EAST HONOLULU
SUSTAINABLE COMMUNITIES PLAN

City and County of Honolulu | Department of Planning and Permitting | September 2020

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PREFACE AND EXECUTIVE SUMMARY

PREFACE

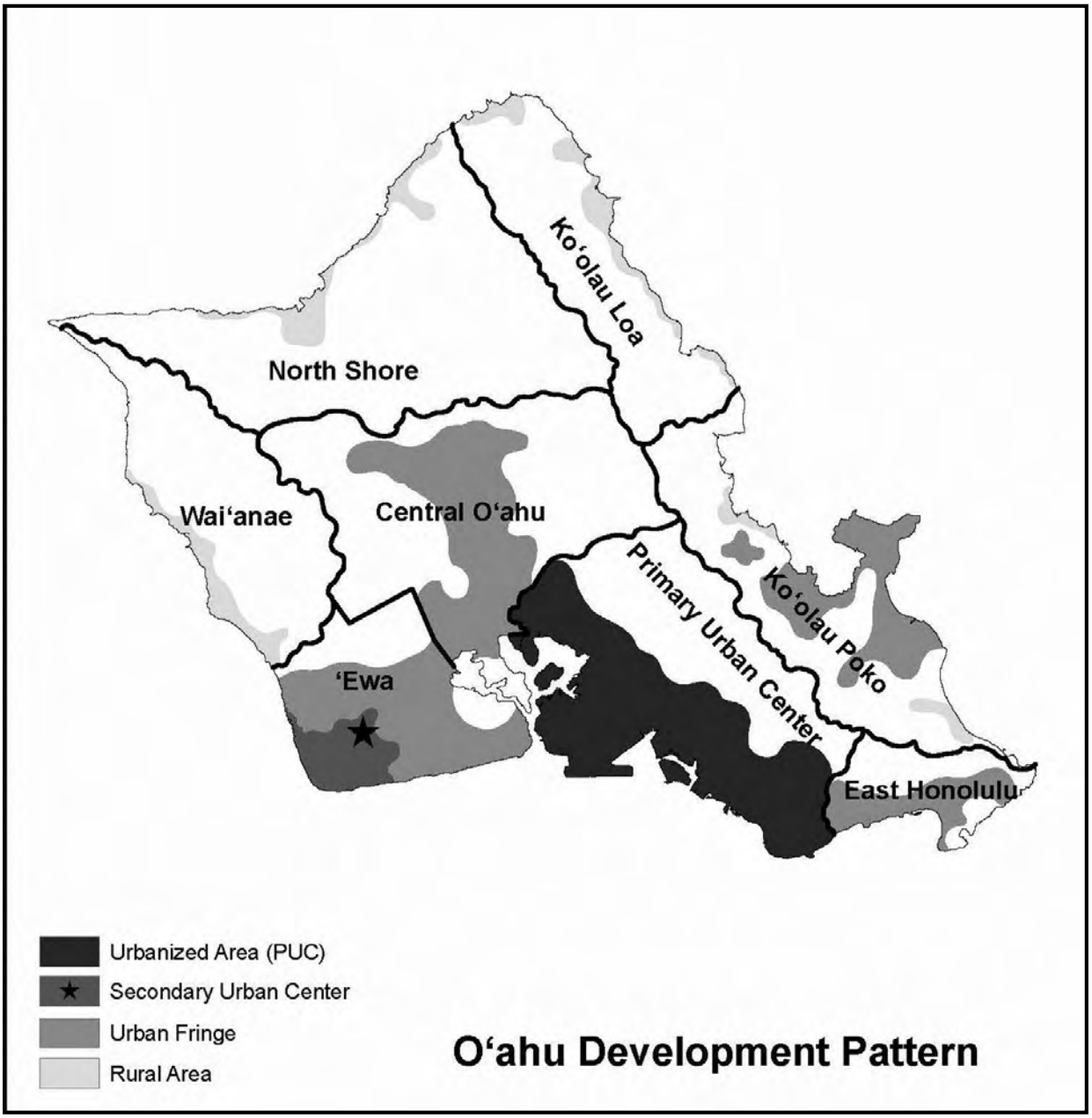
The **East Honolulu Sustainable Communities Plan** (the "**Plan**") has been prepared in accordance with the **City Charter** prescribed requirements for development plans and is to be accorded force and effect as such for all Charter and Ordinance-prescribed purposes. It is one of a set of eight community-oriented plans intended to help guide public policy, investment, and decision-making over the next 25 years. Each of the plans addresses one of eight geographic planning regions on O'ahu, responding to specific conditions and community values of each region. **Exhibit ES-1** on the following page illustrates these planning regions.

Of the eight documents, the plans for 'Ewa and the Primary Urban Center (PUC) are the areas to which the **General Plan** says population growth and development activity are to be directed over the next 25 years and beyond. The plans for these regions will continue to be titled "Development Plans" and will serve as the policy guides for the development decisions and actions required to support that growth.

Plans for the remaining six areas, including East Honolulu, which are envisioned as relatively stable regions for which public actions will focus on supporting existing populations, have been entitled "Sustainable Communities Plans" in order to properly indicate their intent.

The vision statement and implementing policies for the **Plan** are intended to sustain East Honolulu's character, lifestyle, and economic opportunities while stabilizing East Honolulu's share of O'ahu's population at approximately five percent, or 50,000 (in 2010, East Honolulu had 5.2 percent of O'ahu's population).

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



THE SUSTAINABLE COMMUNITIES PLAN REVIEW PROCESS

This **Plan** is a revision of the **Plan** adopted by the City Council in 1999. The 1999 **Plan** was the second of the eight plans revised in response to a 1992 **City Charter** amendment which changed the nature of the Development Plans from relatively detailed, parcel-specific plans to conceptual, visionary plans.

As required by the adopting ordinance, the **Plan** is to be reviewed starting ten years after adoption to assess if the **Plan** vision, land use and infrastructure policies and guidelines, and implementation methods are still appropriate and consistent with the **General Plan**.

This document is the culmination of a community-based planning effort led by the Department of Planning and Permitting (DPP) which involved public meetings and workshops, interviews, focus groups, and numerous meetings since 2005.

In its final form, the **Plan** incorporates and responds to comments received from the public. The DPP performed numerous outreach events with community leaders and organizations, business and labor representatives, landowners, developers, and public and private agency staff through a variety of formats including: public workshops, workgroup meetings, and presentations and meetings with trade groups, companies, and Non-Governmental Organizations (NGOs). The DPP also conducted phone interviews and in-person meetings with community leaders, researchers, and residents.

The **East Honolulu Sustainable Communities Plan Technical Report** (the "**Technical Report**") provides relatively detailed documentation of the review process, comments and suggestions received, and research on significant land use and infrastructure issues. The **Technical Report** also includes proposed revisions to the **Plan** and improvements to its implementation. Like this **Plan**, the **Technical Report** is available on the DPP website.

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 Sustainability 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 by Act 234 (2007). There was a mandate in 2015 that 100 percent of Hawai‘i’s energy generated by 2045 must come from renewable resources (Act 97). In 2016, the City and County conducted a review of its building codes to ensure that new structures would be able to meet the new challenges presented by climate change and sea level rise. In 2017, the Hawai‘i Climate Change Mitigation and Adaptation Commission published its findings and recommendations to the State Legislature in the **Sea Level Rise Vulnerability and Adaptation Report**.

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 Development Plans and Sustainable Communities Plans were first 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 it’s most substantive chapter deals with population, and hence land development distribution. **The General Plan** 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 reduce development pressures within the rural areas of O‘ahu by fully developing downtown Honolulu from Pearl City to Kāhala, by building O‘ahu’s Second

City in ‘Ewa, and by developing surrounding suburban “urban fringe” areas in ‘Ewa and Central O‘ahu. There has been substantial investment in roadways, schools, sewers, water systems, and other infrastructure to support this pattern of development.

The most recent projections show that O‘ahu will need 77,700 new housing units to meet expected population growth between 2010 and 2040. 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 the Primary Urban Center, ‘Ewa, or Central O‘ahu.

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, wastewater services, community resilience and hazard mitigation, 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 following principles of sustainability that are intended to promote the long-term health of the land and its people, and its community resources for current and future generations:

- Adopt the concept of ahupua‘a in land use and natural resource management;
- Protect lands designated for recreation, agriculture, physical and environmental resources, and where appropriate, open spaces and view planes;
- Use resources so they are not depleted, permanently damaged or destroyed;

- Plan, develop, and utilize construction technologies that minimize negative environmental impacts and promote restoration of natural processes;
- Adapt infrastructure and programs to be more accessible and age-friendly based on the recommendations in the Honolulu Age-Friendly City Action Plan;
- 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 cumulative effects such decisions will have on the land and community resources;
- Improve community resilience to natural and man-made hazards in accordance with the **O'ahu Resilience Strategy**;
- Balance economic prosperity, social and community well-being, and environmental stewardship; and
- Encourage greater collaboration across agencies and with the community to manage and protect resources.

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 of objectives, policies and guidelines, and regulations.

- 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 Sustainable Communities Plans, and each other.

In addition, the Development Plans and Sustainable Communities Plans are supplemented by two planning mechanisms:

- Functional plans, like the **O'ahu Regional Transportation Plan** or the **O'ahu Water Management Plan**, or City departmental plans, which are required by **City Charter** for solid waste or parks and recreation, 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** give specific guidance for neighborhoods, communities or specialized resource areas. There are currently no **Special Area Plans** in East Honolulu.

AUTHORITY OF THE DEVELOPMENT AND SUSTAINABLE COMMUNITIES PLANS

The authority of the Development Plans and Sustainable Communities Plans is derived from the **City Charter**, which mandates preparation of a **General Plan**, Development Plans, and Sustainable Communities Plans to guide the development and improvement of the City. The **City Charter** states the purpose of these plans are:

> "to recognize and anticipate the major problems and opportunities concerning the social, economic and environmental needs and future development of the city and to set forth a desired direction and patterns of future growth and development." (Section 6-1507)

Together, Development Plans and Sustainable Communities Plans provide policies to guide land use and budgetary actions of the City and to evaluate progress toward the goals and objectives put forth in the **General Plan**.

The **City Charter** provides that "public improvement projects and subdivision and zoning ordinances should be consistent with the development plan for that area." Although the Development Plans and Sustainable Communities Plans are not themselves regulatory, they provide guidance that decision makers and administrators should follow, in approving project development and in revising rules and regulations and standard policies. The plans are policy tools and are to be used, in conjunction with the programs and budgets of the City, to accomplish the objectives of the City as guides for decisions.

Consistent with the **City Charter**'s description of Development Plans and Sustainable Communities Plans conceptual schemes and policy guides, the language, maps, and illustrations of the plans shall serve as a policy guide for regulations which will implement the plans.

The Development Plans and Sustainable Communities Plans are also intended to aid decisions made in the public and 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 **City Charter** amendments established that the purpose of the Development Plans and Sustainable Community Plans are to be conceptual plans whose purposes are 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: East Honolulu's Role in O'ahu's Development Pattern defines the region's role and identity within the overall framework of islandwide planning and land use management;
- Chapter 2: The Vision for East Honolulu's Future summarizes the community-based vision for the future of the region, 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 East Honolulu described in Chapter 2;
- Chapter 4: Public Facilities and Infrastructure Policies and Guidelines provides the infrastructure policies needed to implement the vision for East Honolulu described in Chapter 2 and Chapter 3;
- Chapter 5: Implementation identifies the means through which the policies will be applied, including zone changes, and infrastructure budgeting and development outlined by the Plan; and
- Appendix A includes:
    - Three conceptual maps (Open Space, Urban Land Use, and Public Facilities) which illustrate the vision and policies of the Plan; and
    - A glossary of terms used in the **Plan** and on those maps.

The following summary provides an overview of the vision, land use and infrastructure policies of the **Plan** and the means of implementation.

EAST HONOLULU'S ROLE IN O'AHU'S DEVELOPMENT PATTERN

- Limited development and population growth so that East Honolulu's share of O'ahu's population remains stable at approximately five percent, or 50,000;

- Maintenance as a predominantly residential area characterized by generally low-rise, low-density development; and,
- Moderate growth of business centers, retail and service commercial uses, and satellite institutional and public uses geared to serving the needs of households.

THE VISION TO 2040

East Honolulu is a safe, clean community with unique landscapes and natural and cultural resources. Each residential neighborhood has its own special quality and sense of place. The suburban development patterns of the 20th century have been modified to provide for more walkable streets and local convenience stores. There is a full range of commercial, medical and legal services to meet the needs of the elderly community members. Agricultural areas have been preserved and are producing food for the East Honolulu community. Community organizations partner with government agencies and develop plans and strategies to adapt and respond to the challenges of climate change, sea level rise, flooding, severe coastal storms, inundation of coastal areas and Kalaniana‘ole Highway, and wildfires. Best management practices have been implemented to retain stormwater runoff, replenish valuable ground water reserves and improve the quality of nearshore ocean waters.

- Population remains stable at approximately 50,000 through 2035 and 2040;
- An estimated 24 percent of O‘ahu residents will be 65 years and older by 2040 with approximately 37 percent of East Honolulu residents that will be 65 years and older, the highest on O‘ahu; and,
- Job stabilization and slight growth from 10,240 civilian jobs in 2010 to 10,400 jobs.

ELEMENTS OF THE VISION

- Protect Community Resources by:
  - Protecting scenic views, particularly the Kaiwi Scenic Shoreline;
  - Providing and improving access to shoreline and mountain recreational areas;
  - Creating more complete streets that are walkable, facilitate ease of use for pedestrians, cyclists, and other alternative mode uses that adhere to the following key principles:
    - Safety;
    - Context sensitive solutions;
    - Accessibility and mobility for all;
    - Use and comfort of all users;
    - Consistency of design;
    - Energy efficiency;
    - Health; and
    - Green infrastructure.
  - Promoting stewardship of natural and cultural resources;
  - Implementing the goals and actions of the **O‘ahu Resilience Strategy**.
  - Preserving significant historic, cultural, and archaeological features;
  - Protecting and preserving existing agricultural areas; and
  - Containing all urban development within the existing Community Growth Boundary.
- Adapt to Changing Community Needs by:
  - Improving and replacing the region's aging infrastructure, as needed;
  - Preparing the community and infrastructure for anticipated impacts from natural disasters and climate change by providing community-based training, and creating or strengthening existing shelters capable of withstanding Category 3 hurricanes;
  - Adapting the housing supply, public spaces, and street orientation to meet the expected aging of the population; and

- Focusing commercial centers on serving the region's neighborhoods.

IMPLEMENTING POLICIES AND GUIDELINES

Chapter 5 discusses the various measures that support implementation of this **Plan**, including the regulatory mechanisms, physical improvements, and other actions that are needed to realize the **Plan**'s vision. **Section 5.7** presents an Implementation Matrix to help organize and facilitate plan implementation. The Implementation Matrix, which is based on the policies and guidelines presented in Chapters 3 and 4, identifies the specific actions, corresponding plans and/or codes, and public and private entities responsible for implementation.

Land use development policies and implementing guidelines are provided for:

- Open space preservation, natural resources, and scenic views;
- Recreational access to shoreline and mountain areas;
- Island-based and community-based parks and recreation;
- Historic and cultural resources;
- Residential communities and commercial redevelopment; and
- Disaster Preparedness.

Infrastructure policies and implementing guidelines are provided for:

- Transportation systems;
- Water allocation and systems development;
- Wastewater treatment;
- Electrical and communications systems;
- Solid waste handling and disposal;
- Drainage systems;
- School facilities; and

- Civic and public safety facilities.

The means for implementing the **Plan** are provided 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, as needed;
- 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; and
- Conducting a periodic evaluative review of the **Plan** vision, policies and implementation.

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1. EAST HONOLULU'S ROLE IN O'AHU'S DEVELOPMENT PATTERN

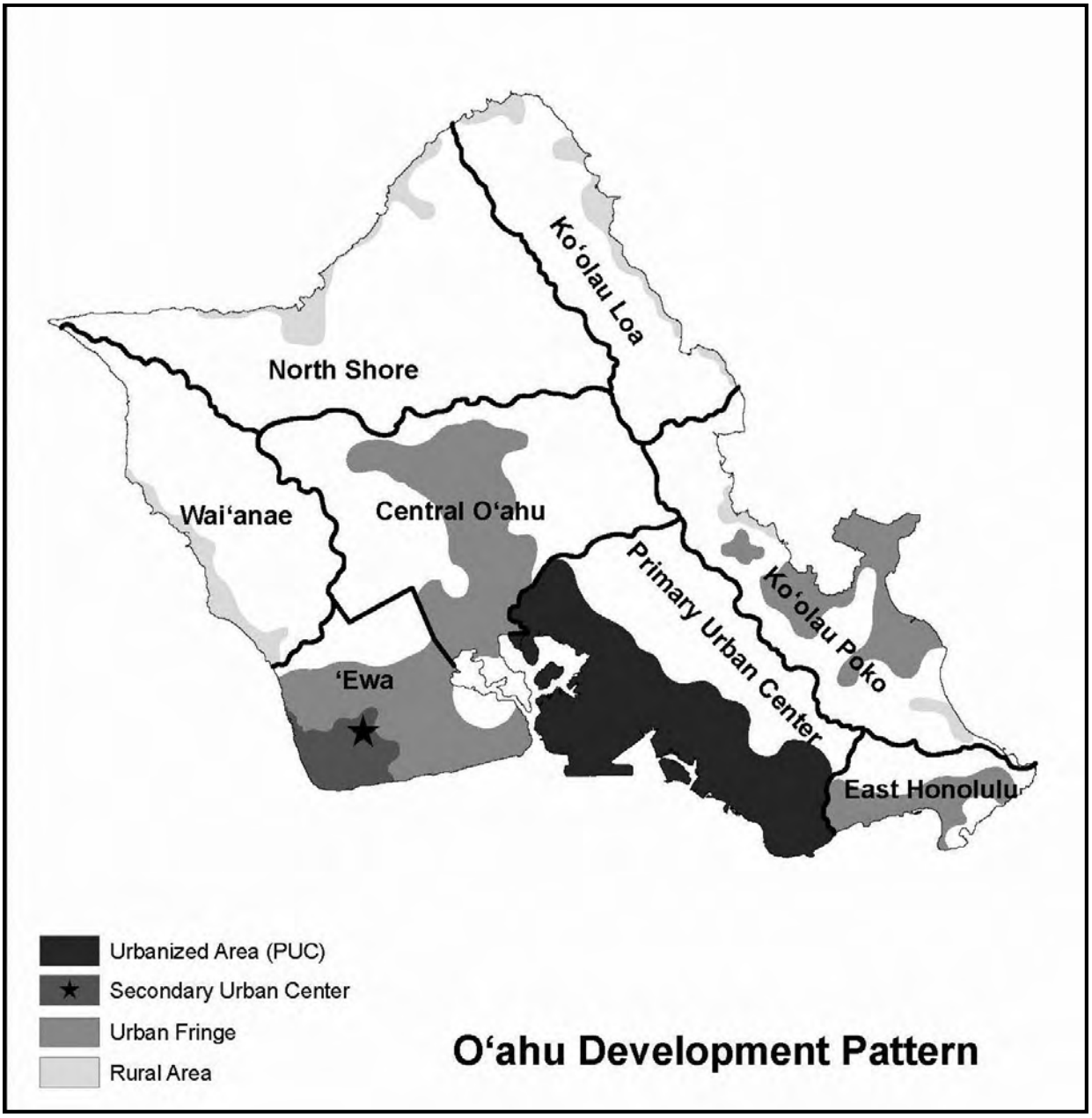
The East Honolulu region spans from Makapu'u Point in the east to Wai'alae Nui stream and gulch in the west and is further defined by the peaks of the Ko'olau Range, the shoreline, and Maunalua Bay. The **General Plan** of the City and County of Honolulu designates the **East Honolulu Sustainable Communities Plan** (the "**Plan**") area, shown in **Exhibit 1-1**, as an urban fringe area which is to remain predominantly residential communities characterized by generally low-rise, low-density development. **General Plan** policies call for sustaining those development and environmental characteristics which make East Honolulu a desirable place to live, and maintaining East Honolulu's existing population at around 50,000, which is within the **General Plan**'s allotment of five percent of O'ahu's projected population in 2040.

The present land use pattern and suburban character of East Honolulu began to take shape with the inauguration of the master planned community of Hawai'i Kai in 1961. Prior to that time, most of the region was regarded as too far removed from Honolulu to be suitable for large-scale residential development.

Building on the momentum that development in Hawai'i Kai was creating in the 1960s and 1970s, residential development spread quickly to the valleys of Kamilo Iki and Kalama and to Mariners Ridge. With the development of newer communities at Kamehame Ridge, Hawai'i Loa Ridge, and portions of Wai'alae Iki, most of the ridges and valleys in East Honolulu from Kāhala to Kalama Valley have been developed for residential use.

In the past three decades, however, the rate of urban growth in East Honolulu has slowed as the availability of suitable development sites has diminished.

Exhibit 1-1: Development Plan and Sustainable Communities Plan Areas for O‘ahu



This update reaffirms East Honolulu's role in O'ahu's development pattern as intended in the **General Plan** policies by establishing the following guidelines for future land use and development in the **Plan**:

- Limit the potential for substantial new housing in the region so that significant residential growth is directed instead to the Primary Urban Center, the 'Ewa Development Plan area, and the Central O'ahu Sustainable Communities Plan area;
- Revitalize existing commercial centers while limiting the expansion of commercial and other economic activities in the region to promote the development and growth of employment in the Primary Urban Center, Central O'ahu, and 'Ewa while reorienting existing commercial centers to better serve their neighborhood community needs;
- Maintain the predominantly low-rise, low-density form of residential development in the neighborhoods;
- Redesign and repurpose infrastructure and programs to become a more age-friendly community with a focus on senior housing and complete streets;
- Avoid flood damage, slippage and other problems associated with development of steep slopes and sites with expansive soils;
- Create resilient, disaster-ready communities that are strategically and physically prepared for disasters and environmental stressors;
    - Improve evacuation area designations and procedures;
    - Increase cooperation with neighborhood emergency preparedness groups;
    - Create a City-community liaison to leverage non-profit and volunteer assets;
    - Seek to harden emergency shelters to be capable to minimally withstand winds from a Category 3 hurricane;
- Address, minimize risks from, and adapt to the impacts of climate change and sea level rise;

  - Integrate climate change adaptation into the planning, design, and construction of all significant improvements to and development of the built environment;
  - Prepare for the anticipated impacts of sea level rise on existing communities and facilities through remediation, adaptation, and other measures;
- Utilize the design capacity of Kalaniana‘ole Highway, the region’s key component of transportation, as a means to manage urban growth;
- Preserve scenic views of ridges, upper valley slopes, and shoreline areas along Kalaniana‘ole Highway, popular hiking trails, and the Kaiwi Scenic Shoreline;
- Promote access to mountain and shoreline resources for recreational purposes and traditional hunting, fishing, gathering, hiking, religious, and cultural practices; and
- Adopt and implement the ahupua‘a concept to improve downstream water quality through improved upland management and the implementation of low-impact development (LID) standards when properties or infrastructure are redeveloped.

2. THE VISION FOR EAST HONOLULU'S FUTURE

This chapter presents the vision for East Honolulu's future, discusses the key elements of the vision, and presents illustrative maps and tables.

This vision for East Honolulu has two horizons. The first horizon extends from the present to the year 2040. The 2040 horizon is used to project likely socio-economic change in East Honolulu and to assess the infrastructure and public facility needs that will have to be met over that period. The second horizon is used for the purposes of illustrating long-term, gradual trends and extends to 2050 and beyond.

2.1 VISION STATEMENT

East Honolulu is a safe, clean community with unique landscapes and natural and cultural resources. Each residential neighborhood has its own special quality and sense of place. The suburban development patterns of the 20th century have been modified to provide for more walkable streets and local convenience stores. There is a full range of commercial, medical and legal services to meet the needs of the elderly community members. Agricultural areas have been preserved and are producing food for the East Honolulu community. Community organizations partner with government agencies and develop plans and strategies to adapt and respond to the challenges of climate change, sea level rise, flooding, severe coastal storms, inundation of coastal areas and Kalaniana'ole Highway, and wildfires. Best management practices have been implemented to retain stormwater runoff, replenish valuable ground water reserves and improve the quality of nearshore ocean waters.

The Vision to 2040 – Through 2035 and 2040, East Honolulu is projected to experience population stabilization. According to projections by the Department of Planning and Permitting (DPP), East Honolulu's population is expected to remain stable at approximately 50,000, or roughly five percent of O'ahu's total population, which is consistent with the **General Plan**. The region is expected to experience a growing elderly population and an associated decrease in average household size.

Due to the expected population stabilization, there is not anticipated to be significant demand for additional commercial development or major investments in infrastructure and public facility capacity in East Honolulu. As a consequence, job growth in East Honolulu is expected to be minimal, remaining close to 2010 levels at approximately 10,400 jobs.

To forestall anticipated impacts of climate change, East Honolulu must begin taking active steps to improve resiliency to hurricanes, coastal and inland erosion, inundation, and flooding.

Beyond 2040 – There will be little residential development capacity available in East Honolulu beyond 2040. Capacity will be limited to infill and redevelopment opportunities. After 2040, the impacts of climate change will become more evident, requiring East Honolulu to actively manage adaptation and improve resiliency to hurricane winds, coastal and inland erosion, inundation, flooding, and impacts to watersheds.

As discussed below, the vision for East Honolulu focuses on the long-term protection of community resources and adapting to changing community needs.

2.1.1 PROTECT COMMUNITY RESOURCES

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

- **Protect natural and Scenic Resources –** Significant scenic views of ridges, upper valley slopes, and shoreline areas along Kalaniana‘ole Highway, popular hiking trails, and the Kaiwi Scenic Shoreline, mauka to makai, are protected from residential and commercial development and degradation by vehicle operations. Furthermore, access to shoreline areas and mountainous regions are improved and provided for all to use responsibly. Urban uses are contained within the Community Growth Boundary protecting agricultural lands in Hawai‘i Kai, undeveloped ridges and valley walls throughout East Honolulu, and important wildlife habitat

areas. Key open space areas within the Community Growth Boundary are retained to provide active and passive recreation and community gathering places. Maunalua Bay continues to serve as one of East Honolulu's primary viewsheds, recreational assets, and important habitats for various native aquatic species.

- **Preserve Cultural and Historical Resources** – Visual landmarks and significant views are retained, and significant historic, cultural, and archaeological features from East Honolulu's past are preserved.

2.1.2 ADAPT TO CHANGING COMMUNITY NEEDS

The Plan provides a vision for the gradual physical transformation of East Honolulu to address changing demographics and aging of housing stock and infrastructure.

- **Address Changing Demographics –** Different housing types and services are developed to meet the needs of East Honolulu's growing elderly population, "empty nesters" who want to move out of single-family dwellings, and younger families who want to move into these dwellings. In addition, need to provide for the increasing number of "multi-generation" households, as well as smaller, more affordable housing types, such as accessory dwelling units (ADUs) is being addressed.
- **Address Aging Housing and Infrastructure –** The region's housing stock and infrastructure systems are aging. Incrementally, existing structures and facilities are modified, expanded, or replaced due to obsolescence. As changes are made, new structures and facilities are designed to adapt to and mitigate the impacts of climate change. New structures and facilities are also designed to respond to the needs for ecological restoration through low-impact development standards, increased energy efficiency, and potable water conservation.

2.2 KEY ELEMENTS OF THE VISION

The vision for East Honolulu's future will be implemented through the following key elements:

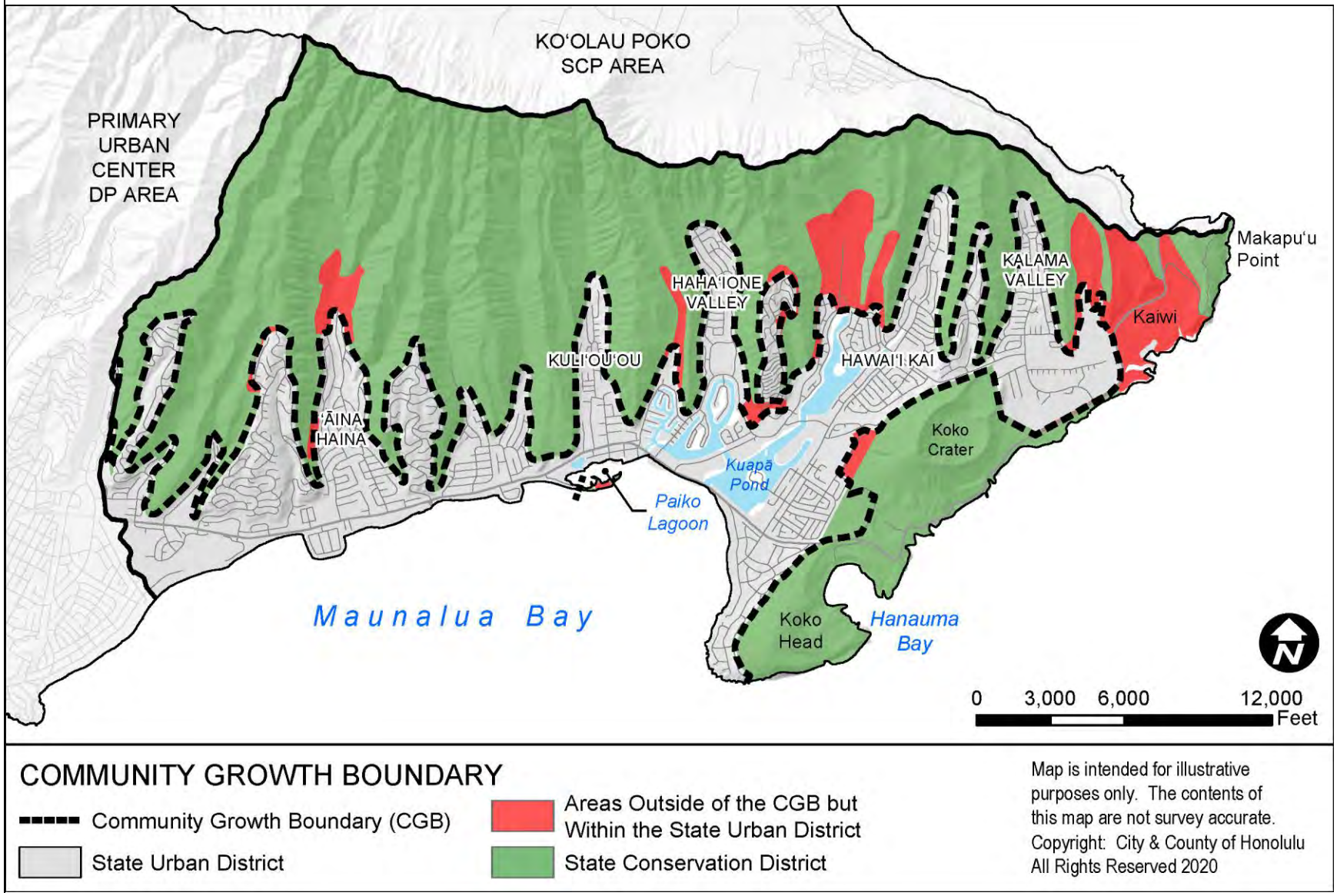
- 2.2.1 Community Growth Boundary, and Agricultural and Preservation Lands;
- 2.2.2 Adoption of the Concept of Ahupuaʻa in Land Use and Natural Resource Management;
- 2.2.3 Kaiwi Scenic Shoreline;
- 2.2.4 Ridge-and-Valley Neighborhoods;
- 2.2.5 Mauka-Makai Recreational Access;
- 2.2.6 Protection and Preservation of Natural Areas;
- 2.2.7 Housing Stability and Age-Friendly Communities;
- 2.2.8 Commercial Centers Refocused; and
- 2.2.9 Climate Change Adaptation.

2.2.1 COMMUNITY GROWTH BOUNDARY, AND AGRICULTURAL AND PRESERVATION LANDS

The Community Growth Boundary (previously Urban Community Boundary) was established to guide development and preserve open space and agricultural areas in East Honolulu. Lands outside the Community Growth Boundary are identified as either Agricultural Lands or Preservation Lands.

The Community Growth Boundary will remain fixed through the 2040 planning horizon and is intended to help guide future development, redevelopment, and resource management within existing zoning designations or future zoning designations. Other standards or guidelines may be developed in response to established entitlements, or in accordance with pertinent policy and guidelines described in this **Plan** (see **Exhibit 2-1** and conceptual maps in **Appendix A**).

Exhibit 2-1: Community Growth Boundary



Areas within the Community Growth Boundary characteristically include extensive tracts of residential or commercial development clearly distinguishable from undeveloped or more natural portions of the region's environment. The Community Growth Boundary may include areas designated park or preservation, or areas with development-related hazards such as steep slopes or unstable soils. These areas, while inside the boundary, will not be developed with uses unsuitable to their designations or in ways that may tend to exacerbate hazards.

The Community Growth Boundary is intended to confine most new development to infill sites that are within or adjacent to existing urbanized areas. A more compact form of development will result in relatively lower site development costs, more efficient utilization of existing urban infrastructure systems, and reduced reliance on the automobile by making transit ridership, walking, and bicycling more feasible and attractive as modes of travel.

The Community Growth Boundary is generally coterminous with the State Urban District boundary, but excludes the following areas of the State Urban District listed below and shown **in Exhibit 2-1.** These exclusions highlight the need for City planners and community members to guard against State decisions for its State Urban District that may negatively impact this and other Sustainable Communities Plans.

- ʻĀina Haina Nature Preserve;
- Areas committed to agricultural use by long-term leases (i.e., the farm lot subdivisions in Kamilo Nui Valley and adjacent to Kaiser High School);
- Undeveloped areas in Kamilo Nui Valley which are adjacent to existing agricultural uses but zoned as preservation;
- Large tracts of undeveloped lands at higher elevations that are prominently visible from the coastal highway or other public areas and are desirable natural scenic features;
- Mauka lands along the Kaiwi coast are zoned as preservation and located outside of the Community Growth Boundary to protect open space;
- Significant undeveloped Urban District land areas identified as suspect areas for land movement by the U.S. Geological Survey; and,
- Keawāwa Marsh and Wetlands.

The six main objectives of the Community Growth Boundary are to:

- **Avoid Development of Hazardous Areas –** Undeveloped lands on the fringes of urbanized areas which are characterized by steep slopes and/or unstable soils are placed outside the Community Growth Boundary to prevent potential property damage and threats to public safety. These physical constraints also increase site development costs, which are passed on to housing consumers.
- **Support General Plan Policy –** Consistent with **General Plan** policy Housing Objective B, Policy 1, which aims to encourage the State government to coordinate its urban-area designations with the developmental policies of the City and County, the Community Growth Boundary indicates an appropriate adjustment to the State Land Use Urban District boundary.
- **Support Agricultural Use –** Two areas in Hawai‘i Kai are placed outside the Community Growth Boundary to protect agricultural lots with long-term leases. Preventing the encroachment of suburban residential development supports active use of these lots for agricultural purposes.
- **Provide Sufficient Capacity for Projected Population Stability –** Excluding the amount of land reserved for parks and open space, there is sufficient capacity within the Community Growth Boundary to accommodate anticipated residential and commercial development to 2040 (see **Table 2-1**). About 300 new housing units can be identified as probable or possible within the Community Growth Boundary under existing zoning. This translates to a total potential population in East Honolulu consistent with the DPP’s projected population for 2035-2040 of about 50,000 residents to counteract shrinking household sizes.
- **Promote an Efficient Pattern of Urban Development –** The Community Growth Boundary confines most new development to infill sites that are adjacent to existing urbanized areas on relatively level terrain. A more compact form of development on the coastal plain will result in relatively lower site development costs, more efficient utilization of existing urban infrastructure systems, and reduced reliance on the automobile by making transit ridership, walking, and bicycling more feasible and attractive as modes of travel.

- **Protect Natural and Scenic Resources –** By confining the potential area for new urban development through the Community Growth Boundary, significant natural landscape features can be protected from physical changes that will permanently impair their scenic value. These scenic landscape elements include the ridges and valley walls that are visible from Kalaniana‘ole Highway, particularly in the area between Koko Head and Makapu‘u Head, and the unaltered shoreline (See **Exhibit 2-2**).

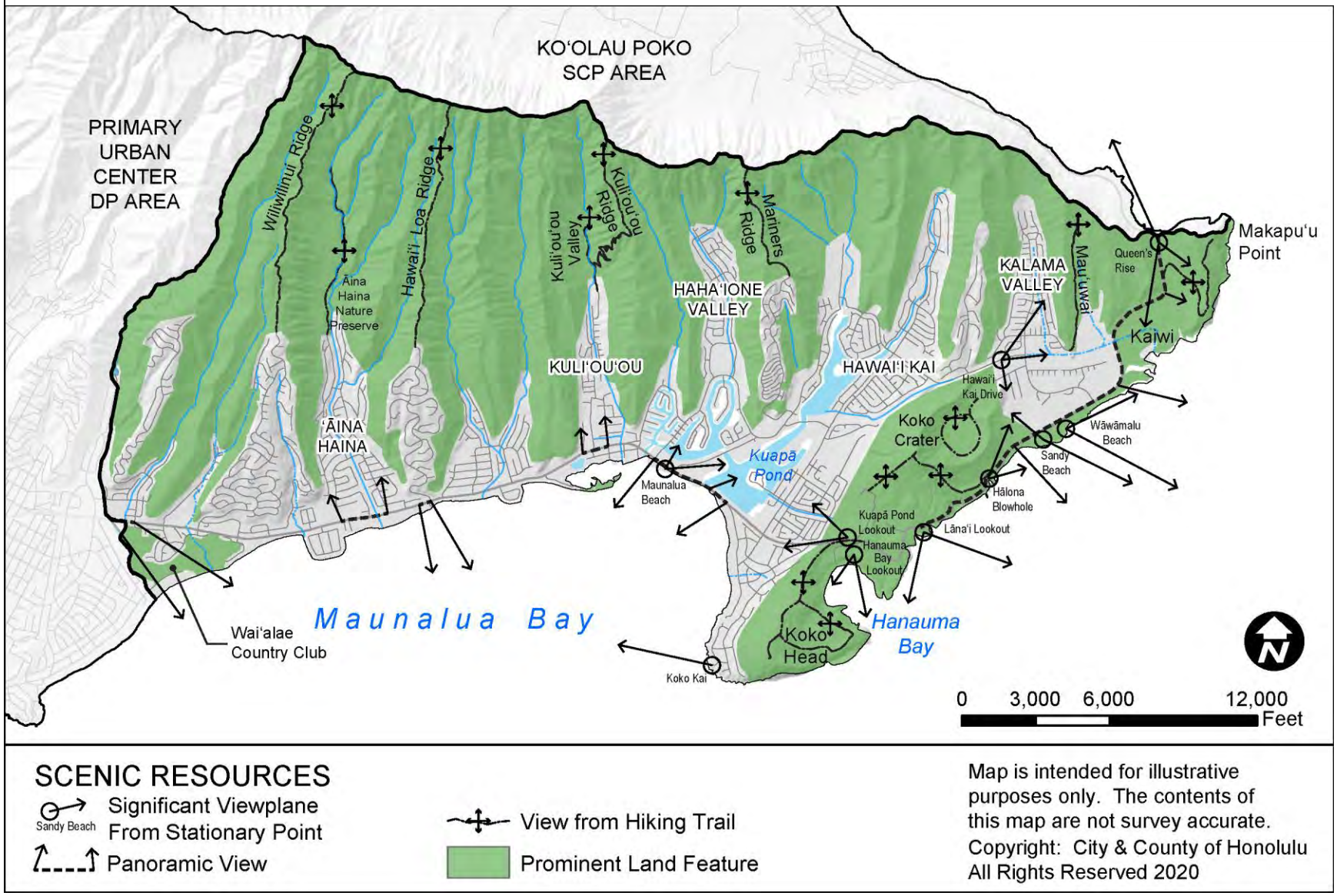
Table 2-1: Potential Housing within CGB on Lands Zoned for Residential Use

Project Areas	Probable Units[1]	Possible Units[2]	Description
Wai‘alae Nui	14		Ord. 96-69 limits site to 14 units
Wai‘alae Iki	9		Owner-build lots
‘Āina Haina	10		Upper ‘Āina Haina lots (2); lower ‘Āina Haina (8)
Hawai‘i Loa Ridge	26		Owner-build lots
Niu Valley		30	3 large adjacent lots with 6 existing units
Kuli‘ou‘ou		8	Large vacant lot
Kamilo Iki Valley		16	Large vacant lot
Hawai‘i Kai	28		Remaining units from Ord. 99-54 & Ord. 00-70
Nā Pali Hāweo (Kamehame)	16		Owner-build lots
Lower Kalama Valley	21		2015/CL-5 (14) & 499 Kealahou (7)
Infill Vacant Lots	50		Vacant standard-size lots within the Plan area
‘Ohana or ADU units	50		Assumes 2-3 units per year from 2020-2040
Total	**224**	**54**	
Cumulative Total	**278 units**		

[1] Includes unbuilt units with approved building permits, units approved as part of a larger development or cluster project, vacant standard-size lots within approved subdivisions, and ‘Ohana/ADU units at 2-3 per year.

[2] Estimates based on lot size built to underlying zoning density after accounting for steep lands and clustering of units.

Exhibit 2-2: Scenic Resources



2.2.1.1 Agricultural Lands

Agricultural lands are identified to protect the region's economic and open space values. The primary use of all lands designated as agriculture is that they should be open, agriculture uses, or uses directly supportive of the agriculture industry.

Two areas in Hawai'i Kai are identified as agricultural lands: the farm lots in Kamilo Nui Valley and lands adjacent to Kaiser High School. See **Appendix A-2**. Both agricultural areas are in active use and have long-term leases. In addition, undeveloped areas in Kamilo Nui Valley that are adjacent to existing agricultural uses are placed within the Agriculture Lands. Preventing the encroachment of urban fringe residential development within the existing agricultural uses supports active use of these lots for agricultural purposes while preventing adverse impacts associated with residential development including an increase in stormwater, sediment, and toxic pollutant runoff from the addition of impermeable surfaces.

2.2.1.2 Preservation Lands

Preservation lands are identified to protect undeveloped lands which form an important part of the region's open space fabric but that are not valued primarily for agricultural uses. Such lands include important native (i.e., indigenous and endemic) Hawaiian plant, invertebrate and wildlife habitat, archaeological or historic sites, significant landforms or landscapes over which significant views are visible, recreational areas, agricultural areas, areas important to the health of the watershed, and areas hazardous to potential development.

Preservation lands generally include undeveloped lands that:

- Are necessary for protection of watersheds, water resources, and water supplies;
- Are necessary for the conservation, preservation, and enhancement of sites with scenic, recreational, historic, cultural, archaeological, or ecological significance;

- Are necessary for providing and preserving parklands, wilderness, and beach reserves, and for conserving natural ecosystems of indigenous and endemic plants, invertebrates, fish and wildlife, for forestry, and other activities related to these uses;
- Are located at an elevation below the maximum inland line of the zone of wave action, and marine waters, fishponds, and tide pools unless otherwise designated;
- Are generally characterized by topography, soils, climate or other related environmental factors that may not be normally adaptable or presently needed for urban or agriculture use;
- Have general slopes of 20 percent or more and which provide for open space amenities and/or scenic values;
- Are susceptible to floods and soil erosion, are undergoing major erosion damage and requiring corrective attention, or are necessary to the protection of the health, safety and welfare of the public by reason of soil instability or the land's susceptibility to landslides and/or inundation by tsunami and flooding;
- Are used for State parks outside the Community Growth Boundary or City parks within the Community Growth Boundary;
- Are suitable for growing commercial timber, grazing, hunting, and recreation uses, including facilities accessory to such uses when such facilities are compatible with the natural and physical environment;
- Lands that have historical significance. Preserve and enhance significant historic and pre-historic features including Native Hawaiian cultural and archaeological sites especially:
    - ‘Ihi‘ihilauākea Preserve;
    - Makani ‘olu Shelter;
    - Hāwea Heiau Complex; and
    - Pāhu‘a Heiau.
- Retain visual landmarks and significant vistas including:
    - The Kaiwi coast;

- Views of Maunalua Bay and other shoreline areas from Kalaniana‘ole Highway; and
- Views from ridge, valley, and shoreline hiking trails.

- Limit building heights to low-rise and mid-rise structures to protect panoramic views and the existing character of the built environment; and,
- Limit vehicle operations which could cause degradation to the dunes, vegetation, and beach at Wāwāmalu Beach.

2.2.2 AHUPUA‘A IN LAND USE AND NATURAL RESOURCE MANAGEMENT

Prior to Western contact, Hawaiians managed the environment and organized their society through a land division system known as ahupua’a. Ahupua’a boundaries are similar to those of watersheds. Pukui and Elbert provide the following definition of ahupua‘a:

> *Land division usually extending from the uplands to the sea, so called because the boundary was marked by a heap (ahu) of stones surmounted by an image of a pig (pua‘a).*[1]

The ahupua‘a has also been described as follows:

> *A principle very largely obtaining in these divisions of territory was that a land should run from the sea to the mountains, thus affording to the chief and his people a fishery residence at the warm seaside, together with the products of the high lands, such as fuel, canoe timber, mountain birds, and the right of way to the same, and all the varied products of the intermediate land as might be suitable to the soil and climate of the different altitudes from sea soil to mountainside or top.*[2]

The ahupua‘a system recognizes the interconnected relationship between land-based and marine-based natural resources, focusing on streams as the connecting element

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[1] Pukui, M.K. and Elbert, S.H. **Hawaiian Dictionary**, 1986.
[2] Ibid.

between ridge and reef, especially in an island environment. The ahupuaʻa concept is still a useful concept for managing the natural environment and fostering desirable community development, adapted to the context of today's community needs and technology. It also serves as a logical foundation for sub-planning areas.

East Honolulu contains and is comprised of two larger ahupuaʻa: the Waimānalo Ahupuaʻa, spanning from Waimānalo to Kuliʻouʻou in the moku of Koʻolau Poko, and the Waikīkī Ahupuaʻa, spanning from Niu to Mānoa and Ala Moana in the moku of Kona.

East Honolulu previously contained several fishponds including Wailupe, Kānewai, and Kuapā Pond, one of the largest inland fishponds in Hawaiʻi. In addition to aquaculture, these fishponds, surrounding wetlands, and upland land management assisted in controlling the distribution of stormwater, sediment, and toxic pollutant runoff into Maunalua Bay. These fishponds have since been filled in, degraded, or developed for other use.

The filling of wetlands and fishponds has been restricted for decades. Regulatory and management practices have been improved to promote more effective maintenance of these resources and deter land-based activities which contribute to their degradation. In addition, wetlands to detain and retain stormwater have been protected to increase infiltration and reduce polluted runoff into streams, estuaries and nearshore waters.

As applied to East Honolulu's drainage system, the ahupuaʻa management concept involves the retention of natural stream beds and, as feasible, partial or full restoration of drainage ways that have been altered by concrete-lined channels. A streamside management zone or buffer area along natural streambeds defines where uses or activities are controlled or modified to protect water quality and aquatic resources and reefs. Revised or new public works standards have allowed the dedication of passive stormwater drainage systems and minimal channel modifications to provide flood protection for the redevelopment of properties.

Adapting and implementing the ahupuaʻa concept requires significant cooperation and integration of efforts among the various government agencies whose jurisdictions

encompass all or part of each ahupuaʻa, community organizations, large landowners, and those looking to redevelop.

2.2.3 KAIWI SCENIC SHORELINE

The rugged coastal lands of the Kaiwi coast, also known as the Maunalua-Makapuʻu State Scenic Byway, are composed of the areas between Koko Head and Makapuʻu Head. The Kaiwi coastline is among Oʻahu's most unique and spectacular scenic resources, offering mauka and makai views from many vantage points (see **Exhibit 2-2**, above). Protection of the scenic value of the Kaiwi viewshed has island wide importance because of its attraction to both residents and visitors. Preserving Oʻahu's open space resources is critical to the economy since tourism is a base industry.

Nowhere else on the island, with the exception of the Kaʻena coastline, are there elements of a natural environment in one large, contiguous area of undeveloped open space. Unlike Kaʻena, however, the Kaiwi coast is easily accessible by vehicle. While easy access benefits the public's recreational needs, it can also contribute to degradation of the area's historic, cultural, or ecological resources. Overuse, misuse, and potential urban encroachment, particularly in the Queen's Beach vicinity, are pressures that threaten the integrity of this coastal area.

Historic, cultural, ecological, and recreational resources of the Kaiwi region should be protected and enhanced. The publicly owned Koko Head Regional Park, which includes Hanauma Bay Nature Preserve and Sandy Beach Park, should continue to provide world-class educational and recreational opportunities for residents and visitors alike. At the same time the value of historic, cultural, and ecological resources are protected from overuse. Visual resources of the Queen's Beach and Queen's Rise sections should be protected as part of the Kaiwi coast despite being located within the State Urban District. This area also provides critical habitat, as designated by the U.S. Fish and Wildlife Service, for at least six endangered native or endemic plants, and potentially habitat for the endangered native yellow-faced bee, which is managed by the State Department of Land and Natural Resources (DLNR).

2.2.4 RIDGE-AND-VALLEY NEIGHBORHOODS

East Honolulu's residential communities, and their geographic extent, are physically defined by the topography of the region. A series of ridges and valleys serve as natural boundaries separating one community from the next. The first areas to develop, in approximate order, were the coastal plains of Waiʻalae, the Wailupe coastal plains and flatter valley floors (now known as ʻĀina Haina), Kuliʻouʻou, and Niu. Over time, further subdivision into smaller lots, infill lot developments, and home expansions have intensified the use of these areas. Also, development has extended deeper into the valleys and up the lower slopes of valley walls.

Residential development of hillsides and descending ridges generally followed the development of the coastal plain and valleys. Most of the residential zoned areas of these hillsides have been fully developed, but there is some vacant land which is zoned residential remaining in upper and side slope fringes. Hawaiʻi Kai, located in the eastern portion of the region, is a large, mixed-use master-planned community containing a broad mix of housing types. It was inaugurated on a grand scale in the 1960s with the dredging of the coastal wetland for a marina, housing subdivisions, and apartment complexes. The master plan encompassed several geographic sub-areas: the Marina, Hahaʻione Valley, Mariners Ridge, Kamilo Nui Valley, Kamilo Iki Valley, Kamehame Ridge, Kalama Valley, and Queen's Beach. Most of these areas have been fully developed except for Queen's Beach, which is zoned preservation but is still within the State Urban District.

Kalanianaʻole Highway is the primary linkage between these hillside and valley neighborhoods. It is a major route for joggers and bicyclists, as well as vehicles, and its attractively landscaped median helps to unify the image of East Honolulu as a distinct region.

With most of Oʻahu's future population growth being directed to the Primary Urban Center, ʻEwa and Central Oʻahu regions, no major developments are expected in East Honolulu. New construction that will occur in East Honolulu should be on infill properties within existing built-up areas rather than spreading development onto steep

slopes, higher elevations, undeveloped mountain ridges and valley walls, or deeper recesses of the valleys.

The character of existing neighborhoods must not only be protected, but also enhanced through effective design of public and private infrastructure and other community facilities. East Honolulu's existing communities may need to adapt facilities and services to accommodate the changing composition of the region's population, particularly for the elderly (see **Section 2.2.7**).

2.2.5 MAUKA-MAKAI RECREATIONAL ACCESS

The Koʻolau Mountain Range provides a wealth of actual and potential recreational opportunities including, but not limited to, hiking, hunting, biking, bird watching, and camping opportunities. It is important that access to the shoreline and publicly owned trails be made as open as possible while balancing the potential ecological impacts of hikers. The State and communities, both open and gated, should collaborate to ensure that visitor parking and access to trails are provided to the public. If these agreements do not work, consideration should be given to purchasing or condemning land and easements.

Existing mauka-makai beach access and rights-of-way in East Honolulu should be maintained and new perpendicular and lateral shoreline access ways should be provided as the opportunities arise. Erosion and sea level rise are expected to continue to reduce lateral shoreline access, furthering the need for better mauka-makai access.

Along Portlock Road there are approximately 19 private shared driveways with access to the coastline occurring approximately every 200 feet. At least three public access points should be acquired along Portlock Road in order to meet the City's standard of public shoreline access at approximately one-quarter-mile intervals. Furthermore, access to the Kaiwi shoreline, which extends from Koko Head to Makapuʻu Head, should be improved as part of the Maunalua-Makapuʻu State Scenic Byway Corridor. Wāwāmalu Beach should be developed as a nature park with the addition of demarcated parking and installation of barriers to protect natural dunes, native vegetation, beach rock, and beach.

2.2.6 PROTECTION AND PRESERVATION OF NATURAL AREAS

Natural areas in East Honolulu include, but are not limited to, the following areas:

- Kānewai Spring and Fishpond
- Paikō Lagoon Wildlife Sanctuary
- ‘Ihi‘ihilauākea and Nono‘ula Preserves
- Kaiwi Scenic Shoreline
- Kaiwi Mauka Lands
- Wailupe Nature Preserve
- Keawāwa Marsh and Wetlands
- Kuli‘ou‘ou and Honolulu Watershed Forest Reserves
- Hanauma Bay Marine Life Conservation District
- Hanauma Bay Nature Preserve
- Maunalua Bay

These natural areas will be protected and preserved by providing proper management and security to protect endangered species habitat, and by monitoring and regulating uses to avoid overuse and misuse of resources. Access to these areas and the provision of facilities will be provided to the public insofar as to mitigate existing impacts or not adversely impact existing habitats these areas provide to endangered, indigenous, and endemic plants, animals, and invertebrates.

The policies in this **Plan** are intended to protect the aforementioned natural areas and supplement the zoning ordinance and State Land Use District through the **Plan**’s horizons. However, to protect the land from development in perpetuity, community leaders and organizations have partnered together, and with the City, to purchase either the title to the land or a conservation easement. Mauka lands near the Kaiwi Scenic Shoreline area and in the back of Wailupe Valley were purchased as a means to protect both areas’ rich recreational, scenic, and historic resources (see **Section 3.2.1.2**). Kānewai Spring was also purchased to protect and restore the culturally and ecologically important spring and fishpond. Other areas have been examined for purchase agreements including Paikō Ridge.

Community residents and organizations will continue to serve as stewards of natural areas and nearshore waters. Environmental and community organizations have a stewardship role in engaging the larger community, applying political pressure, fundraising for the purchase of lands for preservation, and routine beach cleanup events protecting Maunalua Bay from stormwater, sediment, and toxic pollutant runoff and invasive algae.

2.2.7 HOUSING STABILITY AND AGE-FRIENDLY COMMUNITIES

East Honolulu should remain a relatively stable residential area, with only modest growth in housing stock or changes in household characteristics. In 1990, the owner occupancy rate for East Honolulu was approximately 79 percent, compared to 49 percent for the island as a whole, and remained fairly constant up to 2000. Population in East Honolulu is projected to remain stable at around 50,000 until 2035 and 2040. See **Table 2-2**. With a minimal population change in East Honolulu, housing stability will not be affected by rapid growth and new developments.

Table 2-2: Population and Projections by Development Plan Area

DP Area	2000 Pop	2000 % Share	2010 Pop	2010 % Share	2035 Pop	2035 % Share	2040 Pop	2040 % Share
PUC	419,333	47.9%	435,118	45.6%	458,200	42.8%	467,100	43.0%
‘Ewa	68,696	7.8%	101,397	10.6%	173,800	16.2%	172,700	15.9%
Central O‘ahu	148,208	16.9%	168,643	17.7%	189,500	17.7%	192,400	17.7%
East Honolulu	**46,735**	**5.3%**	**49,914**	**5.2%**	**48,900**	**4.6%**	**50,000**	**4.6%**
Ko‘olau Poko	117,999	13.5%	115,164	12.1%	110,800	10.3%	113,300	10.4%
Ko‘olau Loa	14,546	1.7%	16,732	1.8%	18,000	1.7%	18,100	1.7%
North Shore	18,380	2.1%	17,720	1.9%	19,200	1.8%	19,600	1.8%
Wai‘anae	42,259	4.8%	48,519	5.1%	52,900	4.9%	53,600	4.9%
Population Total	**876,156**	**100%**	**953,207**	**100%**	**1,071,200**	**100%**	**1,086,700**	**100%**

The gradually changing composition of East Honolulu’s population, however, could have an impact on housing supply. O‘ahu, and East Honolulu, have a significant and growing percentage of elderly residents. However, the growth rate of East Honolulu’s elderly

population continues to outpace that of O‘ahu as a whole with an estimated 37 percent of East Honolulu’s population to be 65 and older in 2040. See **Table 2-3**.

Table 2-3: Percentage of Area Population 65 Years and Older

Area	1980[1]	1990[1]	2000[1]	2010[1]	2015[1]	2040
East Honolulu	9.3%	11.7%	18.2%	21.6%	23.5%	37%[2]
All O‘ahu	7.3%	10.9%	13.4%	14.5%	16.2%	23.7%[3]

Sources: [1] U.S. Census & ACS 5-Year Est., 2015. [2] DPP Projections, 2018. [3] DBEDT 2045 Series, 2017.

This aging trend, however, is not consistent throughout the region. In the region around Lunalilo Home Road and Kaiser High School, approximately 24.7 percent of the population is 65 years or older (Census Tract 1.12). In comparison, 14.2 percent of Kalama Valley residents are 65 years or older (Census Tract 1.10).

The trend for the aging population in East Honolulu and the island in general is expected to continue to accelerate through 2040 and beyond, indicating an increasing need for geriatric services, including long-term and care home services, alternative transportation modes, and alternative living accommodations for seniors such as retirement communities and group homes. East Honolulu will strive to create “an inclusive and accessible urban or suburban environment that encourages active and healthy aging” in accordance with the goals and visions from **Making Honolulu an Age-Friendly City: An Action Plan**.

These changing demographics may require different housing types and could result in changes to mature neighborhoods through the expansion of existing dwellings or the further addition of “‘ohana” units, or accessory dwelling units, on a long-term basis. Zoning, infrastructure, and other community guidelines will need to ensure that neighborhood character is not adversely altered by the incremental intensification of existing residential lots.

To meet the need for affordable housing for seniors, for those who are downsizing, for students and young families who are just starting out, and for others, residential uses should be allowed as a permitted use above the first floor of parcels zoned B-1

Neighborhood Business District or B-2 Community Business District. In most cases these areas are well-served by bus service, allowing the occupants to minimize use of personal automobiles and thereby increasing the affordability of such units.

2.2.8 REFOCUS COMMERCIAL CENTERS

East Honolulu's commercial areas should continue to be oriented primarily to the region's residential community. **General Plan** policy discourages major new employment growth in this region. Any significant retail and office expansion in this region would countervail the **General Plan** policy to direct job growth to the Primary Urban Center and Secondary Urban Center. Furthermore, given the small amount of population growth that is forecast for East Honolulu, there is expected to be only modest growth in the demand for commercial land uses to support the communities of the East Honolulu region.

The Hawai'i Kai Towne Center, with over 200,000 square feet of gross leasable area, is East Honolulu's largest retail complex and includes "big box" stores that cater to the community and attract shoppers from outside the region. It is expected to maintain its role as the region's major commercial center. Its present floor area could be increased to accommodate more retail establishments to fulfill future demand without any expansion of land area.

The smaller Koko Marina Shopping Center serves a dual market, containing specialty stores and services oriented to both local residents and tourists, particularly visitors to Hanauma Bay.

East Honolulu's five other retail complexes, those at the community and neighborhood scale, are spaced at somewhat even intervals between 'Āina Haina and Kalama Valley. The market areas of the 'Āina Haina, Niu Valley, Haha'ione Valley, Hawai'i Kai, and Kalama Valley shopping centers are limited mostly to the communities for which they are named, emphasizing food, household products, and personal services. None of these retail areas should require additional land area for expansion. The Kalama Village Center continues to be under-leased, primarily because it serves a very limited market area that is not expected to grow significantly. Consequently, the land presently

planned for expansion of this commercial center could be redesignated to serve as a residential or residential-mixed use project. In addition, to meet the need for affordable housing for seniors who are downsizing and for students and young families who are just starting out, residential uses above the first floor should be allowed as a permitted use.

2.2.9 CLIMATE CHANGE ADAPTATION

East Honolulu faces new and emerging challenges within both of the **Plan**'s horizons as a result of climate change. Some of these changes likely include: rising sea levels, increasing coastal erosion, storm surge flooding, salt water intrusion, a rising water table and groundwater inundation in low-lying areas, rainfall that may deviate from historical records including drought, and frequency and scale of flooding. To counter the increase in risk associated with these hazards, the communities of East Honolulu will mitigate and minimize the vulnerability of social and physical infrastructure while increasing community resiliency as outlined in the **O‘ahu Resilience Strategy**.

The City and County of Honolulu and the State are taking steps to mitigate and adapt to the impacts of climate change, sea level rise, and increased threat of hurricanes, higher intensity rainfall, and wildfires. The City and County of Honolulu participates in the State Building Code Council which establishes the State building code through the timely adoption of national building codes, including the International Building Code.

The State Office of Planning/Coastal Zone Management Program examined the building codes and development controls in effect for the City and County of Honolulu with the objective of developing a model ordinance for all the Hawai‘i counties to strengthen and/or replace existing standards and regulations in order to reduce existing and future building vulnerability to coastal hazards and climate impacts. The City will work cooperatively to develop and implement land use policies, hazard mitigation actions, and design and construction standards that mitigate and adapt to the impacts of climate change and sea level rise.

The State of Hawai‘i published the **Sea Level Rise Vulnerability and Adaptation Report** in December 2017. On June 5, 2018, the City Climate Change Commission

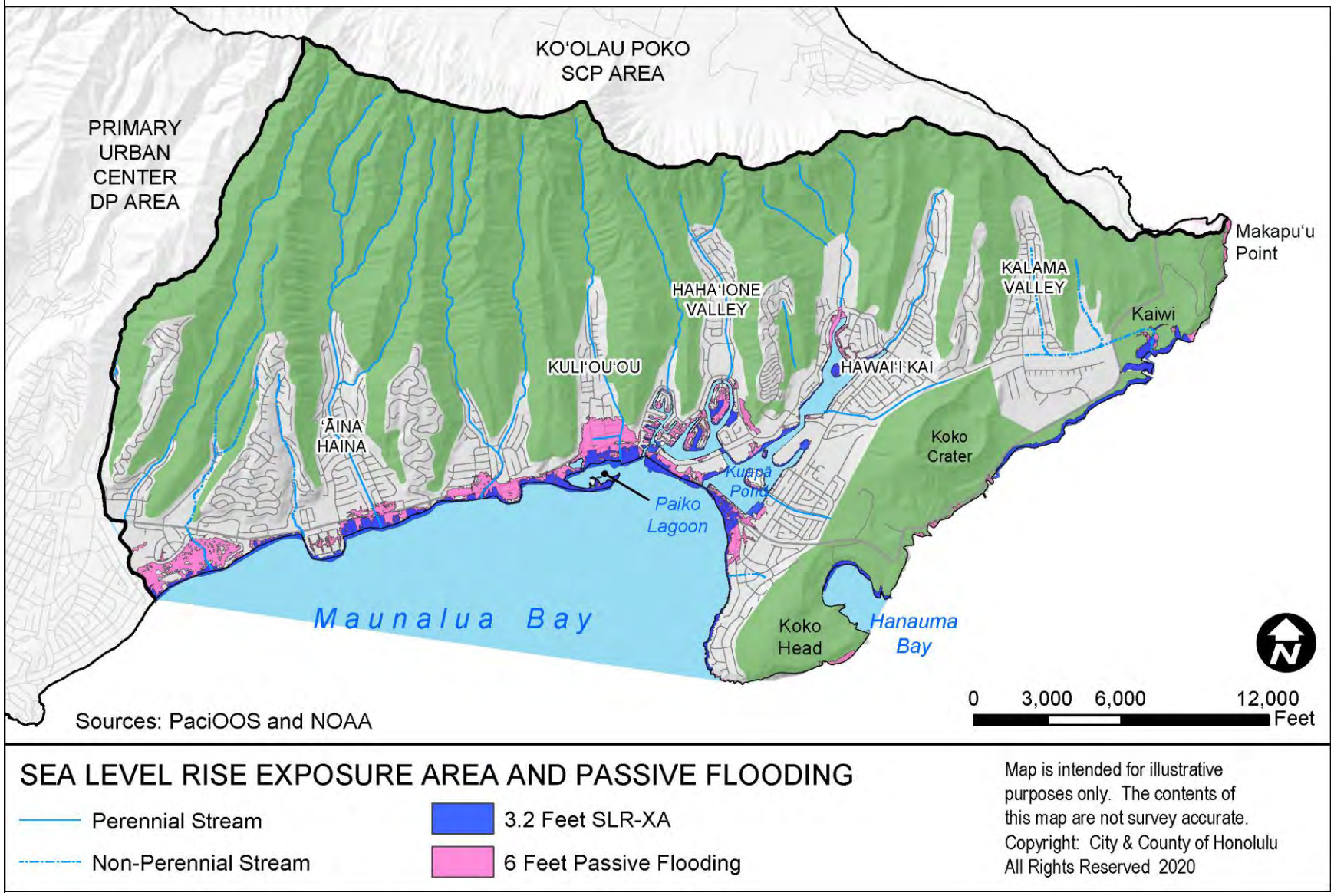
published **Sea Level Rise Guidance** and an accompanying **Climate Change Brief**. The Guidance was followed by Directive No. 18-2 in which the Mayor directed that all City departments and agencies are required to use the Guidance, Brief, and Report in their plans, program, and capital improvement decisions.

The **Sea Level Rise Vulnerability and Adaptation Report** and accompanying online Hawai‘i Sea Level Rise Viewer project sea level impacts from passive flooding, annual high wave flooding, coastal erosion, and groundwater inundation for an overall Sea Level Rise Exposure Area (SLR-XA) with sea level rise of 0.5 feet, 1.1 feet, 2.0 feet, and 3.2 feet. The **Sea Level Rise Guidance** recommends that the SLR-XA at 3.2 feet be adopted as a vulnerability zone (hazard overlay) for planning by the City. Further, the **Sea Level Rise Guidance** recommends that it is reasonable to set, as a planning benchmark, up to six feet of sea level rise for critical infrastructure projects with long expected lifespans and low risk tolerance. City shoreline maps and regulations will be updated based on guidance from the City Climate Change Commission. Proposed projects should reflect up-to-date data from the most current versions of the **Sea Level Rise Guidance** and **Climate Change Brief**.

Exhibit 2-3 shows the SLR-XA with 3.2 feet of sea level rise as published in the **Sea Level Rise Vulnerability and Adaptation Report**, and passive flooding with 6 feet of sea level rise from the NOAA Sea Level Rise Viewer. East Honolulu communities are especially vulnerable to flooding and sea level rise if the main transportation connection, Kalaniana‘ole Highway, become impassible. Access between neighborhoods needs to be maintained and restored in a timely manner after flooding to ensure the safety of residents and the efficiency in distribution of emergency resources and supplies. Additional protections should be made to Kalaniana‘ole Highway, particularly in the vicinity of Kuli‘ou‘ou, to mitigate the anticipated impacts from sea level rise.

Climate change and sea level rise increase disaster risk and the cost of disasters. In recognition of this, the City’s Office of Climate Change, Sustainability and Resiliency has prepared the **O‘ahu Resilience Strategy** to guide preparation and recovery from potential disasters. Redevelopment and disaster recovery in East Honolulu will “build back better and smarter” by incorporating adaptive design and resiliency strategies that consider location, structure, and operations plans.

Exhibit 2-3: Sea Level Rise Exposure Area and Passive Flooding



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3. LAND USE POLICIES AND GUIDELINES

The vision for East Honolulu described in the preceding chapter will be implemented through application of the following land use general policies and guidelines.

3.1 OPEN SPACE PRESERVATION AND DEVELOPMENT

Open space preservation and development is a key element of the vision for East Honolulu's future. Long-term protection and preservation of scenic resources, natural areas, and recreational areas are important to maintaining the desirability and attractiveness of East Honolulu for both residents and visitors.

3.1.1 GENERAL POLICIES

Open space will be used to:

- Protect scenic views;
- Provide and maintain recreational access to shoreline and mountain areas;
- Meet the need for both passive and active open space;
- Define the boundaries of communities;
- Promote and support the long-term viability of agriculture;
- Protect endangered species habitats;
- Re-establish and restore native Hawaiian plant, animal, and invertebrate species and habitats in open space areas;
- Protect aesthetic and biological values of wetlands, beaches, nearshore marine environments, natural streams, and other drainage ways;
- Provide and maintain fire safety buffers where developed areas border "wildlands" either in preservation areas within the Community Growth Boundary or in the State Conservation District;

- Create a linear system of landscaped pathways and bikeways along roadways and drainage channels to visually enhance the different communities, create more complete streets, and assist with stormwater retention;
- Slow the rate of stormwater runoff into drainageways through increasing ground absorption and reducing the amount of impermeable surfaces on both public and private lands; and
- Prevent development of areas susceptible to natural hazards such as soil movement, rock falls, coastal erosion, and sea level rise.

3.1.2 PLANNING GUIDELINES

The following sections provide a description of regional open space resources in East Honolulu, followed by their respective guidelines for implementing the general policies. The open space system shall consist of areas in both active and passive uses.

3.1.2.1 Mountain Areas

Access to mountain areas for passive uses and resource gathering, including parking areas, should be made available in accordance with Hawaiʻi Revised Statutes (HRS) 115, 171, and 264.

> *"The absence of public access to Hawaiʻi's shorelines and inland recreational areas constitutes an infringement upon the fundamental right of free movement in public space and access to and use of coastal and inland recreational areas."* HRS 115-1.

Passive areas include lands in the State Conservation District, drainage and utility corridors, nature preserves, and lands undeveloped because of physical constraints or hazards.

Seventeen major trails, inventoried by the State Department of Land and Natural Resources (DLNR), provide access to the mountainous areas of East Honolulu. Four of

these trails (see **Exhibit 3-1**) are actively managed by the State's Nā Ala Hele program and are described below. Other trails that are not actively managed by the DLNR Nā Ala Hele Trail and Access Program, are included in **Table 3-1**. The DLNR State Parks also manages the two-mile Makapuʻu Point Lighthouse Trail within the Kaiwi coast.

- **Wiliwilinui Ridge Trail –** Half of the 3-mile trail to the crest of the Koʻolau Range is comprised of a dirt access road.
- **Hawaiʻi Loa Ridge Trail –** This trail begins at the top of the Hawaiʻi Loa community and extends 2 miles to the crest of the Koʻolau Range.
- **Kuliʻouʻou Valley Trail –** Beginning at the back of Kuliʻouʻou Valley, this trail runs for 1.0 miles to approximately the 520-foot contour.
- **Kuliʻouʻou Ridge (Koko Head) Trail –** This 2.5-mile trail is an extension of the Kuliʻouʻou Valley trail, extending to the crest of the Koʻolau.

Public access to trails in East Honolulu and in other urban fringe neighborhoods is a source of controversy because community residents and large landowners are concerned about liability, security, loss of privacy, and parking congestion with the use of private roads by hikers and hunters. Consequently, hikers driving to the trails have been subjected to certain restrictions including signing of waivers of liability, parking at the base of the ridge miles away from the trailhead, having to show a driver's license, or no access at all. Landowners, however, are protected from liability in making their land and water areas available to the public for recreational purposes in accordance with HRS 520.

Mountainous areas in East Honolulu are in the State Conservation District and thus the State Board of Land and Natural Resources (BLNR) has the authority to decide what uses are allowed in these areas. Landowners and residential associations should cooperate with the BLNR to ensure that access to the trails and visitor parking are provided to the public. If a suitable mechanism for public access cannot be agreed upon, consideration should be given to acquiring fee ownership or easements for public use either by a government agency or third-party organization. Furthermore, the State and City should negotiate, in advance, provision for public access easements and visitor parking near the trailheads with the concerned property owners, with representative community associations, and with Non-Governmental Organizations (NGOs).

Exhibit 3-1: Public Parks, Trails, and Open Space

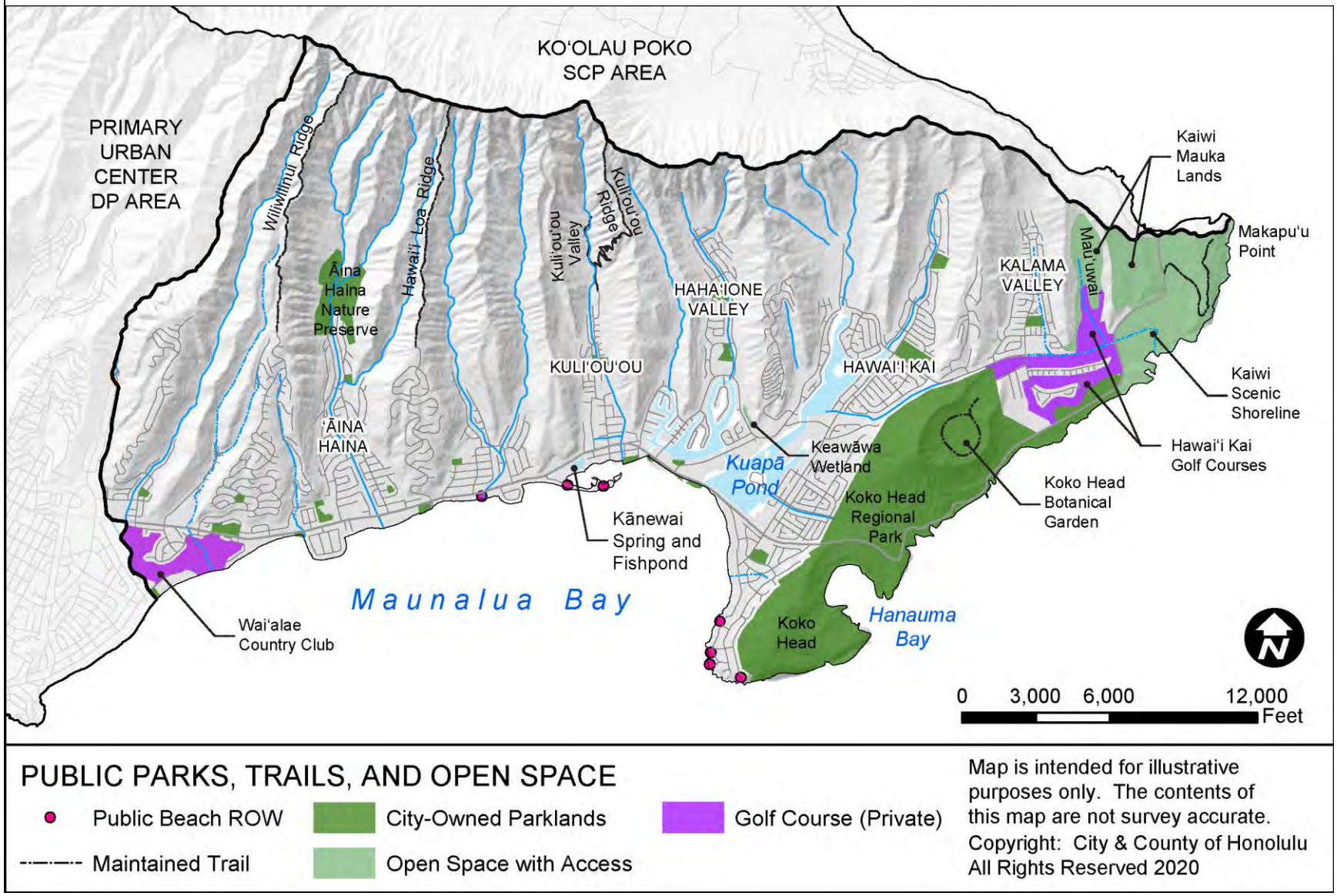


Table 3-1: East Honolulu Trails Not Actively Managed by the State DLNR

Trail Name	Miles
Waiʻalae Nui Ridge / Kalani Iki Ridge	3.0
Wailupe Nature Preserve	1.5
Kuluʻī Ridge	2.3
Pia Valley / Niu Valley	1.0
Niu Ridge / Kūlepiamoa Ridge	3.0
Kūpaua Valley	2.0
Kuliʻouʻou Ridge - Diamond Head (Paikō Ridge)	3.0
Kuliʻouʻou Center Ridge	4.0
Kaʻalākei Ridge	2.0
Maunaʻōʻahi Ridge	3.0
Hahaʻione Valley (Kaʻalākei Valley)	2.0
Mariners Ridge / Kaluanui Ridge	1.5
Kamilo Nui Valley	2.0
Kamilo Iki Ridge / Pāhuʻa (Makahūʻena)	1.8
Kamehame Ridge	1.2
Koʻolau Summit and Spine / Makapuʻu to Puʻu Konahuanui	16
Tom-Tom Waimānalo	1.0
Mauʻuwai (Kaiwi Mauka)	1.0
Kaiwi Shoreline Trail	1.4
Koko Crater Botanic Garden (City maintained)	2.2
Koko Crater Railway Line (Kohelepelepe)	1.0
Koko Crater Blowhole	1.5
Lānaʻi Lookout to Bamboo Ridge and Hanauma Bay	1.5
Koko Head / ʻIhiʻihilauākea Preserve (within Hanauma Bay Nature Preserve)	4.0

Demand for outdoor recreational activities in maintained and unmaintained and undeveloped areas will continue to increase. Action is needed at the City and State level to:

- Protect important natural resources in the State Conservation District;
- Control the number and range of feral animals and other alien species;
- Prevent overuse and misuse of natural resources;

- Prevent the destruction of habitats of native and endangered species;
- Mitigate erosion; and
- Mitigate the social impacts of congestion.

Guidelines pertaining to mountain areas are as follows:

- **Access –** Make access to mountain areas (including provision of parking areas) readily available for passive uses and resource gathering, in accordance with HRS 115, 171, and 264.
- **Access Easements –** Acquire and maintain public access easements, or encourage the transfer of easements to the State or NGOs that preserve access to open space areas.
- **Parking –** Provide public parking for trail users near the trailhead.
- **Native Upland Forests –** Maintain, protect, and/or restore upland native forests in the State Conservation District.
- **Lowland Forests and Vegetation –** Maintain, protect, and/or restore native Hawaiian plant communities in lowland native grasslands and scrublands and dry forests.
- **Utility Impacts –** Avoid disturbances caused by utility corridors and other uses on areas with high concentrations of native species.
- **Habitat –** Identify and protect endangered species habitats and other important ecological zones from threats such as fire, alien species, feral animals, and human activity.
- **Alien Species –** Control the number and range of feral animals and other alien species which could lead to the destruction of habitats of native or endangered species and erosion. Prevent the establishment of new alien species.
- **Resource Management –** Create a City Resource Management Program to address the demands from outdoor recreational activities and the associated stresses to the natural and built environment.
- **Trail Maintenance –** Increase trail maintenance to mitigate the impacts from hikers on the natural environment and improve safety.

- **More Trails –** Balance trail demands across East Honolulu and alleviate overcrowding at residential trailheads through the opening and sanctioning of additional trails, particularly in Mariners Ridge, Niu Valley, Kamilo Nui Valley, and the Wailupe Nature Preserve.
- **Wildfire Hazards –** Implement the findings and recommendations from the **Kamilo Nui – Mariner's Cove Firewise Hazard Assessment**.

3.1.2.2 Shoreline Areas

East Honolulu's shoreline extends for approximately 13 miles between Waiʻalae and Makapuʻu Head. The shoreline provides residents and visitors with significant active and passive recreational value. Thus, public access, both mauka-makai and lateral, should be maintained and improved.

Shoreline access is protected under HRS 115-1, referenced in **Section 3.1.2.1**. The absence or loss of mauka-makai access to the shoreline is largely the result of the intensity of urban development and policy decisions in maintaining remaining access routes.

Over the **Plan**'s long-term horizon, East Honolulu will face increased threats from coastal hazards and flooding as a result of climate change. While the causes of climate change are global, its impacts – sea level rise, ground water inundation, and increased rainfall intensity – will occur locally. Impacts from high tide flooding will be observed decades before permanent inundation by sea level rise. Tidal flooding will become more frequent and more damaging as ocean levels rise. A number of residential neighborhoods bordering Maunalua Bay and portions of Kalanianaʻole Highway will become more vulnerable to routine flooding and coastal erosion as a result of sea level rise, particularly around Paikō Drive and makai areas of Kuliʻouʻou (see **Exhibit 2-3**, above).

In addition to recreational and ecological value, shoreline areas in East Honolulu, particularly along the Kaiwi coastline, offer unparalleled scenic value. As such, views from Kalanianaʻole Highway to the shoreline should be preserved.

The East Honolulu shoreline is characterized into two distinct regions:

- **Waiʻalae to Koko Head –** Few areas along this shoreline are accessible to the public due to residential development along Kalanianaʻole Highway. Access points to the shoreline along this stretch include Wailupe, Kawaikuʻi, Kuliʻouʻou, and Maunalua Bay Beach Parks and a few mauka-makai public pedestrian easements.

  Physical and visual access to the shoreline is limited because of rather continuous residential development and the erection of sound barrier walls to screen traffic noise. However, there are a few points where public pedestrian easements to the shoreline could be expanded as properties are redeveloped or subdivided.

  Vertical seawalls and revetments have been constructed along many of the properties between Waiʻalae and Koko Head. Seawalls and revetments have caused beach narrowing and loss in nearby unhardened areas which disrupt natural processes. Beach loss will accelerate in the coming decades with sea level rise, especially if widespread coastal armoring is permitted.

  According to research published by the University of Hawaiʻi School of Ocean and Earth Science and Technology, the following shorelines erode up to one foot per year: near the Kāhala Resort beach, just east of Wailupe Peninsula, Paikō Peninsula and in the Portlock area between the Hawaiʻi Kai Marina entrance channel and the former Henry Kaiser Estate. Additional minimum shoreline setbacks for structures have been recommended as a management strategy to protect remaining sandy beaches in these segments. With the projected rate of sea level rise by 2050 and 2100, and the compounding effects that sea level rise have on shoreline erosion, shoreline setbacks will have to be reviewed and increased routinely to mitigate further damages.

  In the residential area near Koko Head, there are numerous points of public access to the shoreline from Portlock Road, which occur approximately every 200 linear feet. These access routes occur along privately owned, shared driveways. Members of the Portlock Community Association have said the association is dedicated to ensuring the existing 19 driveways remain open to the public for shoreline access.

Lateral shoreline access along this stretch of coastline is a desirable goal but difficult to achieve because of physical constraints, land ownership patterns, the extent of urban development, and geophysical changes that are a result of beach erosion and sea level rise.

It is also important in this area to retain and, if possible, expand visual access to the shoreline from the coastal highway. Presently, the most significant makai views are from the H-1 Freeway viaduct looking across the Waiʻalae Country Club golf course and from Kalanianaʻole Highway fronting the Wailupe, Kawaikuʻi, and Maunalua Bay Beach Parks.

- **Kaiwi Scenic Shoreline –** Mauka-makai and lateral shoreline access is more prevalent between Koko Head and Makapuʻu Head, particularly beginning at Sandy Beach. The shoreline between Koko Head Regional Park and Makapuʻu Head is frequented by residents and visitors for various recreational and educational activities. The 354-acre Kaiwi Coast area is located along the Maunalua-Makapuʻu State Scenic Byway Corridor, that was nominated by the Livable Hawaiʻi Kai Hui in addition to the Hawaiʻi Kai Neighborhood Board, and, designated by the State of Hawaiʻi Department of Transportation as a State of Hawaiʻi Scenic Byway in 2013. The State Scenic Byway Corridor extends from Hawaiʻi Kai Drive to Makai Research Pier. A Corridor Management Plan focused on preserving and protecting the resources along Kaiwi coastline was prepared in 2018 by Livable Hawaiʻi Kai Hui and the Ka Iwi Coalition (see **Section 3.2.1.2**). The Kaiwi Scenic Shoreline, was established to preserve the area's natural and scenic resources and to provide educational and passive recreation opportunities. There are continuous views of the ocean and mountains from Kalanianaʻole Highway between Koko Head and Makapuʻu Head as well as shoreline access. This segment of Kalanianaʻole Highway is the highlight of a continuous visual sequence of the coastline extending from Hawaiʻi Kai to Waimānalo.

Guidelines pertaining to shoreline areas are listed below:

- **Makai Views** – Maintain makai view channels along the H-1 Freeway or Kalaniana‘ole Highway between Wai‘alae and Koko Head. Avoid obstructions such as walls and landscaping, designed to screen out traffic noise.
- **Natural Landscape –** Maintain the natural landscape quality of the Kaiwi coast, mauka to makai, as a high priority viewshed. Limit vehicle operations which could cause degradation to the dunes, vegetation, and beach at Wāwāmalu Beach. Any modification to this shoreline area will be done in a manner that preserves the aesthetic values of the undeveloped xerophytic landscape (plants adapted to a dry environment).
- **Kaiwi Scenic Shoreline –** Protect and preserve the long-term recreational and scenic value of the shoreline between Koko Head and Makapu‘u Head through responsible maintenance.
- **Lateral Access –** Improve, protect, and maintain lateral shoreline access from Koko Kai Beach Park to Wai‘alae Beach Park.
- **Shoreline Access –** Pursue opportunities to secure additional pedestrian rights-of-way from the nearest street or highway to the shoreline in sections that have high recreational value, but no similar public access within at least a quarter of a mile, particularly in the areas of Kai Nani, Wailupe Peninsula, and Niu Peninsula.
- **Feedback –** Encourage citizen reporting of shoreline access issues to the DLNR Office of Conservation and Coastal Lands. DLNR should report back to the communities of East Honolulu the status of oceanfront issues.
- **Vegetation –** Landowners along the shoreline shall maintain vegetation so as to not encroach into the public right-of-way, particularly as the shoreline erodes pushing the right-of-way inland.
- **Sea Level Rise Impact on Lateral Access –** Include sea level rise and shoreline erosion projections when establishing protections for lateral shoreline access.
- **Codify Access –** Recognize and codify mauka-makai shoreline access into the Revised Ordinances of Honolulu (ROH).

- **Setbacks –** Increase minimum shoreline setbacks and implement other management strategies to account for anticipated impacts from climate change and coastal erosion. Revise and amend shoreline rules and regulations to incorporate sea level rise into the determination of shoreline setbacks and Special Management Area (SMA) use requirements.
- **Armoring –** Conserve and enhance a natural, dynamic shoreline wherever possible. Restrict shoreline hardening. Shoreline hardening should only be considered as a last resort where it supports significant public benefits and will result in insignificant negative impacts to coastal resources and natural shoreline processes.
- **Protect Infrastructure –** Mitigate impacts to critical public and private infrastructure subject to sea level rise exposure through elevation, relocation, or other adaptation measures.
- **Sea Level Rise Impact on New Projects –** Analyze the impact of sea level rise for new public and private projects in shoreline and low-lying areas. If it is likely that sea level rise will increase the risk of flooding during the lifespan of the project, incorporate, where appropriate and feasible, measures to reduce risks and increase resiliency to impacts of sea level rise.
- **Current Information –** Use the most current versions of the City Climate Change Commission's **Sea Level Rise Guidance**, **Climate Change Brief**, and the State of Hawai'i **Sea Level Rise Vulnerability and Adaptation Report** and associated Viewer for managing assets, reviewing permitting requests, and assessing project proposals.
- **Building Codes –** Work cooperatively to develop design and construction standards that mitigate and adapt to the impacts of climate change and sea level rise.
- **Hazard Assessment –** Incorporate assessments of all hazards into the land development application process.
- **Redevelopment District –** Form a community-based redevelopment district, similar to a business improvement district, that would protect, adapt, and relocate residential and commercial structures, public facilities, and natural and cultural resources vulnerable to sea level rise impacts, including coastal flooding, inundation, and erosion.

- **"Build Back Better and Smarter" –** Map repetitive loss areas and develop and implement a "build back better and smarter" strategy to mitigate future damage costs.
- **Disaster Plans –** Develop short- and long-term resiliency and recovery plans to:
    - Develop a network of Community Resilience Hubs;
    - Designate evacuation routes;
    - Increase coordination with neighborhood emergency preparedness groups and create a liaison between City agencies and NGOs;
    - Encourage residents to have their own emergency supplies and be knowledgeable about what they will do in the event of a disaster;
    - Expedite the recovery of East Honolulu; and
    - Outline the vision and methods for how East Honolulu can "build back better and smarter" following disasters.

3.1.2.3 Agricultural Areas

The physical and economic conditions and suburban development pattern of East Honolulu preclude large-scale agricultural operations. There are two concentrations of small-scale diversified agricultural operations – the larger one in Kamilo Nui Valley and the other above Kaiser High School on the slopes of Koko Crater – which should be preserved as being consistent with the overall community vision underlying this **Plan**. In both areas, individual farm lots on long-term leases are used for nursery and vegetable production and have remained commercially viable due to low lease rents and by serving a mostly East Honolulu market.

When lease terms end for the agricultural areas, their continued commercial viability will likely depend upon revision of lease rents and the leaseholders continued interest in farming. An economic feasibility study would assist in determining the continued viability of agriculture in Kamilo Nui Valley and identify potential arrangements that would be suitable and acceptable to concerned parties. Community groups are working to protect agricultural lands in perpetuity through fee purchase, easements, or land swaps.

Prior to the adoption of the 1999 **Plan**, approximately 17 acres of agricultural lands located outside the Community Growth Boundary in Kamilo Nui were rezoned from the general agricultural district to the low-density apartment district. The 1999 **Plan** did not reflect this change as the project, now known as Leolani, did not receive its final approvals until June 2000, after the adoption of the **Plan**. The 17-acre Leolani development is displayed within the Community Growth Boundary since the development was approved and is now complete. Other existing agricultural uses and preservation lands in Kamilo Nui Valley will remain outside the Community Growth Boundary.

Water supply is sufficient in Kamilo Nui Valley, although short winter days are a limitation on the types of crops that can be grown. There is also the potential for conflict between farming in Kamilo Nui Valley, where agriculture existed prior to adjacent urban development, and nearby suburban residential areas. This has resulted in complaints from neighbors about nuisance dust, noise, chemical overspray, odors, and other normal impacts of farming. In turn, this can lead to operational changes that may be required by the enforcement of public health regulations and that adversely affect the feasibility of agriculture. The most effective way to avoid this conflict is to provide adequate separation between agricultural and residential uses.

Guidelines relating to agricultural areas are listed below:

- **Accessory Uses –** Design and locate buildings and other facilities that are accessory to an agricultural operation in a way that minimizes the impact on nearby urban areas and the street system.
- **Existing Uses –** Encourage continued use of small lots for agricultural uses, and promote compatibility of nearby residential areas with those uses. Maintain the existing buffer between agricultural lands and residential development.
- **Kamilo Nui Valley –** Designate undeveloped areas in Kamilo Nui Valley which are on the ‘Ewa side of the existing farm lots for agricultural use.
- **Agricultural Leases –** Encourage continued long-term agricultural leases at reasonable rates consistent with feasible agricultural use by having such areas remain outside the Community Growth Boundary.

- **Community Growth Boundary –** Preserve the Community Growth Boundary through the foreseeable future to prevent further residential encroachment around the two active farm areas and to mitigate potential nuisances associated with farming from impacting new residential development.
- **Runoff –** Implement agricultural best management practices (BMPs) to mitigate stormwater, sediment, and toxic pollutant runoff from agricultural uses and stockpiling from adversely impacting downstream water quality.
- **Food Sufficiency –** The existing agricultural lots should be maintained to support State and County goals.

3.1.2.4 Runoff, Natural Gulches, and Drainage Corridors

Water springs sustain life in this low rainfall region. Springs are found at Ka‘alawai, Wai‘alae, Wailupe Beach Park, Kalauha‘iha‘i Fishpond at Niu, Kawaiku‘i Beach Park, Kanewai Spring and Elelupe Spring at Kuli‘ou‘ou, Keawāwa Wetland, and Kawaiakane at Kawaihoa Point. Smaller seeps are located along the shoreline.

Streams in the region also play an important role in the traditional sustainability of the region. Kapakahi Stream was once rich with o‘opu. Many of East Honolulu’s streams have lost their essential functions when they were concreted and channelized. Nevertheless, they retain potential for restoration. Wailupe Stream is one of the only streams that has not been concreted completely.

The ridges and valleys in East Honolulu form a series of drainage ways extending across the region. All but two of the streams have been channelized as a means for conveying stormwater from valley watersheds to the sea as quickly as possible. These stream channels are capable of handling stormwater runoff from normal rainfall amounts if properly maintained. During periods of intense rainfall, however, a number of these drainage ways have experienced flooding problems (see **Chapter 4**).

The swift conveyance of stormwater through the channelization of streams in East Honolulu impacts downstream water quality, particularly when those waters reach

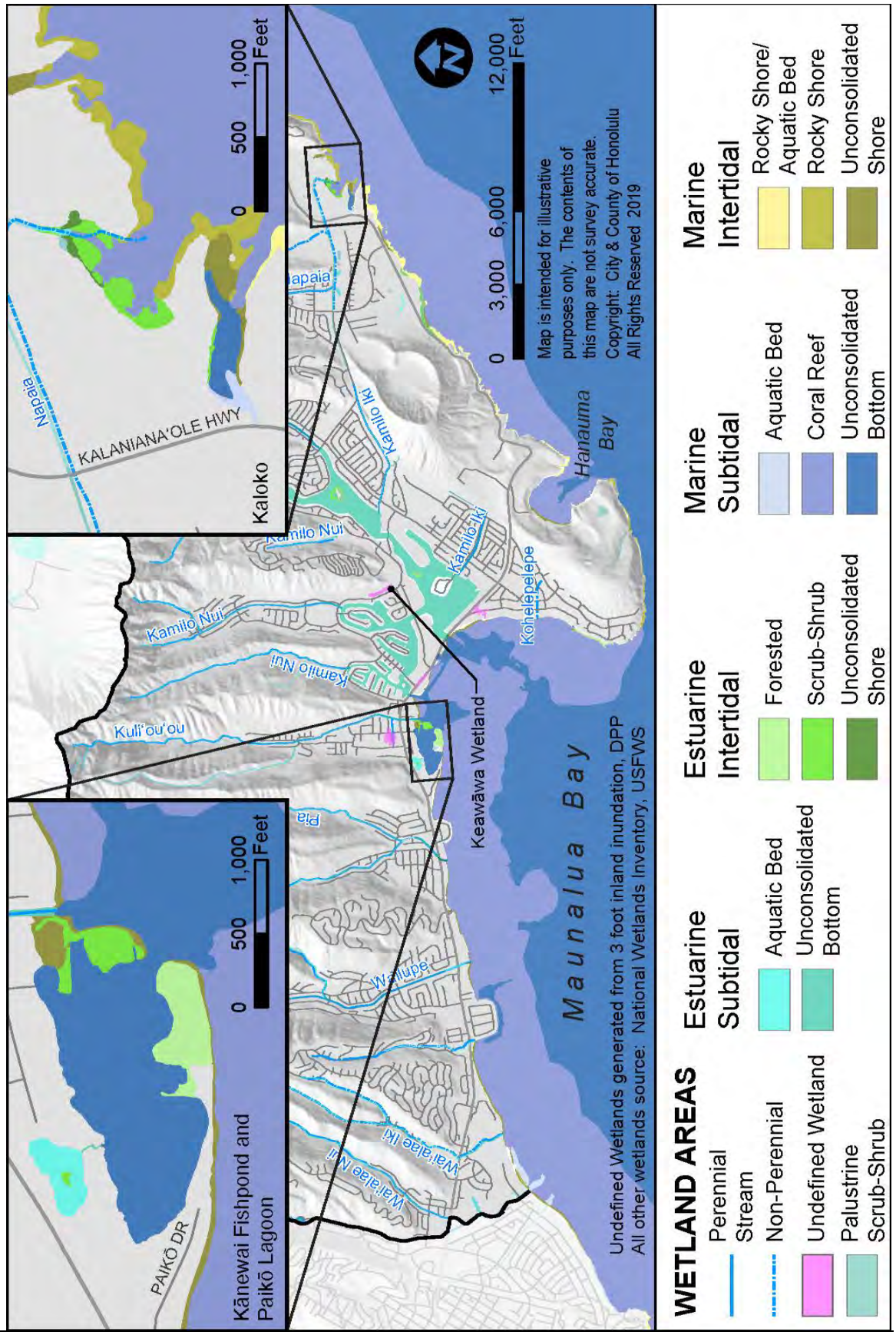
Maunalua Bay. If stormwater is not given time to settle, it will often carry sedimentation and other particulate matter downstream leading to the deterioration of nearshore waters and reefs. Dechannelization, or restoration of natural stream beds, can improve downstream water quality, increase groundwater recharge, and help in re-establishing habitats for native species. Restoration of upland areas and reestablishment of native vegetation can also assist in controlling and absorbing precipitation and lengthen the period of discharge potentially reducing flood rates.

Wetlands play a vital ecological role in providing habitat and holding and filtering stormwater and sediment runoff. Wetlands are difficult to replace or reconstruct in their entirety and will be preserved where possible. A map of the **National Wetlands Inventory** is shown in **Exhibit 3-2**.

Guidelines concerning natural gulches and drainage ways are as follows:

- **Drainage Ways –** Preserve and restore the aesthetic values and biological functions of significant streams, wetlands, natural gulches and other drainage ways by requiring setbacks, where appropriate and feasible, as part of the open space system. These include:
    - Perennial streams identified in the Hawai‘i Stream Assessment prepared by the State Commission on Water Resource Management;
    - Wetlands identified by the Army Corps of Engineers and/or identified on the Fish and Wildlife Service’s National Wetland Inventory maps;
    - Other drainage ways identified by the Department of Design and Construction or the Department of Planning and Permitting;
    - For other streams, including intermittent streams, require applicants for development to show that the open space system will not be significantly impacted and that biological values will not be significantly disturbed if setbacks are not provided; and,

Exhibit 3-2: Wetland Areas



- Improve drainage channels, not just to convey runoff downstream as quickly as possible, but to increase permeability and retention.

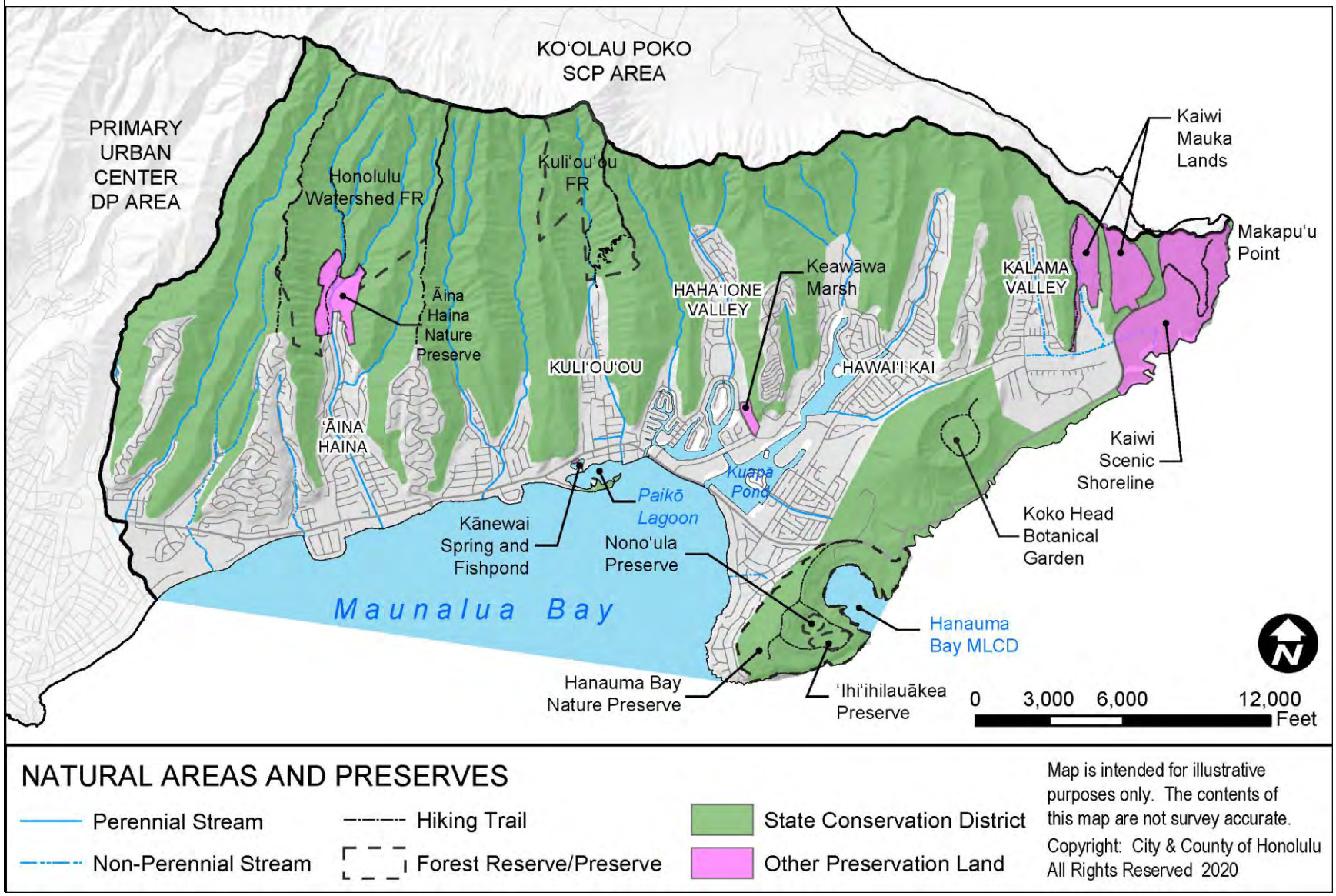
- **Low-Impact Development –** Implement low-impact development standards and other green infrastructure to restore ecological function to the area, particularly along and adjacent to stream channels, and reduce the amount of stormwater, sediment, and toxic pollutant runoff entering Maunalua Bay.
- **Green Incentives –** Provide incentives for owners of existing homes, particularly those adjacent to drainage ways, to develop rain gardens, permeable driveways, and other strategies that hold stormwater on-site instead of discharging it into storm drains or streams.
- **Preservation –** Preserve the remaining natural gulches within the Community Growth Boundary that are necessary to provide flood protection in a way which protects aesthetic values and biological functions and avoids degradation of stream, coastline and near shore water quality.
- **Remediation –** Clean up contaminated areas that pose hazards to soil and downstream water quality, particularly any properties adjacent or directly upland of a stream channel.
- **Recreation Corridors –** Incorporate landscaped pathways and bikeways adjacent to stream channels and drainage corridors, where appropriate and feasible.
- **Retention –** Retain stormwater, sediment, and toxic pollutant runoff through the installation of linear landscaping features and permeable pavement along roadways, particularly Kalaniana‘ole Highway, which should be used to visually enhance the different communities.
- **Preservation Lands –** Use preservation lands, located within and outside of the Community Growth Boundary to prevent further degradation of nearshore water quality.
- **Natural Improvements –** Identify potential natural improvements to park and preservation lands within the Community Growth Boundary to improve its ecological function and retain an open, undeveloped character, particularly on lands near Hawai‘i Kai Marina and Maunalua Bay, including along Keāhole Street.

3.1.2.5 Natural Resources and Preserves

East Honolulu is home to the following recognized wildlife preserves (see **Exhibit 3-3**):

- **Kānewai Spring and Fishpond –** The freshwater spring is located makai of Kalaniana‘ole Highway and feeds freshwater into the adjacent fishpond which flows into Paikō Lagoon and Maunalua Bay. The spring was purchased for protection with public and private funds.
- **Paikō Lagoon Wildlife Sanctuary –** Paikō Lagoon, formerly a coastal fishpond, is fed by a freshwater spring and Kuli‘ou‘ou Stream and is managed by the DLNR. The lagoon’s water level varies with the tides and occasionally exposes the saline mudflats. This wildlife sanctuary provides habitat to the endangered Hawaiian Stilt as well as other migratory water birds. The proximity of residential uses may threaten the sanctuary due to intrusions by humans and domesticated animals.
- **‘Ihi‘ihilauākea and Nono‘ula Preserves –** These preserves are located on the southern rim of the Hanauma Bay ridgeline on land owned by the City and County of Honolulu, and managed by the Nature Conservancy of Hawai‘i (NCH) through a cooperative agreement with the City. The preserves maintain a pool for the endangered ‘Ihi‘ihi (Marsilea villosa), an ephemeral plant appearing only during periods of rainfall. The preserves include mixed herbland and shrubland, the moisture regime, and subcanopy and understory native plant species.
- **Kaiwi Scenic Shoreline –** An undeveloped natural area between Koko Head and Makapu‘u Head located makai of Kalaniana‘ole Highway. The Kaiwi coast contains one of O‘ahu’s last undeveloped, rugged coastlines. These lands contain beaches, dunes, trails, rocky cliffs, historic sites, and viewpoints.
- **Kaiwi Mauka Lands –** Kaiwi mauka lands contain lands between Koko Head and Makapu‘u Head located mauka of Kalaniana‘ole Highway. The Kaiwi Mauka Lands were acquired with public and private funds for the purposes to preserve the undeveloped region as an open, rugged landscape.

Exhibit 3-3: Natural Areas and Preserves



- **Keawāwa Marsh and Wetlands –** Keawāwa Wetlands and adjacent Hāwea Heiau complex are located on the mauka corner of Hawai‘i Kai Drive and Keāhole Street. The wetlands provide refuge for the native, endangered Hawaiian moorhen in addition to other migratory birds and insects. The Hāwea Heiau complex contains ancient walls, petroglyphs, terraces, a coconut grove, and heiau. The property is preserved in perpetuity through the purchase of the land by the Livable Hawai‘i Kai Hui. Keawāwa Marsh and Wetlands are located outside of the Community Growth Boundary.
- **Kuli‘ou‘ou and Honolulu Watershed Forest Reserves –** The upper ranges of the Kuli‘ou‘ou Mountains fall within into two forest reserve systems, both of which are located within the State Conservation District and managed by the DLNR. The reserves are host to designated critical habitats for endangered species including the O‘ahu ‘Elepaio. Two public trails, the Kuli‘ou‘ou Ridge Trail and the Wiliwilinui Trail, traverse the Kuli‘ou‘ou and the Honolulu Watershed Forest Reserves, respectively.
- **Hanauma Bay Marine Life Conservation District (MLCD) –** Established in 1967 by the Department of Land and Natural Resources, the Hanauma Bay MLCD was once a popular site for fishing and throw netting. State law now protects wildlife within Hanauma Bay. The adjoining Hanauma Bay Nature Preserve is part of Koko Head Regional Park, administered by the City. In order to protect the marine resources and limit crowding of this popular visitor destination, the City restricts the daily number of visitors that have access to the bay. The City closes the Nature Preserve once per week for maintenance. The City also collects entry and parking fees used to fund maintenance and capital projects at Hanauma Bay.
- **Hanauma Bay Nature Preserve –** The nature preserve was established to protect and preserve one of Hawai‘i’s most spectacular natural resources. The preserve includes the Marine Education Center which opened in August 2002 where residents and visitors are welcomed to Hanauma Bay and taught how to respect and safeguard the fragile marine life found in the Hanauma Bay MLCD.
- **‘Āina Haina Nature Preserve –** In 2000 the City purchased land in the back of the residential neighborhood of ‘Āina Haina, below the Honolulu Watershed Forest Reserve, for the purposes of preserving the land from further suburban development.

- **Maunalua Bay –** Although the Bay is not listed as a preserve, it serves as a defining scenic, recreational, and marine resource for East Honolulu. The bay has many users including fishermen, cultural practitioners, surfers and boaters, and supportive commercial uses for these activities. With its unique mixture of fresh and salt water, Maunalua Bay provides a unique near shore habitat for various aquatic species. Community groups conduct studies, organize community events, and develop plans in order to restore Maunalua Bay.

There are a few other areas located within the Community Growth Boundary that could be preserved other than for the sake of protecting wildlife:

- **Great Lawn –** The "Gateway to Hawaiʻi Kai" is an unimproved grassy space bounded by Hawaiʻi Kai Drive, Kalaniana'ole Highway, Keāhole Street, and the marina. The lawn primarily serves as open space, and, for two weeks a year, a carnival. Natural improvements could improve ecological function to the preservation area.
- **Rim Island 2 –** An area previously used for dredging spoils in the upper Hawaiʻi Kai Marina, comprised of approximately 3.25 acres, has become an additional established habitat for several species of endangered Hawaiian waterfowl. However, there have been studies regarding the viability of the fill lands as being unable to support the birds attracted there. Continued use of this site for dredging spoils should be further evaluated, especially if alternative spoils dumpsites are available.

Guidelines relating to wildlife preserves in East Honolulu are as follows:

- **Encroachment –** Avoid encroachment or intensification of residential or other urban uses near preservation lands.
    - Prohibit the reduction in preservation zoning in the vicinity of the Paikō Lagoon or intensification of residential use in this zone.
    - Designate any property with an existing residential use for low-density residential use and to an appropriate residential zone.
- **Management –** Implement management programs in areas where intense human activity threaten the sustainability of the resources. This could

include, for example, impact monitoring studies, limits on the number of visitors, and admission fees such as at Hanauma Bay.

- **Biological Study –** Conduct a biological study to determine if Rim Island 2 is eligible for declaration as a recognized endangered species habitat.

3.1.2.6 Marina

The 260-acre Hawai‘i Kai Marina provides protected water for small sail and motor craft, water skiing, and fishing. Residences fronting the marina have launching ramps and mooring facilities. In addition, there are boating facilities adjacent to the Koko Marina Shopping Center that can accommodate boats up to 40 feet in length.

The Hawai‘i Kai Marina also serves as the focal point for commercial activity in Hawai‘i Kai. East Honolulu’s three largest commercial centers, the Hawai‘i Kai Towne Center, Hawai‘i Kai Shopping Center, and Koko Marina Shopping Center, front the marina on the east and west sides.

The Hawai‘i Kai Marina contributes to the open space system by providing recreational value and visual relief from adjacent urban uses. It also has a cooling effect and thus offers climatic benefits for commercial and residential uses that front the water.

Guidelines concerning the Hawai‘i Kai Marina are listed below:

- **Recreational Boating –** Enhance the recreational value of this open space feature by improving facilities in support of boating.
- **Pedestrian Access –** Improve access to and along the marina’s edge by way of a multi-use path for people walking and biking.
- **Waterfront –** Ensure that marina and commercial waterfront uses do not present a barrier for pedestrians desiring to visit more than one destination along the waterfront.
- **Bridge –** Link the Hawai‘i Kai Towne Center and the Hawai‘i Kai Shopping Center with a pedestrian bridge in order to provide convenient access between the two commercial centers.

- **Viewshed –** Maintain and improve views across the marina, especially from Kalaniana‘ole Highway and other major roadways.
- **Screening –** Install and maintain landscaping, where appropriate, to screen areas of the marina not intended for public views and to intercept stormwater, sediment, and toxic pollutant runoff.
- **Best Management Practices –** Utilize BMPs for marina uses to mitigate degradation of water quality to both the marina and Maunalua Bay.

3.1.3 RELATIONSHIP TO MAP A-1 – OPEN SPACE MAP

The following components of the regional open space system are shown on **Map A-1, Open Space Map** in **Appendix A**:

- **Mountain and Agricultural Areas –** These areas are to remain outside the Community Growth Boundary, and are not intended for development.
- **Shoreline Areas –** All beaches and shoreline areas with high scenic or wildlife value, especially areas along the Kaiwi Scenic coast and at Paikō Peninsula, are designated for preservation and are located outside the Community Growth Boundary. Construction of seawalls and rock revetments has had a severe negative impact on beaches in the Plan area, particularly between Wai‘alae and Portlock.
- **Parks –** Areas designated as island-based and district parks are shown, as well as the general location of community and neighborhood parks. Additions to the community-based park system are determined more by community facility design considerations (see **Section 3.3**) than by their relationship to the regional open space network.
- **Golf Courses –** The three golf courses in East Honolulu are shown because of their recreational value and visual contribution to the open space landscape.
- **Hazard Areas –** Certain undeveloped lands within the State Urban District that have either experienced significant damage from soil movement or potential rock falls, or are highly susceptible to such problems, particularly in ‘Āina Koa, ‘Āina Haina, and Kuli‘ou‘ou; are located outside the Community Growth Boundary and designated for preservation.

- **Marina –** Hawai‘i Kai Marina is located within the Community Growth Boundary.
- **Streams –** Major channelized and channelized stream channels which may provide habitat and convey water from upland areas.

3.2 ISLAND-BASED PARKS AND RECREATIONAL AREAS

This section presents an overview of island-based parks and recreational areas in East Honolulu. This is followed by general policies and guidelines for the recreational development of these resources. The location of the region’s island-based parks and recreational areas are shown in **Appendix A**, **Maps: A-1 Open Space**, **A-2 Urban Land Use,** and **A-3 Public Facilities**.

3.2.1 OVERVIEW

The City and County of Honolulu Department of Parks and Recreation (DPR) develops and maintains a system of park and recreation facilities that it classifies in a hierarchical manner. The largest and most specialized parks are classified as island-based parks since they serve the needs of all O‘ahu residents. This group includes regional parks, beach/shoreline parks, beach/shoreline right-of-ways, nature parks/reserves, botanical gardens, golf courses, and zoological parks (see **Table 3-2**). The location of public parks and recreation areas in East Honolulu are shown in **Exhibit 3-1**.

Table 3-2: Types of Island-Based Parks

Regional Parks	Large areas that may serve the entire island or a region of the island and may include a variety of recreation park types and facilities, natural and cultural sites.
Beach/Shoreline Parks	Areas and sites along the shoreline that may include facilities and support services for water activities, hiking, sunbathing, picnicking, and other passive activities.
Beach/Shoreline Rights-of-Way	Access lanes to beaches and the shoreline where residential or other uses prevent development of a beach/shoreline park.
Nature Parks/Reserves	Areas maintained primarily to preserve or conserve unique natural features.
Botanical Gardens	Areas to plan, develop, curate, maintain, and study documented dryland plants for the purposes of conservation, botany, horticulture, education, and passive recreation.

As shown in **Table 3-3**, East Honolulu contains 10 island-based parks that are maintained by the DPR. A brief description of East Honolulu's regional parks, various beach parks, and three privately operated golf courses, two of which offer public play, is provided below.

Table 3-3: DPR Island-Based Parks and Preserves in East Honolulu

Park Type/Name	Acreage	Park Type/Name	Acreage
Beach/Shoreline Parks		**Regional Parks**	
Maunalua Bay Beach Park	5.4	Koko Head Regional Park[1]	951.4
Sandy Beach Park (including Wāwāmalu Beach Park)	22.6	**Nature Preserve/Reserves**	
Kawaikuʻi Beach Park	4.1	ʻĀina Haina Nature Preserve	85.2
Kuliʻouʻou Beach Park	3.2	Hanauma Bay Nature Preserve	50.0
Waiʻalae Beach Park	4.4	**Botanical Gardens**	
Wailupe Beach Park	1.2	Koko Crater Botanical Garden	200.0
Subtotal	**40.9**		
Grand Total			**1,327.5**

[1] Acreage figure excludes Sandy Beach Park, Hanauma Bay Nature Preserve, Koko Crater Botanical Garden (listed separately) and Koko Head District Park (see **Section 3.3**).

3.2.1.1 Koko Head Regional Park

The 1,264-acre Koko Head Regional Park encompasses the most popular recreation areas in East Honolulu, including:

- Hālona Blowhole Lookout
- Hanauma Bay Nature Preserve
- Old Hawaiʻi Job Corps Center
- Koko Crater Stables
- Koko Head Rifle Range
- Koko Crater Botanical Garden
- Koko Head District Park
- Sandy Beach Park

The park was established in 1928 when the City acquired the property from the Estate of Bernice Pauahi Bishop for a fee of one dollar. In exchange for the nominal charge, the City agreed to extend and maintain the municipal water system through Maunalua. Further, the deed stipulated that use of the property be restricted to public parks or

rights-of-way. Other uses of the property would require approval by the Bishop Estate Trustees.

In 1992, the **Koko Head Park Master Plan** was completed. The report contains elements regarding the preservation and enhancement of the park's recreational and educational resources that are generally consistent with the guidelines set forth in this **Plan** (discussed in **Section 3.2.4**).

Expansion of Koko Head Regional Park through the City's acquisition in 2002 of the 32-acre parcel known as Golf Course 5 and 6 properties, located mauka of Sandy Beach and Kalaniana‘ole Highway, completes the Kaiwi Scenic Shoreline. The 38-acre park visually links the existing Koko Head Regional Park and the Kaiwi Scenic Shoreline and provides a continuous stretch of open space with recreational opportunities extending from Koko Head to Makapu‘u Head totaling about 600 acres. This area is now used for active recreation with playfields and open space for kite flying and other outdoor activities. There will be no courts or paved areas.

3.2.1.2 Kaiwi Coast

A 354-acre scenic shoreline area has been established in the Queen's Beach/Makapu‘u Head region of East Honolulu adjacent to Koko Head Regional Park. The Kaiwi Scenic Shoreline was established as a means to protect the area's rich recreational and scenic resources and natural environment. A master plan for the Kaiwi Scenic Shoreline was prepared in October 1995 by the DLNR pursuant to House Concurrent Resolution No. 261 (1988).

Hiking is a very popular form of recreation along the Kaiwi coast. Substantial improvements have been made to parking, access, and trail amenities along the Makapu‘u Point Lighthouse Trail. Further implementation of the master plan has been halted due to community concerns that construction of comfort stations or a visitor's center will detract from the region's undeveloped, wilderness character.

In 2016, the region known as Queen's Rise, or Kaiwi Mauka, located mauka of Kalaniana‘ole Highway between Hawai‘i Kai Golf Course and Makapu‘u Head, was purchased with public and private funds to set aside for preservation purposes. Although the land is zoned for preservation, it is within the State Urban District and should be redesignated for conservation. The preservation of mauka lands from development will further preserve the scenic characteristics defined by the adjacent, rugged landscape of the Kaiwi Scenic Shoreline.

3.2.1.3 Beach and Shoreline Parks

East Honolulu's six existing beach parks are Maunalua Bay, Sandy Beach, Kawaiku‘i, Kuli‘ou‘ou, Wai‘alae, and Wailupe. The City has acquired lands comprising the Kaiwi Scenic Shoreline at Queen's Beach/Makapu‘u Head. Improvements to Wāwāmalu Beach as a nature park would help to protect the natural dunes, native vegetation, beach rock, and beach.

A mix of low- and medium-intensity recreational uses is envisioned along the Kaiwi Scenic Shoreline. The primary purpose of the park is to preserve the area's natural resources and to provide educational and passive recreation opportunities.

3.2.1.4 Aquatic Recreation

In addition to recreation lands under the jurisdiction of the DPR, another asset of East Honolulu is its near shore waters which help to define much of its character. Maunalua Bay extends from Kūpikipiki‘ō (Black Point) to Kawaihoa Point spanning two ahupua‘a (Waimanalo and Waikīkī) and seven watersheds (Wai‘alae Nui, Wailupe, Niu, Kuli‘ou‘ou, Kamilo Nui, Kamilo Iki, and Portlock). Maunalua Bay hosts a variety of users including, but not limited to, fishermen, boaters, kayakers, surfers, cultural practitioners, and stewardship organizations. These user groups comprise residents and tourists for commercial and non-commercial uses. Regulation of aquatic uses falls under State jurisdiction.

3.2.2 GENERAL POLICIES

The following general policies relate to island-based parks and recreational resources in East Honolulu:

- Increase the inventory of island-based parks, where feasible and supportive of open space general policies and guidelines, by expanding the boundaries of existing parks and/or creating new parks.
- Maintain and enhance, to the extent possible, existing island-based parks by utilizing land area that has not been fully developed for recreation use. Island-based parks are part of the region's abundance of natural and scenic resources and contribute to the attractiveness of East Honolulu to residents and visitors.
- Expand access to existing park lands by improving neighborhood linkages along shared paths for people walking and biking, and blending park boundaries through the transition of park space to adjacent paths or greenways.
- Preserve the Kaiwi coast as one of O‘ahu's last undeveloped, rugged coastlines.
- Prohibit alterations to the shoreline to avoid disrupting natural processes and the potentially adverse impacts armoring has on adjacent areas.
- Develop additional trails and bike paths to balance trail demands across East Honolulu and alleviate potential overuse at existing trails.

3.2.3 PLANNING GUIDELINES

The general policies for island-based parks and recreation complexes, including golf courses, are supported and implemented by the following planning guidelines:

- **Appropriate Screening and Siting –** Carefully site active playfields and supporting facilities intended for intensive use, and use generous landscape screening to reduce the potential impacts on surrounding areas.

- **Environmental Compatibility –** Construct park facilities in a manner that avoids adverse impacts on natural resources or processes in the coastal zone or any other environmentally sensitive area. In the design of recreation areas, incorporate natural features of the site and use landscape materials that are indigenous to the area where feasible in order to retain a sense of place.
- **Community Integration –** Link recreational attractions that may be designed to have distinct identities and entries, with surrounding areas through the use of connecting roadways, bikeways, walkways, landscape features and/or architectural design.
- **Irrigation** – The Board of Water Supply (BWS) Rules and Regulations require the use of non-potable water for irrigation of large landscaped areas. For large landscaped areas, the feasibility of using non-potable water for irrigation should be investigated. If non-potable water is either unavailable or infeasible, a report of the investigation should be coordinated and submitted to the BWS prior to considering the use of potable water.

3.2.3.1 Passive or Nature Parks

- **Kaiwi and Koko Crater –** Preserve and enhance the Kaiwi Scenic Shoreline's recreational and educational resources by implementing the following:
    - Convert the portion of Kalaniana‘ole Highway between Lunalilo Home Road and Wāwāmalu Beach Nature Park to a 25-mile per hour scenic roadway.
    - Maintain and facilitate access to the important fishing resources.
    - Develop new walking/hiking trails within Koko Crater Botanical Garden for better viewing of plant collections.
    - Prohibit access to any trails or paths from outside of Koko Crater Botanical Garden to the garden.

- Protect the fragile topography of Koko Crater by restricting recreational uses such as horseback riding to areas apart from the conservation plant collections.
- Continue to develop Koko Crater Botanical Garden as a conservation site of global importance for rare and endangered species from Hawai‘i and other tropical dryland areas.
- Maintain Koko Crater Botanical Garden with drought-tolerant plant species.
- Minimize adverse lighting impacts on aquatic life and avifauna, as well as adverse aesthetic impacts, particularly from stationary point lookouts and along significant view planes.

- **Preservation and Recreation –** Maintain the Kaiwi Scenic Shoreline in a manner that preserves the area’s natural scenic quality and provides educational and passive recreation opportunities.
- **Management –** Protect fragile natural resources, such as the wildlife at Hanauma Bay Nature Preserve, from overuse through continued management and control of visitor numbers and impacts such as walking on the reef and sunscreen pollution.
- **Wāwāmalu Beach Nature Park –** Develop Wāwāmalu Beach as a nature park with the addition of demarcated parking and installation of barriers to protect natural dunes, native vegetation, beach rock, and beach.

3.2.3.2 Active Recreation Areas

- **Expansion –** Expand Sandy Beach Park to include Golf Course 5 and 6 properties, thereby increasing East Honolulu’s active recreation areas.
- **Sport Venues –** Locate areas designed for sporting events that attract high numbers of people along major collector streets or accesses that are separated as much as possible from residential areas and wildlife habitats.
- **Screening and Aesthetics –** Minimize the visibility of perimeter fencing along major collector streets, large recreation buildings or structures, lighting, parking lots and other utilitarian elements through plantings or other appropriate visual screens adjacent to residential areas and major

roadways, particularly to soften the view of the park from above at the roadside vista point along Kalaniana‘ole Highway.

- **Transit –** Locate bus stops and loading areas at principal entries and adjacent to convenient pedestrian accesses to main activity areas within the park.
- **Picnic Amenities –** Provide amenities and service facilities to accommodate “tailgate” picnics in parking areas for sporting events, including shading canopy trees within the parking lot as well as nearby picnic tables and outdoor grills.
- **Lighting –** 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.
- **Access to Recreation Facilities –** Public recreation facilities should be available to users of all skill levels and incomes, particularly Koko Crater Stables.

3.2.3.3 Golf Courses

There are three 18-hole golf courses in East Honolulu. The Hawai‘i Kai Championship Golf Course and the Hawai‘i Kai Executive Golf Course and a driving range are open to the public, while the Wai‘alae Country Club is a members-only course (**Table 3-4**). These three golf courses are important elements of East Honolulu’s open space system because they provide areas for active recreation and offer visual relief from adjacent urban uses. No additional golf courses are proposed.

Guidelines relating to golf courses in East Honolulu are listed below:

- **Viewsheds –** Maintain golf course designs to provide view amenities for adjacent urban areas, especially from well-used public rights-of-way, parks and vista points.
- **Retention –** Optimize the function of golf courses as passive drainage ways, maximizing their potential to retain or detain stormwater runoff.

Table 3-4: East Honolulu Golf Courses

Golf Course Name	Use and Ownership	Acreage
Hawai‘i Kai Championship Course	Open to Public Privately Owned	129.1
Hawai‘i Kai Executive Course and Driving Range	Open to Public Privately Owned	54.9
Wai‘alae Country Club	Members Only Privately Owned	144.9
Total		**328.9**

- **Through Access –** Provide and maintain safe access along golf courses for regional continuity of pedestrian and bicycle systems.
- **Screening –** When necessary for safety reasons, use screening, landscaping, setbacks, and modifications to the course layout, where feasible, rather than fencing or solid barriers.
- **Irrigation –** Use of non-potable water for irrigation of large landscaped areas in accordance with the BWS Rules and Regulations. If non-potable water is either unavailable or infeasible, a report of the investigation should be coordinated and submitted to the BWS prior to considering the use of potable water.

3.3 COMMUNITY-BASED PARKS

The following section provides an overview and a list of general policies and guidelines pertaining to community-based parks and recreation areas.

3.3.1 OVERVIEW

Park areas that serve more localized populations are classified as community-based parks. There are 122.7 acres of community-based parks in East Honolulu. This includes district, community, and neighborhood parks as well as other, smaller park areas (see **Table 3-5**). The main purpose of community-based parks is to provide

active recreation space for residents of the region in the form of playfields and gyms, among others. In addition to meeting the active recreation needs of the region, community-based parks also serve as open space elements and add aesthetic value to the region by providing visual relief from urban land uses.

Table 3-5: Types of DPR Community-Based Parks

Park Type	Average Acres	Population Service Size	Typical Facilities
District	20	25,000	Playfields, play courts, passive areas, gym/recreation complex, swimming pool
Community	10	10,000	Playfields, play courts, passive areas, recreation building
Neighborhood	6	5,000	Playfields, play courts, passive areas, comfort station
Mini Park	Varies	High-Density Area	Benches, picnic tables, children's play area

The largest community-based park in East Honolulu is the 40-acre Koko Head District Park (see **Table 3-6**). Expansion of this park to 59 acres is possible by incorporating the adjacent former Job Corps site. In East Honolulu, this is the most appropriate location for sports and active recreation facilities designed for league play and other major sporting events. This complex should also include passive use areas for quiet enjoyment and nature learning activities. These areas can also serve as buffers from adjacent residential areas or from natural features, such as the slopes of Koko Crater.

Private recreation facilities in Hawai'i Kai also meet some of the demand for neighborhood parks such as at Mariner's Cove, the Esplanade and others. While privately facilities might not be accessible to the general public, they have the ability to reduce demands on nearby public recreation facilities.

In evaluating community-based recreational park needs, the DPR uses a general standard of two acres per 1,000 persons, 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, topographic, or other community conditions. Based on this general park area-to-population standard and East Honolulu's 2010 population of 49,900, the

community-based park area of 122.7 acres is approximately 22.9 acres above the minimum requirement. Based on population stabilization anticipated by 2040, there is not a need for new community-based parks in East Honolulu.

There is only one District Park in the region, while DPR's population service ratio (see **Table 3-5**) would suggest the need for two such parks in East Honolulu. However, the land area for Koko Head District Park is twice as large as DPR's standard for District Parks. Moreover, as noted previously, this park can be expanded to 59 acres by incorporating the adjacent Job Corps site.

Table 3-6: DPR Community-Based Parks in East Honolulu

Park Type/Name	Acres	Park Type/Name	Acres
District Parks		**Dog Parks**	
Koko Head District Park	40.0	Hawai'i Kai Dog Park	1.8
Subtotal	**40.0**	**Subtotal**	**1.8**
Community Parks		**Mini Parks**	
Kalama Valley Comm. Park	6.0	Koko Kai Park	0.6
Kamilo Iki Community Park	18.5	Kamole Mini Park	2.2
'Āina Haina Community Park	6.2	Kōke'e Park	0.5
Subtotal	**30.7**	**Subtotal**	**3.3**
Neighborhood Parks		***Private Recreation Facilities (not managed by the DPR)***	
'Āina Koa Neighborhood Park	2.4	*The O'ahu Club*	*7.6*
Haha'ione Neighborhood Park	4.1	*The Peninsula*	*4.3*
Haha'ione Valley Neighborhood Park	6.2	*Wai'alae Iki V Pavilion*	*3.1*
Kamilo Iki Neighborhood Park	7.2	*Hawai'i Loa Ridge Clubhouse*	*3.1*
Koko Head Neighborhood Park	6.8	*Nā Pali Haweo Lookout Park*	*1.4*
Kuli'ou'ou Neighborhood Park	4.4	*Queen's Gate Recreation Center*	*1.2*
Nehu Neighborhood Park	1.3	*Kuapā Isle Clubhouse*	*0.8*
Niu Valley Neighborhood Park	2.1	*Mariners Village III Rec. Center*	*0.5*
Wai'alae Iki Neighborhood Park	9.9	*Koko Isle Clubhouse*	*0.5*
Wailupe Valley Neighborhood Park	2.5	***Subtotal***	***22.5***
Subtotal	**46.9**		
Subtotal All Public Parks	**122.7**	***Grand Total Public Parks and Private Recreation Facilities***	***145.2***

As suggested in the discussion of Koko Head District Park, the distribution of community-based parks within East Honolulu is slightly uneven. The Hawai‘i Kai Neighborhood Board area has approximately 36 acres above the minimum requirement for community-based parks, while the Kuli‘ou‘ou-Kalani Iki Neighborhood Board area has a deficit of approximately 10 acres according to DPR’s population ratios.

However, as mentioned previously, population is not the only factor to consider when evaluating community-based park needs. Other factors, such as the demographic composition and maturity of a neighborhood, should also be taken into account. In East Honolulu, the Kuli‘ou‘ou-Kalani Iki Neighborhood Board area has a higher share of residents over the age of 65, an older housing stock, and fewer households with related children compared to the Hawai‘i Kai Neighborhood Board area. As such, the Kuli‘ou‘ou-Kalani Iki community does not currently have a strong demand for park facilities such as children’s play areas, but conversely, may develop a need for more facilities supporting passive recreation.

There is the potential for an increase in “multi-generation” households (i.e., aging parents living with adult children and pre-school or school-age grandchildren), particularly in the Kuli‘ou‘ou-Kalani Iki community, as children of elderly residents either move in to care for their aging parents or are unable to live on their own due to economic pressures and high housing costs. These trends may play an important role in the life cycle of the Kuli‘ou‘ou-Kalani Iki community and may increase the requirements, by amount and type, and mixture of active and passive recreation facilities over time. (Also see related discussion on housing in **Section 3.5**)

DPR has no current plans to acquire additional land for community-based park development in the region. Expansion of community-based parklands is possible in Hawai‘i Kai, but is limited in the Kuli‘ou‘ou-Kalani Iki Neighborhood Board area by the lack of available land. However, there are opportunities to expand the availability of recreational facilities oriented to a younger population in the Kuli‘ou‘ou-Kalani Iki area by jointly, with the Department of Education (DOE), using and improving elementary and intermediate school recreational facilities as community-based parks to overcome the current shortfall.

3.3.2 GENERAL POLICIES

General policies pertaining to community-based parks are as follows:

- Provide adequate parks to meet the recreational needs of the neighborhood residents, particularly community gardens.
- Observe the DPR standard for community-based parks of a minimum of two acres of community-based parks per 1,000 residents, with one acre for district parks and a total of one acre for community parks, neighborhood parks, and mini-parks.
- Expand active recreational facilities at Koko Head District Park by incorporating and developing the adjacent Job Corps Center site.
- Modify recreational facilities in existing parks and increase access to public school facilities in areas where there is limited opportunity to expand park space to respond to changing demographic profiles or recreational needs.
- Expand access to existing park lands by improving neighborhood linkages for non-motorized transportation modes and disguising park boundaries through the transition of park space to paths or greenways.
- Continue efforts to co-locate Neighborhood or Community Parks with elementary or intermediate schools and coordinate the design of facilities when efficiencies in the development and use of athletic, recreation, meeting, and parking facilities can be achieved.
- Develop additional trails and bike paths to balance trail demands across East Honolulu and alleviate potential overuse at existing trails.

3.3.3 PLANNING GUIDELINES

The following guidelines implement the general policies for community-based parks:

- **Connectivity –** Provide and improve linkages with bikeways and walking paths off-site with the redevelopment of existing parks.

- **Residents' Needs –** Modify community-based parks in areas where recreational needs of residents are not being adequately met.
- **Aesthetic Improvements –** Design and site structural improvements and landscaping in community-based parks to create or add to the aesthetic value of these open space elements.

3.4 HISTORIC AND CULTURAL RESOURCES

The following sections provide an overview and a listing of policies and guidelines for the preservation of historic and cultural resources in East Honolulu.

3.4.1 OVERVIEW

Much of East Honolulu is defined by the old Maunalua Fishpond. Maunalua Fishpond, sometimes referred to as Kuapā Pond or Keahupua o Maunalua, was 523 acres and the largest ancient fishpond of the Hawaiian Islands. The Maunalua Fishpond was reportedly connected via a tunnel to Ka'ele'pulu Pond, now known as Enchanted Lake, in Kailua. In the 1960s, Kamehameha Schools leased much of what is now Hawai'i Kai to Henry J. Kaiser who dredged and filled the fishpond to create a subdivision and the private marina.

While many of the ancient fishponds have been filled, wall remnants of large fishponds remain visible. At Wailupe is the 41-acre Loko Nui o Wailupe with its 2,500-foot-long wall. Niu Peninsula is the former Kūpapa Fishpond with its 2,000-foot-long wall.

Cultural and natural resources were carefully conserved by Hawaiian konohiki, or land managers. An advanced system of land and ocean management once fed the regional population sustainably. 'Uala (sweet potato), ama'ama (mullet) and limu (seaweed) were among the foods cultivated in East Honolulu. Feral pigs are another traditional food source. Community subsistence hunters continue to hunt the large population in the valleys and mauka areas.

Fish catches were historically shared with kūpuna from the Lunalilo Home for elderly Hawaiians. The Home is a historic landmark that has been in the Maunalua region since the 1920s. Fish and limu were also sold and bartered within the community. Kapu or rest periods for fishing were instituted during fish spawning and managed by the konohiki. In Maunalua Bay konohiki used a flag system to alert boaters when fish were spawning. Muliwai (stream estuaries that meet the ocean), umu (nearshore fish houses) and koʻa (ocean fish gathering areas) were part of the sustainable aquacultural production system.

While unmarked today, these historic fish gathering sites remain high value areas for community sustainability. Named koʻa were Keahupua o Maunalua located near the bridge at Kuliʻouʻou Beach Park. Paliʻalaea and Huanui were shrines where mullet gathered, while Hina was for akule. These now destroyed sites were located along the Portlock shoreline. Traditional muliwai sites are located at Kapakahi Stream in Kāhala, near Wailupe Beach Park, Niu Stream, Kuliʻouʻou Stream, Kamilonui Valley and Kaloko at Wāwāmalu. Hanauma Bay also was favored greatly by the aliʻi for its fishing grounds.

Today, Native Hawaiians and the community at large are working to access, perpetuate, and steward East Honolulu's resources. Invasive species currently envelop large acreages and active management is necessary. Historic trails and mauka to makai pathways should be restored and maintained. Well known examples of these can be found in the ahupuaʻa trail in the back of Wailupe Valley, recently purchased by the City as the Wailupe Nature Preserve, and the Kealaikapapa paved roadway near Makapuʻu. Access to traditional resource gathering should also be preserved. These include the former salt making area at the bridge mauka of Joe Lukela Beach Park.

Access for surfing, fishing, hunting and diving should be maintained and improved to reopen more customary paths to resources. Buffer and kapu areas also play a role in managing sensitive resources within the landscape.

Large scale ranching and numerous dairies were active in the 19th and first half of the 20th century. Piggeries and poultry operations were also part of the agricultural production. The latter part of the 20th century saw a shift away from agricultural

sustainability with rapid urbanization. The farms at Kamilonui Valley and Koko Head as well as the Koko Head Stables retain the historic legacy of the area and should be perpetuated.

In 1930, an archaeological survey of Oʻahu documented approximately 60 sites in the area now defined as East Honolulu. Many of these sites, however, have since been destroyed by land-altering activities such as ranching, development, and construction, as well as by erosion and the 1946 tsunami. Numerous archaeological sites do remain though they have not been formally recorded, and lie in undeveloped areas.

Pohaku markers and stone boundary walls distinguish resource districts. Many remain today on hillsides and play a part in water management in addition to their historic value. Exceptional dry stack walls can still be found along the slopes above Kāhala, Wailupe, and Niu as well as scattered eastward.

Coconut groves that were planted in traditional times remain today. Near Waiʻalae Beach Park are the remnants of what was once the second largest grove on Oʻahu. The shoreline retains groves near Kāhala, Kawaikuʻi Beach Park and Kānewai Spring in Kuliʻouʻou.

Traditional burials remain throughout the region. Cliff sides and caves in each valley as well as sand dunes are known burial grounds. Many of these sites have been looted or had the iwi removed to the Bishop Museum. Burial sites retain cultural significance for the descendants and community and should be preserved without disturbance. Lava tubes often contain burials as well as act as conduits for freshwater. They are of great age and care should be taken to maintain their integrity whenever possible. One noted lava tube was said to be a fish passage between Kaʻeleʻpulu Fishpond in Kailua and the Maunalua Fishpond.

Within the Koko Head Regional Park, a survey conducted in 1988 located one of five sites identified in the 1930 archaeological study. This site, the Koko Head Petroglyphs, was discovered in 1899 and is situated near the Lānaʻi Lookout. The petroglyphs have been extensively altered by erosion and vandals since the 1930 survey, but nevertheless remain significant examples of petroglyph art.

Similarly, in the Queen's Beach area, approximately 20 sites were documented in the 1930 survey. The features included fishing shrines, house platforms, and a habitation cave. Although survey work done in 1984 found none of these sites, the large quantity of sites recorded earlier make it likely that subsurface cultural deposits and scattered human burials remain in the areas within and surrounding Koko Head Regional Park.

West of Koko Head, archaeological sites consist of shelters, shrines, heiau, burial caves, and burial cliffs. A system of Heiau were once found often at ridge elevations overlooking Maunalua Bay. While many have been destroyed, these sites remain worthy of preservation and restoration when appropriate. Many of the sites require a line of site view plane to the next heiau as well as to the ocean. Often elevations were used as kilo or fish spotting points where a spotter would find fish schools and signal to the fisherman out in the ocean. Kilo points include Kawaihoa Point and Hawaiʻi Loa Ridge.

The Hāwea Heiau complex contains ancient walls, petroglyphs, terraces, a coconut grove, and heiau and is located near the intersection of Hawaiʻi Kai Drive and Keāhole Street. Pāhuʻa Heiau, located at the end of Makahūʻena Place, underwent restoration work during the 1980s. Besides its significance as a fifteenth to eighteenth century heiau, Pāhuʻa Heiau is also noted as the Office of Hawaiian Affairs' first landholding.

Makaniʻolu Shelter in Kuliʻouʻou is on the Hawaiʻi Register of Historic Places and is one of two such registered sites in East Honolulu. Makaniʻolu is a pre-contact cave in good condition and is a good representative of its class. Makaniʻolu is where the first radio-carbon dating in the Pacific was done. The U.S. Coast Guard Makapuʻu Point Lighthouse is also on the National Register of Historic Places.

There are also archaeological sites on undeveloped parcels located along cliff faces and deep within the region's valleys. These areas have not been impacted by the tsunami of 1946 or by previous development activity. Some of these areas, however, have been subject to intensive agricultural use in the past.

For example, a privately initiated pedestrian survey of surface and possible subsurface material remains was conducted on a parcel located in Kamilo Nui Valley near the planned extension of Hawai‘i Kai Drive. Three archaeological sites were identified: a single, isolated rock pile feature; a small bedrock cavity containing a human molar; and a historic wall which was probably a remnant of a larger complex. Of these sites, only the bedrock cavity was recommended for in-situ preservation.

3.4.2 GENERAL POLICIES

General policies pertaining to historic and cultural resources are as follows:

- Emphasize physical references to East Honolulu’s history and cultural roots.
- Protect existing visual landmarks and support the creation of new, culturally appropriate landmarks.
- Preserve and actively maintain significant historic features from earlier periods.
- Retain, whenever possible, significant vistas associated with archaeological features.

3.4.3 PLANNING GUIDELINES

The treatment of a particular historic or cultural site should depend upon its characteristics and preservation value. The following planning guidelines should be used to implement the general policies and determine appropriate treatment:

- **Preservation and Protection –** Determine the appropriate preservation methods on a site-by-site basis in consultation with the State Historic Preservation Officer and cultural practitioners of the area.
    - Require preservation in-situ only for those features that the State Historic Preservation Officer has recommended such treatment.
    - Recommend in-situ preservation and appropriate protection measures for sites that have high preservation value because of their good condition or unique features.

- **Compatible Setting –** Determine the appropriate treatment for a historic site by the particular qualities of the site and its relationship to its physical surroundings in consultation with the State Historic Preservation Officer. The context of a historic site is usually a significant part of its value and care should be taken in the planning and design of adjacent uses to avoid conflicts or abrupt contrasts that detract from or destroy the physical integrity and historic or cultural value of the site. Include sight lines that are significant to the original purpose and value of the site in criteria for adjacent use restrictions.
- **Accessibility –** Determine the degree of access that would best promote the preservation of the historic, cultural and educational value of the site in consultation with the State Historic Preservation Officer, Hawaiian cultural organizations, and the landowner, recognizing that economic use is sometimes the only feasible way to preserve a site. Public access to a historic site can take many forms, from direct physical contact and use to limited visual contact. In some cases, however, it may be highly advisable to restrict access to sites to protect their physical integrity or sacred value.

3.5 RESIDENTIAL USE

An overview of residential development in East Honolulu is presented below. This is followed by a description of general policies and guidelines that are to be applied to existing and planned residential developments.

3.5.1 OVERVIEW

With the establishment of the Community Growth Boundary to contain the spread of development, housing capacity in East Honolulu should only be increased through infill development. This will occur through development of the few remaining scattered vacant parcels on the relatively level valley floors and on previously developed ridges; through minor subdivisions of some larger residential lots at scattered locations throughout the region; and expansions of existing homes.

The development of ‘ohana units, or accessory dwelling units (ADUs), represents a significant opportunity to provide smaller, affordable units as part of the planned infill development. However, out of the approximately 1,800 eligible parcels in East Honolulu, at the current rate of construction, there will be approximately only 50 ‘ohana units or ADUs built in East Honolulu by 2040. Increasing the number of ‘ohana units or accessory dwelling units has the potential to:

- Enable long-term rental housing opportunities affordable to low- and moderate-income, gap group, elderly, and single person households; and
- Assist in making more housing affordable by providing the potential for a built-in (rental) income stream that could partially offset housing and mortgage costs.

This would be particularly advantageous for ADUs within a convenient walking distance (1/4 mile) of shopping centers served by city bus lines. This would increase transit accessibility and reduce reliance on automobiles for households in the ‘ohana units.

While the development of large vacant parcels through the normal development process are readily identified and their effects are more immediately apparent, the physical changes wrought by incremental intensification of residential use in existing built-up neighborhoods through minor subdivisions and home expansions will be slower and more dispersed.

Effective residential lot design standards that limit building height, coverage, paving, and removal of landscaping are implemented through the Land Use Ordinance (LUO). These should be reviewed and if necessary modified to minimize the long-term cumulative impact of this gradual transformation, which could otherwise adversely affect the character of existing neighborhoods.

3.5.2 GENERAL POLICIES

The following general policies may be applied to existing and planned residential developments to preserve and enhance the quiet bedroom communities of East Honolulu:

- Accommodate a slight increase of housing capacity in East Honolulu by:
  - Development of new homes on the few remaining vacant lots designated for low-density residential use.
  - Expansion of existing homes (especially ‘ohana units on eligible parcels) in built-up residential neighborhoods.
- Respond to the special needs of an aging population by providing future housing opportunities for a variety of living accommodations which are affordable to low- and moderate-income, gap group, and other elderly households. These accommodations could include several forms; such as houses that can accommodate multi-generation households, ‘ohana units, home expansions, group living facilities, adult residential care homes, assisted living units, and continuing care retirement communities such as the Kāhala Nui assisted living units and the Hawai‘i Kai retirement community.
  - Encourage the development of medical care facilities, including, but not limited to, facilities that provide palliative and hospice care.
- Modify residential neighborhood street design to provide greater emphasis on safe, accessible, convenient and comfortable pedestrian routes, bus stops, bike routes, and landscaping with shade trees. Methods include, but are not limited to: slowing travel speeds, less direct routes, adding and improving crosswalks, and converting on-street automobile parking spaces into seating areas and shaded landscaping. Revision of City street standards, subdivision regulations, and use of traffic calming measures may be required in order to support these policies and the policies identified in the **Complete Streets Design Manual** (2016). Policies that emphasize Complete Streets adhere to the following key principles:
  - Safety;
  - Context sensitive solutions;
  - Accessibility and mobility for all;
  - Use and comfort of all users;
  - Consistency of design;
  - Energy efficiency;
  - Health;
  - Green infrastructure.

- Create an inclusive and accessible urban or suburban environment that encourages active and healthy aging, specifically age-in-place principles and the Universal Design Standards that address or include the following:
    - Equitable, flexibility, simple and intuitive, perception information, tolerance for error, low physical effort, and size and space.
- Suggest the formation of a community-based redevelopment district that would protect, adapt, and relocate residential and commercial structures, public facilities, and natural and cultural resources vulnerable to sea level rise impacts, including coastal flooding, inundation, and erosion.
- Adopt maps and regulations to incorporate the guidance from the **City Climate Commission** and the **Hawai‘i Sea Level Rise Vulnerability and Adaptation Report** on vulnerability to coastal erosion and flooding and other science based projections of climate change impacts into land use regulations and permit processes.
- Encourage new structures to be designed to withstand the anticipated impacts of sea level rise over the building’s lifespan.
- Enforce regulations relating to the operation of transient vacation units in residential neighborhoods.

3.5.3 PLANNING GUIDELINES

A summary of the guidelines to implement the general policies are provided below with additional discussion in the following sections:

- **Physical Character and Definition of Neighborhoods –** Establish design guidelines to minimize long-term adverse impacts of new infill development on surrounding neighborhoods. Encourage use of sloped roof forms with wide overhangs. Enhance the boundaries of existing neighborhoods through the use of landscaping, natural features, and building form and siting. Focus neighborhood activity on the local street, common pedestrian rights-of-way, or recreation areas.

- **Transit, Bicycle and Pedestrian-Oriented Residential Streets –** Encourage bus, pedestrian, and bicycle travel, particularly to reach neighborhood destinations such as schools, parks, and convenience stores, by seeking to reduce the number of vehicle miles traveled per person and recognizing the need for accessible design and safe travel conditions for elderly and disabled people. Implement passive and active automobile traffic calming measures on residential neighborhood streets and add street trees to provide shading for sidewalks and bus stops. Implement the policies and guidelines in the **O‘ahu Bike Plan**, **Bike Plan Hawai‘i**, the **Statewide Pedestrian Master Plan**, and, when completed, the **O‘ahu Pedestrian Plan**.
- **Environmental Compatibility –** Encourage energy-efficient features, such as the use of solar panels for generating electricity and heating water, and passive solar design, such as the use of window recesses and overhangs and orientation of openings to allow natural cross-ventilation.
- **Low-Impact Development and Stormwater Retention –** Follow low-impact development standards as properties are redeveloped to encourage the capture of stormwater, sediment, and toxic pollutant runoff on-site and reduce pollutant loads into downstream water bodies. Provide incentives for owners of existing homes to develop rain gardens, permeable driveways, and other strategies that hold stormwater on-site instead of discharging it into storm drains or streams.

3.5.3.1 Residential Development

Three categories of urban residential development are recognized by this **Plan**: Single-Family Residential, Low-Density Apartment and Medium-Density Apartment. All of these categories are found only within the Community Growth Boundary.

- **Residential** – Dwellings in this category consist of single-family detached and attached homes or townhouses with individual entries. Density of development may range from 5-12 dwelling units per acre. Building heights generally do not exceed two stories.
- **Low-Density Apartment** – This category consists of predominantly two- and three-story townhouse complexes, stacked flats, or low-rise apartment

buildings; parking provision may comprise a separate story. Overall building height should not exceed 40 feet. Buildings may have elevators and common entries for multiple dwellings. Density of development may range from 10-30 dwelling units per acre. The Low-Density Apartment designation will be applied only to sites that have already been developed in a manner that is consistent with the density and building height guidelines for this category, and to undeveloped areas zoned for the Apartment District as of the effective date of this **Plan**.

- **Medium-Density Apartment** – This category of residential development takes the form of multi-story apartment buildings with densities in the range of 25-90 dwelling units per acre. Medium-Density Apartment designation is applied only to sites that have already been developed in a manner that is generally consistent with the density and building height guidelines for Medium-Density Apartment use, or are collocated on a site designated for commercial use and proposed mixed-use development.

  For all existing developments in the Medium-Density Apartment category:

  - Maintain building height setbacks and landscaping to reduce the direct visibility of taller buildings from lower density residential areas and from the street front. Possibly add low-rise accessory buildings within the height setback areas to provide a visual transition from the high-rise apartment building to adjacent areas. Building height should not exceed 90 feet.
  - Consider mixed-use zoning to permit limited commercial uses, primarily to serve residents of an apartment complex and the immediate neighborhood, depending on site characteristics and adequate justification for the need for such commercial uses based on demand and convenience to residents.

3.5.3.2 Special Needs Housing and Senior Housing

Special Needs Housing comprises facilities designed for certain segments of the population, such as elderly and disabled persons. Often such housing includes special features, such as: congregate dining and social rooms; laundry, housekeeping and personal assistance services; shuttle bus services for residents; skilled nursing beds, and physical therapy clinics.

Group living facilities are allowed in all residential areas. Special needs housing for the elderly can be located in apartment, apartment mixed use, and business mixed use districts. Both types of facilities require a Conditional Use Permit Major (CUP-Major), which requires a public hearing.

The guidelines for special needs housing and senior housing are as follows:

- **Proximity to Transit –** Locate special needs housing near transit services and commercial centers.
- **Universal Design –** Apply the seven principles of Universal Design to projects to support the seniors who wish to age-in-place, as articulated in the **Making Honolulu an Age-Friendly City: An Action Plan**.
    - The seven principles of universal design, intended to make products or environments accessible to everyone in society, incorporate or address the following: equitable, flexibility, simple and intuitive, perception information, tolerance for error, low physical effort, and size and space.
- **Density –** Accommodate an allowable building density of 10-40 units per acre, not including beds in skilled nursing facilities. Allow designated affordable housing projects of up to 40 units per acre.
- **Design –** Utilize building and roof form, orientation, location of entries, landscape screening, and height to maintain compatibility with the existing residential uses and scale.
- **Map –** This land use is not specifically designated on **Map A-2, Urban Land Use** as it is an allowable use inclusive in residential areas.

3.5.4 OTHER USES IN RESIDENTIAL AREAS

The following uses are not specifically designated on **Map A-2, Urban Land Use**, but are allowed in all residential areas: elementary schools, parks, churches, community centers, child care centers, and public facilities and utilities serving the area.

3.6 NON-RESIDENTIAL DEVELOPMENT

This section provides an overview of non-residential development in East Honolulu followed by general policies and planning guidelines for the location, expansion or renovation of such uses. Non-residential use includes retail commercial, office, service-oriented industrial, visitor accommodations, and institutional uses.

3.6.1 OVERVIEW

East Honolulu has seven commercial centers. Hawai‘i Kai Towne Center, the largest retail complex in East Honolulu, provides parking for approximately 1,010 vehicles and attracts shoppers from outside the region with big box stores as anchor tenants.

Koko Marina Shopping Center, the second largest complex, includes ocean recreation-related services such as boating equipment and repair and dive tour headquarters; restaurants and entertainment attractions; and retail shops that serve the needs of both visitors and residents in the area. The other commercial centers located in the **Plan** area include the Hawai‘i Kai Shopping Center, Niu Valley Shopping Center, ‘Āina Haina Shopping Center, Haha‘ione Valley Center, and Kalama Village Center.

The market areas for other commercial centers listed above are limited mostly to the communities for which they are named, emphasizing food, household products and personal services. In all of these smaller centers, additional floor area could be developed within their existing land areas with more efficient site design. However, demand for expansion has not been strong, and given the minimal anticipated population growth, there is little prospect for commercial expansion.

Only the first phase of Kalama Village, occupying less than a third of the land area that had been designated for this project, has been developed, and it has struggled to lease the developed floor area.

Some commercial activities in the Niu Valley Center are anticipated to be displaced and their functions moved to nearby neighborhood commercial centers. A religious community, which has moved into the shopping center, is diminishing the original commercial function.

Expansion of Costco and the addition of a storage facility has increased the commercial square footage in Hawaiʻi Kai. Commercial zones in East Honolulu appear sufficient in view of the projected population stabilization. However, an opportunity still exists for additional commercial space within existing commercial-zoned parcels.

There is approximately 468,000 square feet of office space supply in the **Plan** area, a majority of which is located in Hawaiʻi Kai. Historically, East Honolulu's vacancy rate for office space has been one of the lowest on Oʻahu, with some of the highest asking base rent.

With the exception of the Japan-America Institute of Management Science (JAIMS), which is a private institute, most of East Honolulu's office inventory is located within and adjacent to the Koko Marina Shopping Center in two buildings, Hawaiʻi Kai Corporate Plaza and Hawaiʻi Kai Executive Plaza, that are located along Kalanianaʻole Highway makai of the Hawaiʻi Kai Towne Center. These areas provide a combined total of nearly 200,000 square feet of office floor area. **Table 3-7** lists the locations and gross leasable area.

Table 3-7: Office Inventory in East Honolulu

Office Building	Year Opened	Gross Leasable Area (Approx.)
Japan-America Institute of Management Science (JAIMS)	1972	257,000
Koko Marina Office Space	1963	47,760
Hawaiʻi Kai Executive Plaza	1990	41,582
Hawaiʻi Kai Corporate Plaza	1987	39,355
ʻĀina Haina Professional Building	1982	22,550
Koko Head Plaza	1975	21,226
Hawaiʻi Kai Medical/Office Center	1987	16,598

There is a probable demand for certain light industrial uses that are oriented to the East Honolulu communities. Such uses could include, among others, small warehousing facilities, and appliance and automobile repair shops. However, the anticipated demand for space in this region is not sizable and the type and scale of such uses that may be needed could be conveniently located in a large commercial center with appropriate environmental and aesthetic controls to promote compatibility with adjacent uses. Many of these types of uses are in fact already located within some of East Honolulu's commercial centers.

East Honolulu has only one resort hotel – the Kāhala Hotel and Resort – which was developed in the 1970s, and continues to serve visitors and residents.

3.6.2 GENERAL POLICIES

For purposes of this **Plan**, the various types of non-residential uses are defined and designated in four categories: Neighborhood Commercial Center, Regional Town Center, Resort and Institutional. The policies pertaining to each of these categories are as follows:

- **Neighborhood Commercial Center –** The existing centers in ʻĀina Haina, Niu Valley, Kalama Village, and Hahaʻione Valley will continue to function as Neighborhood Commercial Centers. There is no need to designate additional land for expansion of the Neighborhood Commercial Centers. In fact, market response suggests that land that was originally designated for expansion of the site area of Kalama Village Center should be redesignated for residential or mixed-use (residential and commercial/office). Modest additions of floor area and parking could be made to these centers through redesign of the sites they presently occupy, if needed. These centers should be oriented to serve the local community.
- **Regional Town Center –** Create a "Regional Town Center" in the Hawaiʻi Kai Marina area by strengthening the relationship between the existing commercial uses in this area, increasing the mix of uses and types of services and activities in this commercial zone, and providing more

convenient transportation access and improved amenities and connections for people who walk and bike.

- **Resort and Institutional –** Prohibit new or expanded land areas for resorts and institutional campuses. A new or expanded resort destination in East Honolulu would be contrary to **General Plan** policy. The population forecast for 2040 in East Honolulu does not warrant major new schools, hospitals, or similar institutions to serve these communities, and establishment of a large institution in East Honolulu for the purposes of creating additional employment in the region would be contrary to the **General Plan** policy to direct job growth to the Primary Urban Center, ‘Ewa, and Central O‘ahu.
- **Mixed Uses in Business Districts –** Allow low-rise, multi-family residential use as a permitted accessory use above the first floor in the B-1 Neighborhood Business District and the B-2 Community Business District.

In addition to the policies pertaining to the specific uses above, the following general policy may be applied to existing and planned non-residential development:

- **Sea Level Rise –** Protect, adapt, or relocate commercial structures, public facilities, and natural and cultural resources vulnerable to sea level rise impacts, including coastal flooding, inundation, and erosion as feasible.

3.6.3 PLANNING GUIDELINES

The following planning guidelines apply to neighborhood and community commercial centers. They should apply to the expansion or renovation of existing commercial centers, as well as to the development of new neighborhood commercial centers.

- **Scale and Purpose of Neighborhood Commercial Centers –** Neighborhood Commercial Centers are located on 5 to 10 acres or less, within or adjacent to a residential area, and whose primary access and frontage is from a collector street. The center may have up to 100,000 square feet of floor area. These centers emphasize retail stores, personal services, and public facilities designed to serve the needs of the

surrounding community; i.e., typically residents within a one- to two-mile radius.

- **Mix of Uses in the Regional Town Center –** The Regional Town Center serves as the regional hub for commercial activity serving both neighborhood residents and visitors. This center comprises four components:
    - The Hawaiʻi Kai Towne Center, given its size and location relative to principal travel routes in the region, is the de facto focal point for regional shopping and services. Enhance the Hawaiʻi Kai Towne Center as a focus of activity by offering a greater diversity of uses potentially including: apartment uses, public uses, and indoor small- to medium-size "service-industrial" establishments.
    - The Koko Marina Shopping Center, while physically separated from the Hawaiʻi Kai Towne Center, plays a complementary role with a focus on marina and ocean recreation services, specialty shops and entertainment attractions. Enhance the Koko Marina Shopping Center as a recreation/entertainment oriented commercial complex with the addition of more services for ocean recreation, restaurants, and similar attractions.
    - The two office buildings are the third component of the Regional Town Center. Convert excess ground or second-floor space in office buildings to retail or other commercial uses if there is a demand for other uses.
    - The fourth component of the Regional Town Center is the Hawaiʻi Kai Shopping Center. Its size and tenant mix is similar to that of a Neighborhood Commercial Center. The Hawaiʻi Kai Shopping Center continues to play a supporting role in the Regional Town Center through improvements in physical linkages.
- **Resorts and Institutional –** If redeveloped, the resort area in Kāhala needs to take into account the projected impacts of climate change and sea level rise over the length of the building's lifespan.
    - Limit building heights generally to not exceed 60 feet for Institutional use and 70 feet for Resort use. Height setback transitions will be provided from street frontages, the shoreline, and adjacent residential areas.

- Signage will be non-illuminated or indirectly illuminated. Appropriately shield high-intensity lighting downward to minimize impact on adjoining or affected uses and wildlife.

- **Physical Linkages and Accessibility –** Incorporate site design and facilities to promote pedestrian, bicycle, and transit access in Neighborhood Commercial Centers and the Regional Town Center.
  - Provide at least one pedestrian access way from the public sidewalk or other off-site pedestrian pathway to the entrance of establishments in the commercial center that does not require crossing a traffic lane or parking lot aisle or driveway.
  - Place parking and service areas behind the buildings or otherwise visually screened from streets and residential areas.
  - Prioritize pedestrian and bicycle access as more important for the Neighborhood Commercial Centers, while transit access is more significant for the Regional Town Center.
  - Achieve efficiencies and other improvements in traffic and parking conditions by redesigning or re-siting parking lots, driveways and walkways and providing shuttle bus services between the components of the regional Town Center.
  - Develop a pedestrian route along the marina and bridges to link the adjacent components to provide convenient access between the two commercial centers and enhance the recreational value of the marina.
  - Encourage businesses to develop evacuation plans and guidelines in the event of a disaster.

- **Appropriate Scale and Architectural Style –** Maintain consistency between the building mass of a commercial center and its urban and natural setting.
  - Strive to have Neighborhood Commercial Centers reflect a residential architectural character.
  - Allow the Regional Town Center to reflect a more varied, urban architectural character. Future additions or renovations to the Hawai‘i Kai Towne Center, in particular, will reflect a more positive orientation to its Marina frontage.

- Provide a landscaped screen of trees and hedges for parking areas in setbacks with shade trees throughout the parking lot for aesthetics and stormwater retention.
- Use only low-level or indirect lighting, appropriately shielded and pointed downward, which meets safety and security requirements in parking lots.
- Ensure compatibility between the type, size, design, placement, and color of signage and the context of adjacent facilities and uses.
- Avoid blank facades on portions of buildings visible from a street or the Hawai‘i Kai Marina by using texture, articulation, color, and fenestration to create visual interest.

- **Environmental Compatibility –** Encourage energy-efficiency features, such as the use of solar panels for generating electricity and heating water, and passive solar design, such as the use of window recesses and overhangs and orientation of openings to allow natural cross-ventilation.
  - Incorporate resource conservation measures, such as water constrictors and facilities for the sorting of waste materials for recycling, in the design of new development.
  - Require the use of low-impact development standards for any significant new construction or redevelopment, particularly in areas that may have large impervious surfaces, in order to hold stormwater on-site instead of discharging it into storm drains or stream channels.
  - Provide incentives for owners to develop rain gardens, permeable parking lots and driveways, and other strategies that hold stormwater on-site instead of discharging it into storm drains or streams.
  - Projects shall comply with the Clean Water Act.

3.6.4 OTHER USES IN NON-RESIDENTIAL AREAS

Other uses in non-residential areas are shown on **Map A-2**, Urban Land Use in **Appendix A** as follows:

Elementary schools, churches, child care centers, fire stations, and other public facility and utility uses serving the area are not specifically designated on the Urban Land Use Map, but are allowed in all residential and commercial areas, subject to appropriate zoning controls to assure compatibility with surrounding uses. The general locations of existing larger institutions, such as high schools, are indicated by special symbols.

4. PUBLIC FACILITIES AND INFRASTRUCTURE POLICIES AND GUIDELINES

The vision for East Honolulu will be implemented in part through application of the general policies and guidelines for public facilities and infrastructure that are presented in the following sections.

4.1 TRANSPORTATION SYSTEMS

This section describes the existing road, transit, and bikeway network in East Honolulu as well as plans for future improvements. These elements are shown in the Public Facilities Map in **Appendix A**. The section concludes with general planning policies and guidelines to direct future transportation system development in East Honolulu.

4.1.1 EXISTING AND PLANNED ROADWAY NETWORK

4.1.1.1 Existing Roadways

The only major roadway arterial in East Honolulu is Kalaniana‘ole Highway (State Highway 72), which links the Primary Urban Center to the communities of East Honolulu and is also a scenic, secondary route between Kailua/Waimānalo and Honolulu.

Kalaniana‘ole Highway consists of six lanes (three lanes in each direction). One of the lanes is designated as a High Occupancy Vehicle (HOV) contra-flow lane, thus providing four Honolulu-bound lanes during the morning peak between West Halema‘uma‘u Street and ‘Āinakoa Avenue. This HOV lane is restricted to buses, vanpools, motorcycles, and carpools. Other improvements made to this section of the highway include left turn lanes, bus turnouts, improved traffic control systems, and improved lighting.

Major roadway collectors in East Honolulu are those leading from Kalaniana‘ole Highway into the ridge and valley neighborhoods. Important intersections include, but are not limited to, ‘Āinakoa Avenue, Kalani Iki Street, West Hind Drive, Hawai‘i Kai Drive, Keāhole Street, and Lunalilo Home Road. Hawai‘i Kai Drive runs parallel to Kalaniana‘ole Highway through parts of Hawai‘i Kai. However, because a section of the planned route for Hawai‘i Kai Drive in the Kamilo Nui Valley area has not been completed, it does not function as an additional mauka access route linking Maunalua Bay to Kalama Valley. A portion of the Hawai‘i Kai Drive Extension was constructed with a narrower width of 26 feet rather than the normal 40-foot width to reduce the amount of through traffic allowed. The right-of-way for this section is 56 feet, which allows for future road widening to 40 feet along with inclusion of a bike lane.

American commuting habits, and therefore their parking needs, are changing. People are increasingly leaving their cars behind in favor of riding transit, ridesharing, walking, biking, and even scootering. Additionally, as the population of East Honolulu continues to age, there will be fewer commuters resulting in potentially less congestion during peak hours.

4.1.1.2 Planned Roadways

Planning and development of roadways are the responsibility of the State Department of Transportation and the City Department of Transportation Services. Roadway projects using federal transportation funds also involve the O‘ahu Metropolitan Planning Organization (OMPO), a joint City-State agency.

In April 2016, OMPO published the **2040 O‘ahu Regional Transportation Plan** (**ORTP**). The **2040 ORTP** recognizes the impact of the transportation and land use cycle which has resulted in the urban fringe development pattern found in East Honolulu. According to the **2040 ORTP**, no major projects are planned for East Honolulu’s roads. Therefore, it is not anticipated that there will be an increase in pressure for development.

There is an uncompleted section of Hawai‘i Kai Drive in the Kamilo Nui Valley area. While this project is not included in the **2040 ORTP**, it was included in the 2008 plan as

it would be desirable to provide for more direct travel and an alternate route from Lunalilo Home Road to Kamilo Nui Place and also to create a new bicycle route (see **Section 4.1.3**). The completion of this connection would require the acquisition of a 56-foot right-of-way, part of which is in private ownership, and the resolution of drainage issues that may involve bridge construction.

4.1.2 TRANSIT SYSTEM

East Honolulu is served by 11 bus routes. Bus service in Hawaiʻi Kai is complemented by the Hawaiʻi Kai park and ride facility on Keāhole Street across from the Hawaiʻi Kai Towne Center. Park and ride facilities, which serve as a central access point for buses and autos, are ideal for lower-density areas such as Hawaiʻi Kai.

There are no plans to extend or expand the number of routes, but the frequency and capacity of transit service may be increased by switching to a hub-and-spoke system, potentially freeing up existing buses. Additional service enhancements are also possible by adding more bus stops, shifting to smaller vehicles for upper valley neighborhoods, and making highway and street improvements designed to make bus travel more efficient, convenient, and comfortable.

4.1.3 BIKEWAY SYSTEM

As of 2013, Oʻahu had at least 134 miles of bikeways, including at least 40 miles of new bikeways since 1994. **Bike Plan Hawaiʻi** (2013), the current State master plan for bikeways, proposes another 13 miles for East Oʻahu. In addition to the State's **Bike Plan Hawaiʻi**, the City and County of Honolulu Department of Transportation Services also publishes the **Oʻahu Bike Plan**, last dated August 2012, and currently being updated. Both plans contain timetables for development dependent upon construction feasibility (including right-of-way acquisition) and funding. The **Oʻahu Bike Plan** defines the various types of bikeways as follows:

- **Bike Paths –** Bicycle paths, also referred to as shared use paths, are off-street facilities constructed of concrete or asphalt and are 10-12 feet wide. These grade-separated facilities are family- and beginner rider-friendly,

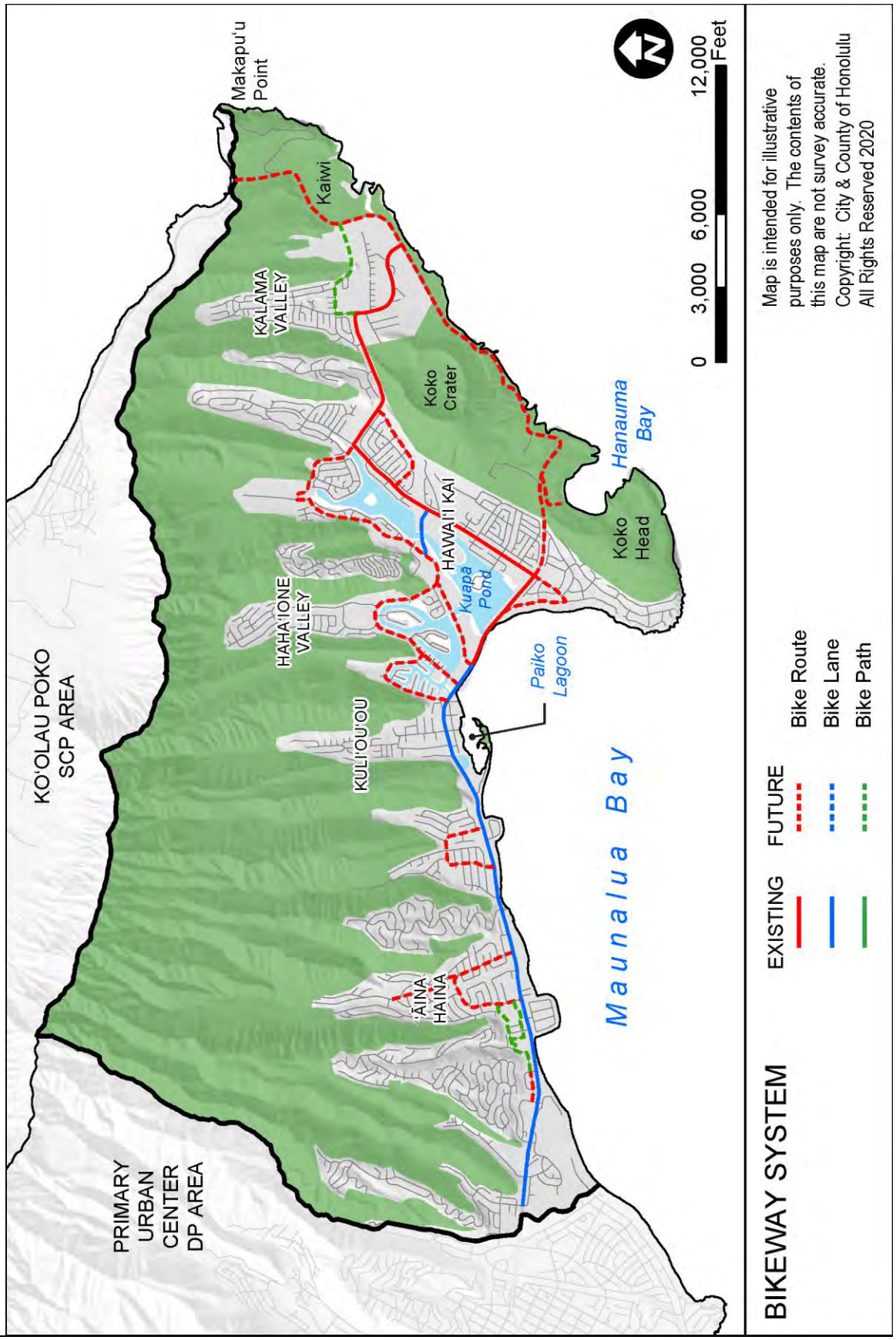
often traveling through parks and in general providing a more leisurely, less direct route. Shared use paths are considered to supplement, rather than replace, on-road bicycling facilities.

- **Bike Lanes –** Bicycle lanes are on-street facilities delineated from vehicle traffic by a wide, white line. They are typically 5-6 feet wide (4-foot minimum) and contain pavement markings that indicate they are for bicycle use only.
- **Bike Routes –** Bicycle routes are also on-street facilities, posted with street signage and, in some instances, pavement markings. A wide outside traffic lane (14 feet) is typically preferable for routes to enable cars to safely pass bicyclists without crossing the centerline. Routes may also include wide paved shoulders, at least 4 feet wide (5 feet when adjacent to a guard rail, curb, or other barrier used along highways). They are typically separated from vehicle traffic through striping treatments to delineate the space for use by bicycles and pedestrians.
  In urban areas, bicycle routes may be designated through street signage, "sharrows," or shared lane pavement markings which can alert motorists to the likelihood of encountering bicyclists traveling in the lane. It is important to note that with very few exceptions, bicycles are permitted to travel on all public streets within the City, regardless of whether it has been formally designated as a bikeway.

In East Honolulu, the existing bikeway system consists of a bike lane along Kalaniana‘ole Highway from Kāhala (‘Āinakoa Street) to Hawai‘i Kai (Keāhole Street); a signed shared roadway along Kalaniana‘ole Highway from Keāhole Street to Lunalilo Home Road; a signed roadway along Lunalilo Home Road to Hawai‘i Kai Drive; and a bike lane along Wailua Street between Hawai‘i Kai Drive and Lunalilo Home Road. (see **Exhibit 4-1**).

The State's **Bike Plan Hawai‘i** proposes substantial additions to East Honolulu's bikeway system. Proposed signed shared roadways would extend from Kalaniana‘ole Highway into ‘Āina Haina, Niu Valley, Haha‘ione Valley, and Hawai‘i Kai. A signed shared roadway is proposed along the Hawai‘i Kai Drive-Kealahou Street corridor and along ‘Anali‘i Street and Po‘olā Street.

Exhibit 4-1: Bikeway System



4.1.4 GENERAL POLICIES

The following general policies support the vision for complete streets, age-friendly communities, and a multi-modal transportation system in East Honolulu:

- Maintain East Honolulu's role as a predominantly residential urban fringe area with limited future growth by designing a transportation system that provides:
  - Adequate and comfortable access between communities, shopping, and recreation centers in East Honolulu.
  - Improved access to adjacent areas.
  - Adequate person-carrying capacity for peak-period commuting to and from work in the Primary Urban Center for all modes of travel.
- Reduce reliance on the private passenger vehicle through the implementation of the findings and recommendations found in the **Statewide Pedestrian Master Plan**, the **Honolulu Complete Streets Design Manual**, the **Bike Plan Hawai'i**, the **O'ahu Bike Plan**, the **O'ahu Pedestrian Plan**, and the **Honolulu Age-Friendly City Action Plan**.

4.1.5 PLANNING GUIDELINES

- **Commuter Travel –** For commuter trips the objective is to minimize the impact of population growth on travel times and improve safety of all commuters.
  - Provide improved services and facilities for express buses, such as more frequent and more comfortable vehicles.
  - Expand improved park-and-ride facilities, including possible relocation and provision of compatible accessory uses.
  - Promote ridesharing and vanpooling.
  - Increase person-carrying capacity on Kalaniana'ole Highway for commuter travel without expanding automobile rights-of-way by constructing facilities to increase the safety and comfort of users of active modes of travel.

- Decrease the use of single-occupant, or even zero-occupant, automobile trips during commute times by:
  - Converting regular automobile lanes into additional HOV lanes during regular or rush hour times.
  - Increasing the vehicle occupancy requirement of the use of the HOV lane.
- Improve sidewalks along Kalaniana‘ole Highway consistent with the **Statewide Pedestrian Master Plan**.

- **Local Trips –** For local trips, the objective is to promote alternative modes of travel and less automobile travel.
  - Complete the link between the two built portions of Hawai‘i Kai Drive in the Kamilo Nui Valley area, thereby providing an additional mauka access route linking Maunalua Bay to Kalama Valley.
  - Modify rights-of-way design in selected areas, particularly along designated bike lanes and routes, principal pedestrian routes and street crossings, and near bus stops. Change travel way widths or curb radii, pavement texture, introduce appropriate signage, and provide generous landscaping for both aesthetics and stormwater retention. Implement lane restriping during repaving projects.
  - Design on-street and off-street parking facilities more efficiently to encourage joint use of parking in ways that ensure public safety and better manage stormwater, sediment, and toxic pollutant runoff.
  - Improve sidewalk along Kalaniana‘ole Highway consistent with the **Statewide Pedestrian Master Plan** and the **O‘ahu Pedestrian Plan**.
- **Streetscape** – Roadway design should be altered to encourage greater bicycle and pedestrian use and support users of all ages.
  - Provide more convenient pedestrian paths within commercial centers, transit stops, parks, beaches, schools, senior living facilities, and other high-activity areas to encourage people to walk short distances for multi-purpose trips instead of moving the vehicle to another parking facility.

- Ensure street furniture is comfortable and does not impede sidewalk movement. See the **Complete Streets Design Manual**.
- Ensure all lighting is shielded and pointed downward to protect the night sky, reduce light pollution, and protect wildlife, particularly in key areas such as along the Kaiwi coastline. Any additional lighting or changes to existing lighting should maintain or improve night sky visibility while also creating places that feel safe and secure.
- Discourage the use of gated communities and encourage existing gated communities to improve adjacent streetscape and disguise the public-private boundary.
- Support the Safe Routes to School program and projects to improve pedestrian and bicycle links around schools.
- Preserve and enhance existing crosswalks. Install additional enhanced crosswalks, especially near open spaces, parks, shopping centers, and other public gathering places.
- Include more landscaping along roadways to improve aesthetics, to manage stormwater, sediment, and toxic pollutant runoff, and to filter oils and sediment from the roadway improving downstream water quality.
- Implement a pedestrian system around the Hawaiʻi Kai Marina to improve accessibility to various waterfront locations (see **Section 3.1.2.6**).
- Implement traffic-calming measures in appropriate residential areas to reduce average motor vehicle speeds and make vehicular routes less direct, thereby increasing safety and enjoyment for pedestrians and bicyclists.
- Design on-street and off-street parking facilities more efficiently to encourage joint use of parking in ways that ensure public safety and better manage stormwater, sediment, and toxic pollutant runoff.

- **Resiliency –** Roadway design, particularly along Kalanianaʻole Highway in the vicinity of Kuliʻouʻou, should take into account the anticipated impacts of sea level rise to ensure safe and efficient access between neighborhoods is maintained.

4.2 WATER ALLOCATION AND SYSTEMS DEVELOPMENT

4.2.1 OVERVIEW

In 1987, the State enacted the Water Code (HRS Chapter 174C) in order to protect, control, and regulate the use of the State's water resources. This Code is implemented through the **Hawai'i Water Plan**, which addresses water conservation and supply issues on a statewide level by incorporating county water plans and water-related project plans.

The **O'ahu Water Management Plan** (OWMP), last published in 2008, is the City and County of Honolulu's component of the **Hawai'i Water Plan**. The OWMP sets forth strategies to guide the State Commission on Water Resource Management (CWRM) in planning and managing O'ahu's water resources. The BWS's **Water Master Plan** was adopted by the Board in October 2018. The Water Master Plan is a comprehensive "living" document that will guide future water system improvements.

Another component of the **Hawai'i Water Plan** is the **Water Resource Protection Plan** (2019). According to the CWRM, "the objective of the [**Water Resource Protection Plan**] is to protect and sustain ground and surface water resources, watersheds, and natural stream environments statewide. Such protection requires a comprehensive study of occurrence, sustainability, conservation, augmentation, and other resource management measures."

The BWS has begun the development of **the East Honolulu Watershed Management Plan**, one of eight district water management plans that comprises **the O'ahu Water Management Plan**. The **East Honolulu Watershed Management Plan** will detail any new water source development or redistribution changes that would impact East Honolulu's water importation from Primary Urban Center or Windward water sources.

In East Honolulu, potable water is primarily supplied by the BWS. Between 2013 and 2017, East Honolulu consumed about 6 percent of the island wide potable water, a total 8.4 mgd, down from 9.3 in 2010. According to the BWS, by 2040 East Honolulu will

continue to experience a similar average demand for potable water of approximately 8.6 mgd due to continued conservation efforts and little to no anticipated population growth.

Previously, BWS identified several potential well sites in the Waiʻalae East and West aquifers that could provide sufficient water supply for East Honolulu. The Waiʻalae West aquifer has a sustainable yield of 2.5 mgd, of which 2.797 mgd is permitted and 1.75 mgd is used. The Waiʻalae East aquifer has a sustainable yield of 2 mgd, of which 0.79 mgd is permitted and 0.16 mgd is used. The balance of available supply consists of low-yield, very expensive wells.

For the near term, BWS does not have plans to develop any groundwater sites in East Honolulu due to decreasing demand and economic feasibility. Other management strategies identified in the OWMP include water conservation, groundwater development in outlying areas, surface water development, desalination, and water recycling. Although the BWS would be responsible for the development of any new wells, the State CWRM has final authority in all matters regarding administration of the State Water Code.

Projected decreases in rainfall due to climate change will also encourage adaptations and redevelopments which conserve potable water and develop alternative non-potable water sources.

4.2.2 GENERAL POLICIES

General policies pertaining to East Honolulu's potable and non-potable water systems are as follows:

- Integrate management of all potable and non-potable water sources, including groundwater, stream water, stormwater, and effluent, following State and City legislative mandates.
- Adopt and implement water conservation and stormwater management practices, in the design of redevelopment projects and the modification of existing uses, including landscaped areas.

- Research and prepare for the potential impacts of sea level rise on ground water aquifers and water supply infrastructure.

4.2.3 PLANNING GUIDELINES

- **Development and Allocation of Potable Water –** BWS will coordinate development of potable water sources and allocation of all potable water intended for urban use on O‘ahu.
- **Certification of Capacity –** BWS will certify that adequate potable and non-potable water is available in order for a new residential or commercial development to be approved.
- **Water Conservation Measures –** Conserve potable water by implementing the following measures, as feasible and appropriate:
    - Encourage the use of low-flush toilets, flow constrictors, and other water-conserving devices in commercial and residential redevelopments.
    - Encourage the use of indigenous, drought-tolerant plants and drip irrigation systems in landscaped areas and promote stormwater retention and infiltration on-site.
    - Encourage timely leak repair for distribution systems.
    - Encourage the use of tertiary-treated recycled water for the irrigation of golf courses and other landscaped areas where this would not adversely affect potable groundwater supply.
    - Expand use of reclaimed water in State and County Facilities in accordance with HRS 174C-31.
    - Encourage use of reclaimed water in redevelopment projects.
    - Require the use of low-impact development standards for any significant new construction or redevelopment in order to hold stormwater on-site instead of discharging it into storm drains or stream channels.
    - Provide incentives for owners of existing homes to develop rain gardens, permeable driveways, and other strategies that hold

stormwater on-site instead of discharging it into storm drains or streams.

4.3 WASTEWATER TREATMENT

East Honolulu is divided into two wastewater service areas:

- The western portion of the region, from Kāhala to Niu Valley, is part of the East Māmala Bay service area. Wastewater from this service area is pumped to the Sand Island Wastewater Treatment Plant (WWTP) via the Ala Moana wastewater pump station.
- From Kuliʻouʻou eastward, sewage is pumped to the privately operated East Honolulu Wastewater Treatment Plant.

4.3.1 SAND ISLAND WASTEWATER TREATMENT PLANT

The Sand Island WWTP had an original design capacity of 82 mgd average flow. In 2000, expansion projects were begun that will increase the daily average plant capacity from 82 mgd to 90 mgd and will increase wet weather capacity from 210 mgd to 270 mgd. Some components of the collection system, including sewer lines and pump stations, are at or close to 100 percent capacity. Between 2016 and 2040, the Department of Environmental Services (ENV) projects that nearly all of the increase in wastewater flows at the Sand Island WWTP will be from the Sand Island sewer shed.

Wastewater flow generated in East Honolulu, specifically from the Kāhala-Niu Valley sewer shed, is only a very small portion of the total flow to Sand Island and is projected to increase by less than 3 percent between 1995 and 2020. Therefore, the projected increase from East Honolulu flows will have a negligible impact on capacity demand at the Sand Island WWTP. In order to meet future demand throughout the area served by the Sand Island WWTP, the **East Māmala Bay Final Wastewater Facilities Plan** (1993) recommends a combination of increasing capacity and reducing flows via water conservation and rehabilitation projects.

During resurfacing of Kalaniana‘ole Highway, a temporary emergency sewer line was placed above ground within the median. This temporary line has been replaced with a new permanent underground line.

4.3.2 EAST HONOLULU WASTEWATER TREATMENT PLANT

The privately owned East Honolulu WWTP opened in 1965 and is located on the mauka side of Kalaniana‘ole Highway near Sandy Beach. The State Public Utilities Commission requires that the plant accept wastewater from public or private sources in the service area.

The plant primarily collects wastewater from homes in the Hawai‘i Kai, Kuli‘ou‘ou, Paikō, and Portlock communities. Some wastewater is also received from commercial users around Koko Marina. The plant serves about 37,000 people, or 74 percent of East Honolulu’s 2010 population.

The East Honolulu WWTP is a partial-tertiary treatment facility. The plant’s design capacity is 5.2 mgd with average flows at approximately 4.5 mgd. The plant processes about 80 gallons per capita per day and removes up to 97 percent of biological oxygen demand effluents. Pipes along Lunalilo Home Road have been relined and the treated effluent is discharged via a 36-inch outfall, 1,400 feet off Sandy Beach at depths between 29 and 45 feet. The receiving waters are classified as “Class A” (generally dry, open coastal water) and “Class II” (marine bottom type) by the State Department of Health (DOH). Biosolids from the plant are dried and taken to the Waimānalo Gulch landfill.

Flows from Kuli‘ou‘ou Valley are pumped via the Kuli‘ou‘ou Wastewater Pump Station (WWPS) to the Hawai‘i Kai system under an existing agreement between the City and East Honolulu Community Services, the private company that owns and operates the Hawai‘i Kai system and the East Honolulu WWTP. The average daily flow from the Kuli‘ou‘ou WWPS is about 0.50 mgd and is not projected to increase over the next 25 years. An engineering study prepared by ENV in 1999 recommended that the current system for disposal of Kuli‘ou‘ou sewage flows should continue with the wastewater pumped to the Hawai‘i Kai disposal system. Some tributary collection pipes have been

rehabilitated. A primary objective is to prevent wastewater spills and provide adequate collection and transmission capacity to accommodate projected high rainfall/peak flow conditions.

Under the State of Hawai‘i’s rules and guidelines for wastewater systems and the treatment and use of reclaimed water, recycled water from the wastewater facility can be used for irrigation purposes. A 2 mgd filtration and disinfection facility has been built to produce tertiary treated R-1 rated recycled water, which can be used without restriction for irrigation purposes. The State authorized the Hawai‘i Kai Golf Course to use this recycled water from the East Honolulu WWTP for irrigation. However, recycled water is not currently being used for golf course irrigation due to its high salinity, but this problem may be mitigated in the future, thereby enabling the use of recycled water.

4.3.3 CESSPOOLS

In addition to the majority of homes that are connected to the two sewer systems, there are many homes in East Honolulu which are served by cesspools or septic tanks with leaching fields. Many locations that host cesspools in East Honolulu feature critically narrow depths to groundwater and/or are located within 200 feet of a shoreline.

Cesspools do not treat sewage effluent and inject raw sewage into groundwater, which has the potential to spread disease and contaminate recreational waters. The DOH has identified limited vertical and horizontal distances to water as being one of the main factors that increase the potential of contamination. This is because unsaturated soil provides the primary method of filtering cesspool effluent. Further, as sea level continues to rise, this method of effluent filtration will be progressively hindered as vertical and horizontal distances to water decrease or are lost altogether.

State rules implemented in 2015 incentivize the upgrade of cesspools to sewer or septic systems. However, in areas that feature narrow depths to groundwater, septic tanks are known to buoy, which causes structural damage to the septic system and causes and mixing of effluent with surrounding waters.

4.3.4 GENERAL POLICIES

The following general policies apply to wastewater treatment in East Honolulu:

- Connect all wastewater produced by urban uses in East Honolulu to a publicly regulated or municipal sewer service system.
- Implement, where feasible, water recycling as a water conservation measure.
- Provide buffer zones and landscape elements between the East Honolulu WWTP and adjacent residential designated areas in order to mitigate possible visual, noise, and odor impacts.
- Connect homes to one of the two existing sewer systems. Support conversion efforts and upgrades to individual wastewater systems where connections are not feasible.

4.3.5 PLANNING GUIDELINES

- **Water Recycling –** Encourage or require, as feasible and appropriate, the use of recycled water from the East Honolulu WWTP as a source for irrigating golf courses and other uses compatible with the Board of Water Supply's rules and guidelines for the treatment and use of recycled water.
- **Private Operation of the East Honolulu WWTP –** Unless there is a compelling reason and a mutually satisfactory agreement between the City and the private operator to incorporate this treatment plant within the municipal wastewater treatment system, keep the East Honolulu WWTP under private operation and under the regulatory supervision of the State Public Utilities Commission and the State Department of Health.
- **Buffer Zones and Landscape Elements –** Provide adequate horizontal separations and landscape elements (e.g. berms and windrows) between the East Honolulu WWTP and adjacent residential designated areas. Site-specific studies should be conducted to determine the width of the buffer zone and specific types of landscaping elements to use.

4.4 ELECTRICAL AND COMMUNICATIONS SYSTEMS

Hawaiian Electric Company forecasts that increased demand will create a need for additional island wide power generation capacity by 2020. Growth policies in the **General Plan** direct significant residential growth to the Primary Urban Center DP, ‘Ewa DP, and Central O‘ahu Sustainable Communities Plan Areas. East Honolulu is designated as an urban fringe area and is projected to have limited future population growth. As such, East Honolulu will not be a major source of island wide future power demand.

In 2014 Hawai‘i became the first state in the nation to commit to having a 100 percent renewable portfolio standard by the year 2045. Part of this goal will be achieved by reducing electric energy consumption statewide by 4,300 gigawatt-hours by 2030. Petroleum use accounts for two-thirds of the state’s overall energy usage. Strategies shall focus on redevelopment projects that increase residential densities in and around town centers which will help minimize automobile use and thereby support people who choose to walk, bike, and use public transit.

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 telecommunications industry has provided more convenient communication capabilities for individuals, it has also increased 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 the neighborhood character. Their visibility has increased, especially where antennas are mounted on free-standing towers.

The 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.

4.4.1 GENERAL POLICIES

The following general policies pertain to electrical and communications systems:

- Design system elements such as sub-stations and transmission lines to avoid or mitigate any potential adverse impacts on scenic and natural resource values.
- 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 (i.e. towers disguised as trees), especially on free-standing antenna towers to blend in with surroundings.
- Relocation of electrical and other overhead utility lines underground wherever feasible.
    - The design in undergrounding utilities shall account of the potential adverse impacts of sea level rise impacting increases in the elevation of the water table and other groundwater inundation.

4.4.2 PLANNING GUIDELINES

- **Facility Routing and Siting Analysis –** If any new or relocated substations or transmission lines are necessary, site such routes or facilities to avoid or mitigate potential adverse impacts on scenic and natural resources. (Although these facilities are not shown on the Public

Facilities Map, their routes and sites are reviewed and permitted by administrative agencies of the City.) Utility lines should be located underground wherever feasible.

4.5 SOLID WASTE HANDLING AND DISPOSAL

Solid waste collection, transport and disposal operations on the island are provided by the City Department of Environmental Services, Refuse Collection and Disposal Division (primarily single-family curbside pickup) and private haulers (primarily commercial and multi-family pickup). In addition, individuals can haul their own trash to one of six convenience centers around Oʻahu. The collected refuse is ultimately disposed of either in a waste-to-energy incineration facility or sanitary landfill. Incineration, accounting for approximately 50 percent of the island's waste disposal, is done at the H-POWER plant, located in ʻEwa. The City has instituted recycling and other waste diversion programs in an effort to extend the useful life of this landfill.

The City is in the process of determining the site of a new landfill to supplement or replace the Waimānalo Gulch Sanitary Landfill in ʻEwa, Oʻahu's only landfill for municipal solid waste. A Landfill Site Advisory Committee identified and ranked 11 potential landfill sites in 2012, including Upland Hawaiʻi Kai, ranked 10th. Since the publication of the 2012 report, the Upland Hawaiʻi Kai area was purchased to be used for preservation and protection in contribution to the Kaiwi Scenic Shoreline.

East Honolulu has no convenience centers where residents can dispose of large bulky items, although monthly curbside pickup of bulk items is available. The Keʻehi Transfer Station will accept household rubbish and yard waste. For East Honolulu residents, the closest facilities for the disposal of bulky items are at Kapaʻa and the Waimānalo Convenience Center. There are no plans to locate a convenience center, another transfer station, or a landfill operation in East Honolulu. There is currently a recycling service station that accepts HI-5 beverage containers and other non-HI-5 material near the Hawaiʻi Kai Park and Ride.

4.5.1 GENERAL POLICIES

The following general policy applies to solid waste handling and disposal in East Honolulu:

- Promote East Honolulu‘s role in the City's long-term efforts to establish more efficient waste diversion and collection systems as waste management and technological innovations occur. However, the region is not expected to contribute significantly to future increases in O‘ahu’s solid waste management demands and the only site in East Honolulu deemed suitable for the processing or disposal of solid waste on an island wide scale has been purchased for the purpose of preservation.

4.5.2 PLANNING GUIDELINES

Planning guidelines related to solid waste handling and disposal are as follows:

- **Recycling Programs and Facilities –** Promote the recycling of waste materials by providing expanded collection facilities and services, and public outreach and education programs.
- **Efficient Solid Waste Collection –** Expand the use of automated refuse collection in residential areas to ensure provision of adequate solid waste collection. Have residents pay their fair share of all costs needed to ensure provision of adequate solid waste collection facilities.

4.6 DRAINAGE SYSTEMS

The streams that drain the valleys of East Honolulu include Wai‘alae Iki Stream, Wiliwilinui Stream, Wailupe Stream, Niu Stream, and Kuli‘ou‘ou Stream. These streams begin in the Ko‘olau Range and discharge into Maunalua Bay. The drainage basins are long and narrow and range from 0.3 to 3.2 square miles in area. The upper reaches of the basins are very steep, while the lower reaches are almost flat.

Several drainage ways have been prone to flooding during more intense rainstorms. Niu Valley, Kuliʻouʻou Valley, and Hahaʻione Valley, in particular, experienced severe flooding during the New Year's Eve flood of 1987. Heavy rainfall at the head of the valleys, combined with falling rocks and debris, overwhelmed the capacities of the concrete-lined stream channels. Flooding has been exacerbated by residents dumping items into drainageways as well as overgrown vegetation. Along the Niu and Hahaʻione drainage ways, debris-clogged bridges and culverts contributed significantly to the flooding problems.

A federal reconnaissance study found that the Wailupe Stream faces similar drainage problems. According to the study, the Wailupe drainage basin's existing flood control system is unable to accommodate debris flows. Furthermore, the existing stream channel is incapable of handling clear water flood discharges greater than about a 20-year recurrence interval. Among the preliminary improvement alternatives under consideration are channeling 8,900 feet of Wailupe Stream from the mouth to the existing boulder basin, enlarging the existing boulder basin, and constructing a new debris basin in Kuluʻī Gulch.

In 2003, the U.S. Senate appropriated $300,000 for a Wailupe Stream Flood Control Study to be undertaken by the Army Corps of Engineers. In 2004, the State House of Representatives approved $200,000 for flood control Preconstruction Engineering and Design for Wailupe Stream. In 2005, the U.S. House of Representatives approved $400,000 to support a study into reducing the size of the Wailupe Stream flood plain. The Congressional Appropriations Committee recommended $860,000 in 2006 for investigative planning of flood problems related to Wailupe Valley Stream.

In the area between Kamehame Ridge and the Hawaiʻi Kai Golf Course, a 40-foot-wide concrete channel alters the natural drainage pattern. Water collected from this area is carried along the drainage way that passes under Kalanianaʻole Highway and into Kaʻiliʻili Inlet.

4.6.1 GENERAL POLICIES

General policies pertaining to East Honolulu's drainage system are as follows:

- Complete the proposed study of local flooding and drainage problems as soon as possible. The study should include the potential impacts to drainage systems from climate change and sea level rise.
- Include a phased plan and implementation program for drainage system improvements.
- Promote drainage system design that emphasizes control and minimization of non-point source pollution.
- Keep drainage ways clear of debris to avoid the flooding problems.
- Join with Federal, State, and City agencies and local landowners and stakeholder organizations to create a Watershed Partnership to effectively manage the East Honolulu ahupua‘a to retain stormwater and keep sediment and pollutants from entering streams and being transported to the ocean.
- Improve downstream water quality, particularly in sources leading to Maunalua Bay, through the restoration of channelized streams and wetlands, the installation of upland detention basins, implementation of low-impact development standards, and the encouragement of planting and maintenance of vegetation along drainage ways. Where possible, drainage ways should also provide passive recreation benefits.
- Identify repetitive loss areas from flooding and implement greater restrictions to rebuilding in these areas.

4.6.2 PLANNING GUIDELINES

Guidelines to direct the maintenance and improvement of East Honolulu's drainage systems include:

- **Debris Basins –** Conduct maintenance of boulder and debris basins at least twice a year and after major storms to prevent the blocking of downstream channels during major storm events.

- **Recreational Areas** – Integrate planned improvements to the drainage system into the regional open space network by emphasizing the creation of passive recreational areas, and recreational access for pedestrians and bicycles without jeopardizing public safety.
- **Drainage Improvements –** Design and execute drainage improvements in a manner which protects natural resource and aesthetic values of the stream to the greatest extent possible, consistent with the guidelines expressed in **Section 3.1.2.4**.
- **Drainage Management –** Keep drainage corridors clear of debris to avoid the flooding problems that have occurred in the past.

4.7 SCHOOL FACILITIES

Public schools in East Honolulu are part of the Department of Education's (DOE) Honolulu District. There are four public elementary schools in East Honolulu, one intermediate school (Niu Valley Intermediate), and two high schools (Kalani High School and Kaiser High School). 2015-2016 enrollment figures for these schools show that they are operating under capacity (see **Table 4-1**). Wailupe Valley Elementary School has closed while enrollment at other elementary schools in East Honolulu has remained constant or declined. For this reason, the DOE does not have plans for new school construction in East Honolulu. Additional demand generated by future residential developments can be absorbed by the existing facilities. If necessary, school boundaries could be adjusted to allocate additional demand to schools that have the most available capacity.

Although new public school construction is not anticipated for East Honolulu, new demand will still create associated expenses. At some schools, such as Koko Head Elementary, excess space is utilized for DOE offices. Reclaiming this space for classroom use would involve renovation expenses in addition to expenses related to relocating the DOE office personnel to other facilities.

Table 4-1: Public School Enrollment, 2018-2019

Facility	Enrollment	Capacity (2017)
Elementary		
‘Āina Haina	465	664
Haha‘ione	523	448
Koko Head	281	442
Kamilo Iki	385	404
Intermediate		
Niu Valley	858	682
High School		
Kalani	1,422	1,015
Kaiser	1,161	1,057
Total	5,095	4,712

Source: DOE, Facilities Development Branch (2019)

While the demand for classroom space has been declining in some sections of East Honolulu, needs could change significantly, even with a relatively slow rate of population growth if there is a future shift in household characteristics as younger adults with school-age children replace or move in with elderly residents in single family dwellings. To make more efficient use of these facilities, as well as DOE fiscal resources, some of the unneeded classroom space could be converted for temporary use as administrative office space for DOE personnel. This largely reflects a strategy that DOE has already adopted. The DOE can collect school impact fees from new residential development to mitigate expenses related to a change of facilities.

There are also several independent schools in East Honolulu, listed in **Table 4-2**, which are either religious-affiliated or based on a particular educational philosophy. While such schools will probably continue their presence in East Honolulu, they are not expected to increase significantly in number or size. Holy Trinity School and Koko Head Prep and Technical Academy have closed. The scale and location of existing campuses are generally compatible with the residential character of the region.

Table 4-2: Private School Enrollment, 2019-2020

Facility	pre-K	K-8	9-12
Holy Nativity School	-	135	-
Honolulu Waldorf School	39	92	4
Star of the Sea Early Learning Center and Elementary School	190	159	-
Subtotal	**229**	**386**	**4**
Grand Total	**619**		

Source: DPP Phone survey in October 2019 to the respective schools.

4.7.1 GENERAL POLICIES

General policies relating to school facilities are listed below:

- Approve new residential developments only after the DOE provides assurance that adequate school facilities, either at existing schools or at new school sites, will be available when the development is completed.
- Encourage more efficient use of DOE facilities with year-round scheduling.
- Require developers to comply with DOE school impact fee requirements and pay their fair share of all costs needed to ensure provision of adequate school facilities for the children living in their developments.

4.7.2 PLANNING GUIDELINES

The following guidelines should be followed in planning and operating schools in East Honolulu.

- **Adaptive Reuse –** Encourage the DOE to continue its strategy of converting unneeded classroom space to temporary use as administrative office space for its personnel. This would make more efficient use of these facilities, while maintaining classroom space if there is a future shift

in household characteristics as younger adults with school-age children replace, or move in with, elderly residents in single-family dwellings.

- **Shared Facilities –** Encourage the Department of Parks and Recreation to coordinate with the DOE on the development and use of athletic facilities such as playgrounds, play fields and courts, swimming pools, and gymnasiums where the joint use of such facilities would maximize use and reduce duplication of function without compromising the schools' athletic programs (see also **Section 3.3.3**). The DOE should coordinate structural design of school buildings with the Hawai'i Emergency Management Agency and the Department of Emergency Management so that these facilities may also be used as public hurricane shelters capable to minimally withstand winds from a Category 3 hurricane.
- **New Facilities –** Apply the guidelines for institutions in **Section 3.6.3** if a new public or private school campus or a significant increase in enrollment capacity at one of the existing campuses is proposed.

4.8 CIVIC AND PUBLIC SAFETY FACILITIES

The City and County of Honolulu operates 10 Satellite City Halls island wide. These facilities offer many basic services for residents, including bus pass sales, bicycle and auto registration, and driver's license renewals. A Satellite City Hall to serve East Honolulu was established in the Hawai'i Kai Corporate Plaza in 2002.

The Honolulu Police Department (HPD) services East Honolulu out of the Main station on Beretania Street. Police protection for East Honolulu is provided largely through regular police patrols as required and is not directly related to the proximity of a police station. A new substation will not necessarily translate into an increased level of police presence or a more rapid response to calls; therefore, no new substation is recommended.

The Honolulu Fire Department (HFD) operates fire stations in Hawai'i Kai and Wailupe. The Hawai'i Kai station is equipped with five-person engine and ladder trucks and a rescue boat. The Wailupe station also has a five-person engine. In addition, the Kaimukī station also serves parts of the Kāhala area. HFD has no immediate plans to

establish any additional new stations in East Honolulu. As land use changes occur through development or redevelopment of older areas, as the demographic profile of the region changes, and as aquatic recreational activities increase, the facilities and staff needed by the HFD to serve East Honolulu may warrant reassessment.

Ambulance service, staffed by the City's Emergency Medical Services Division, is currently provided from each of the fire stations. As regional recreational activities along this eastern corridor of O‘ahu increase, emergency medical services may need to be re-evaluated.

There are 12 emergency shelters and refuge centers located in East Honolulu which double as public buildings and parks when an evacuation is not in effect. East Honolulu residents are encouraged to shelter in place unless they are located within an evacuation zone, in an area that does not feel safe, or as otherwise instructed. Many emergency shelters are not rated to withstand the effects of intense windstorms and hurricanes and require upgrades. Public refuges also are not rated to withstand the effects of storms as they are merely designated areas setup to gather people temporarily displaced by an emergency situation.

Climate change and sea level rise are two threats to existing infrastructure which can cause disruption in a variety of services. Sea level rise can bring increased storm surges and consequent coastal erosion. Thus the impact of sea level rise will be felt well above the new mean sea level. It is prudent to analyze the possible impact of sea level rise and design projects and buildings that account for risk of sea level rise and its associated threats over their lifespan.

4.8.1 GENERAL POLICIES

The following general policy pertains to public safety facilities:

- Provide adequate staffing and facilities to ensure effective and efficient delivery of basic governmental services and protection of public safety.

- Analyze the possible impact of sea level rise for new public and private projects in shoreline and low-lying areas and require, where appropriate and feasible, measures to reduce vulnerability and increase resiliency.
- Identify critical public and private infrastructure and important cultural and natural resources vulnerable to historic coastal hazards and impacts of climate change, and, working with local landowners, stakeholders, and State and Federal agencies, begin the work of protecting, adapting, or relocating the highest priority projects.
- Coordination between community organizations, businesses, residents, homeowners, and City, State and Federal agencies determine how to:
    - Mitigate the anticipated threats from sea level rise,
    - Plan for future infrastructure improvements, and
    - Maintain existing connections, especially along Kalaniana‘ole Highway where future flooding is anticipated to occur.
- The DPR coordinates with the DOE on the development and use of athletic facilities such as playgrounds, play fields and courts, swimming pools, and gymnasiums where the joint use of such facilities would maximize use and reduce duplication of function without compromising the schools' athletic programs (see also **Section 3.3.3**).
- Provide funding to support the structural design of school buildings, such as the cafeteria, gym, or music rooms, so that these facilities may also be used as public hurricane shelters capable of withstanding Category 3 hurricanes.
- Supplement the public emergency shelters by identifying private structures that could be used as public shelters, like churches, meeting the Federal Emergency Management Agency (FEMA) standards.
- Ensure accessibility for senior populations to public shelters, or to prioritize the restoration of services to where seniors and other vulnerable populations are sheltering-in-place.
- Develop a Community Resilience Hub in East Honolulu that will serve critical roles during and immediately following an emergency as well as enhance social resilience ahead of a disaster.

4.8.2 PLANNING GUIDELINES

These guidelines are intended to carry out the above public safety policies:

- **Staffing capacity –** Approve new development only if adequate staffing and facilities for fire, ambulance and police protection will be provided. If the development of any new substation is warranted, potentially near an entry to Hawai‘i Kai, there is a preference that it be co-located with other emergency medical and transportation services.
- **Community Resilience Hub –** Establish and operate a center in East Honolulu in accordance with the recommendations of the **O‘ahu Resilience Strategy**. In addition to post-disaster response and recovery operations, the centers will provide year-round community services.

5. IMPLEMENTATION

Implementation of this **Plan** will be accomplished by:

- Limiting residential and non-residential development to areas within the Community Growth Boundary to support the vision for East Honolulu, and protect agricultural and preservation lands in East Honolulu;
- Initiating zoning map and development code amendments to achieve consistency with the **Plan**'s vision, and provide the means to implement the general policies and guidelines;
- Guiding public investment in infrastructure through functional plans that support the vision and policies of the **Plan**;
- Recommending approval, approval with modifications, or denial of developments seeking zoning, boundary and/or other development approvals based on how well they support the vision and policies of the **Plan**;
- Implementing the **Plan** priorities through the Public Infrastructure Map and the City's annual budget process;
- Evaluating progress in fulfilling the vision of the **Plan** every two years and presenting the results of the evaluation in the Biennial Report;
- Develop a network of Community Resilience Hubs; and
- Conducting a review of the vision, general policies, guidelines, and Capital Improvement Program (CIP) priority investments of the **Plan** every ten years and recommending revisions as necessary.

5.1 PUBLIC FACILITY INVESTMENT PRIORITIES

The vision for East Honolulu requires the cooperation of both public and private agencies in planning, financing, and improving infrastructure. The City must take an active role in planning infrastructure improvements, such as land acquisition and site improvements for parks in the Kaiwi coast, increase public access to the shoreline and mountain areas, provision of pedestrian, bicycle, and other transportation options, as well as improvements to wastewater and stormwater management systems.

5.2 DEVELOPMENT PRIORITIES

Projects to receive priority in the approval process are those which:

- Involve land acquisition and improvements for public projects that are consistent with the **Plan** vision, general policies, and planning guidelines;
- Respect the intent and purposes of the agriculture uses as described in **Section 2.2.1** and delineated in this **Plan**;
- Have adequate required infrastructure in place before or upon completion of the project;
- Analyze the possible impact of sea level rise for new public and private projects near shoreline and low-lying areas and incorporate, where appropriate and feasible, measures to reduce risks and increase resiliency to impacts of sea level rise and coastal hazards;
- Involve applications for zoning and other regulatory approvals that are consistent with the **Plan** vision, general policies, and planning guidelines;
- Are located on vacant usable parcels and are consistent with the vision of this **Plan** as illustrated on **Map A-2: Urban Land Use**.

5.3 SPECIAL AREA PLANS

Special Area Plans provide more detailed policies and guidelines than the Sustainable Communities Plan for areas requiring particular attention. The form and content of Special Area Plans depend on what characteristics and issues need to be addressed in greater detail in planning and guiding 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.

While there are no existing or proposed Special Area Plans within the **Plan** area, the State Department of Land and Natural Resources published a Master Plan for the 354-acre Kaiwi Scenic Shoreline. These parks, shown in light green on **Map A-3**: **Public Facilities** in **Appendix A**, will be designated as a Resource Area, given their rich recreational, educational and scenic resources.

The formation of a community-based redevelopment district would assist in preparing East Honolulu's infrastructure for the anticipated impacts of sea level rise and disasters and pays for implementing services and infrastructure similar to the way the Waikiki Business Improvement District formulates plans specific for the residents, visitors, and businesses in Waikiki. A community-based redevelopment district would develop special area plans to: direct development prior to and after a disaster, mitigate future adaptation costs and damages anticipated from climate change and disasters, and provide a mechanism for payment for needed services and infrastructure.

5.4 FUNCTIONAL PLANNING

Functional planning is the process through which various City agencies determine needs, assign priorities, phase projects, and propose project financing to further implement the vision articulated in the **Plan**. This process may take a variety of forms, depending upon the missions of the various agencies involved, as well as upon requirements imposed from outside the City structure, such as federal requirements for wastewater management planning. Typically, functional planning occurs as a continuous or iterative activity within each agency.

Through the functional planning process, City agencies responsible for providing, developing and maintaining infrastructure and public facilities, or for provision of City services review existing functional planning documents and programs. As a result of these reviews, the agencies then update, if required, existing plans or prepare new long-range functional planning documents that address facilities and service system needs. Updates of functional planning documents are also conducted to assure that

agency plans will serve to further implement the **Plan**, as well as to provide adequate opportunity for coordination of plans and programs among the various agencies.

Agencies with functional planning responsibilities (and representative plans) include:

- Board of Water Supply (**East Honolulu Watershed Management Plan** and **O‘ahu Water Management Plan**)
- Department of Budget and Fiscal Services (**Consolidated Plan for Housing and Community Development Needs**)
- Department of Community Services
- Department of Design and Construction
- Department of Environmental Services (**Solid Waste Management Plan and East Maunalua Bay Facilities Plan**)
- Department of Parks and Recreation
- Department of Planning and Permitting
- Department of Transportation Services
- Honolulu Authority for Rapid Transportation
- Honolulu Emergency Services Department
- Honolulu Fire Department
- Honolulu Police Department
- O‘ahu Metropolitan Planning Organization (**ORTP**)

The number and types of functional planning documents will vary from agency to agency, as will the emphases and contents of those documents. A typical agency may develop a set of core documents such as:

- A resource-constrained long-range capital improvement program with priorities. A "resource-constrained" program is one that identifies the fiscal resources that can be reasonably expected to be available to finance the improvements.
- A long-range financing plan, with identification of necessary new revenue measures or opportunities.

- A development schedule with priorities for areas designated for earliest development.
- Service and facility design standards, including level of service guidelines for determining infrastructure adequacy.

Other documents may also be developed as part of an agency's functional planning activities, such as master plans for provision of services to a specific region of the island. In some cases, functional planning activities will be undertaken in cooperation with agencies outside the City structure, such as the transportation planning activities that are conducted in association with the O‘ahu Metropolitan Planning Organization (OMPO).

Functional planning is intended to be a proactive public involvement process that provides public access to information about infrastructure and public facility needs assessments, alternatives evaluations, and financing. Outreach activities should involve Neighborhood Boards, community organizations, landowners, and others who may be significantly affected by the public facilities and infrastructure projects or programs to be developed to further implement the policies of the **Plan**.

The functional planning process should be characterized by opportunities for early and continuing involvement, timely public notice, public access to information used in the evaluation of priorities, and the opportunity to suggest alternatives and to express preferences. The functional planning process provides the technical background for CIP and public policy proposals that are subject to review and approval by the City Council.

5.5 REVIEW OF ZONING AND OTHER DEVELOPMENT APPLICATIONS

A primary way in which the vision of the **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,

conforms to and carries out the purposes of the respective policies and guidelines of the **Plan**.

Projects involving significant zone changes will require an Environmental Assessment (EA) or Environmental Impact Statement (EIS), which must include a Project Master Plan when 25 acres or more are involved. This is submitted to the Department of Planning and Permitting (DPP) for review and acceptance prior to initiation of the first zone change application for the project.

Zone change applications for zoning to permit urban uses on parcels outside the Community Growth Boundary or on parcels identified as part of the Open Space Network and zoned as Preservation Areas or Agriculture Areas, and indicated on **Map A-1: Open Space**, are not likely to be supported by the Director since development of such areas is not consistent with the Plan's vision and policies to retain these areas in non-urban uses.

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 EA, whether an EIS (prepared in compliance with procedures for Chapter 343, Hawai‘i Revised Statutes) will be required or whether a Finding of No Significant Impact (FONSI) should be issued.

In applying for a zone 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 EA or EIS 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 FONSI from the Director of the DPP for a Final EA, or
- Receive an acceptance of a Final EIS for the project from the Director of the DPP.

All EA/EIS required for a significant zone change should include a Project Master Plan. 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.

Zone change applications for a project already assessed under the National Environmental Policy Act, Hawai‘i Revised Statutes Chapter 343, Revised Ordinances of Honolulu Chapter 25 (Shoreline Management), or a preceding zone change application, will not require a new EA when the Director of the DPP determines that the desired zoning and land use generally conform to that described in the existing EA/EIS provided it meets the visions of the **Plan**.

5.5.1 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 Department of Planning and Permitting, as part of its report on the consistency of a project with the **Plan** vision, general policies and guidelines, 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 Department of Planning and Permitting will address these findings and any additional agency comments submitted as part of the agency review of the zone change application and recommend conditions that the Council may consider for inclusion that should be included in any Unilateral Agreement or Development Agreement to ensure adequacy of facilities.

5.6 TEN-YEAR SUSTAINABLE COMMUNITIES PLAN REVIEW

The Department of Planning and Permitting should begin a comprehensive review of the **Plan** ten years after adoption and should report its findings and recommended revisions to the Planning Commission and the City Council. It is intended the Community Growth Boundary will remain fixed through the 2040 planning horizon.

In the Ten-Year review, the **Plan** will be evaluated to determine if the regional vision, general policies, guidelines and implementing actions are still appropriate.

5.6.1 DEVELOPMENT PLAN COMMON PROVISIONS AND EXISTING LAND USE APPROVALS

This **Plan** will go into effect upon adoption by ordinance. At that time, the revised **Plan** will become a self-contained document. Land use approvals granted under existing zoning, Unilateral Agreements, and approved Urban Design Plans will remain in force and guide zoning decisions unless requests for amendments are submitted. At that

time, the request will be reviewed against the vision and policies of the **Plan**. Otherwise, development can proceed in accordance with existing zoning, Unilateral Agreements, and approved Urban Design Plans.

Projects will be evaluated against how well they fulfill the vision of this amended **Plan** and how closely they meet the policies and guidelines established to implement that vision.

5.6.2 RELATION TO GENERAL PLAN POPULATION GUIDELINES

As required by Section 6-1508 of the **City Charter**, the **Plan** implements the **General Plan** population distribution policies of the proposed **General Plan** (Population Objective C) as follows:

- **Policy 4**: Total population in the **East Honolulu Sustainable Communities Plan** area will account for approximately 5 percent of O‘ahu’s total population in 2040. This relatively small share of the island wide population is consistent with Population Objective C, Policy 1 and Policy 2, which is to facilitate the full development of the Primary Urban Center and direct development toward ‘Ewa and Central O‘ahu regions.
- East Honolulu’s projected share of island wide population in 2040 implements Population Objective C, Policy 3, which is to manage physical growth and development in the urban-fringe and rural areas so that an undesirable spreading of development is prevented and that the suburban and country character of these outlying areas can be maintained.

The **General Plan** population distribution policies will continue to be used as a guide to direct the pattern of growth and development in the **Plan** area. Assessments of this performance will be reported in both the **Annual Report on the Status of Land use on O‘ahu** and in the Ten-Year Review of the **Plan**.

5.6.3 REVIEW AND REVISION OF DEVELOPMENT CODES

Current regulatory codes and standards should be reviewed and revised, as necessary, to maintain their consistency and effectiveness as standards to guide attainment of the objectives and policies envisioned for all Development Plan and Sustainable Communities Plan areas.

At the time such reviews are conducted, the following regulatory codes and standards may warrant further review and revision to ensure achievement of the vision for the East Honolulu region, as identified in this **Plan**, as well as consistency with the **Plan**:

- **Land Use Ordinance –** (Department of Planning and Permitting, pursuant to Chapter 21, Revised Ordinances of Honolulu). Zoning code standards and the zoning map for East Honolulu may need to be revised to further implement the policies and guidelines in the **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 updated to reflect transportation policies and guidelines in the **Plan**.
- **Traffic Standard Manual –** (Department of Transportation Services, July 1976, revised April 1979). Standards which are applied to local and most collector/connector streets need to be revised to reflect transportation policies and guidelines in the **Plan**.
- **State Highways Division Procedures Manual –** (State Department of Transportation, Vol. 8, Chapter 5, Section 4) These State highway standards need to be reviewed to identify provisions which may conflict with the transportation policies and guidelines in the **Plan**.
- **Complete Streets Design Manual** – (Department of Transportation Services, September 2016) These State and City standards summarize design treatments and application for streets and intersections and identify what areas need to be improved to implement the transportation policies and guidelines in the **Plan**.
- **Standard Details for Public Works Construction –** (Honolulu Department of Public Works with Kaua‘i, Maui, 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 policies and guidelines in the **Plan**.

- **Storm Drainage Standards –** (Rules Relating to Water Quality of the Administrative Rules, Title 20, Chapter 3, and Department of Planning and Permitting Storm Drainage Standards, August 2017) Standards to incorporate grassed swales, detention and retention basins, and streamside vegetation need to be created to further implement the policies and guidelines for open space in the **Plan**.
- **Park Dedication Rules and Regulations –** (Department of Land Utilization, 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 System Design Standards –** (Department of Environmental Services, Volumes I: July 2017, and Department of Wastewater Management, Volume II: 1984; Department of Environmental Services, Wastewater System Standard Details: July 2017; pursuant to Chapter 14, Revised Ordinances of Honolulu) These standards and ordinances may require review to further implement policies and guidelines in the **Plan**.

In June 2006 the Department of Planning and Permitting initiated a study, the **Development Plans Implementation Program**, to comprehensively review the rules, regulations and development standards of the City and State that directly affect land development. The purposes of this study were to:

- Review the pertinent sections of the City's Development Plan and Sustainable Communities Plan (DP/SCP) policies and guidelines that imply regulatory change to rules or regulations affecting land development and how they relate to the DP/SCP visions.
- Identify the specific elements of the rules and regulations that may require change in order to enable implementation of the various DP/SCP policies and guidelines.

- Prepare recommendations for revisions to specific rules, regulations and development standards that will support DP/SCP implementation.
- For DP/SCP policies and guidelines that are not addressed by existing City and State rules, regulations or development standards, make recommendations for the type of regulatory mechanisms that could address these discrepancies.
- Identify alternative regulatory approaches used by other comparable municipalities.
- Prepare regulatory alternatives and an approach to facilitate a transition from existing regulations to new or revised regulations.

The DPP has been updating the 2006 study with a new **Streamlining the DP/SCP Update Process** that will be finalized in 2020. Recommendations from that study may not be detailed in this **Plan** but will help to implement some of the findings and recommendations. Recommendations of that study will be incorporated in future **Plan** updates.

Revision and updating of the implementation tools was previously a part of the 1999 **Plan**, as well as several other DPs/SCPs. This revision and updating will now take place within the study noted above and, when enacted, will provide an improved regulatory framework to support the plans in fulfilling their respective vision.

5.7 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, and is not meant to be used as a complete summary of the vision, policies, and guidelines to be found in the body of the **Plan**. Chapter 2 should be consulted for the specific language of the vision elements. Chapters 3 and 4 should be consulted for the specific language of each policy or guideline.

The focus of the matrix is on showing how the vision, policies, and guidelines in the **Plan** relate to existing Federal, State, and City and County programs, who has responsibility for those programs, and what the agency's role is in implementing the **Plan**.

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.

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Key to Abbreviations

Programs	Agencies	Roles
• **AHF**: Affordable Housing Fund Program • **BC**: Building Code, Ch. 16, Revised Ordinances of Honolulu (ROH) • **BID**: Business Improvement District, Ch. 34, ROH • **CDBG**: Community Development Block Grant, HUD • **CFD**: Community Facilities Districts, Ch. 34, ROH • **CIP**: Capital Improvement Program (State or City) • **Conserv. Dist.**: State Conservation District, Ch. 205, HRS • **Conserv Plan**: Soil and Water Conservation District Conservation Plan • **CRMP**: City Resource Management Program • **CZM**: Coastal Zone Management, Ch. 205A, HRS • **Drain MP**: Drainage Master Plan • **EA/EIS**: Environmental Assessment / Environmental Impact Statement, Ch. 343, HRS • **ESA**: Endangered Species Act • **Flood Plan**: Hawai‘i General Flood Control Plan, DLNR • **HOME**: Home Investment Partnerships Act Program, HUD • **Hist. Pres.**: Historic Preservation, Ch. 6E, HRS • **INRMP**: Integrated Natural Resource Master Plan • **LID**: Low Impact Development Standards • **LUO**: Land Use Ordinance, Ch. 21, ROH • **MBTA**: Migratory Bird Treaty Act • **NHTF**: National Housing Trust Fund • **NPDES**: National Pollutant Discharge Elimination System • **Ops**: City Operating Budget • **ORTP**: O‘ahu Regional Transportation Plan	• **BFS**: Department of Budget and Fiscal Services • **BWS**: Board of Water Supply • **CWB**: Clean Water Branch, DOH • **CWRM**: State Commission on Water Resource Management • **BID Assoc.**: 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 • **DLM**: Department of Land Management • **DLNR**: Department of Land and Natural Resources • **DOA**: State Department of Agriculture • **DOD**: U. S. 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 Services • **ENV**: Department of Environmental Services • **EPA**: Environmental Protection Agency • **HECO**: Hawaiian Electric Company • **HFD**: Honolulu Fire Department	• **Implementer**: Manages programs and projects to implement policies and guidelines • **Advocate**: Analyzes policies, programs, and projects. Issues recommendations to decision makers based on how well the policies, programs, and projects implement the **Plan** • **Regulator**: Reviews permit applications and activities and issues permits, notices, violations, and penalties based on adopted regulations, rules, and standards

Programs	Agencies	Roles
• **OWMP**: Oʻahu Water Management Plan • **Park MP**: Park Master Plan • **Ped. Plan**: Oʻahu Pedestrian Plan • **Proj. Review**: Project Review • **PRU**: Plan Review Use • **PUC**: Public Utilities Commission, Ch. 269, HRS • **Sewer CP**: Sewer Connection Permit • **Shore Stbk**: Shoreline Setback, Ch. 23, ROH • **SLUBDA**: State Land Use District Boundary Amendment • **SMA**: Special Management Area, Ch. 25, ROH • **SRTS**: Safe Routes to School • **SWQ**: Storm Water Quality • **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 • **SWIMP**: Solid Waste Integrated Management Plan • **TIP**: Transportation Improvement Plan • **State Water**: State Water Code, Ch. 174C, HRS • **Water MP**: Water Master Plan • **Water PTP**: Watershed Partnerships Program • **WPFPA**: Watershed Protection and Flood Prevention Act • **WUP**: Water Use Permit/Well Permit, CWRM • **WQP**: State Water Quality Plan • **WQ Rules**: Water Quality Rules • **ZC**: Zone Change	• **HHFDC**: Hawaiʻi Housing Finance Development Corporation • **HI-EMA**: Hawaiʻi Emergency Management Agency • **HPHA**: Hawaiʻi Public Housing Authority • **HUD**: U. S. Department of Housing and Urban Development • **LUC**: State Land Use Commission • **NGO**: Non-Governmental Organization • **NOAA**: National Oceanic and Atmospheric Administration • **NRCS**: U. S. Department of Agriculture Natural Resources Conservation Service • **OCCSR**: Office of Climate Change, Sustainability, and Resiliency • **OHA**: Office of Hawaiian Affairs • **OMPO**: Oʻahu Metropolitan Planning Organization • **OP**: State Office of Planning • **PUC**: State Public Utilities Commission • **SHPD**: State Historic Preservation Division, DLNR • **SOEST**: School of Ocean and Earth Science and Technology, UH • **SLC**: Sea Level Center, UH • **SWCD**: Soil and Water Conservation District • **UH**: University of Hawaiʻi • **USACE**: U. S. Army Corps of Engineers • **USFWS**: U. S. Fish and Wildlife Services	

Policies and Guidelines	Programs	Agencies	Roles
SEC. 3.1 OPEN SPACE PRESEVATION AND DEVELOPMENT			
Provide both passive and active open space to meet demand. Prevent development of areas susceptible to natural hazards such as soil movement, rock falls, coastal erosion, and sea level rise.	SLUDBA	LUC	Regulator
	ZC LUO BC	DPP	Regulator
	Cons. Dist.	DLNR	Regulator Implementer
3.1.2.1 Mountain Areas			
Make access to mountain areas readily available, including parking areas, while balancing trail demands and alleviating congestion through additional trails, particularly in Mariners Ridge, Niu Valley, and Kamilo Nui Valley.	State Trails State Parks	DLNR	Implementer Advocate
	Subdivision	DPP	Regulator
Encourage the ownership or transfer and maintenance of public access easements to trailheads to conservation groups or the State DLNR.	State Trails	DLNR NGOs	Implementer Advocate
Create a City Resource Management Program (CRMP) to address the demands from outdoor recreational activities and the associated stresses to the natural and built environment.	CRMP	DPR DLM	Implementer
Re-establish and restore native Hawaiian plant, animal, and invertebrate species and habitats in open space areas. Protect and identify endangered species, their habitats, and other important ecological zones from threats such as fire, weeds, feral animals, and human activity. Control the number and range of feral animals and other alien species. Plan utility corridors and other uses to avoid disturbances to areas with high concentrations of native species.	ESA/MBTA Project Review	DLNR USFWS USACE PUC	Implementer Regulator

3.1.2.2 Shoreline Areas			
Maintain Makai view channels along Kalaniana‘ole Highway between Wai‘alae and Koko Head.	CZM	OP	Regulator
	SMA LUO	DPP	Regulator
	Scenic Byways	DOT	Implementer
Avoid obstructions to access such as walls and landscaping. Landowners along the shoreline maintain any vegetation so as to not encroach into the public right-of-way, particularly as the shoreline erodes pushing the right-of-way inland. Increase minimum setbacks for structures near the shoreline and implement other management strategies to account for anticipated impacts from climate change and coastal erosion. Improve, protect, and maintain lateral shoreline access along reaches of the beach from Maunalua Bay to Wai‘alae Beach Park with consideration given to the anticipated impacts from sea level rise and coastal erosion. Encourage citizen reporting of shoreline access issues to the DLNR Office of Conservation and Coastal Lands. Conserve and enhance a natural, dynamic shoreline wherever possible.	LUO SMA Shore Setback	DPP	Regulator Implementer
	Conserv. Dist.	DLNR	Implementer Advocate
	CZM	OP	Regulator
	Scenic Byways	DOT	Advocate Implementer
Pursue opportunities to secure additional pedestrian rights-of-way from the nearest street or highway to the shoreline in sections that have high recreational value, but no similar public access within at least a quarter-mile.	Ops	DDC	Implementer
	Parks MP	DPR	Advocate
Recognize and codify mauka-makai shoreline access into the ROH.	ROH	DPR	Advocate
Analyze the potential impact of sea level rise for new public and private projects in shoreline areas and low-lying areas. If it is likely that sea level rise will increase the risk of flooding during the lifespan of the project, incorporate, where appropriate and feasible, measures to reduce risks and increase resiliency to impacts of sea level rise. Incorporate assessments of all hazards into the land development application process.	EA/EIS Project Review CZM	DDC DFM DPP OCCSR OP	Implementer Regulator Advocate

Identify critical public and private infrastructure subject to sea level rise exposure and to mitigate these impacts through elevation, relocation, or other adaptation measures. Consider forming a community-based redevelopment district, similar to a business improvement district, that would protect, adapt, and relocate residential and commercial structures, public facilities, and natural and cultural resources from impacts from sea level rise and coastal erosion.	SOEST	UH	Advocate
	CZM	OP	Regulator
		OCCSR	Implementer Advocate
	Redev. Dist. (CFD, TIP, BIPD, etc.)	BID Assoc. DDC DFM	Implementer Regulator Advocate
Use the most current versions of the City Climate Change Commission's **Sea Level Rise Guidance**, **Climate Change Brief**, and the State of Hawai'i **Sea Level Rise Vulnerability and Adaptation Report** and associated Viewer for managing assets, reviewing permitting requests, and assessing project proposals. Map repetitive loss areas, develop short and long-term resiliency and recovery plans, and develop and implement a "build back better and smarter" strategy to mitigate future damage costs.	Resiliency and Recovery Plans	OCCSR DPP	Implementer Regulator Advocate
Develop design and construction standards that mitigate and adapt to the impacts of climate change and sea level rise.	BC Project Review	DPP	Regulator Implementer
Implement the recommendations of the **O'ahu Resilience Strategy**, particularly the development of a community resilience hub in East Honolulu, increase coordination with neighborhood emergency preparedness groups, and create a liaison between City agencies and NGOs.	Disaster Plans	OCCSR NGOs Various	Implementer Advocate
Clean up contaminated areas, particularly properties adjacent or directly upland of a stream channel.	CIP	DFM DDC DOH-CWB	Advocate Implementer

Retain stormwater, sediment, and toxic pollutant runoff through the installation of linear landscaping features and permeable pavement along roadways and highways. Incorporate landscaped pathways and bikeways along stream channels and drainage corridors where appropriate and feasible. Increase ground absorption and reduce the amount of permeable surfaces. Implement low-impact development standards to capture stormwater, sediment, and toxic pollutant runoff on-site and reduce pollutant loads into downstream water bodies. Provide incentives for owners of existing homes to develop rain gardens, permeable driveways, and other strategies that hold stormwater on-site instead of discharging it into storm drains or streams.	CWRM Conserv. Dist.	DLNR	Implementer
	NPDES	DOH-CWB	Regulator Implementer
	LUO BC	DPP	Regulator Implementer
	Bike Plans	DTS	Advocate
	Ops CIP	DFM DDC BWS	Implementer
Incorporate potential natural drainage improvements in park and preservation lands.	CIP Park MP	DPR DFM DDC	Implementer Advocate
3.1.2.5 Natural Resources and Preserves			
Implement management programs in areas where intense human activity threatens the sustainability of the resources.	Monitoring Visitor Limits Admin. Fees	DLNR DPR NGOs	Implementer Advocate
Conduct a biological study to determine if Rim Island 2 is eligible for declaration as a recognized endangered species habitat.	Bio Study	NGOs USFWS	Advocate Implementer
Implement the findings and recommendations from the **Kamilo Nui – Mariner's Cove Firewise Hazard Assessment**.	Hazard Assessment Conserv. Dist.	NGOs USFS DLNR	Advocate Implementer

3.1.2.6 Marina			
Improve facilities in support of boating. Encourage Best Management Practices (BMPs) for marina uses to mitigate degradation of water quality to both the marina and Maunalua Bay.	Conserv. Dist.	DLNR	Regulator
	BMPs	USACE	Implementer
	Grading Permits NPDES	DPP DOH	Regulator
Maintain or improve views across the marina, especially from Kalaniana‘ole Highway and other major roadways. Install and maintain landscaping, where appropriate, to screen areas of the marina not intended for public views and to intercept stormwater, sediment, and toxic pollutant runoff from entering into marina waters.	Scenic Byways	DOT	Implementer
Improve pedestrian access to and along the marina’s edge by way of a path for pedestrians and bikes. Construct a pedestrian bridge between the Hawai‘i Kai Towne Center and the Hawai‘i Kai Shopping Center.	CIP	DTS	Implementer
SEC. 3.2 ISLAND-BASED PARKS AND RECREATIONAL AREAS			
Maintain and enhance, to the extent possible, existing island-based parks by utilizing land area that has not been fully developed for recreation use.	Park MP	DPR	Implementer Advocate
Expand access to existing park lands by improving neighborhood linkages along shared paths for pedestrians and bicyclists.	Park MP	DPR	Implementer
	Bike Plan	DTS	Advocate
	CIP	DDC	Implementer
3.2.3.1 Passive or Nature Parks			
Maintain and facilitate access to the area's important fishing resources.	Conserv. Dist.	DLNR	Regulator Implementer

Provide educational and passive recreation opportunities to preserve the Kaiwi coast.	Conserv. Dist.	DLNR	Regulator Implementer
	Byway Plan	NGOs DTS DOT	Implmenter Advocate
	Park MP	DPR	Implementer
Expand Sandy Beach Park to include Golf Course 5 and 6 properties, thereby increasing East Honolulu's active recreation areas.	Park MP	DPR	Implementer
Minimize adverse lighting impacts on aquatic life and avifauna, as well as adverse aesthetic impacts, particularly from stationary point lookouts and along significant view planes.	CIP	DOT DDC	Implementer
	LUO	DPP	Regulator
Develop new walking/hiking trails within Koko Crater Botanical Garden for better viewing of plant collections, but prohibit access to/from trails or paths outside the garden leading from/to the garden. Protect the fragile topography of Koko Crater by restricting recreational uses such as horseback riding to areas apart from the conservation plant collections. Continue to develop Koko Crater Botanical Garden as a conservation site of global importance for rare and endangered species from Hawai‘i and other tropical dryland areas.	Park MP	DPR	Implementer
	Ops	DES	Implementer
Protect fragile natural resources, such as Hanauma Bay Nature Preserve, from overuse through continued management and control of visitor numbers and impacts such as walking on the reef and sunscreen pollution.	Park MP Conserv. Dist. Bio Study	DPR DLNR NGOs	Implementer Advocate
Develop Wāwāmalu Beach as a nature park with the addition of demarcated parking and installation of barriers to protect natural dunes, native vegetation, beach rock, and beach.	Park MP	DPR DTS DDC	Implementer

Use non-potable water for irrigation of large landscaped areas in compliance with the BWS Rules and Regulations. If non-potable water is either unavailable or infeasible, a report of the investigation should be coordinated and submitted to the Board of Water Supply prior to considering the use of potable water.	CIP Park MP	DPR BWS	Implementer
3.2.3.2 Active Recreation Areas			
Locate areas designed for sporting events that attract high numbers of people along major collector streets or accesses that are separated as much as possible from residential areas and wildlife habitats. Locate bus stops and loading areas at principal entries and adjacent to convenient pedestrian accesses to main activity areas within the park. Provide amenities and service facilities to accommodate “tailgate” picnics in parking areas for sporting events, including shading canopy trees within the parking lot as well as nearby picnic tables and outdoor grills.	Park MP	DPR	Implementer
	CIP Ops	DPP DDC	Implementer
Minimize the visibility of perimeter fencing along major collector streets, large recreation buildings or structures, lighting, parking lots and other utilitarian elements through plantings or other appropriate visual screens adjacent to residential areas and major roadways, particularly to soften the view of the park from above at the roadside vista point along Kalaniana‘ole Highway.	Park MP	DPR	Implementer
	LUO	DPP	Regulator
Reduce light pollution by minimizing the number of lighting facilities installed and ensuring that lights are shielded and pointed downward.	LUO CIP	DPP DDC	Regulator Implementer
Public recreation facilities should be available to users of all skill levels and incomes, particularly Koko Crater Stables.	Park MP	DPR DES	Implementer
3.2.3.3 Golf Courses			
Optimize the function of golf courses as passive drainage ways, maximizing their potential to retain or detain stormwater runoff.	LUO	DPP	Implementer

Provide view amenities for adjacent urban areas, especially from well-used public rights-of-way, parks and vista points. Use screening, landscaping, setbacks, and modifications to the course layout, where feasible, rather than fencing or solid barriers.	SUP LUO	DPP	Implementer
Provide and maintain safe access through these golf courses, as necessary, for regional continuity of pedestrian and bicycle systems.	Bike Plans	DTS	Advocate Implementer
Use of non-potable water for irrigation of large landscaped areas in accordance with the BWS Rules and Regulations. If non-potable water is either unavailable or infeasible, a report of the investigation should be coordinated and submitted to the BWS prior to considering the use of potable water.	Rules and Regulations	BWS	Regulator Implementer
SEC. 3.3 COMMUNITY-BASED PARKS			
Modify recreation facilities in existing parks to respond to changing demographic profiles or recreational needs.	CIP	DPR DDC	Implementer
Co-locate parks with elementary or intermediate schools. Coordinate design, development and use of athletic, recreation, meeting, and parking facilities with DOE where efficient and effective.	Park MP CIP	DPR DDC DOE	Implementer
Incorporate and develop the Job Corps Center site for active recreational facilities.	Park MP CIP	DPR	Implementer
Design and site structural improvements and landscaping in community-based parks to create or add to the aesthetic value of these open space elements. Blend park boundaries through the transition of park space to paths or greenways.	Park MP CIP	DPR DDC	Implementer

Improve neighborhood linkages for non-motorized transportation modes.	Bike Plans Ped. Plan	DTS DPR DDC	Implementer Advocate
Develop additional trails and bike paths to balance trail demands across East Honolulu and alleviate potential overuse at existing trails.	State Trails Conserv. Dist.	DLNR	Implementer
	Park MP CRMP	DPR DLM	Implementer
SEC. 3.4 HISTORIC AND CULTURAL RESOURCES			
Emphasize physical references to East Honolulu's history and cultural roots. Preserve significant historic features from earlier periods. Retain significant vistas whenever possible.	ZC LUO Project Review	DPP	Regulator
	Hist. Pres.	SHPD OHA	Regulator Implementer
Determine the appropriate preservation methods on a site-by-site basis in consultation with the State Historic Preservation Officer and cultural practitioner. Require preservation in-situ only for those features that the State Historic Preservation Officer has recommended such treatment. Recommend in-situ preservation and appropriate protection measures for sites that have high preservation value because of their good condition or unique features.	Hist. Pres.	SHD OHA Cultural Practitioners	Regulator Implementer Advocate
Determine the degree of access that would best promote the preservation of the historic, cultural and educational value of the site in consultation with the State Historic Preservation Officer, Hawaiian cultural organizations, and the landowner, recognizing that economic use is sometimes the only feasible way to preserve a site.	LUO	DPP	Advocate Regulator
	Hist. Pres.	SHPD	Implementer

Protect existing visual landmarks and support the creation of new, culturally appropriate landmarks.	CIP	DDC DFM	Implementer
SEC. 3.5 RESIDENTIAL USE			
Establish design guidelines to minimize long-term adverse impacts of new infill development on surrounding neighborhoods; encourage use of sloped roof forms with wide overhangs; enhance the boundaries of existing neighborhoods through the use of landscaping, natural features, building form and siting; focus neighborhood activity on the local street, common pedestrian rights-of-way, or recreation areas; and encourage energy efficient features, such as solar panels, and design, such as window recesses, overhangs, and orientation of openings to allow natural shade and cross-ventilation.	LUO BC	DPP NGOs (e.g. AIA)	Regulator Implementer Advocate
Encourage bus, pedestrian, and bicycle travel, particularly to reach neighborhood destinations such as schools, parks, and convenience stores. Recognize the need for accessible design and safe travel conditions for elderly and/or disabled people. Implement traffic calming measures on residential neighborhood streets and add street trees to provide shading for sidewalks and bus stops. Modify residential neighborhood street design, where appropriate and feasible, to provide greater emphasis on safe, accessible, convenient and comfortable pedestrian routes, bus stops, bike routes, and landscaping, even if this requires somewhat slower travel speeds, less direct routes and fewer on-street parking spaces for automobiles. Revise City street standards, subdivision regulations, and use of traffic calming measures to support these policies and the policies identified in the Complete Streets Design Manual. Implement the policies and guidelines in the **O‘ahu Bike Plan**, **Bike Plan Hawai‘i**, the **O‘ahu Pedestrian Plan**, and the **Statewide Pedestrian Master Plan**.	Complete Streets	DTS DDC DFM DPP	Implementer
	Ped. Plan	DTS DOT	Implementer
	Age Friendly Action Plan	NGOs UH Various	Advocate
	Bike Plan	DTS DOT	Implementer
	Ops	DDC DTS	Implementer
Allow designated affordable housing projects up to 40 units per acre if designed in a manner compatible with the character of the surrounding residential community.	LUO	DPP	Regulator

Improve management and enforcement of regulations relating to the operation of transient vacation units (TVUs) in residential neighborhoods.	LUO	DPP	Regulator
Provide housing opportunities for a variety of living accommodations which are affordable to low and moderate-income, gap group, and other elderly households such as multi-generation households, ‘ohana units, home expansions, group homes, assisted living units, and continuing care retirement communities such as the Kāhala Nui assisted living units and the Hawai‘i Kai retirement community.	AHF CDBG HOME Section 8 LUO	HPHA HHFDC HUD DPP	Regulator Implementer Advocate
Implement LID practices as properties are redeveloped to encourage the capture of stormwater, sediment, and toxic pollutant runoff on-site and reduce pollutant loads into downstream water bodies. Provide incentives for owners of existing homes to develop rain gardens, permeable driveways, and other strategies that hold stormwater on-site instead of discharging it into storm drains or streams.	Storm Drainage WQ Rules LUO	DPP DFM OCCSR	Regulator Advocate
	NPDES Water PTP	DOH-CWB	Regulator Advocate
Allow designated affordable housing projects up to 40 units per acre if designed in a manner compatible with the character of the surrounding residential community	LUO	DPP	Regulator
3.5.3.2 Special Needs Housing and Senior Housing			
Locate special needs housing within close proximity to transit services and commercial centers. Apply the seven principles of Universal Design to redevelopment projects to support the seniors who wish to age-in-place. Accommodate an allowable building density of 10 to 40 units per acre, not including beds in skilled nursing facilities.	ZC LUO CDBG	DPP	Implementer
Utilize building and roof form, orientation, location of entries, landscape screening, and height to maintain compatibility with the existing residential uses and scale.	LUO	DPP	Regulator

Encourage the development of medical care facilities, including, but not limited to, facilities that provide palliative and hospice care.		DOH	Regulator Implementer
	LUO	DPP	Implementer
		NGO	Advocate
Adhere to the key principles of Complete Streets: safety, consistency of design, context sensitive solutions, energy efficiency, accessibility and mobility for all, health, use and comfort of all users, and green infrastructure. Create an inclusive and accessible urban or suburban environment that encourages active and healthy aging, specifically age-in-place principles and the Universal Design Standards that address or include the following: equitable, flexibility, simple and intuitive, perception information, tolerance for error, low physical effort, and size and space.	LUO Setbacks	DPP	Regulator Implementer
	Bike Plans Ped. Plan BC	DTS DDC DOT DPP	Implementer
	Park Plan	DPR	Implementer
		NGOs	Advocate
SEC. 3.6 NON-RESIDENTIAL DEVELOPMENT			
Allow low-rise multi-family residential use above the first floor in B-1 and B-2 zoned districts.	LUO	DPP	Implementer Advocate
Prohibit new or expanded land areas for resorts and institutional campuses including major new schools, hospitals, or similar institutions.	LUO ZC	DPP	Implementer
Incorporate site design and facilities to promote pedestrian and bicycle access to Neighborhood Commercial Centers and transit access to the Regional Town Center.	Project Review Complete Streets Bike Plan Ped. Plan	DPP DTS DDC Various	Advocate Implementer

Maintain consistency between the building mass of a commercial center and its urban and natural setting.	Project Review LUO	DPP	Implementer
Include at least one pedestrian access way from the public sidewalk or other off-site pedestrian pathway to the entrance of establishments in the commercial center that does not require crossing a traffic lane or parking lot aisle or driveway. Improve efficiencies in traffic and parking conditions by redesigning or re-siting parking lots, driveways, and walkways and by providing shuttle services between components of the Regional Town Center.	Project Review LUO Complete Streets Ped. Plan	DPP DTS DDC Various	Advocate Implementer
Strive to have Neighborhood Commercial Centers reflect a residential architectural character.	Project Review LUO	DPP	Implementer
Allow the Regional Town Center to reflect a more varied urban architectural character.	Project Review LUO	DPP	Implementer
Create a Regional Town Center in the Hawai‘i Kai Marina area by strengthening the relationship between the existing commercial uses, increasing the mix of uses, and providing more convenient access.	Project Review LUO	DPP	Advocate Implementer
Parking areas should include a landscape screen of trees and hedges in setbacks with shade trees throughout the parking lot for aesthetics and stormwater retention. Place parking and service areas behind buildings or visually screen from streets and residential areas.	LUO	DPP	Regulator
Use only low-level or indirect lighting, appropriately shielded and pointed downward, which meets safety and security requirements in parking lots.	Project Review LUO	DPP	Implementer Regulator
Ensure compatibility between the type, size, design, placement, and color of signage and the context of adjacent facilities and uses. Avoid blank facades on portions of buildings visible from a street or the Hawai‘i Kai Marina by using texture, articulation, color, and fenestration to create visual interest.	LUO ZC	DPP	Implementer Regulator

Designate land around Kalama Village Center for residential or mixed-use (residential, and commercial/office).	ZC	DPP	Regulator
Incorporate resource conservation measures in new development. Require the use of low-impact development standards for any significant new construction or redevelopment in order to hold stormwater on-site instead of discharging it into storm drains or stream channels. Provide incentives for owners to develop rain gardens, permeable parking lots and driveways, and other strategies that hold stormwater on-site instead of discharging it into storm drains or streams.	LID LUO ZC WQ Rules	DPP OCCSR	Implementer Regulator Advocate
	NPDES	DOH-CWB	Regulator
Strengthen the relationship between the existing commercial uses in the Hawai‘i Kai Marina area.	Project Review LUO	DPP	Regulator Advocate
Increase the mix of uses and types of services and activities in the commercial zone. Offer a greater diversity of uses including apartment uses, public uses, and indoor small to medium-sized “service-industrial” establishments in the Hawai‘i Kai Towne Center. Enhance the Koko Marina Shopping Center as a recreation/entertainment oriented commercial complex with the addition of more services for ocean recreation, restaurants, and similar attractions. Reorient Hawai‘i Kai Towne Center as a focus of activity by diversifying uses such as apartment, public, and indoor small to medium sized service industrial uses. Convert some additional ground or second floor space to retail or other commercial uses if there is a demand for additional office space.	ZC LUO	DPP	Regulator Implementer Advocate
Provide more convenient transportation access for alternative modes of transportation including improved pedestrian amenities and connections.	CIP	DTS	Implementer
	Project Review LUO Subdivision	DPP	Advocate

Allow low-rise, multi-family residential use as a permitted accessory use above the first floor in the B-1 Neighborhood Business District and the B-2 Community Business District.	LUO ZC	DPP	Advocate Implementer
Building heights should generally not exceed 60 feet for Institutional use and 70 feet for Resort use. Height setback transitions should be provided from street frontages, the shoreline, and adjacent residential areas. Signage should be non-illuminated or indirectly illuminated. High intensity lighting should be appropriately shielded downward to minimize impact on adjoining or affected uses and wildlife.	LUO Project Review	DPP	Regulator
Account for the projected impacts of climate change and sea level rise over the length of the building's lifespan.	SMA Shoreline Setback LUO	DPP OCCST	Implementer Advocate
Implement low-impact development, particularly in areas that may have large impervious surfaces. Provide incentives for owners to develop rain gardens, permeable parking lots and driveways, and other strategies that hold stormwater on-site instead of discharging it into storm drains or streams.	LUO	DPP OCCSR	Regulator Implementer Advocate
	CZM	OP	Regulator Implementer
SEC. 4.1 TRANSPORTATION SYSTEMS			
Implement the **Statewide Pedestrian Master Plan**, the **Honolulu Complete Streets Design Manual**, the **Bike Plan Hawai'i**, the **O'ahu Bike Plan**, the **O'ahu Pedestrian Plan**, and the **Honolulu Age-Friendly City Action Plan**. Improve sidewalks along Kalaniana'ole Highway consistent with the **Statewide Pedestrian Master Plan**.	Various Plans	See plans	See Plans
	Project Review	DTS DPP	Regulator Implementer
	ORTP TIP	OMPO	Implementer

Provide improved services and facilities for express buses, such as more frequent and more comfortable vehicles. Expand and improve park-and-ride facilities, including possible relocation and provision of compatible accessory uses.	CIP Ops LUO	DTS DDC DPP	Implementer Regulator
Promote ridesharing and vanpooling.	Ops	DTS	Implementer
Increase person-carrying capacity on Kalaniana‘ole Highway for commuter travel without expanding automobile rights-of-way by constructing facilities to increase safety and comfort for alternative modes of travel. Decrease the use of single-occupant, or even zero-occupant, automobile trips during commute times by: converting regular automobile lanes into additional HOV lanes during regular or rush hour times, and/or increasing the vehicle occupancy requirement of the use of the HOV lane.	CIP Ops	DTS DOT DDC	Implementer Regulator
Ensure street furniture is comfortable and does not impede sidewalk movement. See the **Complete Streets Design Manual**.	Ped. Plan	DTS DDC	Regulator Implementer
Preserve and enhance existing crosswalks. Install additional crosswalks, especially near open spaces, parks, shopping centers, and other public gathering places.	Ped. Plan	DTS DDC	Implementer
Roadway design, particularly along Kalaniana‘ole Highway in the vicinity of Kuli‘ou‘ou, should take into account the anticipated impacts of sea level rise to ensure safe and efficient access between neighborhoods is maintained.	CIP Ops	DOT OCCSR	Implementer Advocate
Modify rights-of-way design in selected areas, particularly along designated bike lanes and routes, principal pedestrian routes and street crossings, and near bus stops.	CIP Ops	DTS DOT DDC	Implementer
Implement lane restriping during repaving projects.	CIP Ops	DOT DTS DDC	Implementer

Change travel way widths or curb radii, pavement texture, introduce appropriate signage, and provide generous landscaping for safety, aesthetics, and stormwater retention. Design on-street and off-street parking facilities more efficiently to encourage joint use of parking in ways that ensure public safety and better manage stormwater, sediment, and toxic pollutant runoff with improved BMPs. Include more landscaping along roadways to improve aesthetics, to manage stormwater, sediment, and toxic pollutant runoff, and to filter oils and sediment from the roadway improving downstream water quality.	Project Review	DPP	Regulator
	NPDES WQ Rules	DOH-CWB	Regulator
	CIP Ops	DOT DTS DDC	Implementer
Provide more convenient pedestrian paths within commercial centers, transit stops, parks, beaches, schools, senior living facilities, and other high-activity areas to encourage people to walk short distances for multi-purpose trips instead of moving the vehicle to another parking facility. Ensure street furniture is comfortable and does not impede sidewalk movement. Support the Safe Routes to School program and projects to improve pedestrian and bicycle links around schools.	LUO SRTS CIP Ops Complete Streets	DPP DOT DTS DDC	Regulator Implementer Advocate
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.	LUO	DPP DDC DOT	Regulator Implementer
Discourage the use of gated communities and encourage existing gated communities to improve adjacent streetscape and disguise the public-private boundary.	LUO Project Review Subdivision	DPP	Advocate Implementer
Implement traffic calming measures in appropriate residential areas to reduce average motor vehicle speeds and make vehicular routes less direct.	CIP Complete Streets Ops	DOT DTS DDC DPP	Implementer

Complete the roadway between Hawai‘i Kai Drive in the Kamilo Nui Valley area.	TIP CIP	OMPO DTS DPP	Implementer
SEC. 4.2 WATER ALLOCATION AND SYSTEM DEVELOPMENT			
Integrate management of all potable and non-potable water sources, including groundwater, stream water, stormwater, and effluent, following State and City legislative mandates.	WUP OWMP	CWRM BWS	Regulator Advocate
Adopt and implement water conservation and stormwater management practices, in the design of redevelopment projects and the modification of existing uses, including landscaped areas. Have the BWS certify that adequate potable and non-potable water is available in order for a new residential or commercial development to be approved. Encourage the use of low flush toilets, flow constrictors, and other water conserving devices in commercial and residential redevelopments. Encourage the use of indigenous, drought-tolerant plant material and drip irrigation systems in landscaped areas and promote stormwater retention and infiltration. Encourage timely leak repair for distribution systems. Provide incentives for owners of existing homes to develop rain gardens, permeable driveways, and other strategies that hold stormwater on-site instead of discharging it into storm drains or streams. Require the use of Low-Impact Development standards for any significant new construction or redevelopment in order to hold stormwater on-site instead of discharging it into storm drains or stream channels.	LID NPDES WQ Rules	DPP DFM DOH-CWB	Implementer Advocate
	Water PTP	NGOs	Advocate
	Project Review	BWS ENV	Regulator Implementer
	BC	DPP	Regulator
Encourage the use of tertiary-treated recycled water for the irrigation of golf courses and other landscaped areas where this would not adversely affect potable groundwater supply.	WQP	DOH	Regulator
	Project Review	BWS ENV	Implementer

Research and prepare for the potential impacts of sea level rise on ground water aquifers and water supply infrastructure.		BWS OCCSR OP DDC	Implementer
Expand use of reclaimed water in State and County Facilities in accordance with HRS 174C-31. Encourage use of reclaimed water in redevelopment projects.	CIP BC LUO	DDC DPP	Implementer Regulator
SEC. 4.3 WASTEWATER TREATMENT			
Connect all wastewater produced by urban uses to a publicly regulated or municipal sewer service system.	Sewer CP CIP LUO	ENV DDC DPP	Regulator Implementer
Keep the East Honolulu WWTP under private operation and regulatory supervision of the State PUC and the State DOH.	PUC	PUC DOH	Regulator
Implement, where feasible, water recycling as a water conservation measure. Use recycled water from the East Honolulu WWTP as a source for irrigating golf courses and other uses compatible with the Board of Water Supply's rules and guidelines for the treatment and use of recycled water.	WQ Plan	DOH	Regulator
	Project Review	BWS	Implementer
Provide buffer zones and landscape elements between the East Honolulu WWTP and adjacent residential designated areas in order to mitigate possible visual, noise, and odor impacts.	WP WQ Plan	DOH	Regulator
	Ops CIP	ENV	Implementer
	Clean Air Noise Regs.		

Connect homes to one of the two existing sewer systems. Support conversion efforts and upgrades to individual wastewater systems where connections are not feasible.	Wastewater	DOH	Implementer Regulator
SEC. 4.4 ELECTRIC POWER DEVELOPMENT			
Design system elements such as sub-stations and transmission lines to avoid or mitigate any potential adverse impacts on scenic and natural resource values and the potential impacts of sea level rise and associated impacts of the rising water table and groundwater inundation.	CIP LUO Conserv. Dist.	HECO DPP DLNR OCCSR	Implementer Regulator
SEC. 4.5 SOLID WASTE HANDLING AND DISPOSAL			
Provide expanded collection facilities and services including automated refuse collection in residential areas. Establish public outreach and education programs. Have residents pay their fair share of all costs needed to ensure provision of adequate solid waste collection facilities.	Ops	ENV	Implementer
	SWIMP	ENV	Implementer
SEC. 4.6 DRAINAGE SYSTEMS			
Complete the proposed study of local flooding and drainage problems as soon as possible.	Flooding Study Water PTP	NGOs DLNR	Advocate Implementer
Include a phased plan and implementation program for drainage system improvements. Promote drainage system design that emphasizes control and minimization of non-point source pollution.	Ops	DFM	Implementer
	NPDES	DOH-CWB	Implementer
Restore channelized streams and wetlands.	CIP Ops	DDC DFM	Implementer

Install upland detention basins in upper valleys above urbanized areas and properly maintain them in order to prevent the blocking of downstream channels during major storm events. Keep drainage ways clear of debris to avoid the flooding problems that have occurred in the past.	CIP Ops	DDC DFM DLNR	Implementer
Implement Low-Impact Development (LID) standards.	Project Review Subdivision	DPP	Implementer Regulator
Encourage planting and maintenance of vegetation along drainage ways.	LUO Project Review	DPP OCCSR DFM	Regulator Implementer
Improve and protect natural resources and aesthetic values of the stream.		DLNR	Advocate
Identify repetitive loss areas from flooding and implement greater restrictions to rebuilding in these areas.	Flood Plan	OCCSR DEM	Implementer Advocate
Integrate planned improvements to the drainage system into the regional open space network by emphasizing the creation of passive recreational areas, and recreational access for pedestrians and bicycles without jeopardizing public safety.	Project Review	DDC DPP	Implementer Regulator
	Bike Plan	DTS DOT	Implementer Advocate
	Park MP Project Review	DPR	Implementer Regulator
SEC. 4.7 SCHOOL FACILITIES			
Approve new residential developments only after the DOE provides assurance that adequate school facilities will be available when the development is completed.	Project Review	DPP DOE	Implementer

Require developers to comply with DOE school impact fee requirements and pay their fair share of all costs needed to ensure provision of adequate school facilities for the children living in their developments.	Impact Fees	DOE	Implementer
	LUO ZC BC	DPP	Regulator Implementer
Encourage DPR and DOE to coordinate joint development and use of athletic facilities such as playgrounds, play fields and courts, swimming pools, and gymnasiums to maximize use and reduce duplication of function without compromising school athletic programs.	Park MP	DPR	Implementer
	Ops	DOE	Implementer
Encourage the DOE to make more efficient use of their facilities with year-round scheduling.	Ops	DOE	Implementer
Design school buildings and coordinate with the Department of Emergency Management so that these facilities may also be used as public shelters capable of withstanding Category 3 hurricanes.	CIP	DOE DEM HI-EMA	Implementer
SEC. 4.8 CIVIC AND PUBLIC SAFETY FACILITIES			
Approve new development only if adequate staffing and facilities for fire, ambulance and police protection will be provided. If the development of any new substation is warranted, potentially near an entry to Hawai‘i Kai, co-locate it with other emergency medical and transportation services.	CIP Ops Project Review Subdivision	DEM HFD HPD EMS DPP	Implementer
Ensure accessibility for senior populations to public shelters, or to prioritize the restoration of services to where seniors and other vulnerable populations are sheltering-in-place.	Disaster Plan	DEM NGOs	Implementer Advocate

Develop a Community Resilience Hub in East Honolulu that will serve critical roles during and immediately following an emergency as well as enhance social resilience ahead of a disaster.	Disaster Plan Ops	OCCSR DEM DPR DLM	Implementer Advocate
Analyze the possible impact of sea level rise for new public and private projects in shoreline areas and low-lying areas and require measures to reduce vulnerability and increase resiliency. Identify critical public and private infrastructure and important cultural and natural resources vulnerable to historic coastal hazards and impacts of climate change, and, working with local landowners, stakeholders, and State and Federal agencies, begin the work of protecting, adapting, or relocating the highest priority projects.	Disaster Plan LUO SMA Hist. Pres. Ops	DPP DDC DEM DLM DLNR DOT ENV DTS DOE PUC HFD HPD EMS OCCSR	Implementer Advocate

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APPENDIX A: CONCEPTUAL MAPS

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

		PAGE
• Map A-1:	Open Space	A-6
• Map A-2:	Urban Land Use	A-7
• Map A-3:	Public Facilities	A-9

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, policies and guidelines that are presented in Chapters 2, 3, and 4. These policy statements and guidelines are considered the most important elements of the **Plan**.

The maps are considered illustrations of the policies and guidelines. 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 cases 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 three maps are presented in the following section.

Descriptions of elements specific to each map (**A-1: Open Space**, **A-2: Urban Land Use**, and **A-3: Public Facilities)** are presented in separate sections for each map which follow the section on Common Elements.

COMMON ELEMENTS

Agriculture Areas

Agricultural lands, previously lands within the Agricultural Boundary, are established to protect the region's agricultural lands for their economic and open space values. The primary use of all lands within Agriculture areas are agriculture or directly supportive of the agriculture industry.

Two areas in Hawaiʻi Kai are identified as agricultural lands and located outside the Community Growth Boundary to recognize active agricultural lots seeking a continuation of their use (i.e., the farm lot subdivisions in Kamilo Nui Valley and those adjacent to Kaiser High School). In addition, undeveloped areas in Kamilo Nui Valley which are adjacent to existing agricultural uses are placed within the Agriculture area. Preventing the encroachment of suburban residential development within and surrounding the existing subdivisions supports active use of these lots for agricultural purposes.

Community Growth Boundary

The Community Growth Boundary (CGB), previously the Urban Community Boundary in the 1999 **Plan**, defines and contains the intended extent of developed or "built-up" areas of East Honolulu's urban fringe communities.

The purpose of the Community Growth Boundary is to:

- Guide future development, redevelopment, and resource management within existing zoning designations or future zoning designations;
- Provide adequate lands for facilities or other groupings of built uses needed to support established communities; and
- Protect lands outside this boundary for agriculture and other resources and open space values.

Areas within this boundary are generally characterized by extensive tracts of residential or commercial development clearly distinguishable from undeveloped or more "natural" portions of a region's environment.

Within the **Plan** area, the Community Growth Boundary is generally coterminous with the State Urban District boundary but excludes the following areas of the State Urban District:

- ʻĀina Haina Nature Preserve;
- Areas committed to agricultural use by long-term leases (i.e., the farm lot subdivisions in Kamilo Nui Valley and adjacent to Kaiser High School);
- Undeveloped areas in Kamilo Nui Valley which are adjacent to existing agricultural uses but zoned as preservation;
- Large tracts of undeveloped lands at higher elevations that are prominently visible from the coastal highway or other public areas and are desirable natural scenic features;
- Mauka lands along the Kaiwi coast are zoned as preservation and located outside of the Community Growth Boundary to protect open space;
- Significant undeveloped Urban District land areas identified as suspect areas for land movement by the U.S. Geological Survey;
- Keawāwa Marsh and Wetlands; and
- Small inconsistencies as shown in **Exhibit 2-1**.

There have been no State Land Use District boundary amendments in East Honolulu since the publication of the 1999 **Plan**. There are, however, areas where the Community Growth Boundary has been expanded to reflect zone changes made prior to the publication of the 1999 **Plan** which were not incorporated into the 1999 Appendix Maps. The two changes include the expansion of Niu Valley, which has not been fully developed, and the Leolani development near Kamilo Nui Valley, which was completed shortly after the publication of the 1999 **Plan**. The Community Growth Boundary has also contracted to exclude and preserve Keawāwa Marsh and Wetlands.

Golf Courses

The locations of the three existing privately owned golf courses are shown on the maps because of their recreational value and visual contribution to the open space landscape. There are no proposed golf courses.

Highways, Arterials, and Major Collector Streets

The maps show the locations of existing highways, arterials, and major collector streets. No new highways, arterials, or major collector streets are proposed at this time. The Public Facilities Map includes the connection of Hawaiʻi Kai Drive through Kamilo Nui Valley only as a future bicycle lane as it appears in the **Oʻahu Bike Plan**.

Parks

The maps show locations of existing public parks and recreational facilities, including regional parks, district parks, shoreline parks, nature parks, and the Kaiwi Scenic Shoreline area. Smaller community-based parks, including community parks, neighborhood parks, and mini-parks are not shown.

Preservation Areas

Preservation lands, previously lands within the Preservation Boundary, include those lands not valued primarily for agriculture, but which form an important part of a region's open space fabric. Such lands possess natural, cultural, or scenic resource values, and include important wildlife habitat, archaeological and historic sites, cultural sites, cemeteries, significant landforms or landscapes over which significant views are available, or development-related hazard areas.

The Preservation area includes undeveloped lands that:

- Are necessary for the protection of watersheds, water resources and water supplies;
- Are necessary for the conservation, preservation and enhancement of sites with scenic, historic, archaeological or ecological significance;
- Are 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 activities related to these uses;
- Are located at an elevation below the maximum inland line of the zone of wave action, and marine waters, fishponds, and tide pools unless otherwise designated;
- Are generally characterized by topography, soils, climate or other related environmental factors that may not be normally adaptable or presently needed for urban or agriculture use;
- Have general slopes of 20 percent or more which provide for open space amenities and/or scenic values;
- Are 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, rock fall hazards or the land's susceptibility to landslides and/or inundation by tsunami and flooding;
- Are used for natural, state, or city parks outside the Community Growth Boundary; or
- Are suitable for growing commercial timber, grazing, hunting, and recreation uses, including facilities accessory to such uses when said facilities are compatible with the natural and physical environment.

Preservation areas exclude such features, sites, or areas located within the Community Growth Boundary or Agriculture areas.

Urban Areas

The maps show areas which have been developed or are planned for development for residential or commercial uses. Except when otherwise provided for, uses within the urban areas include residential and low-density apartment, medium-density apartment, neighborhood commercial center, regional town center, and resort uses. Changes to the urban areas from the 1999 **Plan** include the previously mentioned changes to the Community Growth Boundary in Niu Valley, the Leolani Development, and Keawāwa Marsh and Wetlands, as well as the construction of units in the Koko Villa neighborhood outside the entrance of Koko Crater Botanical Garden. The Koko Villas development was interpreted to be within the Community Growth Boundary. The ambiguity to the distinction between urban and preservation areas for Koko Villas is a reminder that these maps are only intended to be illustrations and where there are contradictions between the map and the text, or with other entitlements such as zoning, other regulatory tools will take precedent.

OPEN SPACE MAP

This map is intended to illustrate the region's major open space patterns and resources as outlined in **Chapter 3**. It highlights major open space elements and resources, including agricultural and preservation lands, major recreational parks and golf courses, the Hawai'i Kai marina, important panoramic views, natural stream corridors and drainage ways, and important boundaries.

This map also indicates the general locations of community and neighborhood parks, public access points along the shoreline, and major trails providing mountain access.

Landscaped Boulevard/Greenway

Major arterials and major collector streets with landscaping, potentially including a landscaped median strip, landscaped sidewalk, and/or bikeways.

Natural Drainage Ways/Gulches

Drainage ways and stream channels convey water as flood plains but also serve as open space resources. These areas are protected from development, disturbance, or

channelization, except where absolutely necessary to protect existing urban development from flooding.

Panoramic Views

Points or corridors within the public right-of-way where views and scenic resources are highly valued with minimal obstruction. See **Exhibit 2-2** for areas that are identified as prominent land features, in addition to views of the shoreline and ocean, which many of these views are oriented to.

Trails

Unsanctioned maintained trails have been removed from the map with the exception of the Mariners Ridge Trail. Mariners Ridge Trail and Koko Crater are two trails that are not maintained by the City or State, but remain on the map as both were identified in the 1999 **Plan** as trails offering unique and spectacular scenic resources. The Koko Head Trail was added to the map because of its contribution as a unique and spectacular scenic resource, being an access point to Nonoʻula and ʻIhiʻihilauākea Preserves, and being located on City-owned property as part of the Koko Head Regional Park.

URBAN LAND USE MAP

The Urban Land Use map illustrates the vision for the foreseeable future for East Honolulu's land uses within the Community Growth Boundary. This map illustrates the desired long-range land use pattern for East Honolulu which should result from implementation of the **Plan**'s vision and policies. The map includes the following terms:

Residential and Low-Density Apartment

These uses are depicted as a single yellow tone. "Residential" generally refers to single-family detached and attached houses or townhouses with individual exterior entries. "Low-density apartment" generally refers to low-density, low-rise multi-family residences, including townhouses, stacked flats and apartment buildings. Dwelling units in these buildings may share a common exterior entry. "Residential" housing types will generally be found in the residential zoning districts, and "low-density apartment" housing types will generally be found in the apartment zoning districts.

Medium-Density Apartment

These uses are depicted as a brown-orange tone. “Medium-density apartment” generally refers to mid- to high-rise multi-family residential projects. In East Honolulu, this designation will be applied only to areas developed consistent with this pattern as of the effective date of the **Plan**. The map is reflective zoning within the A-2 Medium-Density Apartment District.

Neighborhood Commercial Center

These centers are depicted with red dots, and generally represent clusters of commercial establishments intended for neighborhood service. Uses typically include grocery and sundry stores and other services and shops catering to common household- or neighborhood-level convenience items.

Regional Town Center

The Regional Town Center for East Honolulu is comprised of the three commercial centers adjoining Hawaiʻi Kai Marina: Hawaiʻi Kai Shopping Center, Hawaiʻi Kai Towne Center, and Koko Marina Shopping Center. These centers are depicted as red shapes.

Resort

The region’s only resort use, the Kāhala Hotel and Resort, is depicted as a pink shape.

Elementary School

Elementary schools have been added to the map to demonstrate the multi-purpose uses they may contain including secondary uses as recreational facilities or emergency shelters. Existing elementary schools include ʻĀina Haina, Hahaʻione, Koko Head, and Kamilo Iki Elementary Schools.

High School

Existing high schools include Kalani High School and Kaiser High School.

Intermediate School

The only existing intermediate/middle school is Niu Valley Intermediate School.

Marina

The map depicts the Hawai‘i Kai Marina as a series of connected light blue shapes indicating waterways and is not intended to be limited to the main docks.

Wastewater Treatment Plant

The existing wastewater treatment plant is located on the mauka side of Kalaniana‘ole Highway in proximity to Sandy Beach Park.

PUBLIC FACILITIES MAP

The Public Facilities Map illustrates major existing and future public facilities and major privately owned facilities, including the golf course at the Wai‘alae Country Club. Its purpose is to display the locations for some of the public resources or assets available within the region.

The Public Facilities Map and corresponding text, as they appear in this **Plan**, are not meant to be amended between revisions of the **Plan** and should not be confused with amendments to the Public Infrastructure Map (PIM) which are used as part of the approval of projects in the CIP budget process.

Major public facilities which are to be funded through the City’s CIP and budget appropriation are shown on the PIM. The PIM is not part of the **Plan** and is adopted and amended by resolution. Projects which are not listed in the **Plan** or are not shown on its 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 **Plan**.

Terms which appear on the Public Facilities Map include the following:

Bike Lane

A bicycle facility (bikeway) is a four to six-foot wide lane, within a roadway, exclusively for bike use.

Bike Path

A bicycle facility (bikeway) is grade-separated from the roadway network.

Bike Route

A bicycle route is a designated roadway with special signage and/or roadway marking to alert automobile drivers that the roadway is to be shared with people on bicycles. Bike routes may also contain traffic calming measures.

Elementary School

Elementary schools have been added to the map to demonstrate the multi-purpose uses they may contain including secondary uses as recreational facilities or emergency shelters. Existing elementary schools include ʻĀina Haina, Hahaʻione, Koko Head, and Kamilo Iki Elementary Schools.

High Occupancy Vehicle Lane

An exclusive lane on a roadway reserved for transit and vehicles with more than one occupant, and which is developed to improve transit speed and to provide incentives for commuters to opt for mass transit or carpooling. The only HOV lane is a coned contra flow lane heading toward town along Kalanianaʻole Highway during morning rush hour.

High School

Existing high schools include Kalani High School and Kaiser High School.

Intermediate School

The only existing intermediate/middle school is Niu Valley Intermediate School.

Marina

The map depicts the Hawai‘i Kai Marina as a series of connected light blue shapes indicating waterways and is not intended to be limited to the main docks.

Park & Ride

Special parking lots where commuters park their cars and continue their commute by mass transit.

Wastewater Treatment Plant

The existing wastewater treatment plant is located on the mauka side of Kalaniana‘ole Highway in proximity to Sandy Beach Park.

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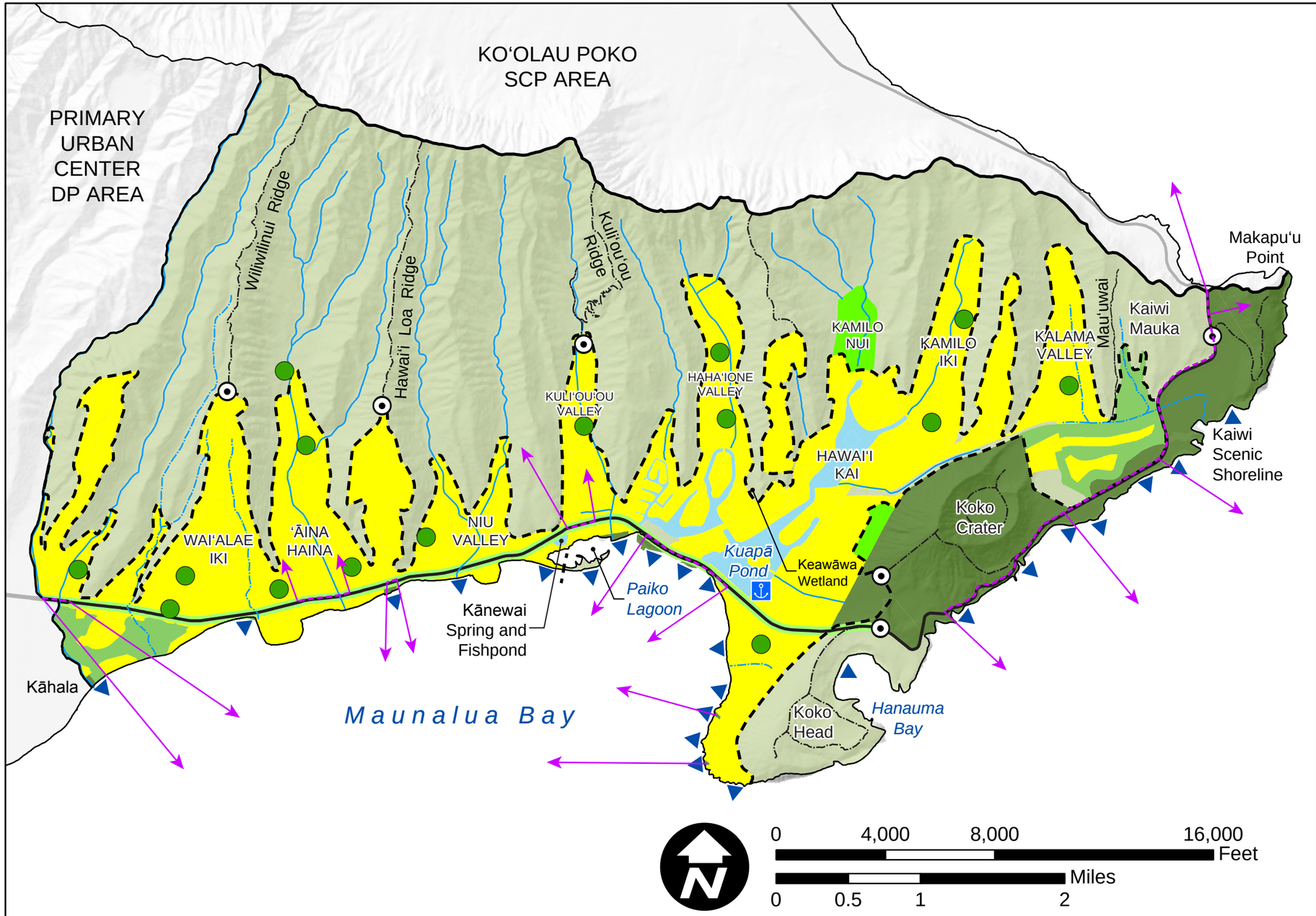
EAST HONOLULU SUSTAINABLE COMMUNITIES PLAN

Map A-1: Open Space



Map is intended for illustrative purposes only.
The contents of this map are not survey accurate.

- Marina
- Shoreline Access
- Community and Neighborhood Parks
- Mountain Access and Views from Trails
- Panoramic View
- Perennial Stream
- Non-Perennial Stream
- Community Growth Boundary
- Landscaped Boulevard / Greenway
- Highway
- Urban Areas
- Agriculture Areas
- Golf Course
- Regional, District, and Beach Parks
- Preservation Areas

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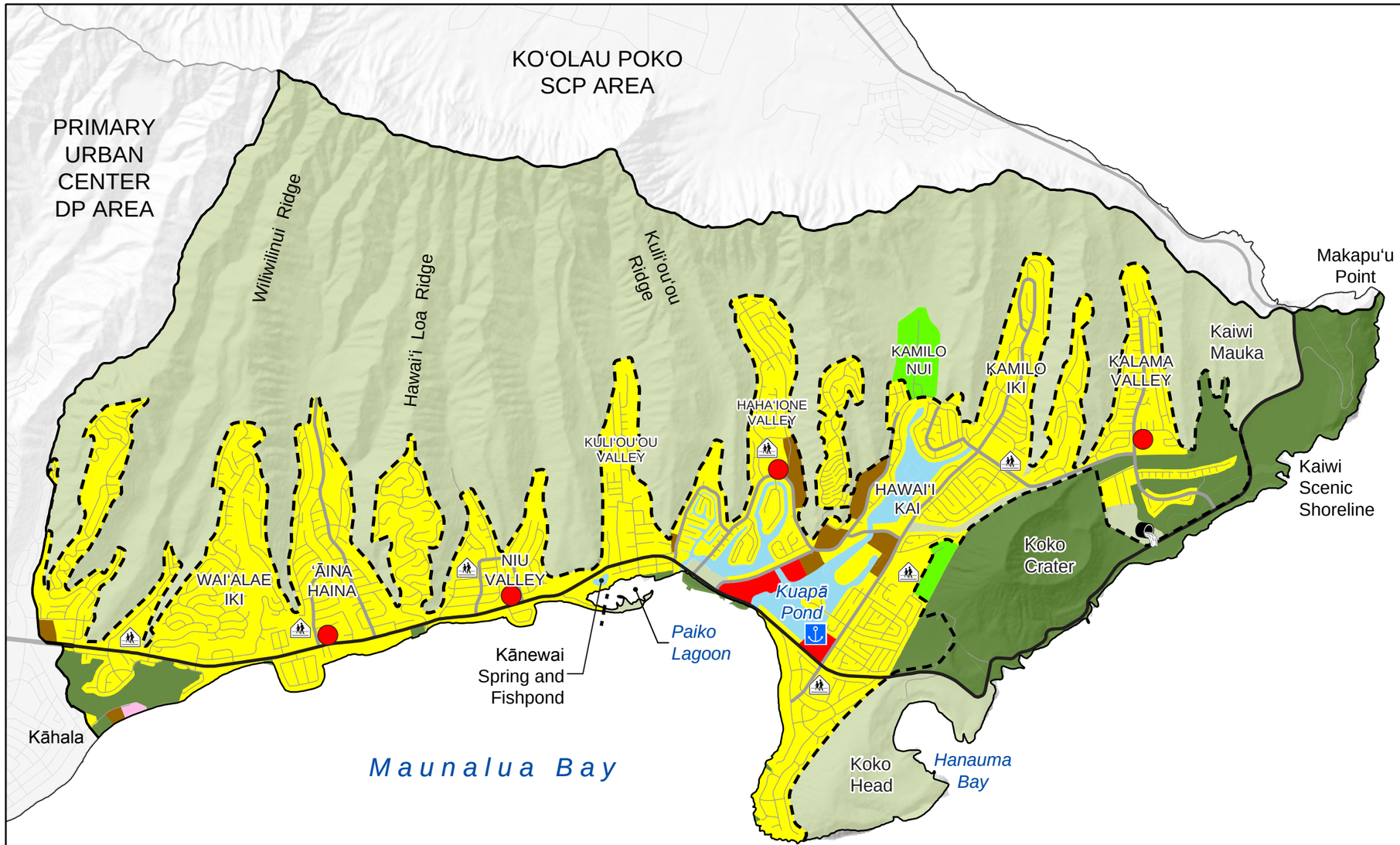
EAST HONOLULU SUSTAINABLE COMMUNITIES PLAN

Map A-2: Urban Land Use



0 4,000 8,000 16,000 Feet

0 0.5 1 2 Miles

Map is intended for illustrative purposes only.
The contents of this map are not survey accurate.

- Neighborhood Commercial Center
- Public School
- Marina
- Wastewater Treatment Plant
- Community Growth Boundary
- Highway
- Streets and Roadways
- Residential and Low-Density Apartment
- Medium-Density Apartment
- Regional Town Center
- Resort Area
- Agriculture Areas
- Major Parks and Golf Courses
- Preservation Areas

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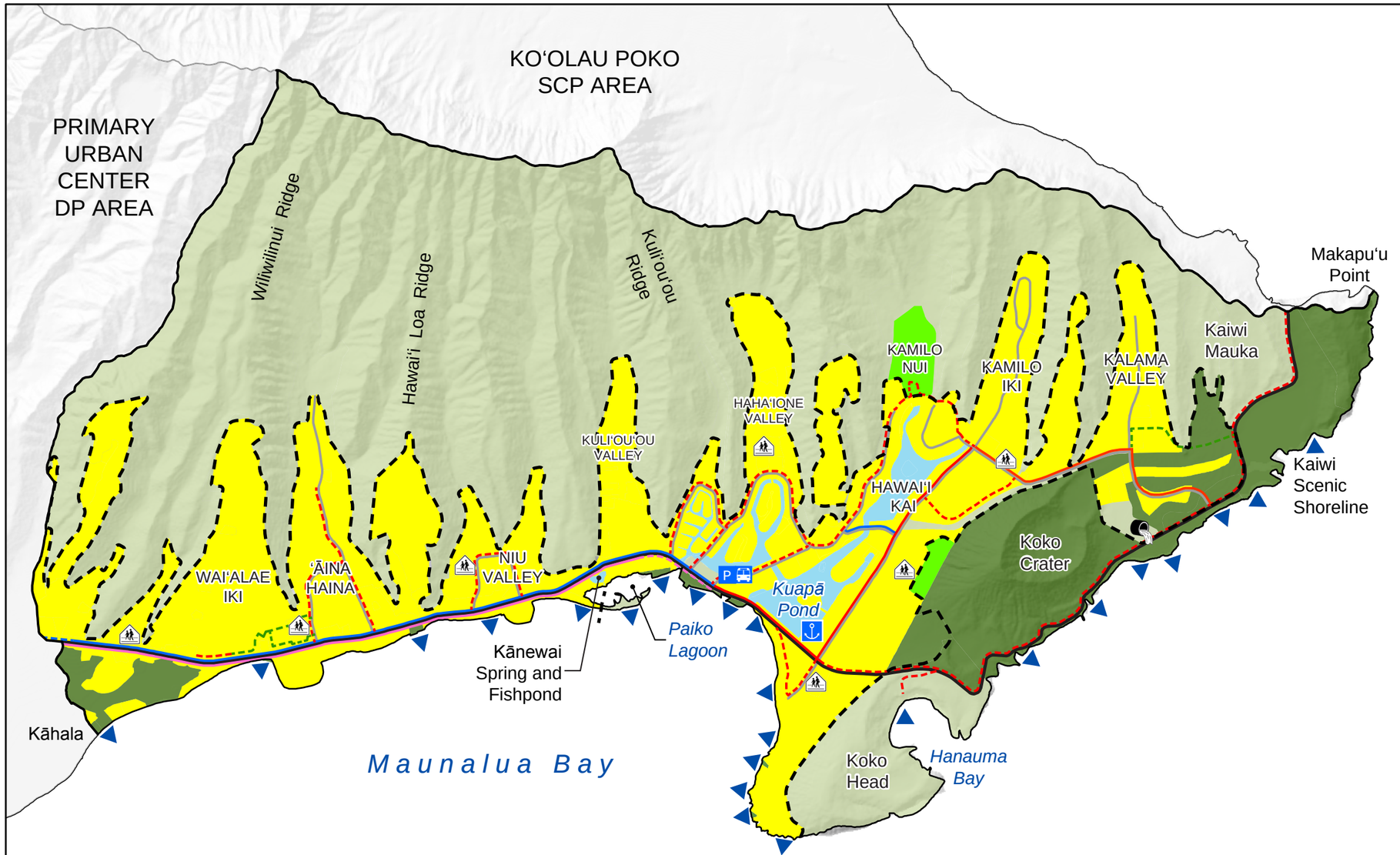
EAST HONOLULU SUSTAINABLE COMMUNITIES PLAN

Map A-3: Public Facilities



0 4,000 8,000 16,000 Feet

0 0.5 1 2 Miles

Map is intended for illustrative purposes only.
The contents of this map are not survey accurate.

- Park and Ride
- Public School
- Marina
- Wastewater Treatment Plant
- Shoreline Access
- Community Growth Boundary
- Urban Areas
- Agriculture Areas
- Major Parks and Golf Courses
- Preservation Areas

EXISTING	FUTURE
	Major Route
	Highway
	Bike Route
	Bike Lane
	Bike Path
	High Occupancy Vehicle Lane

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