOD	DPP	Regulator

Table 5.1: Implementation Matrix

Policies and Guidelines Statements	Programs	Agencies	Roles
Provide land for community facilities including churches, community centers, and elderly and child care centers.	KMP	HCDA	Regulator
	KRMP	DHHL	Regulator / Implementer
	ZC/UA UDP TOD Park Dedic.	DPP AOHO	Regulator Implementer
	City CIP Park MP	DDC DPR	Implementer Implementer
Use xeriscaping, non-potable water for irrigation, and efficient irrigation systems wherever possible to conserve groundwater resources.	SUB	BWS DPP	Regulator Regulator
Ko Olina			
Develop Ko Olina as an integral part of the Secondary Urban Center.	UA UDP SUB	DPP	Regulator
Provide substantial waterfront areas for public use and retain the shoreline as natural open space softened by landscaping and focused on the beach and swimming lagoons. Avoid adverse impacts on natural resources or processes in the coastal zone. Follow best practices with respect to urban form, natural environment, shoreline access, views and vistas, circulation system and transportation facilities, water conservation, and landscaped treatment.	UA UDP SMA SUB	DPP	Regulator
Kalaeloa			
Develop Kalaeloa in ways that integrate the circulation system and land use pattern of the 'Ewa Plain. Provide additional ways for 'Ewa residents and workers to cross 'Ewa from east to west and north to south.	KMP	HCDA	Regulator
	State CIP	DOT	Implementer
	City CIP	DDC	Implementer
Develop a major new regional park. Provide continuous lateral shoreline access with links to adjacent pathways in Ocean Pointe/Hoakalei and Campbell Industrial Park.	KMP	HCDA	Regulator
	City CIP	DDC	Implementer
	Park MP	DPR	Implementer
Provide ample lands devoted to uses that will create long-term jobs for 'Ewa residents.	KMP	HCDA	Regulator

Table 5.1: Implementation Matrix

Policies and Guidelines Statements	Programs	Agencies	Roles
Follow best practices for shoreline setback and access; protection of archaeological, cultural, historical, and natural resources; separation of use areas; appropriate scale; accessibility and connectivity; landscaping; and water conservation.	KMP	HCDA	Regulator
	City CIP	DDC	Implementer
	Park MP	DPR	Implementer
University of Hawai'i West O'ahu			
Develop University of Hawai'i West O'ahu campus to be environmentally and culturally sensitive to the site, to be reflective of the Hawaiian culture and Ewa, and, in combination with an adjacent University Village, to be an important civic and cultural institution for Ewa. Follow best practices for place making, design, landscaping, circulation, open space, and views.	ZC/UA UDP LUO PRU TOD	DPP	Regulator
		UHWO	Implementer
Provide direct vehicle access to the campus from both Farrington Highway and Kualaka'i Parkway. Orient the campus to support pedestrian access to and transit usage from two rail transit stations planned for locations on Kualaka'i Parkway.	PRU SUB	DPP	Regulator
		DOT	Regulator
		UHWO	Implementer
Design the campus to use open space areas for flood detention and retention as part of the Kalo'i Gulch watershed master plan in order to reduce the downstream impact of major storm events and keep storm water flows and velocity below design levels used for earlier developments in the Kalo'i Gulch watershed.	Drain MP	DPP	Regulator
PLANNED COMMERCIAL RETAIL CENTERS			
Develop planned commercial centers, outside of the City of Kapolei, to provide retail shopping and offices delivering services for the 'Ewa residential communities in which they are located. Concentrate commercial uses in central locations instead of in continuous commercial strips along arterial roads, and design the centers to support pedestrian-friendly centers or "Main Streets" for their communities. Allow medium density mixed use commercial development near rail transit stations on the rail transit corridor.	KMP	HCDA	Regulator
	KRMP	DHHL	Regulator / Implementer
	ZC/UA UDP TOD	DPP	Regulator
Locate Major Community Commercial Centers or Regional Commercial Centers and major office buildings in the City of Kapolei. Allow offices providing support to the University of Hawaii West O'ahu to be located in the TOD areas around the two transit stations closest to the campus.	KMP	HCDA	Regulator
	KRMP	DHHL	Regulator / Implementer
	ZC/UA	DPP	Regulator

Table 5.1: Implementation Matrix

Policies and Guidelines Statements	Programs	Agencies	Roles
Permit multi-family residential use above the first floor and include it wherever possible in commercial centers.	KMP	HCDA	Regulator
	KRMP	DHHL	Regulator / Implementer
	ZC/UA LUO	DPP	Advocate Regulator
Follow best practices for architectural character, building siting, building height and density, accessibility, connectivity, pedestrian and bicycle facilities, visual screening, water conservation, lighting, and signage.	KMP	HCDA	Regulator
	KRMP	DHHL	Regulator / Implementer
	ZC/UA UDP LUO SUB	DPP	Advocate Regulator
INDUSTRIAL AREAS			
Maintain the Barbers Point Industrial Area as one of O'ahu's and the State's most important industrial areas. Develop the northern parts of Kapolei Business Park, Kapolei Harborside, and any Kalaeloa lands designated for industrial use for light industrial uses or compatible commercial uses as a transition between heavy industry at Campbell Industrial Park and the City of Kapolei. Allow development of marine industrial uses at Hoakalei.	KMP	HCDA	Regulator
	LUO UDP	DPP	Regulator
If a major film studio is developed within the Barbers Point Industrial Area, allow accessory uses, such as film production offices, film crew overnight accommodations, a "back lot" area with commercial uses, and visitor attractions.	LUO	DPP	Regulator
Develop Honouliuli as a smaller industrial area, used for wastewater treatment and for light industrial and industrial-commercial mixed uses to serve the surrounding communities. Expand the Honouliuli Wastewater Treatment Plant to accommodate additional growth in the region as well as to provide additional facilities for higher levels of wastewater treatment.	UA LUO	DPP	Regulator
	City CIP	DDC	Implementer
		ENV	Implementer
Allow the **Hawaiian Electric Company generating plant** in Kahe Valley to be expanded to take advantage of available land area, cooling system capacity, and power transmission lines.	PUC	PUC	Implementer
		HECO	Implementer
	LUO	DPP	Regulator

Table 5.1: Implementation Matrix

Policies and Guidelines Statements	Programs	Agencies	Roles
Follow best practices for appropriate scale, environmental compatibility, building height and mass, shoreline setback and access, roadway setbacks, water conservation, and landscape treatment.	KMP	HCDA	Regulator
	ZC/UA UDP LUO SUB	DPP	Regulator
TRANSPORTATION SYSTEMS			
Provide adequate access between residences and jobs, shopping, and recreation centers in 'Ewa as development occurs. To improve connectivity, provide a multi-modal network of interconnected routes that safely accommodate walkways, bikeways, and streets throughout 'Ewa and that efficiently link arterials, residences, schools, parks, community facilities, commercial and employment centers, and transit stops.	ORTP TIP	OMPO	Implementer
	State CIP	DOT	Implementer
	City CIP	DDC DTS	Implementer Implementer
	KMP	HCDA	Regulator
	ZC/UA UDP ECS SUB	DPP	Regulator
Provide improved access and capacity to and from adjacent areas, especially Central O'ahu.	ORTP TIP	OMPO	Implementer
	State CIP	DOT	Implementer
	City CIP	DDC DTS	Implementer Implementer
Provide adequate capacity for major peak hour commuting to work in the Primary Urban Center. Meet demand for peak-period transportation capacity by increased use of transit, and by transportation demand management (improved HOV lane service, provision of park-and-ride facilities, and reduction of single occupant automobile traffic). Establish a commuter ferry from Hoakalei Marina if feasible and if financing for improvements can be found.	ORTP TIP	OMPO	Implementer
	State CIP	DOT	Implementer
	City CIP	DDC	Implementer
		DTS	Implementer
Reserve land for the right-of-way for the Council-identified rail transit corridor in 'Ewa and plan to develop medium density land uses in transit nodes.	KMP	HCDA	Regulator
	KRMP	DHHL	Regulator / Implementer
	ZC/UA AHR UDP TOD	DPP DTS	Regulator Advocate
	City CIP	HART	Implementer

Table 5.1: Implementation Matrix

Policies and Guidelines Statements	Programs	Agencies	Roles
WATER ALLOCATION AND SYSTEM DEVELOPMENT			
Require new developments to provide adequate potable and nonpotable water, and implement water conservation measures. Require developments with large landscaped areas, roadway landscaping, or industrial processes to have dual water lines (potable and non-potable) to conserve use of potable water through use of non-potable water for irrigation and other appropriate uses	ZC/UA SUB	DPP BWS	Implementer Regulator
Develop an adequate supply of nonpotable water for irrigation and other suitable uses on the 'Ewa Plain. Require nonpotable water used for irrigation above Pearl Harbor aquifer to be low in chlorides and total dissolved solids. Request that the State Commission on Water Resource Management consider all sources of water in making allocations of nonpotable water.	Water OWMP City CIP	CWRM BWS DDC	Regulator Implementer Implementer
Develop alternative water supplies using new technologies in water reclamation, membrane and distillation desalination and deep ocean water applications. Encourage use of technologies conserving water and using renewable energy that could support alternative water supplies.	Water OWMP City CIP	CWRM BWS ENV DDC	Regulator Implementer Implementer Implementer
WASTEWATER TREATMENT			
Require all wastewater produced by new developments in 'Ewa to be connected to a regional or municipal sewer service system.	SUB	DPP ENV	Regulator Implementer
Where feasible, use recycled water recovered from wastewater effluent for irrigation and other uses below the Underground Injection Control (UIC) line and the "No-Pass" Line.	WP OWMP ZC/UA SUB	DOH BWS DPP	Regulator Implementer Regulator
Locate wastewater treatment plants in areas shown as planned for industrial use and away from residential areas	WP City CIP WMBFP LUO	DOH DDC ENV DPP	Regulator Implementer Implementer Regulator
ELECTRICAL POWER DEVELOPMENT			
Analyze and approve system improvements based on island-wide studies and siting evaluations. Give strong consideration to placing any new transmission lines underground.	PUC LUO BID/CFD	PUC HECO DPP BFS DA	Regulator Implementer Regulator Regulator Implementer

Table 5.1: Implementation Matrix

Policies and Guidelines Statements	Programs	Agencies	Roles
Locate electrical power plants in areas shown as planned for Industrial use and away from residential areas	PUC	PUC HECO	Regulator Implementer
	LUO	DPP	Regulator
SOLID WASTE HANDLING AND DISPOSAL			
Analyze and approve siting and/or expansion of sanitary landfills based on island wide studies and siting evaluations. Do not develop Makaīwa Gulch as a landfill.	SUP	LUC	Regulator
		DPP	Advocate
	SWIMP	ENV	Implementer
For master-planned communities, in consultation with the Department of Environmental Services, estimate the amount of solid waste to be generated and plan how solid waste will be collected and recycling will be encouraged.	ZC/UA SUB	DPP	Regulator
		ENV	Implementer
DRAINAGE SYSTEMS			
Design drainage systems to emphasize flood control, minimize non-point source pollution, and retain and/or detain storm water. Use storm water for aquifer recharge. Use natural and man-made vegetated drainageways and retention basins as the preferred solution to drainage problems. Permit concrete-lined channels if there is no other feasible alternative. Insure that solutions to handling drainage problems on lands above 'Ewa Villages are compatible with the drainage design of the 'Ewa Villages Master Plan and other developments in the Kaloʻi Gulch drainage basin.	NPDES	DOH	Regulator
	Drain MP	DPP	Regulator
Integrate planned drainage system improvements into the regional open space network by allowing recreational use of retention basins, and creating passive recreational areas and pathways for pedestrians and bikers.	Drain MP	DPP	Regulator
SCHOOL FACILITIES			
Request DOE to report to DPP if adequate school capacity can be provided as part of the project review and approval process, both at the entitlement and permit approval stages.	ZC/UA SUB	DPP	Implementer
Require developers to comply with DOE school impact fees requirements and/or existing UA school impact conditions and pay their fair share of all costs needed to provide adequate school facilities for the children living in their developments.	SIF	DOE	Regulator
	ZC/UA	DPP	Implementer
Design school facilities to facilitate community use during non-school hours and weekends.	State CIP	DOE	Implementer
		DPP	Advocate

Table 5.1: Implementation Matrix

Policies and Guidelines Statements	Programs	Agencies	Roles
Co-locate neighborhood or community parks with elementary and intermediate schools and coordinate design of facilities with the DOE when needless duplication of parking and of athletic, recreation, and meeting facilities can be avoided.	State CIP	DOE	Implementer
	City CIP	DDC	Implementer
		DPR	Implementer
PUBLIC SAFETY FACILITIES			
Provide adequate facilities and staffing to ensure public safety and provide fire protection, police protection, and emergency medical service for existing and new development.	City CIP	DDC	Implementer
	Op Bud	BFS	Implementer
		HFD	Implementer
		HPD	Implementer
		EMS	Implementer
Survey and retrofit, as appropriate, existing DOE and other public buildings to make up the shortfall in hurricane resistant shelters. Require new City buildings which are "critical facilities used for public assembly and able to perform as shelters" to be designed and built to withstand a Category 3 hurricane.	State CIP	HSCD	Implementer
		DOE	Implementer
	City CIP	DDC	Implementer
		DEM	Implementer
	BC	DPP	Regulator
Provide incentives for private organizations to create hurricane resistant shelter areas in their facilities and for homes to include hurricane resistant "safe rooms."	CDBG/HOME	DCS	Implementer
		DEM	Implementer
	Op Bud	BFS	Regulator
OTHER COMMUNITY FACILITIES			
Encourage co-location of antennae. Mount antennae on existing buildings or structures so that public scenic vistas and open spaces will not be negatively affected. Use "stealth" technology to minimize visual impacts.	LUO	DPP	Regulator

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Table 5.1: Implementation Matrix

Key to Abbreviations

Programs	Agencies	Roles
• **Agric Distr**: State Agriculture District, Chapter 205, Hawaii Revised Statutes (HRS) • **BC**: Building Code, Chapter 16, ROH • **BID**: Business Improvement District, Chapter 34, Revised Ordinances of Honolulu (ROH) • **BPH**: Bike Plan Hawai'i • **CDBG**: Community Development Block Grant, HUD • **CFD**: Community Facilities Districts, Chapter 34, ROH • **CIP**: Capital Improvement Program • **Cons Distr**: State Conservation District, Ch. 205, HRS • **CZM**: Coastal Zone Management, Chapter 205A, HRS • **Drain MP**: Drainage Master Plan • **ECS**: 'Ewa Connectivity Study • **EPA Act**: Environmental Protection Agency Act • **ESA**: Endangered Species Act • **EVMP/MOA**: 'Ewa Villages Master Plan / Memorandum of Agreement • **HOME**: Home Investment Partnerships Program, HUD • **Hist Pres**: Historic Preservation, Chapter 6E, HRS • **HSCD**: Hawaii State Civil Defense • **INRMP**: Integrated Natural Resource Master Plan • **Kapolei MP**: Kapolei Area Long Range Master Plan, The Estate of James Campbell • **KMP**: Kalaeloa Master Plan • **KRMP**: Kapolei Regional Master Plan, DHHL • **LUO**: Land Use Ordinance, Chapter 21, ROH • **MBTA**: Migratory Bird Treaty Act • **NPDES**: National Pollutant Discharge Elimination System • **OMTP**: O'ahu Metropolitan Transportation Plan	• **AOHO**: Association of Home Owners • **BFS**: Department of Budget and Fiscal Services • **BWS**: Board of Water Supply • **CWRM**: State Commission on Water Resource Management • **DA**: Business Improvement District Association • **DCS**: Department of Community Services • **DDC**: Department of Design and Construction • **DEM**: Department of Emergency Management • **DES**: Department of Enterprise Services • **DFM**: Department of Facility Maintenance • **DLNR**: State Department of Land and Natural Resources • **DOD**: United States Department of Defense • **DOE**: State Department of Education • **DOH**: State Department of Health • **DOT**: State Department of Transportation • **DPP**: Department of Planning and Permitting • **DPR**: Department of Parks and Recreation • **DTS**: Department of Transportation	• Implementer • Advocate • Regulator

Table 5.1: Implementation Matrix

Programs	Agencies	Roles
• **Op Bud**: City Operating Budget • **Park Dedic**: Park Dedication, Chapter 22, ROH • **Park MP**: Park Master Plan • **PRU**: Plan Review Use • **PUC**: Public Utilities Commission , Ch. 269, HRS • **RPT**: City Real Property Transactions, Chapter 37, ROH • **SIF**: School Impact Fees, Chapter 302A-1601 to 1611, HRS • **Shore Stbk**: Shoreline Setback, Chapter 23, ROH • **SLUBDA**: State Land Use District Boundary Amendment • **SMA**: Special Management Area, Chapter 25, ROH • **State Parks**: DLNR State Parks; Division of Forestry and Wildlife Camping permits • **State Trails**: DLNR Nā Ala Hele State Trails and Access Program • **SUB**: Subdivision • **SUP**: Special Use Permit • **SWIMP**: Solid Waste Integrated Management Plan • **TIP**: Transportation Improvement Plan • **TOD**: Transit Oriented Development • **UA**: Unilateral Agreement, LUO Sec. 21-2.80 • **U&OA**: Use and Occupancy Agreement • **UDP**: Urban Design Plan • **Water**: State Water Code, Chapter 174C, HRS • **WMBFP**: West Māmala Bay Facilities Plan • **WP**: Water Pollution, Chapter 342D, HRS • **WUP**: Water Use Permit/Well Permit, CWRM • **ZC**: Zone Change	Services • **ENV**: Department of Environmental Services • **EPA**: Environmental Protection Agency • **HART**: Honolulu Authority for Rapid Transportation • **HCDA**: Hawai'i Community Development Authority • **HECO**: Hawaiian Electric Company • **HiRS**: Hawaiian Railway Society • **HFD**: Honolulu Fire Department • **HSCD**: Hawai'i State Civil Defense • **HUD**: U.S. Department of Housing and Urban Development • **LCI**: Lanikuhonua Cultural Institute • **LUC**: State Land Use Commission • **NOAA**: National Oceanic and Atmospheric Administration • **OHA**: Office of Hawaiian Affairs • **OMPO**: O'ahu Metropolitan Planning Organization • **OP**: State Office of Planning • **PUC**: State Public Utilities Commission • **SHPD**: State Historic Preservation Division of the Department of Land and Natural Resources • **UHWO**: University of Hawai'i West O'ahu • **USACE**: United States Army Corps of Engineers • **USFWS**: United States Fish and Wildlife Service	

APPENDIX A: CONCEPTUAL MAPS

This appendix includes the four primary conceptual maps used to illustrate the vision for 'Ewa's future development. The maps include:

These maps illustrate the long-range vision of the future of the plan area and the major land use, open space, and public facility policies that are articulated in the plan. In using these maps, the reader should keep in mind that:

1. These maps are general and conceptual, and are not intended to be used to determine specific land use boundaries. Such boundaries are to be determined during the review of specific land use or public facilities investment decisions, and their exact locations are to be guided by the vision and policies of this Plan.
2. These maps illustrate the Plan's vision and policies which are presented in Chapters Two, Three, and Four. These policy statements are considered the most important elements of the Plan.

The maps are considered illustrations of the policies. However, the text should be consulted to determine the appropriate application of the Plan vision, policies, and guidelines for any specific project or location. In case of disagreement, the text should prevail over the map depiction.

A brief explanation of the terms used in each of these maps follows.

GLOSSARY OF TERMS

Descriptions of elements common to each of the four maps are presented in the following section. Descriptions of elements specific to each map (Open Space, Land Use, Public Facilities, Phasing) are presented in separate sections for each map which follow the section on Common Elements.

COMMON ELEMENTS

Preservation Areas

Preservation areas are lands with natural, cultural, or scenic resource value.

They include the following types of land:

- Land necessary for protecting watersheds, water resources and water supplies.
- Lands necessary for the conservation, preservation and enhancement of sites with scenic, historic, archaeological or ecological significance.
- Lands necessary for providing and preserving park lands, wilderness and beach reserves, and for conserving natural ecosystems of endemic plants, fish and wildlife, for forestry, and other related activities to these uses.
- Lands with topography, soils, climate or other related environmental factors that may not be normally adaptable or presently needed for urban, rural or agricultural use.
- Lands with general slopes of 20 percent or more which provide for open space amenities and/or scenic values.
- Lands susceptible to floods and soil erosion, lands undergoing major erosion damage and requiring corrective attention by the State or Federal Government, and lands necessary to the protection of the health, safety and welfare of the public by reason of soil instability or the lands' susceptibility to landslides and/or inundation by tsunami and flooding.
- Lands used for national, state or city parks.

- Lands suitable for growing of commercial timber, grazing, hunting, and recreation uses, including facilities accessory to such uses when said facilities are compatible with the natural physical environment.

Agricultural Areas

Agricultural areas are lands with agricultural value by virtue of current agricultural use or high value for future agricultural use, including those areas identified as Prime, Unique, or Other Important lands on the Agricultural Lands Important to the State of Hawai'i (ALISH) maps. These are lands suitable for crop growing, grazing and livestock raising, flower cultivation, nurseries, orchards, aquaculture, or similar activities.

Under the State Constitution, the State is to identify Important Agricultural Lands (IAL). Once identified, these lands cannot be rezoned except under a "super majority" vote. To date, IAL lands have not be identified. In 2005, Act 183 was adopted to address this mandate. It established a two-step process:

- The State Legislature would adopt incentives to assure the long term use and protection of IAL.
- The State Legislature would approve adequate funding to allow the counties to prepare maps identifying IAL lands which would then be adopted by the LUC.

Act 233, enacted in 2008, adopted the incentive programs. To date, no state funding has been appropriated to the counties for the mapping. Lands identified for agricultural purposes by this plan can serve as the basis for the county mapping process.

Parks

The maps show locations of existing public and private parks and recreational facilities, including regional parks, district parks, shoreline parks, and nature parks and conceptual locations for planned and proposed parks. Smaller community-based parks, including community parks, neighborhood parks, and mini-parks, are not shown.

Golf Courses
The maps show the locations of existing and proposed public and private golf courses.

Historic Railway/Bikeway Corridor
The corridor shown on the 'Ewa maps is part of the Pearl Harbor Historic Trail, a continuous greenway stretching from Nānākuli across the 'Ewa Plain to West Loch and then along the shores of Pearl Harbor to Rainbow Marina near Aloha Stadium with a connection to the Waipahū Cultural Garden Park. The corridor will include a major pedestrian and bike path and a restored OR&L right-of-way that would allow train operations between 'Ewa Plantation Villages and Nānākuli.

Community Growth Boundary
The Community Growth Boundary defines and contains the intended extent of developed or "built up" areas of urban and urban fringe communities.
Its purpose is to provide adequate land to support established or developing communities while protecting lands outside this boundary for agriculture or open space values. Areas within this boundary are generally characterized by extensive tracts of residential, commercial, industrial, or mixed-use development clearly distinguishable from undeveloped or more "natural" portions of a region's environment.

In the **'Ewa Development Plan**, the *mauka* portion of the Community Growth Boundary follows the Special Management Area boundary around Kahe Point, runs along the *mauka* boundary of the Makaīwa Hills project and Makakilo, follows the proposed extension of Makakilo Drive to the H-1 freeway, and then follows the H-1 freeway to the Kunia Road where it turns and follows Kunia Road to the boundary between the 'Ewa Development Plan area and the Central O'ahu Sustainable Communities Plan area. It excludes all State Agricultural and Conservation District lands *mauka* of the boundary from urban development.

The *makai* portion of the Community Growth Boundary excludes the area within the Explosive Safety Quantity Distance (ESQD) arc for the West Loch Naval Magazine from urban development.

Highways, Arterials, and Major Collector Streets
Major existing and proposed roadways providing east-west and *mauka-makai* linkages across the 'Ewa Development Plan area.

OPEN SPACE MAP

The Open Space Map illustrates the vision for the 'Ewa Open Space Network. The Open Space Network consists of large areas of preservation and agricultural lands outside the Community Growth Boundary and a network of parks, wildlife habitats, golf courses, agricultural lands, ravines, grass-lined drainageways, and greenways along utility corridors and major arterials within the Community Growth Boundary. (See definitions of terms and discussion in Sections 2.2.1, 2.2.2, 2.2.3 in Chapter 2 and in Section 3.1 in Chapter 3.)

The Open Space Map shows major open space elements and resources, including agricultural and preservation lands, major recreational facilities, important "panoramic" views, natural stream corridors and drainageways, and important boundaries.

Terms on the Open Space Map which are not common to all of the maps include:

Natural Drainageways/Gulches
Natural waterways which are to be retained as flood plains and open space resources and protected from development, disturbance, or channelization except where absolutely necessary to protect existing urban development from flooding.

Panoramic Views
Significant views and vistas which are to be retained, whenever possible. (See Table 3.2, Exhibit 3.2, and Section 3.4.2.)

Shoreline Access
The proposed lateral public easement/access along the 'Ewa shoreline with public pedestrian access to the shoreline at intervals of approximately 1/4 mile.

Urban Areas
Areas which have been developed or are planned for development for residential, retail, office, and industrial uses.

Landscaped Boulevard/Greenway
Major arterials and major collector streets which should be developed as landscaped parkways, complete with a landscaped median strip, landscaped sidewalk, and bikeways. (See Sections 3.1.3.8 and 3.8.3.)

URBAN LAND USE MAP

The Urban Land Use Map illustrates the desired long-range land use pattern for 'Ewa resulting from implementation of the plan's vision and policies. It portrays the vision for development of the City of Kapolei, for the development of master planned residential communities, and for creation of new jobs at the Ko Olina Resort, Campbell Industrial Park, Kapolei Business Park, West Kalaeloa Industrial Park, Kalaeloa, the University of Hawai'i West O'ahu, and the resort area at Ocean Pointe/Hoakalei. (See definition of terms and discussion in Sections 2.2.4, 2.2.5, 2.2.6, 2.2.7, and 2.2.10 in Chapter 2, and in Chapter 3.)

Terms on the Urban Land Use Map which are not common to all the maps include:

Residential and Low-Density Apartment.
Suburban communities characterized by:

- Single-family detached homes;
- Attached homes or townhouse units with individual entries; and
- Low density, low rise, multi-family residences, including townhouses, stacked flats, or apartment buildings.

In addition to residential uses, these areas may include neighborhood commercial centers, elementary schools, parks, churches, community centers, elderly care centers, child care centers, fire stations and other public facility and utility uses serving the community.

Medium-Density Apartment
Mixed use communities adjacent to transit nodes or resort areas which are characterized by medium density, low- to mid-rise multi-family residences with retail or service commercial uses on the ground or lower floors, where appropriate.

Community Commercial Center
This type of center principally serves the community in which it is located, providing for basic shopping and service needs on a larger scale than the neighborhood center. Community Commercial Centers may contain up to 250,000 sq. ft. of floor area. Major attractions typically include a large grocery store, a drug store, and/or a department store.

City of Kapolei
The urban core or "downtown" for 'Ewa which is intended to be 'Ewa's center for shopping, civic activity, and municipal services. It offers a wide range of shopping and dining opportunities and professional, business and industrial services, and provides housing in high and medium density residential mixed-use buildings.

Resort/Recreation Area
Areas at Ko Olina and Ocean Pointe/Hoakalei to be developed for hotels, apartments, and accessory commercial and recreational facilities for resort use.

Industrial
Areas shown include the State's prime location for heavy industry at Campbell Industrial Park and Kalaeloa Barbers Point Harbor as well as areas designated for light- and service-related industrial uses associated with repair, processing, construction, manufacturing, transportation, wholesaling, distribution, storage and similar economic activities. Industrial areas also can include a range of compatible commercial activities. See Sec. 3.11 for more details on the appropriate uses for specific industrial locations in 'Ewa.

Military
Lands for military and military support purposes.

Public Institution
Major facilities for public use or benefit.

Transit Node
Areas of medium density apartment and commercial development located around rail transit stations on the rail transit corridor, which extends from the City of Kapolei through Waipahū to downtown Honolulu. (See Sections 3.9, 3.10, and 4.1.4.2.)

Civic Center
The regional center with City and State offices and facilities providing services to all O'ahu residents.

Electric Power Plant
Existing power plants at Kahe Point and Campbell Industrial Park.

Wastewater Treatment Plant
The existing wastewater treatment plant at Honouliuli.

Intermediate/Middle School
Existing intermediate/middle schools, 'Ilima Intermediate in 'Ewa Beach, and Kapolei Middle School in the Villages of Kapolei and conceptual locations for new intermediate/middle schools at 'Ewa by Gentry (Makai), East Kapolei (DHHL and Ho'opili), and Makaīwa Hills.

High School
Existing high schools, James Campbell High in 'Ewa Beach, and Kapolei High School in the Villages of Kapolei, and conceptual locations for new high schools near the intersection of Kualaka'i Parkway (formerly North-South Road) and Farrington Highway and near the corner of H-1 and Kunia Road.

University of Hawaii West O'ahu (UHWO)
Campus located on 136 acres near the intersection of Kualaka'i Parkway and Farrington Highway.

Hospital
The existing Hawai'i Medical Center West on Fort Weaver Road.

Small Boat Marina
The existing Ko Olina Marina and the proposed Hoakalei Marina.

Commercial Harbor
The existing Kalaeloa Barbers Point Deep Draft Harbor.

Airfield
The existing airfield at Kalaeloa.

Quarry
The existing quarry in Makakilo on the slopes of Pu'u Makakilo.

PUBLIC FACILITIES MAP

The Public Facilities Map illustrates the major infrastructure needed to implement the vision for 'Ewa. It shows the location of existing facilities and conceptual locations for some of the future required infrastructure facilities.

It is not meant to be amended between revisions of the Plan, and should not be confused with the Public Infrastructure Map used in the Capital Improvement Program budget process.

Major public facilities which are to be funded through Capital Improvement Program budget appropriates must be shown on the Public Infrastructure Map (PIM). The PIM is not part of the **'Ewa Development Plan**, and is adopted and amended by resolution.

Projects which are not listed in the **'Ewa Development Plan** or not shown on the **'Ewa Development Plan** maps can still be added to the Public Infrastructure Map by Council resolution if the Council finds them to be consistent with the vision and policies of the

'Ewa Development Plan. (For definitions, information about existing and planned public facilities, and functional planning processes, see Chapter 4 and Sec. 5.3 in Chapter 5.)

Terms on the Public Facilities Map which are not common to all maps include:

Urban Areas
Areas which have been developed or are planned for development for residential, retail, office, and industrial uses.

Grade Separated Interchange
Existing interchanges at Kunia Road and H-1 Freeway, Kualaka'i Parkway and H-1 Freeway, Makakilo Drive and H-1 Freeway, Kalaeloa Boulevard and H-1 Freeway, and Ali'inui Drive and H-1 Freeway, and proposed interchanges at Kapolei (Wākea Street and H-1 Freeway), and Makaīwa Hills.

Elevated Rail Transit Line

A rail line raised above ground for high speed rail service in urban areas.

Rail Transit Station

A dedicated rail transit facility providing passengers access to high-speed rail service on the elevated rail transit line.

Park and Ride Site
Special parking lots where commuters park their cars and continue their commute by mass transit.

HOV (High Occupancy Vehicle) Lane
An exclusive lane on a roadway reserved for transit and vehicles with more than one occupant which is developed to improve transit speed and to provide incentives for commuters to opt for mass transit or carpooling.

Bike Lane
A biking facility (bikeway) which is a four- to six-foot lane exclusively for bike use which is included in a roadway.

Bike Path
A biking facility (bikeway) which is separate from the roadway network.

Civic Center
The regional center with City and State offices and facilities providing services to all O'ahu residents.

Electric Power Plant
Existing power plants at Kahe Point and Campbell Industrial Park.

Wastewater Treatment Plant
The existing wastewater treatment plant at Honouliuli.

Intermediate/Middle School
Existing intermediate/middle schools, Ilima Intermediate in 'Ewa Beach, and Kapolei Middle School in the Villages of Kapolei and conceptual locations for new intermediate/middle schools at 'Ewa Makai, East Kapolei (DHHL, and Ho'opili), and Makaīwa Hills.

High School
Existing high schools, James Campbell High in 'Ewa Beach, and Kapolei High School in the Villages of Kapolei, and conceptual locations for new high schools near the intersection of Kualaka'i Parkway and Farrington Highway and near the corner of H-1 and Kunia Road.

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Small Boat Marina
The existing Ko Olina Marina and the proposed Hoakalei Marina.

Commercial Harbor
The existing Kalaeloa Barbers Point Deep Draft Harbor.

Airfield
The existing airfield at Kalaeloa.

Corporation Yard
The existing Kapolei Corporation Yard in Campbell Industrial Park.

Landfill
The current Waimānalo Gulch Landfill site.

Desalination Plant
The Board of Water Supply's existing deactivated pilot desalination plant located in the Kapolei Business Park and the proposed desalination plant site located in Kalaeloa adjacent to the Campbell Industrial Park.

PHASING MAP

The Phasing Map shows where urban development has already occurred in 'Ewa, where new development will take place within the Community Growth Boundary, and the only area in Ewa that has a Special Area Plan (Kalaeloa).

Terms on the Phasing Map which are not common to all of the maps include:

Existing Urban Areas
Areas which already have been developed for residential, retail, office, institutional, or industrial uses. Growth in such areas can occur through re-development or in-fill.

Urban Expansion Areas
Undeveloped areas formerly in agricultural uses which are either already approved or will be considered for approval for development for residential, retail, office, institutional, or industrial uses. Applications for zone changes and other development approvals needed for new urban development in the Urban Expansion Area will be accepted for processing, and will be supported for approval if the project supports the vision and implementing policies of the **'Ewa Development Plan** and if adequate infrastructure can be provided. (See Sections 2.2.10, 5.1.2, and 5.3.) Total acreage as of July 2009 was estimated at over 6,500 acres with capacity for development of over 48,000 housing units (See Table 2.1.)

Kalaeloa Special Area
Special areas are areas which require more detailed planning than can be provided in a Development Plan (See Section 5.2). Kalaeloa is the only area in 'Ewa currently designated for a Special Area Plan.

Rail Transit Corridor
An area designated for establishment of communities that encourage use of transit, walking, and biking to go to work, to school, to shop, or to have fun by providing easy access to high speed mass transit; designing streets, public places, and pathways to be friendly to pedestrians and bikers; and locating medium density housing and commercial development within easy walking distance of the nearest rail transit station. Sufficient land will be reserved in the corridor so that an elevated rail transit line and rail transit stations may be developed in the future. (See Sections 2.2.7, 3.9.1, 3.10.1, and 4.1.4.2.).

Rail Transit Station

A dedicated rail transit facility providing passengers access to high speed rail service on the elevated rail transit line.

Landscaped Boulevard/Greenway

Major arterials and major collector streets which should be developed as landscaped parkways, complete with a landscaped median strip, landscaped sidewalk, and bikeways. (See Sections 3.1.4.8 and 3.8.2.)

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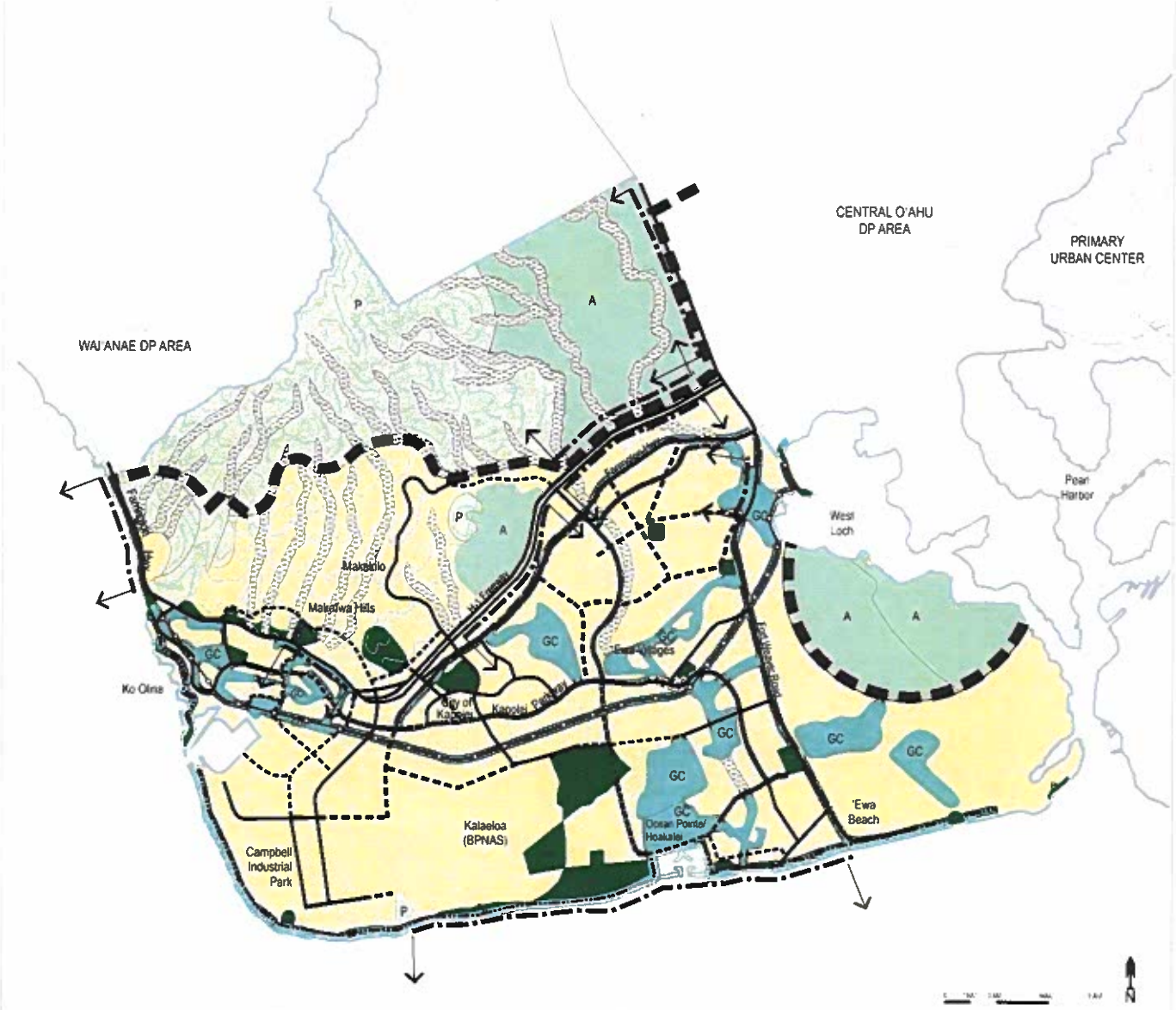
'EWA DEVELOPMENT PLAN

Open Space Map



- P — Preservation Areas
- A — Agricultural Areas
- Regional, District, Shoreline and Nature Parks
- GC — Golf Courses
- Natural Drainageways/Gulches
- Panoramic Views
- Historic Railway/Bikeway Corridor
- Shoreline Access
- Urban Areas
- Community Growth Boundary

EXISTING	FUTURE	
———	- - - - -	Highways, Arterial and Major Collector Streets
———	- - - - -	Landscaped Boulevard/ Greenway

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City & County of Honolulu

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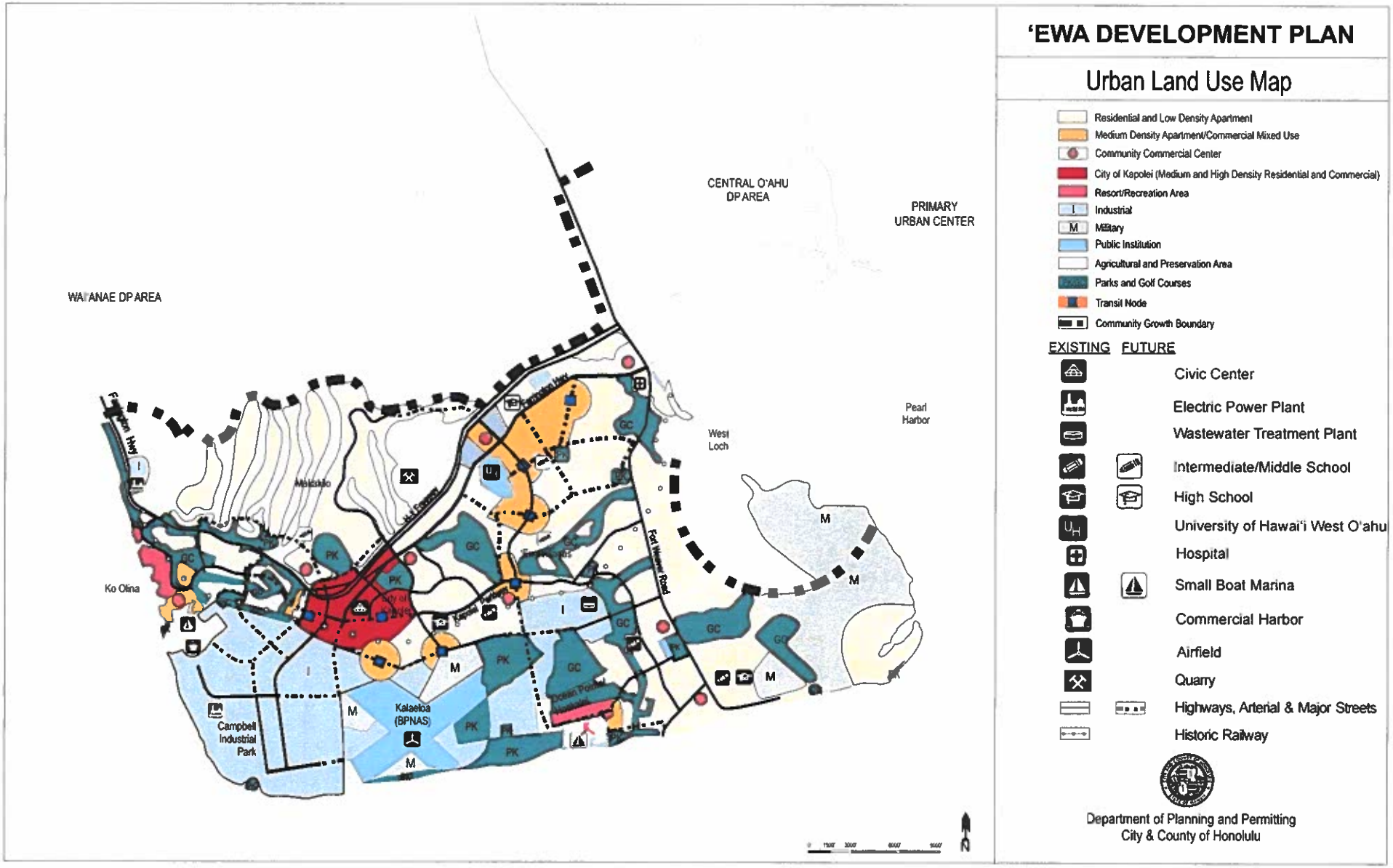
'EWA DEVELOPMENT PLAN
Urban Land Use Map
CENTRAL O'AHU DP AREA
PRIMARY URBAN CENTER
WAI'ANAE DP AREA
Pearl Harbor
West Loch
Ko Olina
Kalaeloa (BPNAS)
Campbell Industrial Park
Fort Weaver Road
Residential and Low Density Apartment
Medium Density Apartment/Commercial Mixed Use
Community Commercial Center
City of Kapolei (Medium and High Density Residential and Commercial)
Resort/Recreation Area
Industrial
Military
Public Institution
Agricultural and Preservation Area
Parks and Golf Courses
Transit Node
Community Growth Boundary
EXISTING
FUTURE
Civic Center
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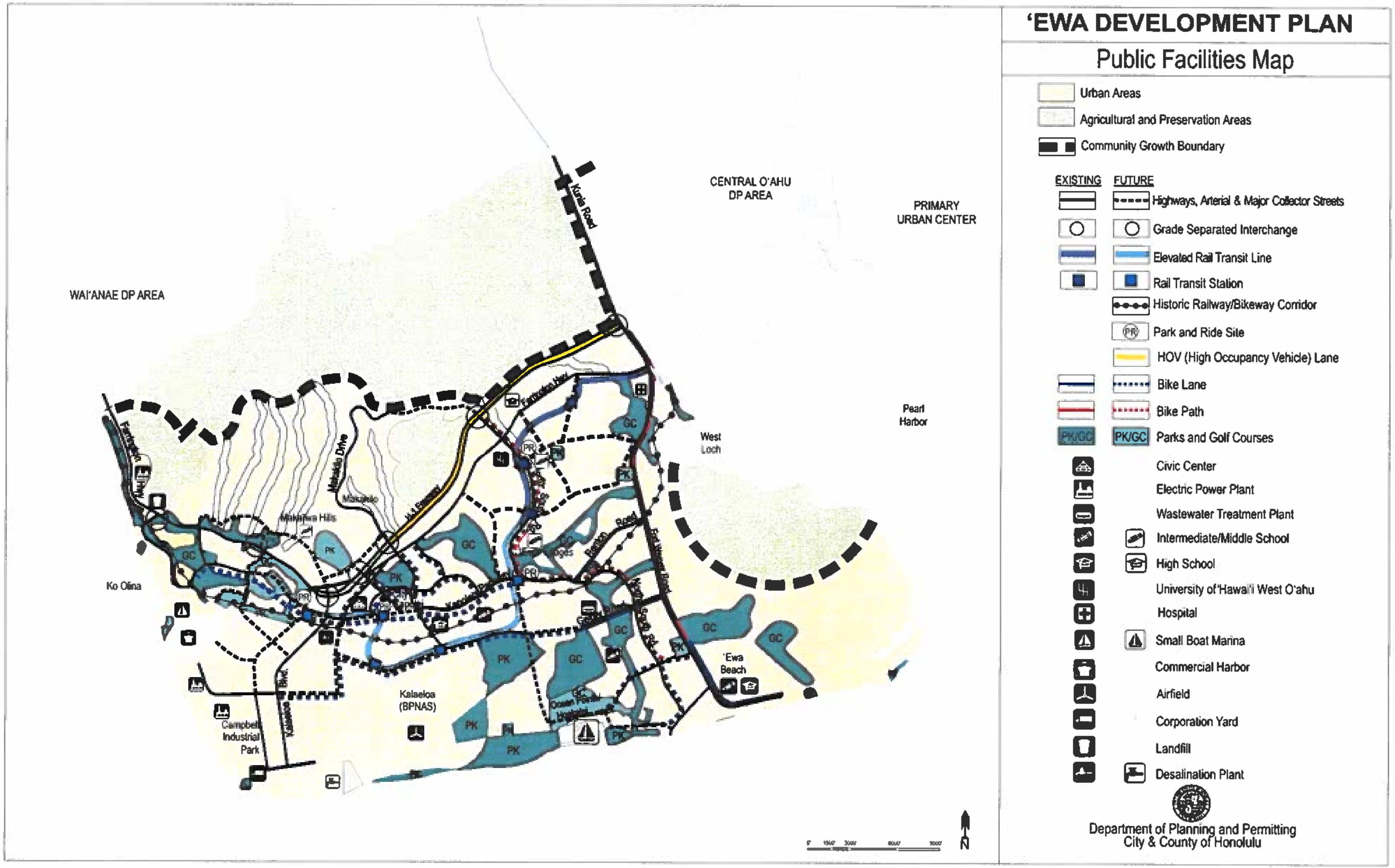
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Makakilo
Makaiwa Hills
Kalaeloa (BPNAS)
Campbell Industrial Park
'Ewa Beach
PK
GC
PR

A BILL FOR AN ORDINANCE

A BILL FOR AN ORDINANCE TO AMEND CHAPTER 2 OF THE REVISED ORDINANCES OF HONOLULU 1990, AS AMENDED, RELATING TO THE OFFICE OF CLIMATE CHANGE, SUSTAINABILITY AND RESILIENCY.

BE IT ORDAINED by the People of the City and County of Honolulu:

SECTION 1. Purpose and Findings. The purpose of this ordinance is to describe the duties and responsibilities of the Office of Climate Change, Sustainability and Resiliency.

The City and County of Honolulu ("City") Office of Climate Change, Sustainability and Resiliency ("Resilience Office") was established by a Charter amendment approved by the voters in the 2016 general election (now codified as Section 6-107 of the Revised Charter of Honolulu 1973 (2017 Edition)) and is charged with, among other things: (1) tracking climate change science and potential impacts of climate change on City facilities; (2) coordinating actions and policies of departments within the City to protect economic activity from climate impacts and develop resilient infrastructure in response to the effects from climate changes; (3) developing or coordinating City policies and programs to improve the environmental performance of City operations and advance environmental priorities; and (4) promoting the resiliency of Oahu's communities and coastal areas.

Since its establishment in 2016, the Resilience Office has actively engaged the Oahu community and developed an overarching policy document entitled *Ola: Oahu Resilience Strategy*. To develop and implement policies that advance climate change and sustainability goals, as well as the 44 specific resilience-building actions defined by the Resilience Strategy, which was adopted by the Honolulu City Council in Resolution 19-233 as a guiding policy document for the City, the Resilience Office works to ensure equitable engagement with community members, stakeholders from the business and non-governmental sector, and other relevant agencies to create practical policies that take multiple considerations, impacts, and costs into account.

In addition to the implementation of the Resilience Strategy, the Resilience Office continues to track, make progress on, and meet the City's established climate change and sustainability goals and commitments, such as establishing a carbon neutral economy and implementing the 2018 Global Climate Action Summit policies, which were outlined in Resolution 18-221, CD1, FD1.

A BILL FOR AN ORDINANCE

This ordinance codifies the duties and responsibilities of the Resilience Office. This ordinance therefore ensures that the City meets its climate change and sustainability goals and objectives, consistent with Section 6-107 of the Revised Charter of Honolulu, the City's General Plan and Development Plans, State law, and the Paris climate agreement, and equitably builds resilience within Oahu's communities.

SECTION 2. Section 2-1.2, Revised Ordinances of Honolulu 1990, is repealed:

["~~**Sec. 2-1.2 Annual energy evaluation.**~~

~~Within 60 days following the end of each fiscal year, beginning with the fiscal year ending June 30, 2009, and each year thereafter, the mayor shall submit to the council a written report detailing the City's:~~

~~(1) Electricity, gasoline, diesel, and biodiesel consumption and costs during the previous fiscal year; and~~

~~(2) Progress in implementing energy conservation policies, programs, and projects.~~"]

SECTION 3. Chapter 2, Article ___, Revised Ordinances of Honolulu 1990 ("Office of Climate Change, Sustainability and Resiliency"), as enacted by Ordinance 20-3, is repealed.

SECTION 4. Chapter 2, Revised Ordinances of Honolulu 1990 ("The Mayor and Executive Agencies – Additional Powers, Duties and Functions"), is amended by adding a new article to be appropriately designated by the Revisor of Ordinances and to read as follows:

"**Article __. Office of Climate Change, Sustainability and Resiliency**

Sec. 2-__.1 Definitions.

As used in this article, unless the context otherwise requires:

"Climate change adaptation" means the process of anticipating and adjusting to actual or expected climate change impacts and effects by taking appropriate actions to prevent or minimize the damage they cause and advantageously improve environmental and community conditions.