DEVELOPMENT PLAN

EAST HONOLULU
SUSTAINABLE COMMUNITIES PLAN

CITY AND COUNTY OF HONOLULU
DEPARTMENT OF PLANNING AND PERMITTING

April 1999

Office of the City Clerk
Effective Date: July 27, 1999

EAST HONOLULU SUSTAINABLE COMMUNITIES PLAN

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PREFACE AND EXECUTIVE SUMMARY

The East Honolulu *Sustainable* Communities Plan has been prepared in accordance with the Charter-prescribed requirements for development plans and is to be accorded force and effect as such for all Charter- and ordinance-prescribed purposes. It is one of a set of eight community-oriented plans intended to help guide public policy, investment, and decision-making through the 2020 planning horizon. Each of the plans addresses one of eight geographic planning regions on Oahu, responding to the specific conditions and community values of each region. The map on the following page illustrates these planning regions.

Two of the eight planning regions, Ewa and the Primary Urban Center, are the areas to which major growth in population and economic activity will be directed over the next 20 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.

The remaining six planning regions, including East Honolulu, are envisioned to remain relatively stable. The plans for those regions have been titled "*Sustainable* Communities Plans" and are focused on serving as policy guides for public actions in support of that goal. The vision statement and supporting provisions of the East Honolulu *Sustainable* Communities Plan are oriented toward maintaining and enhancing the region's ability to sustain its unique character and lifestyle.

P.1 THE *SUSTAINABLE* COMMUNITIES PLAN PROCESS

This Plan is the culmination of the Charter-mandated development plan revision effort led by the City and County of Honolulu's Planning Department and its successor agency, the Department of Planning and Permitting. This effort was comprised of a process that encouraged and enabled significant involvement from the region's neighborhood boards, community associations and numerous individuals. This plan will have incorporated input received from:

- Six meetings of the Resident Advisory Group,
- Public workshops,
- Extensive review and evaluation of landowners' court submissions regarding their long-term development proposals,
- Two Public Information Meetings, and
- Many meetings with community leaders and representatives of government agencies.

P.2 LAND USE PLANNING AND MANAGEMENT IN HONOLULU

The City and County of Honolulu guides and directs land use and growth through a three-tier system of objectives, policies, planning principles, 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, which are adopted and revised by ordinance. These plans address eight geographic regions of the island; the Primary Urban Center, Central Oahu, Ewa, Waianae, North Shore, Koolauloa, Koolaupoko and East Honolulu. The East Honolulu Development Plan was first adopted in 1983. The development plans for East Honolulu, Waianae, North Shore, Koolauloa, and Koolaupoko are now referred to as *Sustainable* Community Plans.

The third tier of the system is composed of the implementing ordinances, including the Land Use Ordinance (Honolulu's zoning code) and the City's Capital Improvement Program. Mandated by the City Charter, these ordinances constitute the principle means for implementing the City's plans. These ordinances are required to be consistent with the General Plan, the Development Plans (or *Sustainable* Community Plans), and each other.

In addition to these three Charter-mandated tiers, the development plans are supplemented by two planning mechanisms that are not required by the Charter, including the functional planning process and special area planning. Functional planning activities, some of which are mandated by state or federal regulations, provide long-range guidance for the development of public facilities such as the water system, wastewater disposal, and transportation. Special area plans are intended to give specific guidance for neighborhoods, communities or specialized resources.

P.3 AUTHORITY OF THE DEVELOPMENT PLANS AND *SUSTAINABLE* COMMUNITIES PLANS

The authority of the Development Plans is derived from the City Charter, which mandates preparation of a General Plan and development plans to guide "the development and improvement of the city." Together with the General Plan, the development plans provide a policy context for the land use and budgetary actions of the City. This is the authority the originally adopted development plans carried, and it remains unchanged in the *Sustainable* Communities Plan presented in this document.

The Charter provides that "public improvement projects and subdivision and zoning ordinances shall be consistent with the development plan for that area." Although the development plans (or *Sustainable* Communities Plans) are not themselves regulatory, they "regulate the regulators." They 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 and as guides for the decisions made in the private sector.

P.4 WHY THE DEVELOPMENT PLANS HAVE BEEN REVISED

In 1992 the City Charter Commission recommended, and the voters of Honolulu adopted, amendments to the City Charter. Chief among its findings, the Charter Commission concluded that the development plans were overly detailed and had engendered processes that duplicated the zoning process. To eliminate this unnecessary duplication, the 1992 Charter amendments changed the definition of development plans from "relatively detailed plans" to "conceptual schemes."

The 1992 Charter amendments established that the purpose of the development plans is to provide:

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

In response to the 1992 Charter amendments, the Planning Department launched a thorough review of the development plans. The goal of that review was the revision of all eight of the development plans to bring them into conformance with the Charter-mandated conceptual orientation. The revised plan presented in this document conforms to that mandate.

P.5 EXECUTIVE SUMMARY OF THE EAST HONOLULU *SUSTAINABLE* COMMUNITIES PLAN

This plan, which is incorporated into Ordinance 98-75 CD2 by reference, is organized in five chapters and an appendix, as follows:

- Chapter 1: East Honolulu's Role in Oahu'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 vision for the future of the region and lists important elements of that vision.
- Chapter 3: Land Use Policies, Principles, and Guidelines presents the Plan's core policies, and provides policy guidance for the region's various land use elements.
- Chapter 4: Public Facilities and Infrastructure Policies and Principles outlines policies, principles and actions needed to support the land use policies of Chapter 3.
- Chapter 5: Implementation addresses needs for carrying out provisions outlined by the Plan.

The contents of each chapter is briefly summarized below:

P.5.1 Chapter 1: East Honolulu's Role in Oahu's Development Pattern

Consistent with the directed growth provisions of the General Plan, East Honolulu is targeted for very little growth over the 20-25 year projection horizon of this plan. Policies in support of this goal limit the potential for expansion of the region's housing stock, commercial centers and economic activity, and are focussed on maintaining the patterns of development characteristic of its residential neighborhoods.

P.5.2 Chapter 2: The Vision for East Honolulu's Future

This vision is shaped around two principal concepts. The first of these calls for protection of the community's natural, scenic, cultural and historic resources. The second principal concept addresses the need to improve and replace, as necessary, the region's aging infrastructure systems, and to adapt the housing supply to accommodate modest expected increases in residents and the changing demographic profile of East Honolulu's aging population. Seven key elements of the vision are identified, including:

- Establish an Urban Community Boundary to contain the spread of urban development; and Agriculture Boundaries to protect and preserve the regions' existing agricultural areas;
- Preserve the scenic value of the Koko Head-Makapuu viewshed;
- Maintain the urban form of ridge-and-valley neighborhoods;
- Expand access to mountain and shoreline recreational areas;
- Protect and preserve natural areas;
- Adapt the housing supply to the region's changing demographics; and
- Focus the commercial centers on serving the region's neighborhoods.

P.5.3 Chapter 3: Land Use Policies, Principles, and Guidelines

This chapter presents general policies, planning principles and guidelines for the major concerns related to land use in East Honolulu. General policies related to each land use type are summarized below:

P.5.3.1 Open Space Preservation:

- Protect scenic views, provide recreation and promote access to shoreline and mountain areas.
- Define the boundaries of communities and provide fire safety buffers.
- Create a linear system of landscaped pathways along roadways and drainage ways.

P.5.3.2 Island-Based Parks and Recreation:

- Employ appropriate screening and siting.
- Ensure environmental compatibility in the design and construction of park facilities.
- Integrate recreational opportunities with the characteristics of the surrounding community.

P.5.3.3 Community-Based Parks:

- Increase the inventory of community-based parks to provide appropriately located sports and recreation facilities.
- Modify recreation facilities and increase access to school facilities to respond to changing demographic profiles and recreation needs.
- Require developers of new residential projects to provide land for open space and recreation purposes, rather than paying the park dedication fee.
- Pursue development of linear parkways along streams and drainage channels.

P.5.3.4 Historic and Cultural Resources:

- Recommend in situ preservation and appropriate protection for sites with high preservation value.
- Determine appropriate treatment for a historic site by the particular qualities of the site and its relationship to the surroundings.
- Determine the degree of access appropriate to promotion and preservation of the historic, cultural and educational value of each site.

P.5.3.5 Residential Uses:

- Increase the region's housing capacity primarily through infill development of existing residential areas.
- Respond to the changing needs of East Honolulu's aging population by providing for development of a variety of housing opportunities affordable to low- and moderate-income, gap group, and other elderly households.
- Modify residential street design to provide emphasis on safe, accessible, convenient and comfortable pedestrian routes, bus stops and bike routes.

P.5.3.6 Nonresidential Development:

- Identify and define commercial uses in various categories appropriate to the character and needs of East Honolulu's communities, including: neighborhood commercial centers; the regional town center; and areas supporting resort and institutional uses.
- Limit the growth of commercial centers, resorts and institutions to current sites.

P.5.4 Chapter 4: Public Facilities and Infrastructure Policies and Principles

This chapter presents general policies and planning principles for the major concerns related to public facilities and infrastructure in East Honolulu. General policies related to each facility type are summarized below:

P.5.4.1 Transportation Systems:

- Reduce reliance on the private passenger vehicle by promoting transportation system management (e.g., contraflow lane operations) and travel demand management (e.g., transit, carpool and vanpool programs) measures for both commuting and local trips.
- Provide adequate and improved mobility between communities, shopping, and recreation centers, especially by enhancing pedestrian, bicycle and transit modes of travel.
- Maintain adequate person-carrying capacity for peak-period commuting to and from work in the Primary Urban Center.

P.5.4.2 Water Systems Development:

- Integrate management of all potable and nonpotable water sources, including groundwater, stream water, storm water, and effluent, following State and City legislative mandates.

- Adopt and implement water conservation practices in the design of new developments and the modification of existing uses, including landscaped areas.

P.5.4.3 Wastewater Treatment:

- Connect all wastewater produced within the Urban Community Boundary area to a municipal or publicly regulated sewer service system.
- Treat and reuse, where feasible, wastewater effluent as a water conservation measure.
- Provide buffer zones and landscape elements between the East Honolulu WWTP and adjacent residential designated areas.

P.5.4.4 Electrical Power Development:

- Design system elements and incrementally replace facilities such as substations, transmission lines and towers to avoid or mitigate any potential adverse impacts on scenic and natural resource values and to enhance system reliability.

P.5.4.5 Solid Waste Handling and Disposal:

- Continue efforts to establish more efficient waste diversion and collection systems.
- Expand the use of automated refuse collection in residential areas.

P.5.4.6 Drainage Systems:

- Promote drainage system design, which emphasizes control and minimization of nonpoint source pollution and the retention of storm water on-site and in wetlands.
- View storm water as a potential irregular source of water for recharge of the aquifer that should be retained for absorption rather than quickly moved to coastal waters.
- Select natural and man-made vegetated drainageways and retention basins as the preferred solution to drainage problems wherever they can promote water recharge, help control nonpoint source pollution, and provide passive recreation benefits.
- Keep drainageways clear of debris to avoid the flooding problems that have occurred in the past.

P.5.4.7 School Facilities:

- Approve new residential developments only after the State Department of Education certifies that adequate school facilities will be available when the development is completed.
- Require that developers pay their fair share of all costs needed to ensure provision of adequate school facilities for the children living in their developments.

P.5.4.8 Civic and Public Safety Facilities:

- Provide adequate staffing and facilities to ensure effective and efficient delivery of basic governmental service

and protection of public safety.

P.5.5 Chapter 5: Implementation

This chapter discusses the various measures that will be necessary to ensure timely implementation of the plan, including those measures that will minimize disruption during the transition into the plan. Among the measures addressed by this chapter, changes to the zoning maps and the Land Use Ordinance will be necessary to achieve required consistency with the *Sustainable* Communities Plan, as will various other regulatory codes and standards. This chapter also addresses monitoring of plan implementation and provides for comprehensive review of the plan at five-year intervals.

P.5.6 Appendix A

The appendix provides three color maps that illustrate some of the plan's textual provisions. Because these maps are intended merely to be illustrative of the text, if there are any conflicts between the maps and the text, the text shall prevail.

1. EAST HONOLULU'S ROLE IN OAHU'S DEVELOPMENT PATTERN

The General Plan of the City and County of Honolulu designates the East Honolulu Development Plan Area (DPA), shown in **Figure 1-1**, as an urban fringe area to remain predominantly residential with limited future population growth. General Plan policies call for developing and maintaining development characteristics which make East Honolulu a desirable place to live.

The present land use pattern and suburban character of East Honolulu began to take shape with the inauguration of the master planned community of Hawaii Kai in 1961. Prior to that time, most of this region was regarded as too far removed from Honolulu to be suitable for large scale residential development. Building on the momentum that Hawaii Kai was creating in the 1960s and 1970s, residential development spread quickly to the valleys of Kamiloiki and Kalama and to Mariner's Ridge. With the development of newer communities at Kamehame Ridge, Hawaii Loa Ridge, and portions of Waialae Iki, most of the ridges and valleys in East Honolulu from Kahala to Kalama Valley have been developed with residential use. In the past two decades, however, the rate of urban growth in East Honolulu has slowed as the availability of suitable development sites has diminished.

This update reaffirms East Honolulu's role in Oahu's development pattern as intended in the General Plan policies by establishing the following principles for future land use and development in the East Honolulu *Sustainable* Communities Plan:

- Limit the potential for new housing in the region so that significant residential growth is directed instead to the Primary Urban Center, Ewa, and Central Oahu Development Plan Areas.

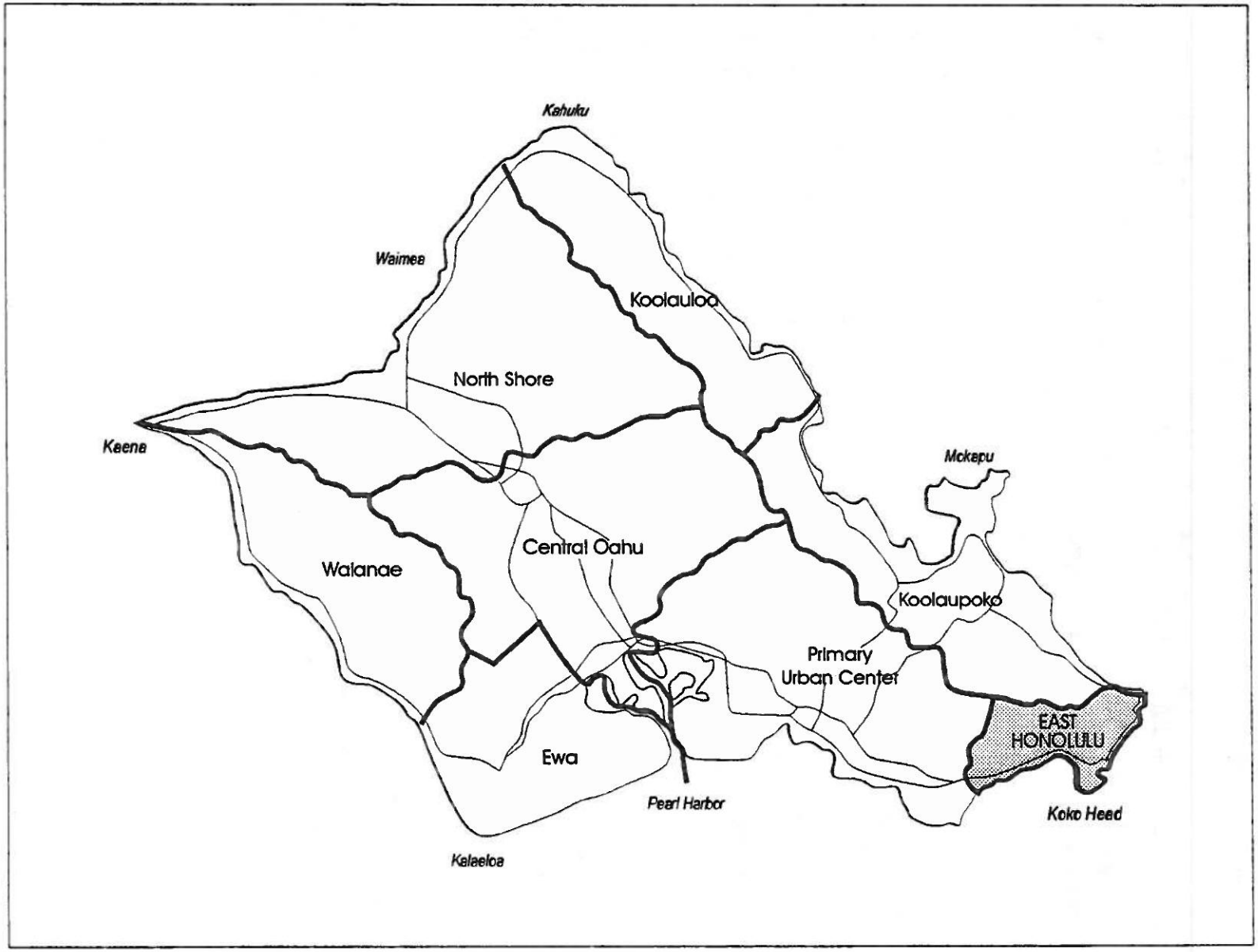
- Limit the expansion of commercial centers and economic activity in the region to promote the development and growth of employment in the Primary Urban Center, and potentially the designated secondary urban center in the Ewa Development Plan Area.

- Maintain the region's predominantly low-rise, low-density form of residential development.

- Avoid flood damage, slippage and other problems associated with development of steep slopes and sites with expansive soils.

- Utilize the design capacity of Kalanianaole Highway, the region's key component of transportation, as a means to manage urban growth.
- Preserve scenic views of ridges, upper valley slopes, shoreline areas from Kalanianaole Highway and from popular hiking trails that extend from Koko Head to Makapuu Head.
- Promote access to mountain and shoreline resources for recreational purposes and traditional hunting, fishing, gathering, religious, and cultural practices.

Figure 1-1
Development Plan Areas for Oahu



2. THE VISION FOR EAST HONOLULU'S FUTURE

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

2.1 VISION STATEMENT

The vision for East Honolulu extends to the year 2020. This is the horizon that was used to project potential residential development capacity of the region. Between 1995 and 2020, East Honolulu is projected to experience minimal population growth. According to projections prepared in 1995 by the City's Planning Department, East Honolulu's population might be expected to increase from 45,850 in 1995 to approximately 51,800 by 2020, or by less than one percent per year. Population growth of this magnitude is not expected to generate significant demand for additional commercial development in the region. 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 East Honolulu *Sustainable* Communities 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 from Kalanianaole Highway and scenic views from popular hiking trails that extend from Koko Head to Makapuu Head must be protected. Furthermore, access to shoreline areas and mountainous regions will be improved and provided for all to use.

- ***Preserve Cultural and Historical Resources***. These resources will be preserved by retaining visual landmarks and significant views, and by preserving significant historic, cultural, and archaeological features from East Honolulu's past.

2.1.2 ADAPT TO CHANGING COMMUNITY NEEDS

Although East Honolulu is nearly built out, it will be essential that the changing demographics of the region's communities be addressed. East Honolulu's growing elderly population, trend of older couples or "empty nesters" moving out of single-family dwellings and younger families moving in, and observed increase in "multigeneration" households will likely require different housing types and services.

In addition, the region's housing stock and infrastructure systems are aging. Incrementally, existing structures and facilities will be modified, expanded, or replaced due to obsolescence. *Sustainable* Communities Plan policies provide long-term direction for this gradual physical transformation.

2.2 KEY ELEMENTS OF THE VISION

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

- Urban community, agriculture and preservation boundaries;

- The Koko Head-Makapuu scenic district;

- Ridge-and-valley neighborhoods;

- Mauka-makai recreational access;

- Protection and preservation of natural areas;
- Housing stability;
- Hawaii Kai Town Center; and
- Neighborhood-oriented services.

Each of these elements is discussed below.

2.2.1 Establish Urban Community, Agriculture and Preservation Boundaries

Three types of boundaries have been established to guide development and preserve open space and agriculture areas. These are the Urban Community Boundary, the Agriculture Boundary and the Preservation Boundary. It is intended these boundaries will remain fixed through the 2020 planning horizon. They are intended to help guide future development, redevelopment, and resource management within existing zoning designations or future zoning designations and other standards or guidelines that may be developed in response to the provisions of this plan, other established entitlements, or in accordance with pertinent policy and character described in this plan.

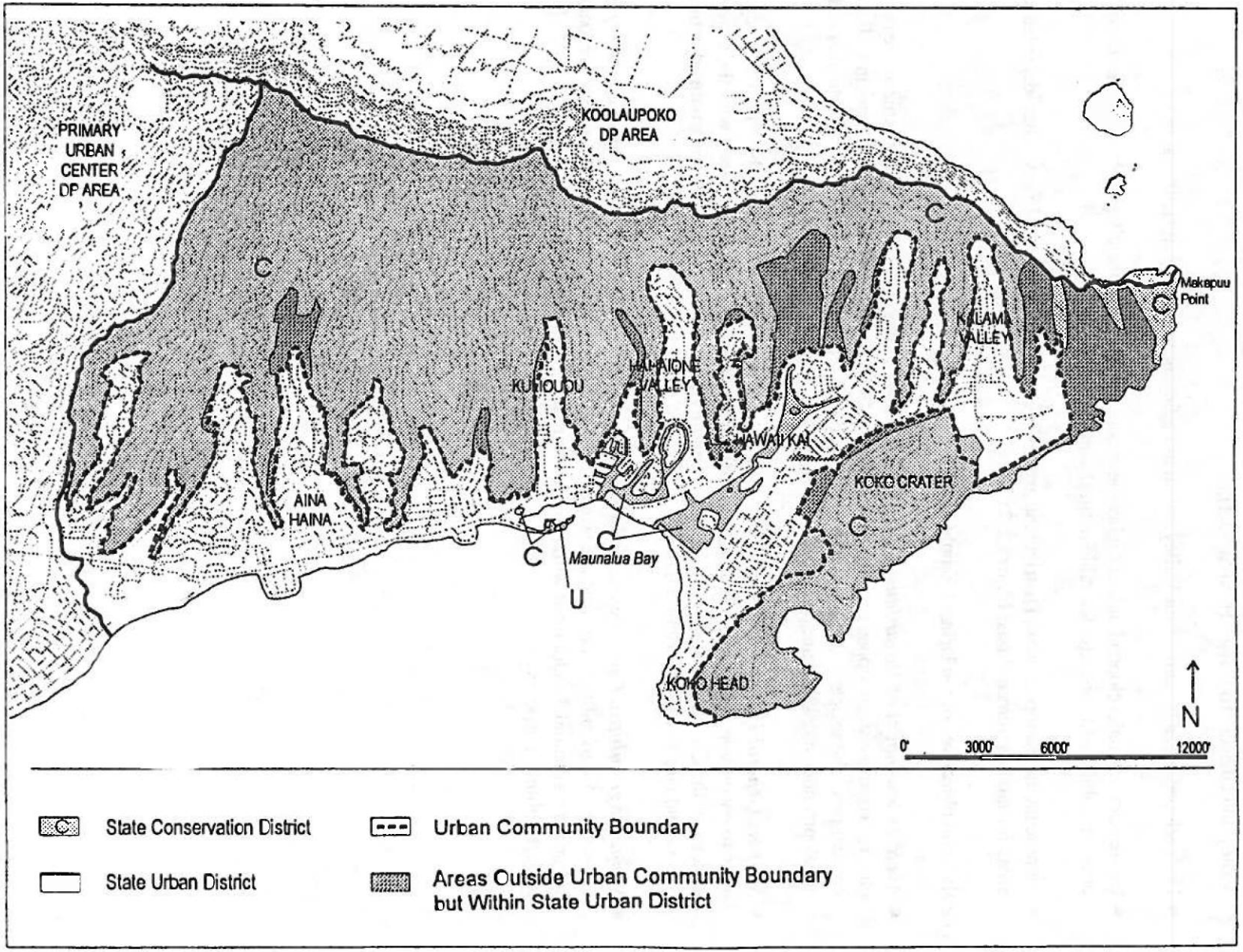
2.2.1.1 Urban Community Boundary

The Urban Community Boundary is established to define and contain the intended extent of urbanized or "built-up" areas within the East Honolulu district. The purpose is to accommodate modest increases in population, to provide adequate lands for facilities or other groupings of built uses needed to support established communities while protecting lands outside this boundary for agriculture and other resource and open space values. Areas within this boundary characteristically include extensive tracts of residential or commercial development clearly distinguishable from undeveloped or more "natural" portions of the region's environment. The Urban Community Boundary may include areas designated "park" or "preservation," or areas with development-related hazards such as steep slopes or unstable soils; it is intended these areas will not be developed with uses unsuitable to their designations or in ways that may tend to exacerbate those hazards.

The Urban Community Boundary is intended to confine most new development to "infill" sites that are 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 purpose of the Urban Community Boundary (see **Figure 2-1**) is to confine the spread of urban development while providing sufficient inventory of developable land to accommodate anticipated urban growth in the region through 2020. It is generally coterminous with the State Urban District boundary, but excludes the following areas of the State Urban District:

Figure 2-1
Urban Community Boundary



- Areas which are committed to agricultural use by long-term leases (i.e., the farm lot subdivisions in Kamilonui Valley and adjacent to Kaiser High School);

- Undeveloped areas in Kamilonui Valley which are adjacent to existing agricultural uses;

- 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; and

- Significant undeveloped Urban District land areas which the U.S. Geological Survey has identified as suspect areas for land movement.[1] (see **Figure 2-2**).

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

- ***Avoid Development of Hazardous Areas***. Undeveloped lands on the fringes of urbanized areas which are characterized by steep slopes or unstable soils are placed outside of the Urban `Community Boundary to prevent potential property damage and threat 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 Urban Community Boundary indicates an appropriate adjustment to the State Land Use Urban District boundary.

- ***Support Agricultural Uses***. Two areas in Hawaii Kai are placed outside of the Urban Community Boundary to recognize agricultural lots whose lease terms extend beyond 2020. Preventing the encroachment of suburban residential development within and surrounding these subdivisions supports active use of these lots for agricultural purposes.

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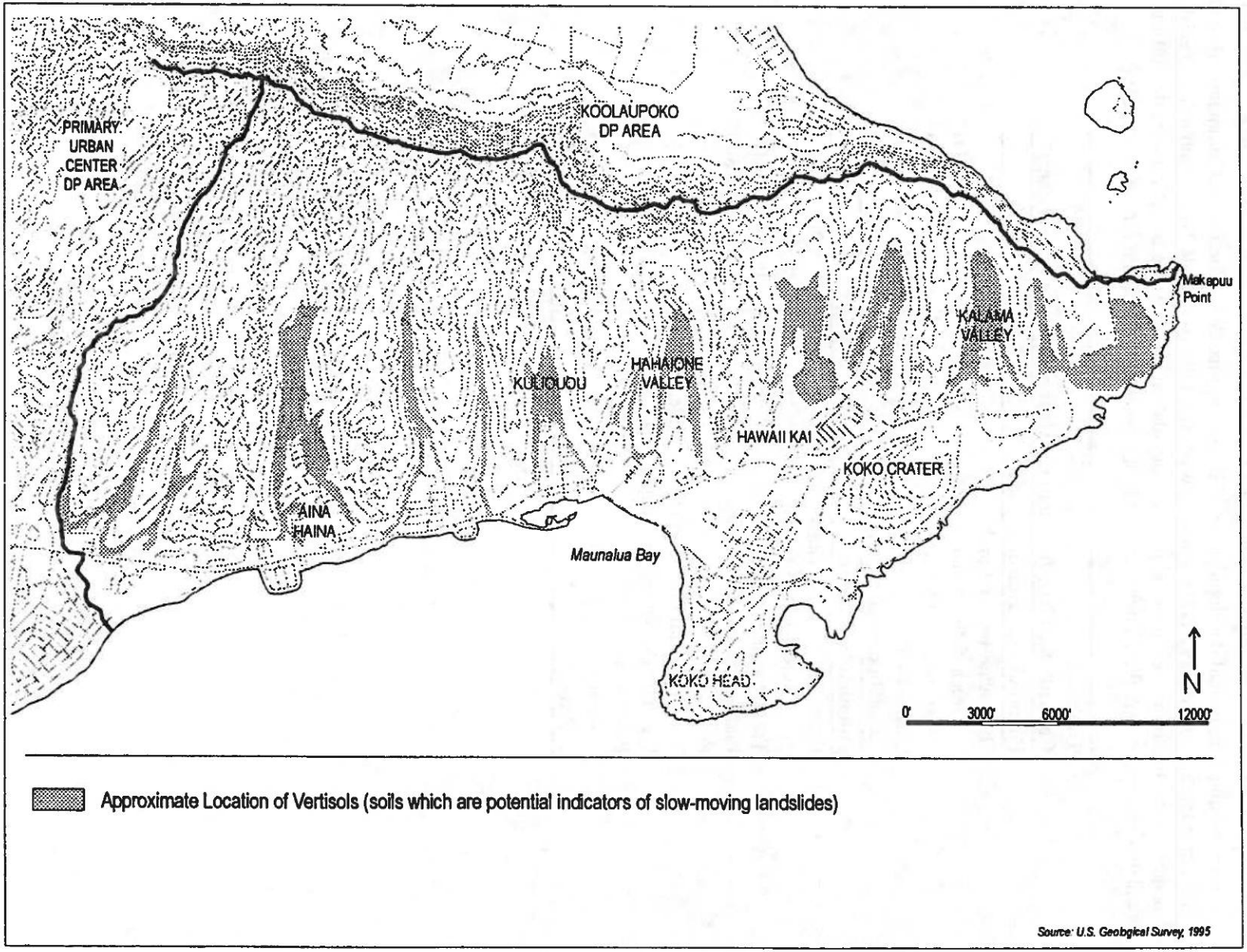
[1] U.S. Geological Survey, *Relation of slow-moving landslides to earth materials and other factors in valleys of the Honolulu District of Oahu, Hawaii*, Open-File Report 95-218, prepared in cooperation with the City and County of Honolulu, Department of Public Works (1995).

Figure 2-2
Suspect Areas for Land Movement

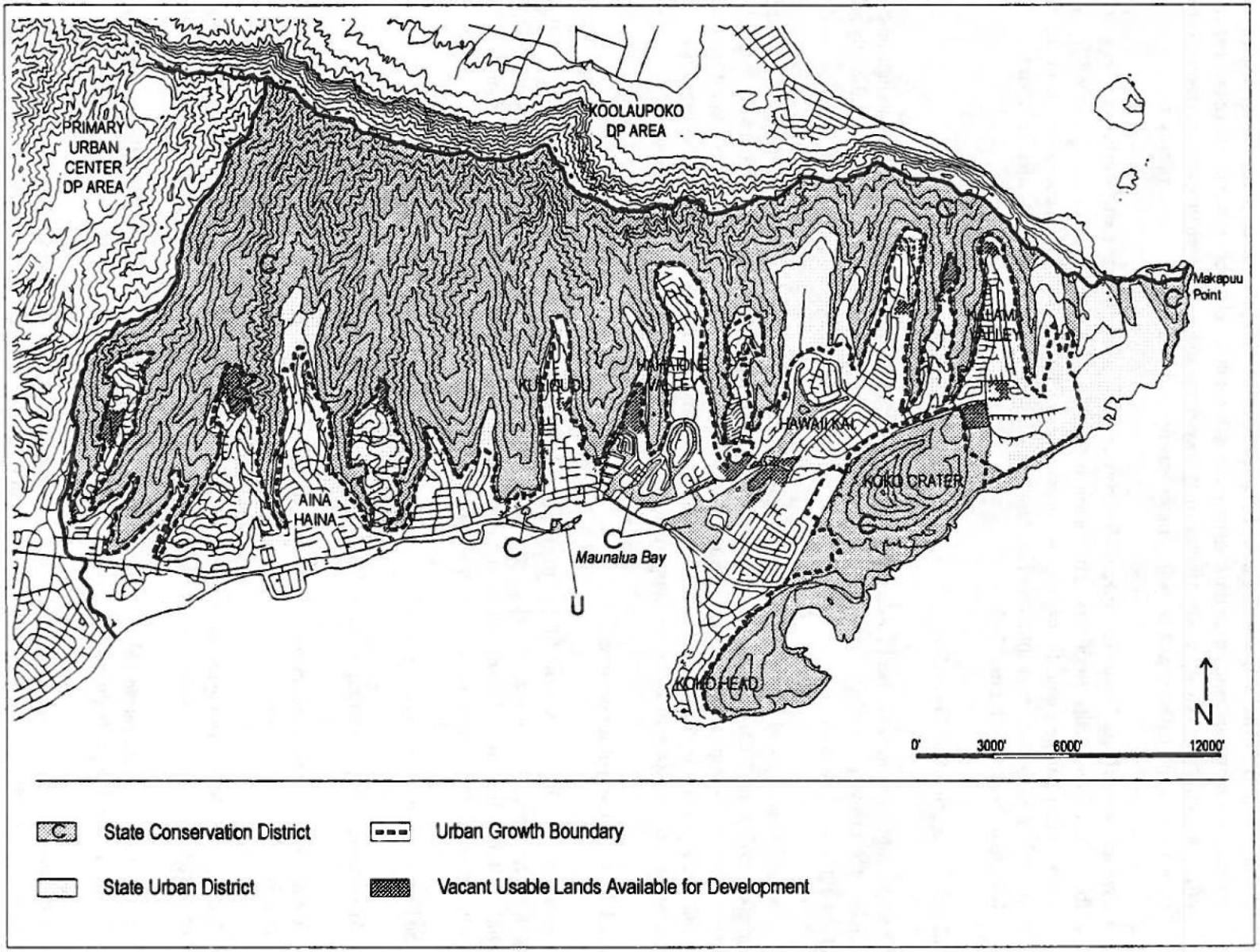


- ***Provide Sufficient Capacity for Projected Growth.*** Even with the amount of land reserved for parks and open space, there is ample capacity within the Urban Community Boundary to accommodate anticipated residential and commercial development to 2020 (see **Figure 2-3**). The Urban Community Boundary can accommodate approximately 2,600 potential new housing units (see **Table 2-1**). Combined with existing 1995 housing units, this translates to a total potential population in East Honolulu of between 48,300 and 52,600, which is consistent with the Planning Department's projected population for the year 2020.

Table 2-1
Capacity for Growth within the Urban Community Boundary

Potential New Housing Units	
On Vacant Usable Lands	
Parcels 5 Acres and Larger	1,800
Parcels Less than 5 Acres	700
Ohana Units	100
Total Potential New Housing Units	2,600
Potential Population	
From New Housing Units	6,200 - 6,800
From Existing 1995 Housing Units	42,100 - 45,900
Total Potential Population	48,300 - 52,600
Planning Department Projected 2020 Population	51,800
Total Potential Population Over (Under) Planning Department Projected 2020 Population	
Persons	(3,500) - 800
Percent	(6.7%) - 1.5%

Figure 2-3
Vacant Usable Lands Available for Development Within the Urban Growth Boundary



- ***Promote an Efficient Pattern of Urban Development***. The Urban Community 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 contracting the potential area for new urban development through the Urban Community 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 Kalanianaole Highway, particularly in the area between Koko Head and Makapuu Point (see **Figure 2-4**).

2.2.1.2 Agriculture Boundary

The Agriculture Boundary is established to protect the region's agricultural lands for their economic and open space values. The primary use of all lands within the Agriculture Boundary must be agriculture or directly supportive of the agriculture industry.

Two areas in Hawaii Kai are placed within the Agriculture Boundary to recognize agricultural lots whose lease terms extend beyond 2020 (i.e., the farm lot subdivisions in Kamilonui Valley and adjacent to Kaiser High School). In addition, undeveloped areas in Kamilonui Valley which are adjacent to existing agricultural uses are placed within the Agriculture Boundary. Preventing the encroachment of suburban residential development within and surrounding the existing subdivisions supports active use of these lots for agricultural purposes.

2.2.1.3 Preservation Boundary

The Preservation Boundary is established 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 wildlife habitat, archaeological or historic sites, significant landforms or landscapes over which significant views are available, and development-related hazard areas.

The Preservation Boundary generally circumscribes 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, 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 tidepools 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 community 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, and lands 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 or city parks outside the Urban Community Boundary; or

- 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.

The Preservation Boundary excludes such features, sites or areas located within the Urban Community or Agriculture boundaries.

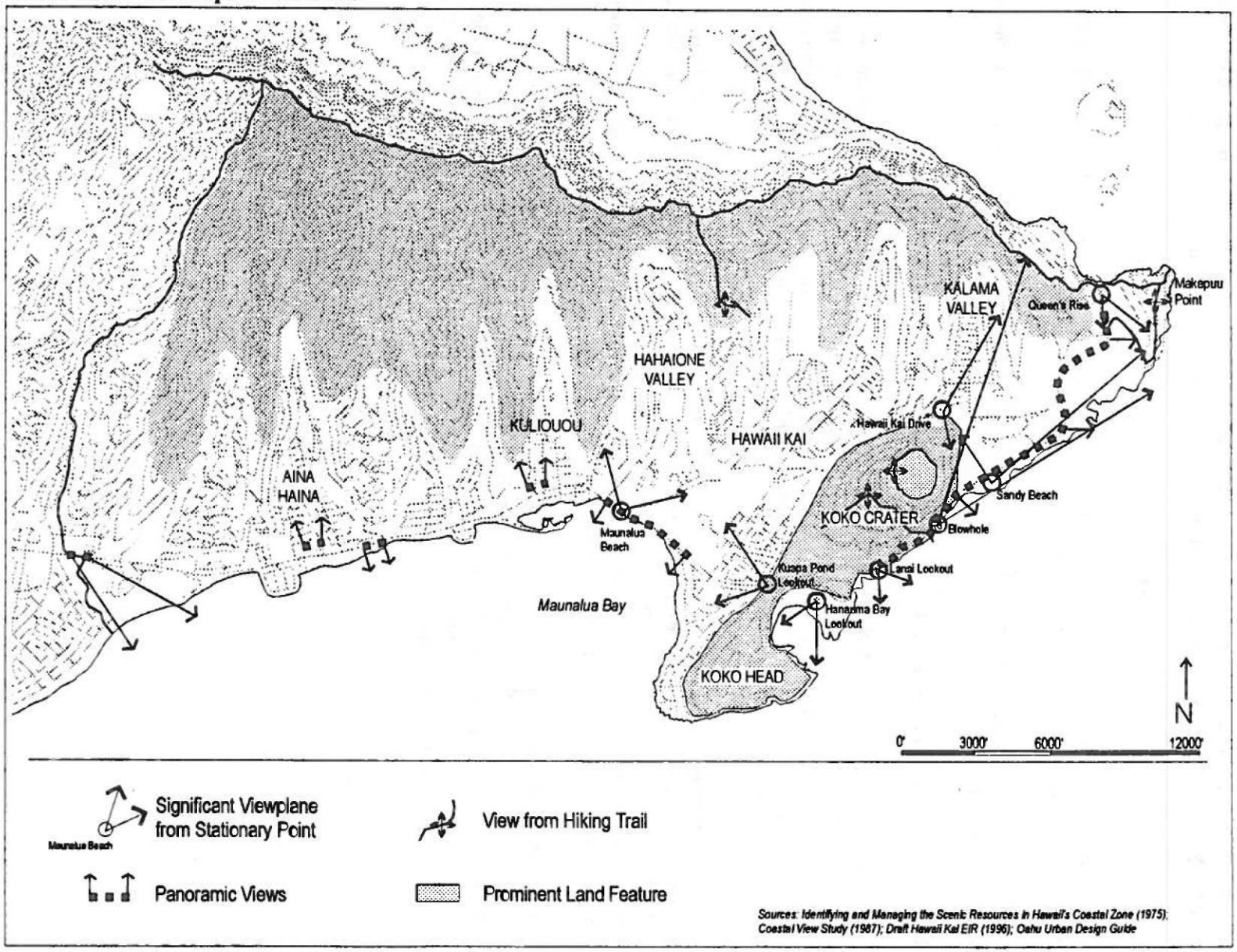
2.2.2 PRESERVE THE SCENIC VALUE OF THE KOKO HEAD-MAKAPUU VIEWSHED

The rugged coastal lands between Koko Head and Makapuu Point are among Oahu's most unique and spectacular scenic resources, offering mauka and makai views from many vantage points (see **Figure 2-4**). Protection of the scenic value of this viewshed has island-wide importance because of its attraction to both residents and visitors. Preserving one of Oahu's most popular visitor resources is critical to our economy since tourism, our base industry, continues to grow in significance.

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

The resources of the Koko Head-Makapuu region should be protected and enhanced. The publicly owned Koko Head Regional Park, which includes Hanauma Bay Beach Park and Sandy Beach Park, should continue to provide world-class recreational opportunities, but at the same time the value of these resources must be protected from overuse. Visual resources of the Queen's Beach and Queen's Rise sections should also be protected through creation of the proposed Ka Iwi scenic shoreline.

Figure 2-4
Koko Head - Makapuu Viewshed



2.2.3 MAINTAIN THE URBAN FORM OF RIDGE-AND-VALLEY NEIGHBORHOODS

East Honolulu's residential communities 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 Waialae and Wailupe and the flatter valley floors of Aina Haina, Kuliouou, 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 residential-zoned land remaining in upper and side slope fringes. Hawaii 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 subareas: the Marina, Hahaione Valley, Mariner's Ridge, Kamilonui Valley, Kamiloiki Valley, Kamehame Ridge, Kalama Valley, and Queen's Beach. Most of these areas have been fully developed, except for Queen's Beach, which has been designated for preservation.

Kalanianaole Highway is the 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 Oahu's future population growth being directed to the Ewa and Central Oahu regions, no major developments are expected in East Honolulu. Growth in East Honolulu should occur by infilling 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 (see Section 2.2.6).

2.2.4 EXPAND ACCESS TO RECREATIONAL AREAS

The Koolau Mountain Range provides a wealth of hiking, hunting, and camping opportunities. It is important that access to publicly owned trails be made as unrestricted as possible. Communities, both open and gated, should cooperate with the State 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 condemning land and acquiring public ownership of easements.

Shoreline access has been less problematic in East Honolulu. Existing beach access and rights-of-way should remain and new shoreline access ways should be acquired as the opportunities arise. In particular, 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 Queen's Beach shoreline, which extends from Koko Head Regional Park to Makapuu Point, should be improved through the creation of the proposed Ka Iwi scenic shoreline.

2.2.5 PROTECT AND PRESERVE NATURAL AREAS

Natural areas in East Honolulu include (see Chapter 3, **Figure 3-2**):

- Paiko Lagoon Wildlife Sanctuary;
- Ihiihilauakea Preserve;
- Hanauma Bay Marine Life Conservation District; and
- Queen's Beach (Ka Iwi scenic shoreline).

These natural areas should continue to 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. In addition, steps should be taken to acquire land for the creation of the Ka Iwi scenic shoreline (see Section 3.2.1.2) as a means to protect the area's rich recreational and scenic resources. Furthermore, the effects of runoff into these areas from any future upland construction will need to be thoroughly examined.

2.2.6 ADAPT HOUSING SUPPLY TO CHANGING DEMOGRAPHICS

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. Between 1995 and 2020, the population in East Honolulu is projected to increase by only about 6,000 residents. With minimal population growth, housing stability in East Honolulu will not be affected by rapid growth and new developments.

The composition of East Honolulu's population, however, could have an impact. East Honolulu has a significant and growing proportion of elderly residents. In 1990, 11.5 percent of the area's population was 65 years of age or older, an increase from 9.3 percent in 1980. This aging trend, however, is not consistent throughout the region. In the Kuliouou/Kalani Iki area, 17.0 percent of the 1990 population were in the 65 years old and over category. In comparison, only about 7.9 percent of Hawaii Kai residents belonged to this age group.

While this aging trend is consistent with the rest of the island – Oahu's proportion of elderly residents increased from 7.3 percent in 1980 to 10.9 percent in 1990 – the growth rate of East Honolulu's elderly population has outpaced that of Oahu as a whole. Between 1980 and 1990, the number of elderly residents in East Honolulu increased by 119.2 percent, compared to an islandwide elderly population growth of 65.2 percent. The aging population in East Honolulu and the island in general is expected to continue into the next century, indicating an increasing need for geriatric services, including long-term and care home services, and alternative living accommodations for seniors, such as retirement communities and group homes.

Despite an overall aging of the population, realtors specializing in this area have observed a trend of older couples or "empty nesters" moving out of single-family dwellings and younger families moving in. However, they have also observed an increase in "multigeneration" households; i.e., aging parents living with adult children and preschool or school-age grandchildren. These changing demographics may require different housing types and could result in changes to mature neighborhoods through the expansion of dwellings or the further addition of "ohana" units on a long-term basis. Zoning and other community guidelines will need to ensure that neighborhood character is not adversely altered by the incremental intensification of existing residential lots.

2.2.7 FOCUS COMMERCIAL CENTERS ON SERVING THE REGION'S NEIGHBORHOODS

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 this region.

The Hawaii 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 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. Since it is likely that the number of visitors to the scenic and recreation area between Koko Head and Makapuu Head will increase, the future tenant mix at Koko Marina may shift to visitor-oriented services.

East Honolulu's five other retail complexes, those at the community and neighborhood scale, are spaced at somewhat even intervals between Aina Haina and Kalama Valley. The market areas of the Aina Haina, Niu Valley, Hahaione Valley, Hawaii Kai, and Kalama Valley shopping centers are limited mostly to the communities for which they are named, emphasizing food and household products and personal services. None of these retail areas should require additional land area for expansion. Presently, the Kalama Village Center is underleased, primarily because it serves a very limited market area which is not expected to grow significantly. Consequently, the land presently planned for expansion of this commercial center should be redesignated for residential use.

3. LAND USE POLICIES, PRINCIPLES, AND GUIDELINES

The vision for development of East Honolulu described in the preceding chapter will be implemented through application of the following land use general policies, principles, 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 and provide recreation;
- Promote access to shoreline and mountain areas;
- Define the boundaries of communities;
- Provide fire safety buffers where developed areas border "wildlands" either in preservation areas within the Urban Community Boundary or in the State Conservation District; and
- Create a linear system of landscaped pathways along roadways and drainage channels.

3.1.2 PLANNING PRINCIPLES

The general policies listed above provide the basis for the following planning principles:

- ***Provide Passive and Active Open Spaces.*** The open space system shall consist of areas in both active and passive uses. Active areas include community-based parks, golf courses, and the Hawaii Kai Marina. Passive areas include lands in the State Conservation District, drainage and utility corridors, nature preserves, and tracts of lands left undeveloped because of physical constraints or hazards. Beach parks may be either active or passive, depending on the extent to which the landscape has been modified by grading and construction of facilities and the intensity of public use.

- ***Promote Accessibility of Recreational Open Space.*** Public parks and most golf courses will be accessible for recreation use, but the open space system should also promote the accessibility of shoreline and mountain areas (as required by City ordinance). Access to mountain trails and shoreline areas should be readily available. This also includes the need for parking areas.

- ***Enhance the Visual and Physical Definition of Urban Areas.*** East Honolulu's residential communities are physically defined by the topography of the region. A series of ridges and valleys linked by Kalanianaole Highway serve as unofficial boundaries separating one community from the next. Open space or landscaping, however, should be used to visually enhance the separation between communities, particularly along Kalanianaole Highway where ridgelines are less pronounced.

- ***Dual Use of Roadway and Drainage Corridors.*** Roadways should be attractively landscaped to serve as linear open space features and create a more inviting environment for walking, jogging and biking. Where physical modification of natural drainageways is necessary to provide adequate flood protection, such modifications should be designed and constructed to maintain habitat and aesthetic values, and to avoid degradation of stream, coastline and near shore water quality.

3.1.3 GUIDELINES

The following provides a brief description of regional open space resources in East Honolulu, followed by guidelines for carrying out the general policies and planning principles related to each open space element.

3.1.3.1 Mountain Areas

Seventeen major trails, inventoried by the State Department of Land and Natural Resources (DLNR), provide access to the mountainous areas of East Honolulu. Three of these trails (see **Figure 3-1**) are actively managed by the State's Na Ala Hele program:

- ***Hawaii Loa Ridge Trail.*** This trail begins at the top of the Hawaii Loa community and extends 2 miles to the crest of the Koolau Range.

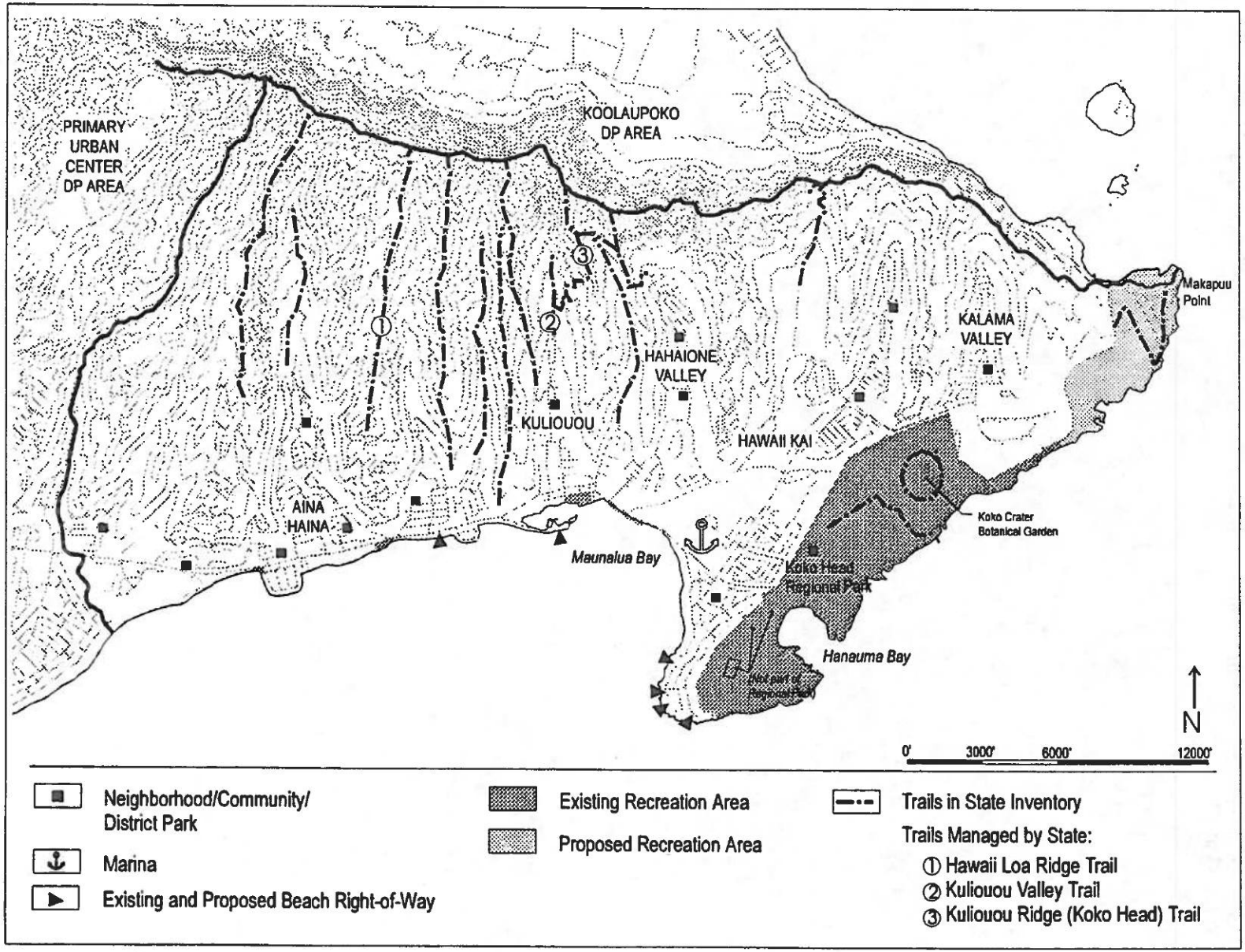
- ***Kuliouou Valley Trail.*** Beginning at the back of Kuliouou Valley, this trail runs for 0.6 mile to approximately the 440-foot contour.

- ***Kuliouou Ridge (Koko Head) Trail.*** This 2.5-mile trail is an extension of the Kuliouou Valley trail, extending to the crest of the Koolaus.

Public access to the Hawaii Loa Ridge trail and the Wiliwilinui trail atop Waialae Iki has been a source of controversy because residents of these communities and large landowners are concerned about liability, security,

and loss of privacy 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, or no access at all.

Figure 3-1
Public Parks and Recreation Areas



Mountainous regions 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. To prevent future problems, 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 these agreements do not work, consideration should be given to acquiring fee ownership or easements for public use. Furthermore, the State and City should negotiate, in advance, provision of public access easements and visitor parking near the trailheads with developers of new subdivisions.

To protect important resource values in the State Conservation District, steps also need to be taken to control the number and range of feral animals and other alien species and prevent overuse and misuse by humans in selected areas, such as habitats of native and endangered species.

Guidelines pertaining to mountain areas are as follows:

- Acquire and maintain public access easements to trailheads.
- Provide public parking for trail users near the trailhead.
- Maintain, protect, and/or restore native forests in the State Conservation District.
- Avoid disturbances caused by utility corridors and other uses on areas with high concentrations of native species.
- Identify and protect endangered species habitats and other important ecological zones from threats such as fire, alien species, feral animals, and human activity.

3.1.3.2 Agricultural Areas

The physical and economic conditions of East Honolulu preclude large-scale agricultural operations. There are, however, two concentrations of small-scale agricultural operations -- the larger one in Kamilonui Valley and the other above Kaiser High School on the slopes of Koko Crater -- which are expected to remain, and 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 remain commercially viable by serving a mostly East Honolulu market.

Water supply is sufficient in Kamilonui Valley, although short winter days are a limitation on the types of crops that can be grown here. There is also the potential for conflict between farming in Kamilonui Valley, an activity which existed prior to adjacent urban development, and the proximity and possible encroachment of suburban residential areas. This can result in complaints from neighbors about dust, noise, overspray, odors, and other normal effects 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:

- Design and locate buildings and other facilities that are accessory to an agricultural operation in a way which minimizes the impact on nearby urban areas and the street system.
- Encourage continued use of small lots for agricultural uses and promote compatibility of nearby residential areas with those uses. Land use policy should explicitly promote maintenance of an adequate buffer between

agricultural lands and new residential development with consideration given to topographic barriers, prevailing winds, and the noise or air-borne emissions associated with the type of agricultural operation.

- Designate undeveloped areas in Kamilonui Valley which are on the ewa side of the existing farm lots for agricultural use.

- Promote long-term agricultural leases at reasonable rates consistent with feasible agricultural use by having such areas remain outside the Urban Community Boundary and placing those areas within the Agriculture Boundary.

3.1.3.3 Natural Gulches and Drainageways

The ridges and valleys in East Honolulu form a series of natural drainageways extending across the region. These stream channels are the primary means for carrying water from the inland areas to the sea and are capable of handling runoff from normal rainfall amounts. During periods of intense rainfall, however, a number of these drainageways have experienced flooding problems (see discussion in Chapter 4).

Guidelines concerning natural gulches and drainageways are as follows:

- Preserve the aesthetic and biological values of significant streams, wetlands, natural gulches and other drainageways by providing appropriate setbacks as part of the open space system. These include the perennial streams identified in the Hawaii 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, and other drainageways identified by the Department of Design and Construction or the Department of Planning and Permitting. For other streams, including intermittent streams, applicants for development should be required to show that the open space system will not be significantly impacted and that biological values will not be significantly impacted by not providing setbacks.

- Alter natural gulches within the Urban Community Boundary that are necessary to provide flood protection in a way which preserves aesthetic and biological values to the extent possible, and avoids degradation of stream, coastline and near shore water quality. For example, impacts on biological habitat may be mitigated, as appropriate, by using v-shaped bottom channels for periods of low stream flow, rip-rap boulder lining of stream banks, and streamside vegetation to shade and cool the waters of the stream.

3.1.3.4 Community-Based Parks

There are approximately 117 acres of community-based parks in East Honolulu. As discussed further in Section 3.3, community-based parks include district, community, neighborhood, and mini parks. 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.

Guidelines pertaining to community-based parks in East Honolulu are as follows:

- Expand community-based parks in areas where there is a deficit of such facilities and where recreational needs of residents are not being adequately met.

- Design and site structural improvements and landscaping in community-based parks in such a way as to create or add to the aesthetic value of these open space elements.

3.1.3.5 Golf Courses

There are three 18-hole golf courses in East Honolulu; the Hawaii Kai Championship Golf Course, the Hawaii Kai Executive Golf Course, and the Waialae Country Club. No additional golf courses are proposed under this Plan. The first two courses are open to the public, while the latter is a members-only course. The 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. Golf courses have a manicured appearance, so they are not necessarily appropriate for areas where the retention of a natural, untamed landscape character is desired. However, the Waialae Country Club demonstrates how a golf course in an urban or suburban setting can preserve a significant viewplane, in this case the mauka-to-makai vista from Kalanianaole Highway. The two Hawaii Kai golf courses demarcate the eastern edge of suburban development and help preserve the mauka portion of the panoramic view from Koko Crater to Makapuu Head. In addition to their open space value at strategic locations, the design and siting of golf course grading contours and water features can contribute in a significant way to a passive stormwater drainage management system in an urban context.

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

- Maintain golf course designs to provide view amenities for adjacent urban areas, especially from well-used public rights-of-way, parks and vista points.
- Optimize the function of golf courses as passive drainageways, maximizing their potential to retain or detain stormwater runoff.
- Provide safe access through golf courses, as necessary, for regional continuity of pedestrian and bicycle systems.
- When necessary for safety reasons, use screening, landscape treatment, setbacks and modifications to the course layout rather than fencing or solid barriers.

3.1.3.6 Shoreline Areas

East Honolulu's shoreline extends for approximately 13 miles between Waialae and Makapuu. 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 to the extent possible. In addition to recreational value, shoreline areas in East Honolulu, particularly between Koko Head and Makapuu, offer unparalleled scenic value. As such, view channels from Kalanianaole Highway to the shoreline should be maintained. The shoreline from Waialae to Koko Head and from Koko Head to Makapuu is discussed below.

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

  Physical and visual access to the shoreline along this stretch 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 the acquisition of additional pedestrian easements to the shoreline may still be possible as properties are redeveloped or subdivided.

  In the residential area near Koko Head, there is a deficiency of public access to the shoreline from Portlock Road. To meet the City standard of public access at approximately one-quarter mile intervals, at least three additional public access points would need to be acquired along this road; two at either end and one in the

middle. Where possible, these acquisitions should provide for direct, safe public access to sandy shoreline areas.

Most of the shoreline in this section is stable. Vertical seawalls and revetments have been constructed along many of the properties, but chronic erosion or accretion appears to be occurring only in two locations -- at Paiko Peninsula and in the Portlock area between the Hawaii Kai Marina entrance channel and the former Henry Kaiser Estate. Additional minimum setbacks for structures have been recommended as a management strategy to protect remaining sandy beaches in these segments.[1]

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 Waialae Country Club golf course and from Kalanianaole Highway fronting the Wailupe, Kawaikui, and Maunalua Bay Beach Parks.

- ***Koko Head to Makapuu***. Mauka-makai and lateral shoreline access is more prevalent between Koko Head and Makapuu. This stretch of shoreline is frequented by residents and visitors for various recreational and educational activities. The portion of this shoreline that extends from Koko Head Regional Park to Makapuu Point has been proposed as a 354-acre scenic shoreline area (see Section 3.2.1.2). The purpose of this park, referred to as the Ka Iwi scenic shoreline, is to preserve the area's natural and scenic resources and to provide educational and passive recreation opportunities. In addition to shoreline access, there are continuous views of the ocean from the stretch of Kalanianaole Highway between Koko Head and Makapuu. This segment of the roadway is the highlight of a continuous visual sequence of the coastline extending from Hawaii Kai to Waimanalo.

Guidelines pertaining to shoreline areas are listed below:

- Maintain existing makai view channels along the H-1 Freeway or Kalanianaole Highway between Waialae and Koko Head. Avoid obstructions, such as walls and landscaping, designed to screen out traffic noise.

- Lateral shoreline access along some reaches of the beach from Maunalua Bay to Waialae Beach Park is a desirable goal, but difficult to achieve because of physical constraints, land ownership patterns and the extent of urban development. As an alternative, pursue opportunities to acquire additional pedestrian rights-of-way from the highway to the shoreline in sections which have high recreational value but no similar public access within at least a quarter-mile.

- Provide additional public access to the shoreline from Portlock Road at approximately one-quarter mile intervals.

- Require additional minimum setbacks for structures near the shoreline and implement other management strategies to protect unstable sandy beach areas at Paiko Peninsula and Portlock.

- Place high priority on maintaining the untamed landscape quality of the Koko Head to Makapuu viewshed. Any modification to this shoreline area should be done in a manner which preserves the aesthetic values of the undeveloped xerophytic landscape.

- Protect and preserve the long-term recreational and scenic value of the shoreline between Koko Head and Makapuu by supporting the creation of the Ka Iwi scenic shoreline.

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[1] Sea Engineering, Inc., for the Department of Land Utilization. Oahu Shoreline Study; Part 2: Management Strategies (1989).

3.1.3.7 Wildlife Preserves

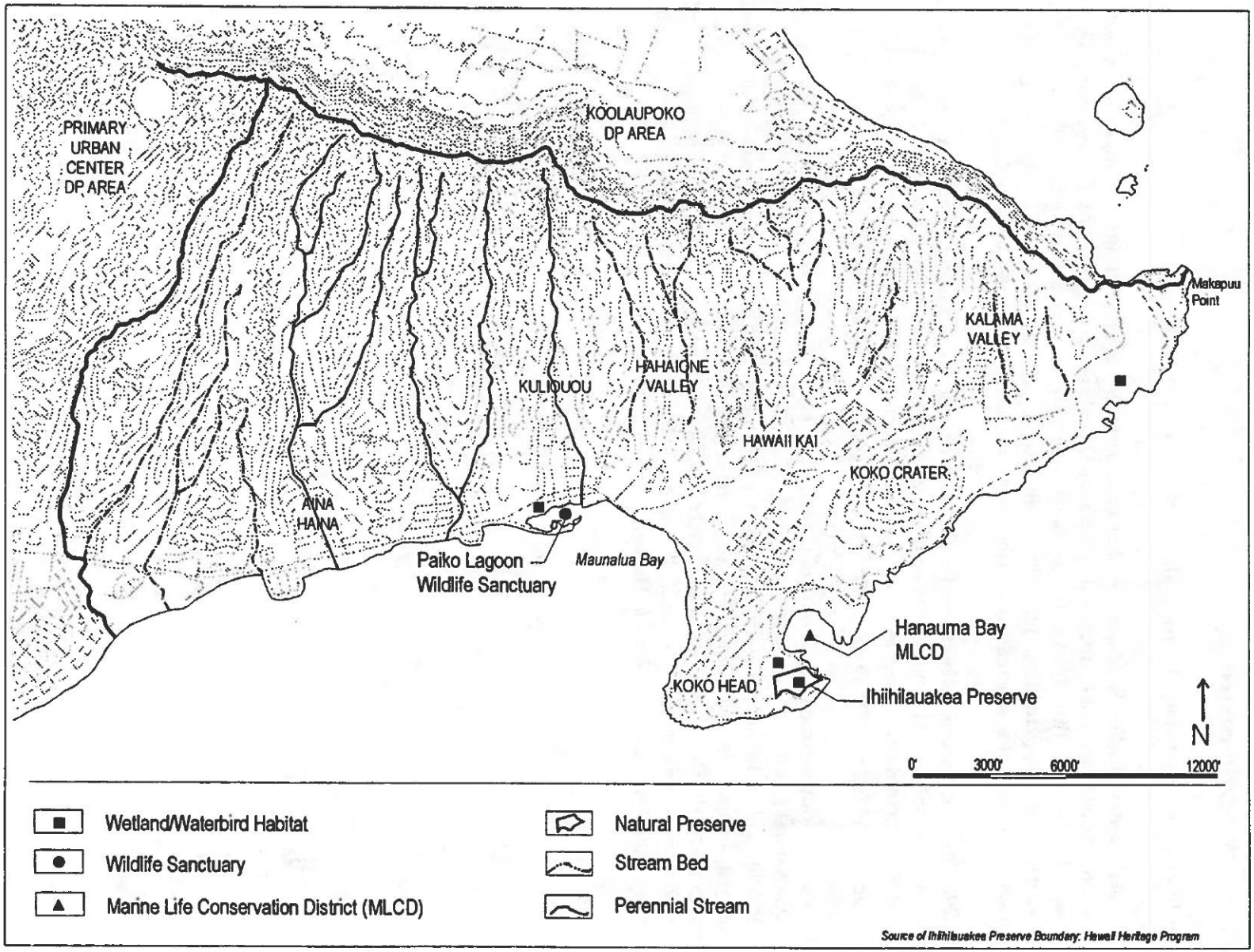
East Honolulu is home to three formal wildlife preserves (see **Figure 3-2**):

- ***Paiko Lagoon Wildlife Sanctuary***. Paiko Lagoon, formerly a coastal fishpond, is fed by a freshwater spring and Kuliouou Stream and is managed by the State Department of Land and Natural Resources. 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 waterbirds. The proximity of residential uses may threaten the sanctuary due to intrusions by humans and domesticated animals.

- ***Ihiihilauakea Preserve***. This preserve is located on the southern rim of the Hanauma Bay ridgeline on land owned by the City and County of Honolulu, and is managed by the Nature Conservancy of Hawaii (NCH) through a cooperative agreement with the City. This preserve maintains a pool for the endangered Ihiihi (Marsilea villosa), an ephemeral plant appearing only during periods of rainfall.

- ***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. Wildlife within Hanauma Bay is now protected by State law. The adjoining beach park is part of Koko Head Regional Park, administered by the City. In order to protect the marine resources of this popular visitor destination, the City restricts the daily number of visitors that have access to the bay, closes the beach on Wednesday mornings, and bans smoking at the bay. The City also collects entry and parking fees used to fund maintenance and capital projects at Hanauma Bay.

Figure 3-2
Natural Areas



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

- Avoid encroachment or intensification of residential or other urban uses near wildlife sanctuaries. In particular, there should be no reduction in preservation zoning in the vicinity of the Paiko Lagoon Wildlife Sanctuary or intensification of residential use in this zone. Provided, however, that any property with an existing residential use shall be designated for low-density residential use and may be zoned to an appropriate residential zone.

- Implement management programs in areas where intense human activity threatens the sustainability of the resources, such as at Hanauma Bay. This could include, for example, monitoring studies, limits on the number of visitors, and admission fees.

3.1.3.8 Marina

The 260-acre Hawaii 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 Hawaii Kai Marina also serves as the focal point for commercial activity in Hawaii Kai. East Honolulu's three largest commercial centers, the Hawaii Kai Towne Center, Hawaii Kai Shopping Center, and Koko Marina Shopping Center, front the marina on the east and west sides. The Hawaii 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 Hawaii Kai Marina are listed below:

- Enhance the recreational value of this open space feature by improving facilities in support of boating and providing additional pedestrian access to the edges, and to the extent possible, around the commercial frontages of the marina by way of a pedestrian and bike path.

- Link the Hawaii Kai Towne Center and the Hawaii Kai Shopping Center with a pedestrian bridge in order to provide convenient access between the two commercial centers.

- Improve pedestrian access to and along the marina's edge. The marina should not be a barrier for those, particularly pedestrians, desiring to visit more than one destination along the waterfront. A shuttle boat transport service should be considered as a means of transporting people across the marina and providing them with easy and convenient access to various waterfront locations.

3.1.4 RELATIONSHIP TO MAP A-1, OPEN SPACE

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

- ***Mountain and Agricultural Areas***. These areas are to remain outside of the designated Urban Community Boundary.

- ***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 below) 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 landscape.

- ***Shoreline Areas***. Shoreline areas with high scenic or wildlife value, primarily in the Koko Head to Makapuu region and at Paiko Peninsula, are designated for preservation and are located outside the Urban Community Boundary.

- ***Hazard Areas***. Certain undeveloped lands within the State Urban District that have either experienced significant damage from soil movement or are highly susceptible to such problems, particularly in Aina Koa, Aina Haina, and Kuliouou, are located outside the Urban Community Boundary and designated for preservation.

- ***Marina***. Hawaii Kai Marina is located within the Urban Community Boundary.

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, planning principles, and guidelines for development of these resources. The location of the region's island-based parks and recreational areas are shown on Map A-1, Open Space; A-2, Urban Land Use; and Map A-3, Public Facilities in Appendix A.

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 which 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 Oahu 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 3-1**). DPR's standard for island-based parks is eight acres for every 1,000 persons. The location of public parks and recreation areas in East Honolulu were shown previously in **Figure 3-1**.

Table 3-1
Types of DPR 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, 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/Reserve	Areas maintained primarily to preserve or conserve unique natural features.
Botanical Gardens	Areas developed for the recreational and educational appreciation of specific types of plants and plant communities.

As shown in **Table 3-2**, East Honolulu contains eight 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 is provided below.

Table 3-2
DPR Island-Based Parks in East Honolulu

Park Type/Name	Acreage
Regional Parks	
Koko Head Regional Park	951.4 [1]
Beach/Shoreline Parks	
Maunalua Bay Beach Park	5.4
Sandy Beach Park	22.6
Kawaikui Beach Park	4.1
Kuliouou Beach Park	3.2
Waialae Beach Park	4.4
Wailupe Beach Park	1.2
Subtotal	41.0
Nature Parks/Reserves	
Hanauma Bay Nature Park	50.0
Botanical Gardens	
Koko Crater Botanical Garden	200.0
Total	**1,242.3**

[1] Acreage figure excludes Sandy Beach Park, Hanauma Bay Nature Park, Koko Crater Botanical Garden (listed separately) and Koko Head District Park (included in 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:

- Halona Blowhole Lookout
- Koko Crater Stables
- Koko Head Rifle Range
- Sandy Beach Park
- Hanauma Bay Nature Park
- Koko Crater Botanical Garden
- Hawaii Job Corps Center (discussed in Section 3.3)
- Koko Head District Park (discussed in Section 3.3)

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 right-of-ways. Other uses of the property would require approval by the Bishop Estate Trustees.[2]

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 which are generally consistent with the guidelines set forth in this Development Plan (discussed in Section 3.2.4).

Expansion of Koko Head Regional Park is proposed with the addition of the Golf Course 5 and 6 properties, located mauka of Sandy Beach and Kalanianaole Highway. The 38-acre park will link the existing Koko Head Regional Park and the proposed Ka Iwi scenic shoreline and will provide a continuous stretch of open space and recreational opportunities extending from Koko Head to Makapuu Head. This area is planned for active recreation use with playfields and open space for kite flying and other outdoor activities. There will be no courts or paved areas, and a generous naturally landscaped buffer fronting Kalanianaole Highway will be needed to retain compatible character with the adjacent Ka Iwi scenic shoreline.

3.2.1.2 Ka Iwi Scenic Shoreline

A 354-acre scenic shoreline area is proposed in the Queen's Beach/Makapuu Head region of East Honolulu adjacent to Koko Head Regional Park. The Ka Iwi scenic shoreline, as it is referred to, is envisioned as a means to protect the area's rich recreational and scenic resources. A master plan for the park was prepared in October 1995 by the State Department of Land and Natural Resources pursuant to House Concurrent Resolution No. 261 (1988).

A mix of low and medium intensity uses are envisioned at the proposed Ka Iwi scenic shoreline. The primary purpose of the park should be to preserve the area's natural resources and to provide educational and passive recreation opportunities.

3.2.1.3 Beach and Shoreline Parks

East Honolulu's five existing beach parks are Maunalua Bay, Sandy Beach, Kawaikui, Kuliouou, Waialae and Wailupe. Hanauma Bay is designated by the DPR as a Nature Park. The DPR has no current plans for additional beach park development in East Honolulu. As mentioned above, the Ka Iwi scenic shoreline is proposed for the Queen's Beach/Makapuu Point region of East Honolulu.

3.2.1.4 Golf Courses

All three golf courses in East Honolulu are privately owned. The Hawaii Kai Championship Golf Course and the Hawaii Kai Executive Golf Course offer public play and the Waialae Country Club is a members-only course. Golf courses are considered valuable open space and aesthetic resources and also serve a practical purpose by reducing flooding and nonpoint pollution by helping retain storm waters. However, they are highly land intensive, typically occupying 150 to 200 acres, and thus plans for future golf courses should undergo careful evaluation. Depending on the location, design, and pricing of green fees and/or memberships, new course development could have significant environmental, economic, and social impacts. Furthermore, East Honolulu is mostly built-out and land areas that could possibly accommodate a new golf course are either in preservation or long-term agricultural use. This Plan does not envision development of additional golf courses in the East Honolulu region.

3.2.2 GENERAL POLICIES

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[2] Belt Collins & Associates. Koko Head Park Master Plan (January 1992), p. 1.

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 principles, 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 both residents and visitors.

3.2.3 PLANNING PRINCIPLES

The general policies for island-based parks and recreation complexes are supported by the following planning principles:

- ***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 which 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.

3.2.4 GUIDELINES

The following guidelines implement the general policies and planning principles for the island-based parks and recreation areas listed above.

3.2.4.1 Passive or Nature Parks

- Preserve and enhance Koko Head Regional Park's coastal-oriented recreational and educational resources by implementing when funding is available, the following:

  - Convert the portion of Kalanianaole Highway between Lunalilo Home Road and Sandy Beach to a 25-mile-per-hour scenic roadway.

  - Maintain and facilitate access to the area's important fishing resources.

  - Develop new trails in and around Koko Crater.

  - Minimize adverse lighting impacts to aquatic life and avifauna, as well as adverse aesthetic impacts.

  - Maintain Koko Crater Botanical Garden with drought-tolerant plant species.

- Develop Ka Iwi scenic shoreline in a manner which preserves the area's natural scenic quality and provides educational and passive recreation opportunities.

- Protect fragile natural resources, such as the wildlife at Hanauma Bay Nature Park, from overuse through some form of management control.

3.2.4.2 Active Recreation Areas

- Expand the Koko Head Regional Park boundary to include Golf Course 5 and 6 properties, thereby increasing East Honolulu's 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.

- 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 Kalanianaole Highway.

- 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.

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. This group includes district, community, and neighborhood parks as well as other, smaller park areas (see **Table 3-3**).

Table 3-3
Types of DPR Community-Based Parks

Park Type	Average Size (Acres)	Population Service Size	Typical Facilities
District	20	25,000	Playfields, playcourts, passive areas, gym/recreation complex, swimming pool
Community	10	10,000	Playfields, playcourts, passive areas, recreation building
Neighborhood	6	5000	Playfields, playcourts, passive areas, comfort station
Mini Park	Varies	High Density Area	Benches, picnic tables, children's play area

East Honolulu contains a total of approximately 120 acres of community-based parks of which the largest is the 40-acre Koko Head District Park (see **Table 3-4**). Expansion of the park to 59 acres is proposed by incorporating the adjacent 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 serve as buffers from adjacent residential areas or from natural features, such as the slopes of Koko Crater. In evaluating community-based recreational park

needs, the DPR uses a standard of two acres per every 1,000 persons, although this figure varies according to each community's situation. Based on this population standard and East Honolulu's 1990 population of 45,650, there is a surplus of approximately 26 acres of community-based parks in the region. There is only one District Park in the region, while DPR's population service ratio (see **Table 3-3**) 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 mentioned earlier, this park can be expanded to 59 acres by incorporating the adjacent Job Corps site.

Table 3-4
DPR Community-Based Parks in East Honolulu

Park Type/Name	Acreage	Park Type/Name	Acreage
District Parks		**Neighborhood Parks, continued**	
Koko Head District Park	40.0	Kuliouou Neighborhood Park	4.4
Community Parks		Nehu Neighborhood Park	1.3
Kalama Valley Community Park	6.0	Niu Valley Neighborhood Park	2.1
Kamilo Iki Community Park	18.5	Waialae Iki Neighborhood Park	9.9
Aina Haina Community Park	6.2	Wailupe Valley Neighborhood Park	2.5
Subtotal	30.7	Subtotal	46.8
Neighborhood Parks		**Mini Parks**	
Aina Koa Neighborhood Park	2.4	Koko Kai Park	0.6
Hahaione Neighborhood Park	4.1	Kamole Mini Park	2.2
Hahaione Valley Neighborhood Park	6.2	Kokee Park	0.5
Kamilo Iki Neighborhood Park	7.2	Subtotal	3.3
Koko Head Neighborhood Park	6.8	**Total**	**120.8**

As suggested in the discussion of Koko Head District Park, the distribution of community-based park lands within East Honolulu is slightly uneven. The Hawaii Kai Neighborhood Board area, with a 1990 population of 27,430, has a surplus of approximately 34 acres of community-based parks, while the Kuliouou-Kalani Iki Neighborhood Board area has a deficit of approximately six acres.[3]

However, as mentioned above, 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 Kuliouou-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 Hawaii Kai Neighborhood Board area. As such, the Kuliouou-Kalani Iki community does not currently have strong demand for park facilities such as children's play areas.

Over time, the composition of the Kuliouou-Kalani Iki community may change as the housing owned by elderly residents is gradually turned over to younger households. There may also be an increase in "multi-generation" households (i.e., aging parents living with adult children and preschool or school-age grandchildren) 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 Kuliouou-Kalani Iki community and may increase the requirements, by amount and type, for active recreation facilities over time.

DPR has no current plans to acquire additional land for community-based park development in the region. Any

[3]Neighborhood Board boundaries do not exactly match boundaries used by the U.S. Census Bureau. For purposes of calculating park requirements, the balance of East Honolulu's population not in the Hawaii Kai neighborhood board area was allocated to the Kuliouou-Kalani Iki neighborhood board area.

new park areas would thus be provided pursuant to the Park Dedication Ordinance in conjunction with private developments. Expansion of community-based park lands is possible in Hawaii Kai, but is limited in the Kuliouou-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 Kuliouou-Kalani Iki area, by jointly, with the Department of Education (DOE), using and improving elementary and intermediate school recreational facilities as community-based parks.

3.3.2 GENERAL POLICIES

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

- Increase the inventory of community-based parks, when feasible, to provide sports and recreation facilities for East Honolulu residents in appropriate locations.
- Modify recreation 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.
- Have new residential development provide land for open and recreation purposes in lieu of payment of a fee for park dedication purposes, if the project is of sufficient size to set aside usable land to meet neighborhood recreational needs.

3.3.3 GUIDELINES

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

- Expand active recreational facilities at Koko Head District Park by incorporating and developing the adjacent Job Corps site.
- Have master plans for development of new parks or redevelopment of existing parks provide for facilities and accessible pathways from surrounding streets to facilitate pedestrian and bicycle access to parks.
- Continue DPR and DOE efforts to co-locate neighborhood or community parks with elementary or intermediate schools. The DPR should also explore ways, through cooperative agreements and mutual indemnifications with the DOE, to design and operate facilities to achieve efficiencies and reduce duplication in the development and use of athletic, recreation, meeting, and parking facilities.

3.4 HISTORIC AND CULTURAL RESOURCES

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

3.4.1 OVERVIEW

In 1930, an archaeological survey of Oahu documented approximately 60 sites in the area now defined as East Honolulu.[4] Many of these sites, however, have since been destroyed by the 1946 tsunami, erosion, or other land altering activities such as beach development and construction. Within the Koko Head Regional Park, for example, a survey conducted in 1988 relocated only one of five sites identified in the 1930 study. This site, the Koko Head

[4] McAllister, J. Gilbert. Archaeology of Oahu. (1933), p. 57.

Petroglyphs, was discovered in 1899 and is situated near the Lanai 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, the number of archaeological sites lessens. Sites in this portion of East Honolulu consist of shelters, heiau, and burial caves. Makaniolu Shelter in Kuliouou is on the Hawaii Register of Historic Places, the only such registered site in East Honolulu.[1] Makaniolu is a large cave in good condition and is a good representative of its class.

Table 3-5 lists the significant cultural and historic sites believed to be present in East Honolulu. Although not listed in the table, there are also archaeological sites on undeveloped parcels located 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 recent privately initiated pedestrian survey of surface and possible subsurface material remains was conducted on a parcel located in Kamilonui Valley near the planned extension of Hawaii Kai Drive.[2] 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.

Table 3-5
Significant Cultural and Historic Sites in East Honolulu

Feature	Reference
Makapuu Point Lighthouse	
Kealakipapa Valley Road	McAllister Site 3; SHPD 3
Kaloko Dwelling Site	SHPD 3997
Kailiili Midden Site	SHPD 3990
Koko Head Petroglyphs	McAllister Site 44; SHPD 1128
Makapuu Head Cave	SHPD 3989
Makaniolu Shelter (Kuliouou)	
Burial Caves (Niu)	McAllister Site 53

Source: McAllister, J. Gilbert, Archaeology of Oahu (1933); Sterling E.P. and C.C. Summers, Sites of Oahu (1978).

3.4.2 GENERAL POLICIES

- 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 significant historic features from earlier periods.

[1]The U.S. Coast Guard Makapuu Point Lighthouse, also in East Honolulu, is on the National Register of Historic Places.
[2]Kusao & Kurahashi, Inc. Rezoning Application Report, Proposed Kamilonui 1 Development (August 1997), p.43-51.

- Retain, whenever possible, significant vistas associated with archaeological features.

3.4.3 PLANNING PRINCIPLES

The treatment of a particular historic or cultural site should depend upon its characteristics and potential value. The following planning principles should be used to determine appropriate treatment:

- ***Preservation and Protection***. 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. 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.

- ***Accessibility***. Determine the degree of access that would best promote the preservation of the historic, cultural and educational value of the site, recognizing that economic use is sometimes the only feasible way to preserve a site. 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 protect the physical integrity or sacred value of the site.

3.4.4 GUIDELINES

The following guidelines apply to Native Hawaiian cultural and archaeological sites and implement the general policies and planning principles listed above:

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

- Determine the appropriate preservation methods on a site-by-site basis in consultation with the State Historic Preservation Officer.

- Determine appropriate delineation of site boundaries and setbacks and restrictions for adjacent uses on a site-by-site basis in consultation with the State Historic Preservation Officer.

- Include sight lines that are significant to the original purpose and value of the site in criteria for adjacent use restrictions.

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

3.5 RESIDENTIAL USE

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

3.5.1 OVERVIEW

With the establishment of Urban Community, Agriculture and Preservation Boundaries to contain the spread of development, housing capacity in East Honolulu will be increased by the "infill" development of remaining vacant

lands on the relatively level coastal plain, primarily in the Hawaii Kai area; minor subdivisions of some larger residential lots into smaller parcels at scattered locations throughout the region; and expansions of existing homes to accommodate larger households. While the development of vacant parcels 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 subtle. Effective residential lot design standards which limit building height, coverage, paving, and removal of landscaping should be implemented to avoid the long-term cumulative impact of this gradual transformation, which could 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:

- Increase housing capacity in East Honolulu through development of new homes on lots designated for low-density residential use and expansion of existing homes (including ohana units) in built-up residential neighborhoods.

- Respond to the special needs of an aging population by providing future housing development 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, group homes, assisted living units, and continuing care retirement communities.

- Modify residential neighborhood street design, where appropriate, to provide greater emphasis on safe, accessible, convenient and comfortable pedestrian routes, bus stops, and bike routes, even if this requires somewhat slower travel speeds or less direct routes and fewer on-street parking spaces for automobiles. This may require review and revision of City street standards.

3.5.3 PLANNING PRINCIPLES

- ***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 right-of-ways, 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, recognizing the need for accessible design and safe travel conditions for elderly and/or 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.

- ***Environmental Compatibility***. Encourage energy efficient features, such as the use of solar panels for heating water, and passive solar design, such as the use of window recesses and overhangs and orientation of openings to allow natural cross-ventilation. Also, resource conservation measures such as water constrictors and facilities for the sorting of waste materials for recycling should be incorporated in the design of new development.

3.5.4 GUIDELINES

Guidelines to implement the general policies and planning principles are provided below:

3.5.4.1 Residential Development

Three categories of urban residential development are recognized by this plan: Residential, Low-Density Apartment and Medium-Density Apartment. All of these categories are found only within the Urban Community 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 2-3 story townhouse complexes, stacked flats, or low-rise apartment buildings; parking provision may comprise a separate story. Overall building height should not exceed 40'. Buildings may have elevators and common entries for multiple dwellings. Density of development may range from 10-30 dwelling units per acre. It is intended 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 A-2 Apartment District as of the effective date of this plan.[1]

- Medium-Density Apartment: This category of residential development takes the form of multistory apartment buildings with densities in the range of 25 to 90 dwelling units per acre. It is intended no new Medium-Density Apartment projects will be developed in the region; therefore, this 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.

  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 streetfront. 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.

3.5.4.2 Special Needs Housing

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

- Locate special needs housing within close proximity to transit services and commercial centers.

- Accommodate an allowable building density of 10 to 30 units per acre, not including beds in skilled nursing facilities; designated affordable housing projects may allow densities up to 30 units per acre if designed in a manner compatible with the character of the surrounding residential community.

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[1]**Editor's Note:** "The effective date of this plan" is July 27, 1999.

- Emphasize compatibility between building height and adjacent uses, although the height may vary according to required flood elevation, slope, and roof form.
- Employ building form, orientation, location of entries, and landscape screening to maintain the existing residential scale.
- Ensure compatibility between building scale, roof form, and materials with those of adjacent residential areas.
- This land use is not specifically designated on Map A-2, Urban Land Use, but is allowed in all residential areas.

3.5.4.3 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 NONRESIDENTIAL DEVELOPMENT

This section provides an overview of nonresidential development in East Honolulu followed by general policies, planning principles, and 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 a total of seven commercial centers, which are listed below.

Table 3-6
Commercial Centers in East Honolulu

Shopping Center	Year Opened	Site Area (Acres)	Gross Leasable Area	Anchor Tenants
Hawaii Kai Towne Center	1993	16.1	202,000	Price/Costco, City Mill
Koko Marina S.C.	1963	15.0	198,300	Foodland; Ben Franklin; Consolidated Theaters; First Hawaiian Bank
Hawaii Kai S.C.	1981	9.4	133,600	Safeway; Longs
Niu Valley Center	1962	4.5	89,910	Times Supermarket
Aina Haina S.C.	1950	7	69,700	Foodland; McDonalds
Hahaione Valley Center	1972	0.5	30,100	Food Pantry
Kalama Village Center	1991	4	19,300	Handi-Pantry

Source: International Council of Shopping Centers, 1992 Directory; interviews with property managers.

Hawaii 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 - particularly Price/Costco - 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 market areas for other commercial centers

listed in **Table 3-7** are limited mostly to the communities for which they are named, emphasizing food and 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, particularly in the smallest of the commercial centers -- Kalama Village. Only the first phase, occupying less than a third of the land area that had been designated for this project, had been developed as of 1997 and less than half of that developed floor area had been leased.

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 and in two buildings -- Hawaii Kai Corporate Plaza and Hawaii Kai Executive Plaza -- that are located along Kalanianaole Highway makai of the Hawaii Kai Towne Center. These areas provide a combined total of nearly 200,000 square feet of office floor area, nearly 30 percent of which was vacant as of 1997. **Table 3-7** lists the locations and spaces that are currently built and occupied:

Table 3-7
Office Inventory in East Honolulu

Office Building	Year Opened	Gross Leasable Area	Occupancy
Japan-America Institute of Management Science (JAIMS)	1972	257,000	100%
Koko Marina Office Space	1963	47,760	63%
Hawaii Kai Executive Plaza	1990	41,582	50%
Hawaii Kai Corporate Plaza	1987	39,355	74%
Aina Haina Professional Building	1982	22,550	na
Koko Head Plaza	1975	21,226	90%
Hawaii Kai Medical/Office Center	1987	16,598	100%

There is a probable demand for certain light industrial uses that are oriented to the Hawaii Kai community. 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 Kahala Mandarin Hotel -- that was developed nearly 30 years ago and recently underwent major renovation and change in management. No expansion of this resort hotel is anticipated.

3.6.2 GENERAL POLICIES

For purposes of this Plan, the various types of nonresidential 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***. Designate the Aina Haina, Niu Valley, Kalama Village, and Hahaione Valley commercial centers as Neighborhood Commercial Centers. They should retain their present purpose and approximate size. The communities served by these Neighborhood Commercial Centers are expected to experience minimal population growth between 1995 and 2020. Modest additions of floor area and parking

could be made to these centers through redesign of the sites they presently occupy. Consequently, there should be no need to designate additional land for expansion of the Neighborhood Commercial Centers. In fact, market response suggests that land that had originally been designated for the expansion of the site area of Kalama Village Center should be redesignated for residential use.

- ***Regional Town Center***. Create a "Regional Town Center" in the Hawaii 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 pedestrian amenities.

- ***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 small increase in population forecast for 2020 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 and Secondary Urban Centers.

3.6.3 PLANNING PRINCIPLES

The following planning principles 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***. The Neighborhood Commercial Center is typically located on five to ten acres or less, within or adjacent to a residential area, and has frontage on at least one collector street or arterial highway. The center may have up to 100,000 square feet of floor area. These centers should continue to emphasize retail stores and 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***. This center will be composed of four components:

  - The Hawaii Kai Towne Center, given its size and location relative to principal travel routes in the region, should be designated as the focal point for regional shopping and services. This may include small to medium-sized "service-industrial" establishments.

  - The Koko Marina Shopping Center can play a complementary role with a focus on marina and ocean recreation services, specialty shops and entertainment attractions.

  - The two office buildings are the third component of the Regional Town Center. It is possible that vacancies in these buildings may gradually be absorbed by the projected 30 percent increase in the number of service-related jobs in this region. However, it may be possible to convert some additional ground or second floor space in these buildings to retail or other commercial uses if the demand for additional office space remains weak.

  - The fourth component of the Regional Town Center is the Hawaii Kai Shopping Center. Its size and types of tenants are similar to those of a Neighborhood Commercial Center. However, because of its proximity to the other three components, it can play a supporting role in the creation of the Regional Town Center through physical linkages that are discussed below.

- ***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. Pedestrian and bicycle access is more important for the Neighborhood Commercial Centers, while transit access is more significant for the Regional Town Center. Efficiencies and other improvements in traffic and parking conditions could be achieved by redesigning or re-siting parking lots, driveways and walkways and providing shuttle bus and water taxi services between the components of the Regional Town Center.

- ***Appropriate Scale and Architectural Style***. Maintain consistency between the building mass of a commercial center and its urban and natural setting. The architectural character of commercial centers should respect the surrounding urban and natural features, particularly when located adjacent to a residential area or significant natural or historic feature. Neighborhood Commercial Centers should reflect a residential architectural character. The Regional Town Center may reflect a more urban architectural character, but future additions or renovations to the Hawaii Kai Towne Center, in particular, should reflect a more positive orientation to its Marina frontage.

- ***Environmental Compatibility***. Encourage energy efficient features, such as the use of solar panels for heating water, and passive solar design, such as the use of window recesses and overhangs and orientation of openings to allow natural cross-ventilation. Also, resource conservation measures such as water constrictors and facilities for the sorting of waste materials for recycling should be incorporated in the design of new development.

3.6.4 GUIDELINES

The following guidelines are intended to implement the general policies and planning principles listed above.

Neighborhood Commercial Centers

- ***Architectural Character and Building Mass***

  - Buildings should maintain a residential character; height, size, and massing of building should be compatible with all adjacent residential areas.

  - The total floor area should not exceed 100,000 square feet.

  - Gable and hip-form roofs should be encouraged, using breaks in the roof line to reduce the apparent scale of large roof plates.

  - Residential character should be expressed by using exterior materials and colors that are typically found in neighborhood houses.

- ***Vehicular Access***

  - Access to the parking and loading areas should be from a collector street.

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

- ***Pedestrian and Bicycle Facilities***

  - There should be at least one pedestrian access 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.

- There should be a direct pedestrian connection from the interior walkways in the commercial center to a bus stop.

- Bicycle racks should be designed to provide security and be visible from the street entry.

- ***Visual Screening, Lighting, and Signage***

  - Place parking and service areas behind the buildings or otherwise visually screened from streets and residential areas.

  - Include a landscape screen of trees and hedges in setbacks from street frontages and property lines.

  - Plant and maintain shade trees throughout parking lots.

  - Use only low-level or indirect lighting which meet 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.

Regional Town Center

- ***Mix of Uses***

  - Enhance the Hawaii Kai Towne Center as a focus of activity with addition of public uses such as a Satellite City Hall.

  - Permit service industrial uses within enclosed buildings. Locate, design, and operate uses that generate high noise levels in a way that will keep noise to an acceptable level in adjacent residential areas.

  - 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.

- ***Architectural Character and Building Massing***

  - The architectural character may be varied, depending on the context and the theme for the particular center. Portions of commercial center buildings that are adjacent to or readily visible from residential areas should reflect a more residential character; or be screened from view from such areas by landscaping.

  - Avoid disruptive design contrasts between facades that are visible simultaneously from public areas.

  - Avoid blank facades on portions of buildings visible from a street or the Hawaii Kai Marina by using texture, articulation, color, and fenestration to create visual interest.

  - Building heights should generally not exceed 60 feet, with height setback transitions from street frontages, the Marina, and adjacent residential areas.

- ***Pedestrian, Bicycle, and Transit Facilities***

- Provide street frontage improvements for bus stops, including a bus shelter and a pull-out off a traffic lane, along all abutting streets which have bus routes.

- Provide a pedestrian pathway from the bus stop to an entrance to the main building of the commercial center. The pathway should be clearly indicated with special paving or markings and covered to provide weather protection, if the commercial center building is not directly connected to the bus shelter.

- Develop a pedestrian route along the marina edges of the Hawaii Kai Towne Center and the Hawaii Kai Shopping Center. The route should be linked by a pedestrian bridge in order to provide convenient access between the two commercial centers, as well as to enhance the recreational value of the marina.

- The marina should not be a barrier for those, particularly pedestrians, desiring to visit more than one shopping destination along the waterfront. A shuttle boat transport service should be considered as a means of transporting people across the water and thereby linking the Koko Marina Shopping Center on the east side of the marina with the Hawaii Kai Towne Center and the Hawaii Kai Shopping Center on the west side.

- Design bicycle racks to provide security and be visible from the street entry to the commercial center.

- ***Visual Screening, Lighting and Signage***

  - Buffer noise and other adverse impacts from parking, loading and service areas from adjacent residential areas by a combination of solid walls or berms and landscaped setbacks.

  - Plant a landscape screen, consisting of trees and hedges, along streets fronting parking lots or garages. Shade trees should be planted throughout parking lots.

  - Visually screen storage areas for vehicles, equipment, and supplies from the street and adjacent lots by privacy walls and buildings, fronted by landscaping used to soften the appearance of large solid walls.

  - Signage may be directly illuminated, but use of direct illumination of building features should be discouraged. High intensity lighting should be shielded to avoid direct visibility from residential areas.

Resorts and Institutions

- ***Architectural Character and Building Massing***

  - Reflect in the site plan a campus-like environment with a relatively low building coverage ratio and emphasize attractive landscaping, including water features where appropriate.

  - Vary the architectural character, depending on theme and purpose of the use. Portions of buildings that are adjacent to or readily visible from residential areas should reflect a more residential character; or be screened from view from such areas by landscaping.

  - 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.

- ***Pedestrian, Bicycle, and Transit Facilities***

  - Provide street frontage improvements for bus stops, including a bus shelter and a pull-out off a traffic lane, along all abutting streets which have bus routes.

- There should be a pedestrian pathway from the bus stop to an entrance to the main building of the institution or resort facility. The pathway should be clearly indicated with special paving or markings.

- Design bicycle racks to provide security and be visible from the main street or parking entry to the institution or resort.

- ***Visual Screening, Lighting and Signage***

- Buffer the noise and other adverse impacts from parking, loading, and service areas from adjacent residential areas by a combination of solid walls or berms and landscaped setbacks.

- Plant a landscape screen, consisting of trees and hedges, along streets fronting parking lots or garages. Shade trees should be planted throughout parking lots.

- Visually screen storage areas for vehicles, equipment, and supplies from the street and adjacent lots by privacy walls and buildings, fronted by landscaping used to soften the appearance of large solid walls.

- Signage should be nonilluminated or indirectly illuminated. High intensity lighting should be shielded to avoid direct visibility from residential areas.

3.6.5 OTHER USES IN NONRESIDENTIAL AREAS

Other uses in nonresidential 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 PRINCIPLES

The vision for East Honolulu will be implemented in part through application of the general policies and principles for public facilities and infrastructure which 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 policies and planning principles to guide 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 Kalanianaole Highway (State Highway 72), which links Honolulu to the communities of East Honolulu and is also a scenic, secondary route for travel between Kailua/Waimanalo and Honolulu.

Portions of the highway were recently widened and upgraded so that the entire 4.2-mile stretch between Ainakoa Avenue and Keahole Street consists of six lanes (three lanes in each direction). One of the lanes is designed as a

High Occupancy Vehicle (HOV) contra-flow lane, thus providing four Honolulu bound lanes during the morning peak between West Halemaumau Street and Ainakoa Avenue. This 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 Kalanianaole Highway into the ridge and valley neighborhoods. Important intersections include, but are not limited to, Kalaniiki Street, West Hind Drive, Hawaii Kai Drive, Keahole Street, and Lunalilo Home Road. Hawaii Kai Drive runs parallel to Kalanianaole Highway through parts of Hawaii Kai. However, because a section of the planned route for Hawaii Kai Drive in the Kamilonui Valley area has not been completed, it does not function as an additional mauka access route linking Maunalua Bay to Kalama Valley.

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 Oahu Metropolitan Planning Organization (OMPO), a joint City-State agency.

In November of 1995, OMPO prepared the 2020 Oahu Regional Transportation Plan (ORTP). According to the ORTP, no major projects are planned for East Honolulu's roads for the immediate term. In the 2001-2005 time period, the ORTP includes plans to extend the morning HOV lane from West Halemaumau Street to Keahole Street. The existing park-and-ride lot at Keahole Street would be served by this extension. In the 2006-2020 period, plans call for the addition of one westbound lane from Laukahi Street to the Kilauea Avenue off-ramp. These projects, however, will be re-evaluated in the 1999 update of the ORTP taking the communities' concerns into consideration.

As mentioned in the previous section, there is an uncompleted section of Hawaii Kai Drive in the Kamilonui Valley area. While this project is not included in the ORTP, it would be desirable to complete this link to provide for more direct travel from Lunalilo Home Road to Kamilonui Place and to create a new bicycle route (see Section 4.1.3).

4.1.2 TRANSIT SYSTEM

On an average weekday, a little less than 40 percent of transit trips on TheBus are between home and work. Slightly over 40 percent of weekday trips are for other home-based trips (to school, shopping, etc.) The remainder are nonhome-based trips and trips made by visitors.[1]

East Honolulu is serviced by nine bus routes (see **Table 4-1**). Bus service in Hawaii Kai is complemented by a park-and-ride facility on Keahole Street across from the Hawaii 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 Hawaii Kai.

Table 4-1
Bus Routes Servicing East Honolulu

Route Number	Route Type	General Service Area Within East Honolulu
1	Urban Trunk	Kalanianaole Highway; Aina Haina; Hahaione Valley; Lunalilo Home Road
21	Urban Collector	Waialae Iki/Waialae Nui

[1] Barton-Aschman Associates, Inc. Comprehensive Operations Analysis of TheBus System (August 1993), p. 1-3 to 1-4.

Route Number	Route Type	General Service Area Within East Honolulu
22	Urban Collector	Kalanianaole Highway; Hanauma Bay; Sandy Beach; Makapuu
58	Suburban Trunk	Kalanianaole Highway; Lunalilo Home Road; Kalama Valley; Makapuu
80	Express	Kalanianaole Highway; Lunalilo Home Road; Park & Ride
80A	Express (UH)	Kalanianaole Highway; Lunalilo Home Road; Kalama Valley; Park & Ride
80B	Express (Downtown)	Kalanianaole Highway; Aina Haina
82	Express	Kalanianaole Highway; Kalama Valley; Park & Ride
95	Express	Kalanianaole Highway; Lunalilo Home Road; Park & Ride

There are no plans to extend or expand the number of routes, but the frequency and capacity of transit service will be increased by additions to the islandwide bus fleet. Service will also be enhanced by making highway and street improvements designed to make bus travel more efficient, convenient and comfortable.

4.1.3 BIKEWAY SYSTEM

Oahu has 55.4 miles of existing bikeways. Bike Plan Hawaii (1994), a State master plan for bikeways, proposes another 293.1 miles islandwide. The timetable for development will depend upon construction feasibility (including right-of-way acquisition) and funding. Bike Plan Hawaii defines the various types of bikeways:

- ***Bicycle Route.*** Any street or highway so designated, for the shared use of bicycles and motor vehicles or pedestrians or both. Bike routes are of two types: a) a widened curb lane in an urban-type area; and b) a paved right shoulder in a rural-type area.

- ***Bicycle Lane.*** A portion of a roadway designated by striping, signing, and pavement markings for the preferential or exclusive use of bicycles. Through travel by motor vehicles or pedestrians is not allowed unless specified by law, rule, or ordinance; however, vehicle parking may be allowed for emergencies. Crossflows by motorists to gain access to driveways or parking facilities are allowed; pedestrian crossflows to gain access to parked vehicles, bus stops, or associated land use is allowed.

- ***Bicycle Path.*** A completely separated right-of-way normally designated for the exclusive or semi-exclusive use of bicycles. Through travel by motor vehicles is not allowed unless specified by law, rule, or ordinance. Where such a facility is adjacent to a roadway, it is separated from the roadway by a significant amount of open space and/or a major physical barrier (such as trees or a considerable change in ground elevation).

In East Honolulu, the existing bikeway system consists of a bike lane along Kalanianaole Highway from Kahala to Lunalilo Home Road and a bike route along the Lunalilo Home Road-Hawaii Kai Drive-Kealahou Street corridor (see **Figure 4-1**).

The State's bikeway master plan proposes substantial additions to East Honolulu's bikeway system. Proposed bike lanes would extend from Kalanianaole Highway into Aina Haina, Niu Valley, Hahaione Valley, and Hawaii Kai. A bike route is proposed to be established along Kalanianaole Highway from Lunalilo Home Road to Kealahou Street, and along the future Hawaii Kai Drive section in Kamilonui Valley. **Table 4-2** provides details on existing and proposed bikeways in East Honolulu.

Figure 4-1
East Honolulu Bikeway System

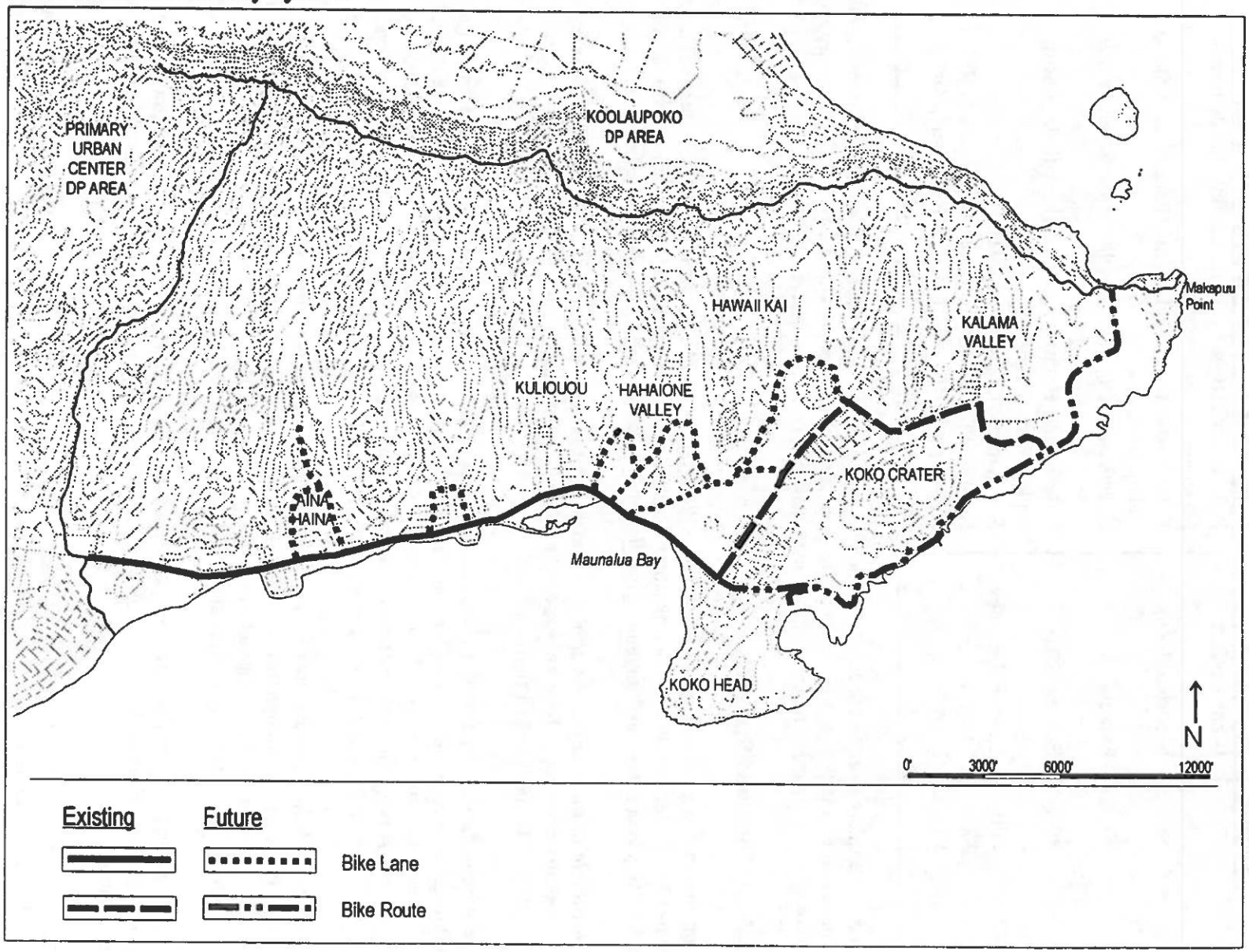

Table 4-2
East Honolulu Bikeways: Existing and Proposed

Description	Type	Length (miles)	Priority [1]
Kalanianaole Highway (Lunalilo Home Rd. to Kilauea Ave.)	Lane	5.6	Existing
Kealahou Street (Kalanianaole Hwy. to Hawaii Kai Dr.)	Route	0.8	Existing
Hawaii Kai Drive (Kealahou St. to Lunalilo Home Rd.)	Route	1.1	Existing
Lunalilo Home Road (Kalanianaole Hwy. To Hawaii Kai Dr.)	Route	1.8	Existing
Kawaihae Street (Kalanianaole Hwy. to Hawaii Kai Dr.)	Lane	0.9	2
Hawaii Kai Drive (Kawaihae St. to Wailua St.)	Lane	1.3	2
Keahole Street (Kalanianaole Hwy. to Hawaii Kai Dr.)	Lane	0.6	2
Wailua Street (Hawaii Kai Dr. to Lunalilo Home Rd.)	Lane	0.5	2
West Hind Drive/East Hind Drive	Lane	1.2	2
Hind Iuka Drive (E. Hind Dr. to Wailupe Valley School)	Lane	0.7	2
Halemaumau Street (Kalanianaole Hwy. to Kalanianaole Hwy.)	Lane	0.8	2
Hawaii Kai Drive (Kalanianaole Hwy. To Kawaihae St.)	Lane	0.4	2
Kalanianaole Highway (Lunalilo Home Rd. to Nawiliwili St.)	Lane	0.4	3
Kalanianaole Highway (Kealahou St. to Wailea St.)	Route	4.8	3
Hanauma Bay Road	Route	0.3	3
Kalanianaole Highway (Nawiliwili St. to Kealahou St.)	Route	2.8	3
Hawaii Kai Drive Extension (Kamilonui Valley area)	Route	1.4	3

[1] Priority 1 proposals have a timeframe of under 5 years; Priority 2 proposals have a timeframe of under 10 years; Priority 3 proposals have a timeframe of more than 10 years.

Source: Department of Transportation, Highways Division, Bike Plan Hawaii: A State of Hawaii Master Plan (April 1994).

4.1.4 GENERAL POLICIES

The following general policies support the vision for a multimodal transportation system in East Honolulu:

- To maintain East Honolulu's role as a predominantly residential urban fringe area with limited future growth, its transportation system should provide:
  - Adequate 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.
- Reduce reliance on the private passenger vehicle by promoting transportation system management (e.g., contraflow lane operations) and travel demand management (e.g., mass transit, carpool and vanpool programs) measures for both commuting and local trips.

4.1.5 PLANNING PRINCIPLES AND GUIDELINES

- ***Commuter Travel.*** For commuter trips, the objective is to minimize the impact of population growth on travel times.

- Provide improved services and facilities for express buses, such as more frequent, larger-capacity and more comfortable vehicles and expansion of improved park-and-ride facilities, including possible relocation and provision of compatible accessory uses.

- Promote ridesharing and vanpooling.

- Increase person-carrying capacity on Kalanianaole Highway for commuter travel without expanding rights-of-way or exacerbating delays in access to the highway from collector streets during peak periods.

- ***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 Hawaii Kai Drive in the Kamilonui 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 travelway widths or curb radii, pavement texture, introduce appropriate signage, and provide more generous landscaping.

  - Provide more convenient pedestrian paths within commercial and other high-activity areas (e.g., from the park-and-ride facility to the Hawaii Kai Towne Center) to encourage people to walk short distances for multipurpose trips instead of moving the vehicle to another parking facility.

  - Implement a pedestrian system around the Hawaii Kai Marina to improve accessibility to various waterfront locations (see Section 3.1.3.8).

  - 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.

4.2 WATER ALLOCATION AND SYSTEMS DEVELOPMENT

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 Hawaii Water Plan which addresses water conservation and supply issues on a statewide level by incorporating county water plans and water-related project plans.

The Oahu Water Management Plan (OWMP), signed into law in 1990, is the City and County of Honolulu's component of the Hawaii Water Plan. The OWMP sets forth strategies to guide the State Commission on Water Resource Management (CWRM) in planning and managing Oahu's water resources.

Based on CWRM's 1996 basal permitted uses on Oahu for about 340 million gallons per day (mgd), there is approximately 75 mgd[2] of untapped sustainable yield remaining in the islandwide groundwater supply to be developed.

[2] Accounts for interim flow standards.

In East Honolulu, municipal water is primarily supplied by the Board of Water Supply (BWS). In 1990, East Honolulu consumed 8.7 mgd of potable water, or about six percent of the islandwide total. According to the BWS, East Honolulu will need a total of approximately 10.0 mgd of potable water by the year 2020, an increase of about 1.3 mgd from 1990, in order to accommodate future residential and commercial growth.[1]

To meet future potable water demand, BWS has identified several potential well sites in the Waialae East and West aquifers which could provide sufficient water supply for East Honolulu. The Waialae West aquifer has a sustainable yield of 4 mgd of which 1.99 mgd is permitted. The Waialae East aquifer has a sustainable yield of 2 mgd of which 0.6 mgd is permitted. The balance of 3.41 mgd available supply consists of low yield, very expensive wells. For the short-term BWS will target those groundwater sites that are economically feasible to develop. Other management strategies identified in the OWMP include water conservation, groundwater development in outlying areas, surface water development, desalination, and water recycling.

BWS long-range plan is to develop new Windward water sources to serve Windward and East Honolulu users. This source development will allow redistribution of water presently pumped to East Honolulu from existing Pearl Harbor and Honolulu sources to accommodate future growth in the Primary Urban Center and other areas.

4.2.1 GENERAL POLICIES

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

- Integrate management of all potable and nonpotable water sources, including groundwater, stream water, storm water, and effluent, following State and City legislative mandates.

- Adopt and implement water conservation practices in the design of new developments and the modification of existing uses, including landscaped areas.

4.2.2 PLANNING PRINCIPLES AND GUIDELINES

- ***Development and Allocation of Potable Water***. While the State CWRM has final authority in all matters regarding administration of the State Water Code, the BWS should coordinate development of potable water sources and allocation of all potable water intended for urban use on Oahu. The BWS should certify that adequate potable and nonpotable water is available in order for a new residential or commercial development to be approved. State and private well development projects could then be integrated into and made consistent with City water source development plans.

- ***Water Conservation Measures***. Conserve the use of potable water by implementing the following measures, as feasible and appropriate:

  - Low-flush toilets, flow constrictors, and other water conserving devices in commercial and residential developments.

  - Indigenous, drought-tolerant plant material and drip irrigation systems in landscaped areas.

  - 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.

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[1] Wilson Okamoto & Associates. Oahu Water Management Plan, Initial Revision of Technical Reference Document (October 1996).

4.3 WASTEWATER TREATMENT

East Honolulu is divided into two wastewater service areas. The western portion of the region, from Kahala to Niu Valley, is part of the East Mamala 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 Kuliouou 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 has a design capacity of 82 mgd average flow and is operating at approximately 89 percent capacity. Some components of the collection system, including sewer lines and pump stations, are at or close to 100 percent capacity.[4] Between 1995 and 2020, the Department of Environmental Services (ENV) projects that nearly all of the increase in wastewater flow at the Sand Island WWTP will be from the Sand Island sewer shed. Wastewater flow generated in East Honolulu, specifically from the Kahala-Niu Valley sewer shed, currently comprises only a very small portion of the total flow to Sand Island and is projected to increase by less than three 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 Mamala Bay Final Wastewater Facilities Plan recommends a combination of increasing capacity and reducing flows via water conservation and rehabilitation projects.

Flows from Kuliouou Valley are currently pumped via the Kuliouou Wastewater Pump Station (WWPS) to the Hawaii Kai system under an existing agreement between the City and East Honolulu Community Services, the private company which owns and operates the Hawaii Kai system and the East Honolulu WWTP. The average daily flow from the Kuliouou WWPS is about 0.50 mgd and is not projected to increase over the next 25 years. The ENV is conducting an engineering study to evaluate the most cost-effective approach for future disposal of Kuliouou flows. A primary objective is to prevent wastewater spills and provide adequate collection and transmission capacity to accommodate projected high rainfall/peak flow conditions.

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 Kalanianaole 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 residential sources in the Hawaii Kai, Kuliouou, Paiko, and Portlock communities. Some wastewater is also received from commercial users around Koko Marina. The actual population served by the plant is approximately 37,000, or 81 percent of East Honolulu's 1990 population.

The East Honolulu WWTP is a partial-tertiary treatment facility. The plant's design capacity is 5.2 mgd with current flows at approximately 3.8 mgd. 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 a municipal landfill.

Under the State of Hawaii'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. At present, a 2 mgd filtration and disinfection facility has been built to produce R-1 rated recycled water for irrigation purposes. As

[4] Belt Collins Hawaii. "East Mamala Bay Final Wastewater Facilities Plan" (December 1993), p. 1-7.

of October 27, 1997, the State authorized the Hawaii Kai Golf Course to use this recycled water from the East Honolulu WWTP for irrigation.

4.3.3 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 which mitigate possible visual, noise, and odor impacts.

4.3.4 PLANNING PRINCIPLES AND 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 State's rules and guidelines for the treatment and use of recycled water.
- ***Private Operation of the East Honolulu WWTP***. The East Honolulu WWTP should remain under private operation under the regulatory supervision of the State Public Utilities Commission and Department of Health 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.
- ***Use of Buffer Zones and Landscape Elements***. Adequate horizontal separations and landscape elements (e.g., berms and windrows) should be provided between the East Honolulu WWTP and adjacent residential-designated areas. In order to mitigate negative impacts of the wastewater treatment plant, 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 POWER DEVELOPMENT

The 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 of the City and County of Honolulu directs significant residential growth to the Primary Urban Center, Ewa, and Central Oahu Development 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. Electrical power development is thus not a significant component of the East Honolulu Development Plan.

4.4.1 GENERAL POLICIES

The following general policy pertains to electrical power development in East Honolulu:

- Design system elements such as substations and transmission lines to avoid or mitigate any potential adverse impacts on scenic and natural resource values.

4.4.2 PLANNING PRINCIPLES AND GUIDELINES

- ***Facility Routing and Siting Analysis.*** If any new or relocated substations or transmission lines are necessary, the selection of the route or site of such facilities should avoid or mitigate any 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.

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 multifamily pickup). In addition, individuals can haul their own trash to one of six convenience centers around Oahu. 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 the Ewa region. The City's sanitary landfill is at Waimanalo Gulch, also in the Ewa region, and has a remaining site life to the year 2001 under existing load levels. The City has instituted recycling and other waste diversion programs in a effort to extend the useful life of this landfill.

In East Honolulu, there are presently no convenience centers where residents can dispose of large bulky items, although the Keehi Transfer Station will accept household rubbish and yard waste. For East Honolulu residents, the closest facilities for the disposal of bulky items are at Kapaa and Waimanalo. There are no plans to locate a convenience center, another transfer station, or a landfill operation in East Honolulu.

4.5.1 GENERAL POLICIES

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

- As waste management and technological innovations occur, East Honolulu can and should play a part in the City's long-term efforts to establish more efficient waste diversion and collection systems. However, since the region is not expected to contribute significantly to future increases in Oahu's solid waste management demands and does not contain sites suitable for the processing or disposal of solid waste on an islandwide scale, no short-term significant program changes are planned.

4.5.2 PLANNING PRINCIPLES AND GUIDELINES

- ***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.

4.6 DRAINAGE SYSTEMS

The streams which drain the valleys of East Honolulu include Waialae Iki Stream, Wiliwilinui Stream, Wailupe Stream, Niu Stream, and Kuliouou Stream. These streams begin in the Koolau 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 drainageways have been prone to flooding during more intense rainstorms. Niu Valley, Kuliouou Valley, and Hahaione 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. Along the Niu and Hahaione drainageways, 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 Kului Gulch.

In the area between Kamehame Ridge and the Hawaii Kai Golf Course, a 40-foot wide concrete channel alters the natural drainage pattern. Water collected from this area is carried along the drainageway which passes under Kalanianaole Highway and into Kailiili Inlet.

4.6.1 GENERAL POLICIES

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

- A comprehensive study of local flooding and drainage problems should be developed and should include a phased plan for improvements.
- Promote drainage system design which emphasizes control and minimization of nonpoint source pollution and the retention of storm water on-site and in wetlands.
- View storm water as a potential irregular source of water for recharge of the aquifer that should be retained for absorption rather than quickly moved to coastal waters.
- Select natural and man-made vegetated drainageways and retention basins as the preferred solution to drainage problems wherever they can promote water recharge, help control non-source pollutants, and provide passive recreation benefits.
- Keep drainageways clear of debris to avoid the flooding problems that have occurred in the past.

4.6.2 PLANNING PRINCIPLES

Principles to guide the maintenance and improvement of East Honolulu's drainage systems include:

- ***Retention and Detention***. Emphasize retaining or detaining storm water for gradual release into the ground as the preferred strategy for management of storm water. Also, large-capacity boulder and debris basins in upper valleys above urbanized areas should be properly maintained in order to prevent the blocking of downstream channels during major storm events.
- ***Stream Channel Improvements***. To the extent possible, integrate planned improvements to the drainage system into the regional open space network by emphasizing the use of retention basins, creation of passive recreational areas, and recreational access for pedestrians and bicycles without jeopardizing public safety. In places where the hardening of stream channels is unavoidable or highly desirable to prevent significant loss of property or threat to public health and safety, as in the case of Wailupe Stream, the improvements should be designed and made 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 3.1.3.3.

4.7 SCHOOL FACILITIES

Public schools in East Honolulu are part of the Department of Education's (DOE) Honolulu District. There are eight elementary schools in East Honolulu, one intermediate school (Niu Valley Intermediate), and two high schools (Kalani High School and Kaiser High School).

Recent enrollment figures for these schools show that they are operating under capacity (see **Table 4-3**). For this reason, the DOE does not have plans for new school construction in East Honolulu. Additional demand generated by any 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.

Table 4-3
Public School Enrollment, 1995

Facility	Enrollment	Capacity
Elementary		
Aina Haina	490	700
Hahaione	560	800
Koko Head	380	800
Wailupe Valley	170	280
Kamiloiki	580	630
Intermediate		
Niu Valley	530	910
High School		
Kalani	1,120	1,450
Kaiser	1,100	1,300

Source: Department of Education, Facilities and Support Services Branch (1996).

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.

There are also several independent schools in East Honolulu, listed in **Table 4-4**, 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. The scale and location of existing campuses are generally compatible with the predominate residential character of the region.

Table 4-4
Private School Enrollment, 1994

Facility	K-8	9-12
Holy Nativity School	120	0
Holy Trinity School	140	0
Honolulu Waldorf School	210	10
Koko Head Prep & Tech	0	30
Star of the Sea Early Learning Center	50	0

Facility	K-8	9-12
Star of the Sea Elementary	350	0

Source: Department of Education, Public and Private School Enrollment.

4.7.1 GENERAL POLICIES

General policies relating to school facilities are listed below:

- Approve new residential developments only after the State Department of Education certifies that adequate school facilities, either at existing schools or at new school sites, will be available when the development is completed.

- Have developers 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 PRINCIPLES AND GUIDELINES

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

- ***Adaptive Reuse***. 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.

  Therefore, the existing inventory of school facilities should be maintained. 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.

- ***Shared Facilities***. The Department of Parks and Recreation should coordinate with the DOE 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). Moreover, the DOE should coordinate the structural design of school buildings with the Oahu Civil Defense agency so that these facilities may be used as public hurricane shelters.

- ***Fair Share Contribution***. The City should support the DOE's requests for fair share contributions from developers of residential projects to ensure that adequate school facilities are in place at existing schools to meet the needs of residents.

- ***New Facilities***. If a new public or private school campus or a significant increase in enrollment capacity at one of the existing campuses is proposed, the guidelines for institutions in Section 3.6.4 should apply.

4.8 CIVIC AND PUBLIC SAFETY FACILITIES

The City and County of Honolulu operates 19 Satellite City Halls islandwide. These facilities offer many basic services for residents, including bus pass sales, bicycle registration, and driver's license renewals. There are no permanent Satellite City Hall facilities in East Honolulu. However, this area is served by a mobile Satellite City

Hall which is parked at the Koko Marina Shopping Center. Consideration could be given to leasing a space in one of Hawaii Kai's shopping centers to establish a permanent presence.

The Honolulu Police Department (HPD) services East Honolulu out of the Main station on Beretania Street. Currently, 160 staff and officers are assigned to the area from Punahou Street to Makapuu. HPD is now in the planning stages for a new station in Aina Haina. The facility would be located on City-owned land behind Aina Haina Elementary School.

The Honolulu Fire Department (HFD) operates fire stations in Hawaii Kai and Wailupe. The Hawaii Kai station is equipped with five-person engine and ladder trucks and a rescue boat. The Wailupe station has a five-person engine. In addition, parts of the Kahala area are also served by the Kaimuki station. 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. However, additional land area to provide for adequate new facility/ambulance space will be needed for the EMS crew collocated at the Hawaii Kai Fire Station in the near future. Also, as regional recreational activities along this eastern corridor of Oahu increase, emergency medical services may need to be reevaluated.

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 service and protection of public safety.

4.8.2 PLANNING PRINCIPLES AND GUIDELINES

These principles and guidelines are intended to carry out the above policy.

- ***Satellite City Hall***. Establish a permanent Satellite City Hall in East Honolulu, preferably within the Regional Town Center to reinforce this area as a regional focal point or gathering spot for activities and services.

- ***Maintain Police and Fire/Ambulance Stations***. After the proposed new police station at Aina Haina is completed, a permanent base of operations for the eastern sector of Oahu will be established. As future needs arise, the development of a substation (collocated with other emergency medical and transportation services) along an entry to Hawaii Kai, may warrant consideration to more effectively and quickly respond with public safety and medical services.

- ***Adequate Police and Fire/Ambulance Protection***. Approve new development only if adequate staffing and facilities for fire/ambulance and police protection will be provided.

5. IMPLEMENTATION

Implementation of the East Honolulu *Sustainable* Communities Plan will be a challenge for the City's planners, engineers, other technical and policy level personnel as well as elected officials who determine the allocation of City resources. In contrast to its predecessor development plan, which functioned primarily as a regulatory guide and prerequisite for City zoning of parcels proposed for development, the East Honolulu *Sustainable* Communities Plan is oriented toward implementation on a broader scale. It now seeks to implement a vision for the future by

providing wider guidance for decisions and actions related to land use, public facilities, and infrastructure, as well as for zoning matters. As a result, its provisions reflect the consultations with pertinent implementing agencies and community input which occurred throughout the planning process.

Many counties, cities and other local jurisdictions on the U.S. mainland have instituted comprehensive planning programs that emphasize proactive, community-based planning and implementation processes. These local governments have sought to establish a strong link between the planning policies and guidelines, and the specific organization, funding and actions needed to implement a variety of public and private projects and programs. The following sections are intended to strengthen the linkage to implementation to realize the vision for the future articulated in this Plan.

Implementation of the East Honolulu *Sustainable* Communities Plan will be accomplished by:

- Initiating zoning map and development code amendments to achieve consistency with the policies, principles, and guidelines of the *Sustainable* Communities Plan;
- Guiding public investment in infrastructure through functional plans which support the vision of the *Sustainable* Communities Plan;
- Recommending approval, approval with modifications or denial of developments seeking zoning and other development approvals based on how well they support the vision for East Honolulu's development;
- Incorporating *Sustainable* Communities Plan priorities through the Public Infrastructure Map and the City's annual budget process;
- Evaluating progress in fulfilling the vision of the East Honolulu *Sustainable* Communities Plan every two years and presenting the results of the evaluation in the Biennial Report; and
- Conducting a review of the vision, policies, principles, guidelines, and CIP priority investments of the East Honolulu *Sustainable* Communities Plan every five 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 Koko Head-Makapuu Head area, provision of adequate public access to the shoreline and mountain areas, provision of pedestrian, bicycle, and other transportation options, and establishment of a permanent Satellite City Hall.

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 *Sustainable* Communities Plan vision, general policies, and planning principles;
- Involve applications for zoning and other regulatory approvals which are consistent with the *Sustainable* Communities Plan vision, general policies, and planning principles; and

- 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, principles, 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 of 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.

The 354-acre Ka Iwi scenic shoreline and the park on the Golf Course 5 and 6 sites mauka of Kalanianaole Highway in the Koko Crater-Makapuu Head area are identified for Special Area Plan status. 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 master plan for the Ka Iwi scenic shoreline, prepared by the State Department of Land and Natural Resources, should be used as the basis for the Special Area Plan. The master plan for the Golf Course 5 and 6 sites, to be prepared by the Department of Parks and Recreation, should reflect uses and site development consistent with the intent to preserve the scenic qualities of this area. Land use and infrastructure policies, principles, and guidelines and other relevant sections from the Ka Iwi Special Area Plan should be submitted to the Planning Commission for public review and to the City Council for its consideration for adoption.

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 *Sustainable* Communities 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 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 *Sustainable* Communities Plan as well as to provide adequate opportunity for coordination of plans and programs among the various agencies.

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. A "resource-constrained" program is one which 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 top priorities for areas designated for earliest development.

- Service and facility design standards, including level of service guidelines for determining 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 Oahu Metropolitan Planning Organization.

Functional planning is intended to be a proactive public involvement process which 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 *Sustainable* Communities 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 Capital Improvement Program and public policy proposals which 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 East Honolulu *Sustainable* Communities Plan will guide land use will be through the review of applications for zone changes and other development approvals. Approval for all development projects should be based on the extent to which the project supports the policies, principles, and guidelines of the *Sustainable* Communities Plan.

Projects which do not involve significant zone changes will be reviewed by the Department of Planning and Permitting for consistency with the policies, principles, and guidelines of the East Honolulu *Sustainable* Communities Plan during the Zone Change Application process. Those projects requiring environmental assessments will follow the provisions of Hawaii Revised Statutes, Chapter 343.

Projects involving significant zone changes will require an Environmental Assessment. This is submitted to the Department of Planning and Permitting for review prior to initiation of the first Zone Change Application.

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 the project with the East Honolulu *Sustainable* Communities Plan vision, 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 should be included in the Unilateral Agreement or Development Agreement to insure adequacy of facilities.

5.6 FIVE-YEAR DEVELOPMENT PLAN REVIEW

The Department of Planning and Permitting shall conduct a comprehensive review of the East Honolulu *Sustainable* Communities Plan and shall report its findings and recommended revisions to the Planning Commission and the City Council five years after adoption and every five years thereafter. It is intended the Urban Community, Agriculture and Preservation boundaries will remain fixed through the 2020 planning horizon; therefore, those boundaries will not be considered during the Five-Year reviews.

In the Five-Year review, the East Honolulu *Sustainable* Communities Plan will be evaluated to see if the regional vision, policies, principles, guidelines, and implementing actions are still appropriate.

5.7 TRANSITION FROM THE CURRENT SYSTEM

This section discusses the transition from the former Development Plan to this *Sustainable* Communities Plan, including its independence from Development Plan Common Provisions, its relationship to the General Plan guidelines, and the need for review and revision of development codes, standards, and regulations.

5.7.1 DEVELOPMENT PLAN COMMON PROVISIONS AND EXISTING LAND USE APPROVALS

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

Land use approvals granted under existing zoning, Unilateral Agreements, and approved Urban Design Plans will remain in force and guide entitlement decisions until any zoning action to further implement the vision and policies of the East Honolulu *Sustainable* Communities Plan is initiated. If an Environmental Assessment or Environmental Impact Statement (EA/EIS) was accepted in the course of a land use approval for a project, it should be acceptable to meet the requirement for an initial project EA/EIS when zone change applications are submitted for subsequent phases of the project unless the project scope and land uses are being significantly changed from that described in the initial EA/EIS.

5.7.2 RELATION TO GENERAL PLAN POPULATION GUIDELINES

The East Honolulu *Sustainable* Communities Plan implements the General Plan population policies (in Population Objective C) as follows:

- Total potential population in the East Honolulu *Sustainable* Communities Plan Area will account for 4.6 percent to 5.5 percent of Oahu's total population in 2010. This relatively small share of the islandwide

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 encourage development within the Secondary Urban Center at Kapolei and the urban fringe areas of Ewa and Central Oahu.

- East Honolulu's total potential share of islandwide population in 2010 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 share for East Honolulu according to Population Objective C, Policy 4, ranges from 5.3 percent to 5.8 percent, which is consistent with the projected population.

The General Plan population distribution guidelines will continue to be used as a guide to direct the pattern of growth and development in the East Honolulu *Sustainable* Communities Plan Area. Assessments of this performance will be reported in both the Biennial Report and in the Five-Year Review of the *Sustainable* Communities Plan.

Under the new East Honolulu *Sustainable* Communities Plan, projects will be evaluated against how well they fulfill the vision for East Honolulu set forth in the *Sustainable* Communities Plan and how closely they meet the policies, principles, and guidelines selected to implement that vision.

5.7.3 REVIEW AND REVISION OF DEVELOPMENT CODES

Upon completion of the revision of all of Oahu's development plans, 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 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 East Honolulu *Sustainable* Communities Plan:

- ***Land Use Ordinance.*** (Chapter 21, Revised Ordinances of Honolulu). Zoning code standards and the zoning map for East Honolulu need to be revised to further implement the policies, principles, and guidelines in the *Sustainable* Communities Plan.

- ***Subdivision Rules and Regulations.*** (Department of Land Utilization, pursuant to Chapter 22, Revised Ordinances of Honolulu). Public right-of-way standards used for subdivision and consolidation of land need to be revised to reflect transportation policies, principles, and guidelines in the *Sustainable* Communities Plan.

- ***Traffic Standard Manual.*** (Department of Transportation Services, July 1976, as revised). Standards which are applied to local and most collector streets need to be revised to reflect transportation policies, principles, and guidelines in the *Sustainable* Communities Plan.

- ***State Highways Division Procedures Manual***, Vol. 8, Chapter 5, Section 4 (State Department of Transportation). These State highway standards need to be reviewed to identify provisions which may conflict with the transportation policies, principles, and guidelines in the *Sustainable* Communities Plan.

- ***Standard Details for Public Works Construction*** (Honolulu Department of Public Works with Kauai, Maui, and Hawaii County Departments of Public Works, September 1984). Engineering standards for the dedication of public works construction need to be revised to reflect *Sustainable* Communities Plan principles and guidelines.

- ***Storm Drainage Standards*** (Department of Public Works, March 1986). Standards for the dedication of drainage systems to incorporate retention basins and the use of v-shaped bottom channels, rip-rap boulder lining of stream banks, and streamside vegetation into the design need to be created to further implement the *Sustainable* Communities Plan policies, principles, and guidelines for open space.

- ***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 Management Design Standards*** (Department of Wastewater Management Design Standards, Volumes I and II) and the 1990 Revised Ordinances of Honolulu, Chapter 14 (relating to sewer services). These standards and ordinances may require review to further implement *Sustainable* Communities Plan policies and guidelines.

APPENDIX A: CONCEPTUAL MAPS

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

Map A-1: Open Space
Map A-2: Urban Land Use
Map A-3: Public Facilities

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 examining these maps the reader should keep in mind that:

1. These maps are intended to be general and conceptual; and

2. They are intended to be illustrative of the plan's policy statements.

The plan's textual policy statements, which appear within the body of the plan, are considered to be the most important elements of the plan. The maps are provided merely as illustrations of those policies. If there are any conflicts between the maps and the text of the plan, the text shall prevail.

Each of these three maps depicts the three boundary areas found in East Honolulu. The intention and extent of each boundary are briefly described below, followed by capsulized descriptions of each of the three maps.

A.1 URBAN COMMUNITY BOUNDARY

The Urban Community Boundary (UCB) is intended to define and contain the extent of developed or "built-up" areas of East Honolulu's urban fringe communities. Its purpose is to provide an adequate supply of land to support the region's established suburban communities while protecting lands outside the boundary for agricultural and open space preservation values. Areas within the UCB are generally characterized by extensive tracts of residential or commercial development clearly distinguishable from the undeveloped or more "natural" portion's of the region.

In East Honolulu, the UCB is generally coterminous with the State Urban District boundary, but excludes the following areas of the State Urban District:

- Areas that are committed to agricultural use by long-term leases (i.e., the farm lot subdivisions in Kamilonui Valley and adjacent to Kaiser High School);
- Undeveloped areas in Kamilonui Valley that are adjacent to existing agricultural uses;
- 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; and
- Significant undeveloped Urban District land areas that are identified as suspect areas for land movement.

A.2 AGRICULTURE BOUNDARY

The Agriculture Boundary is established to protect the region's agricultural lands for their economic and open space values. The primary use of all lands within the Agriculture Boundary must be agriculture or directly supportive of the agriculture industry.

Two areas in Hawaii Kai are placed within the Agriculture Boundary to recognize agricultural lots whose lease terms extend beyond 2020 (i.e., the farm lot subdivisions in Kamilonui Valley and adjacent to Kaiser High School). In addition, undeveloped areas in Kamilonui Valley which are adjacent to existing agricultural uses are placed within the Agriculture Boundary. Preventing the encroachment of suburban residential development within and surrounding the existing subdivisions supports active use of these lots for agricultural purposes.

A.3 PRESERVATION BOUNDARY

The Preservation Boundary is established 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 wildlife habitat, archaeological or historic sites, significant landforms or landscapes over which significant views are available, and development-related hazard areas.

The Preservation Boundary generally circumscribes 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 tidepools 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 community 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, and lands 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 or city parks outside the Urban Community Boundary; or

- 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.

The Preservation Boundary excludes such features, sites or areas located within the Urban Community or Agriculture boundaries.

A.4 MAP A-1: OPEN SPACE

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 Hawaii Kai marina, important "panoramic" views, 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.

A.5 MAP A-2: URBAN LAND USE

Map A-2 illustrates the desired long-range urban land use pattern for East Honolulu, i.e., the land use pattern that will be realized through implementation of the East Honolulu *Sustainable* Communities Plan. The map illustrates the following plan elements within the Urban Community Boundary:

- *Residential and Low-Density Apartment.* These uses are depicted as a single tone 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. It is intended that "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 multifamily residential projects. In East Honolulu, it is intended that this designation will be applied only to areas developed consistent with this pattern as of the effective date of the East Honolulu *Sustainable* Communities Plan.[1]

- *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 Hawaii Kai Marina: Hawaii Kai Shopping Center, Hawaii Kai Towne Center, and Koko Marina Shopping Center. These centers are depicted as red shapes.

- *Resort.* The region's only resort use, the Kahala Mandarin Hotel, is depicted as a pink shape.

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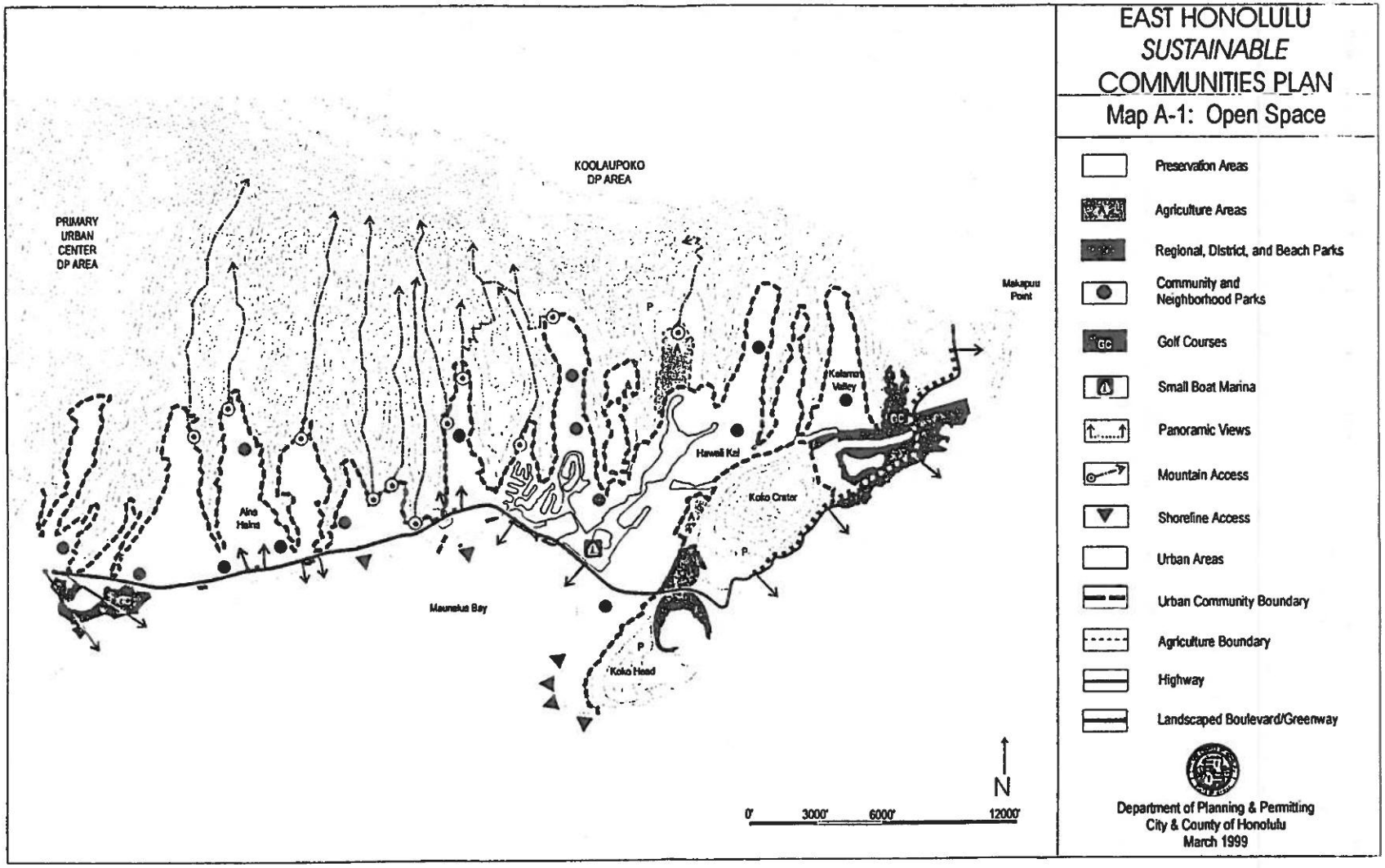
[1]**Editor's Note:** "The effective date of the East Honolulu Sustainable Communities Plan" is July 27, 1999.

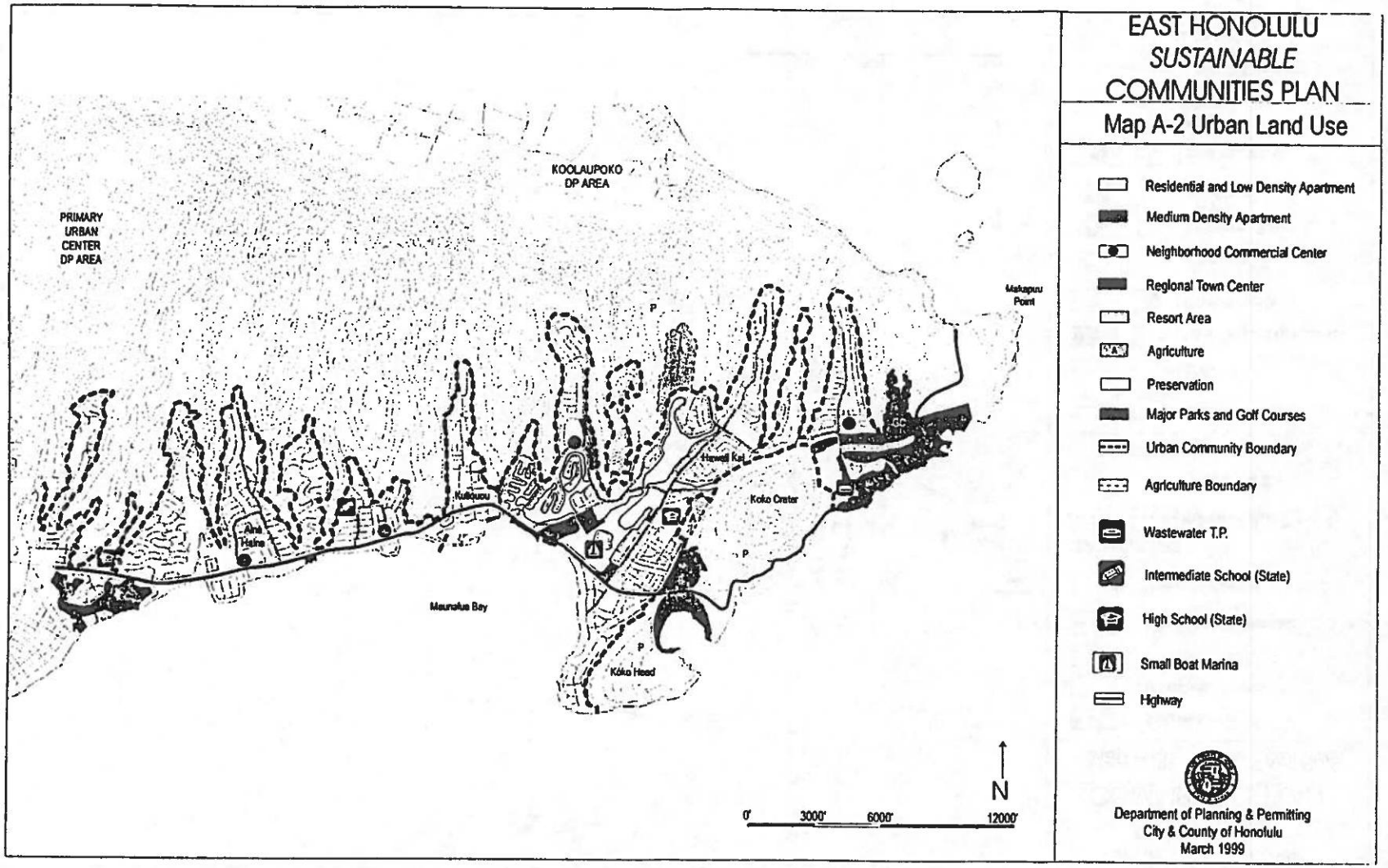
- *Public Facilities.* The wastewater treatment plant and the public intermediate and high schools are depicted with appropriate symbols, and shown primarily to provide points of orientation.

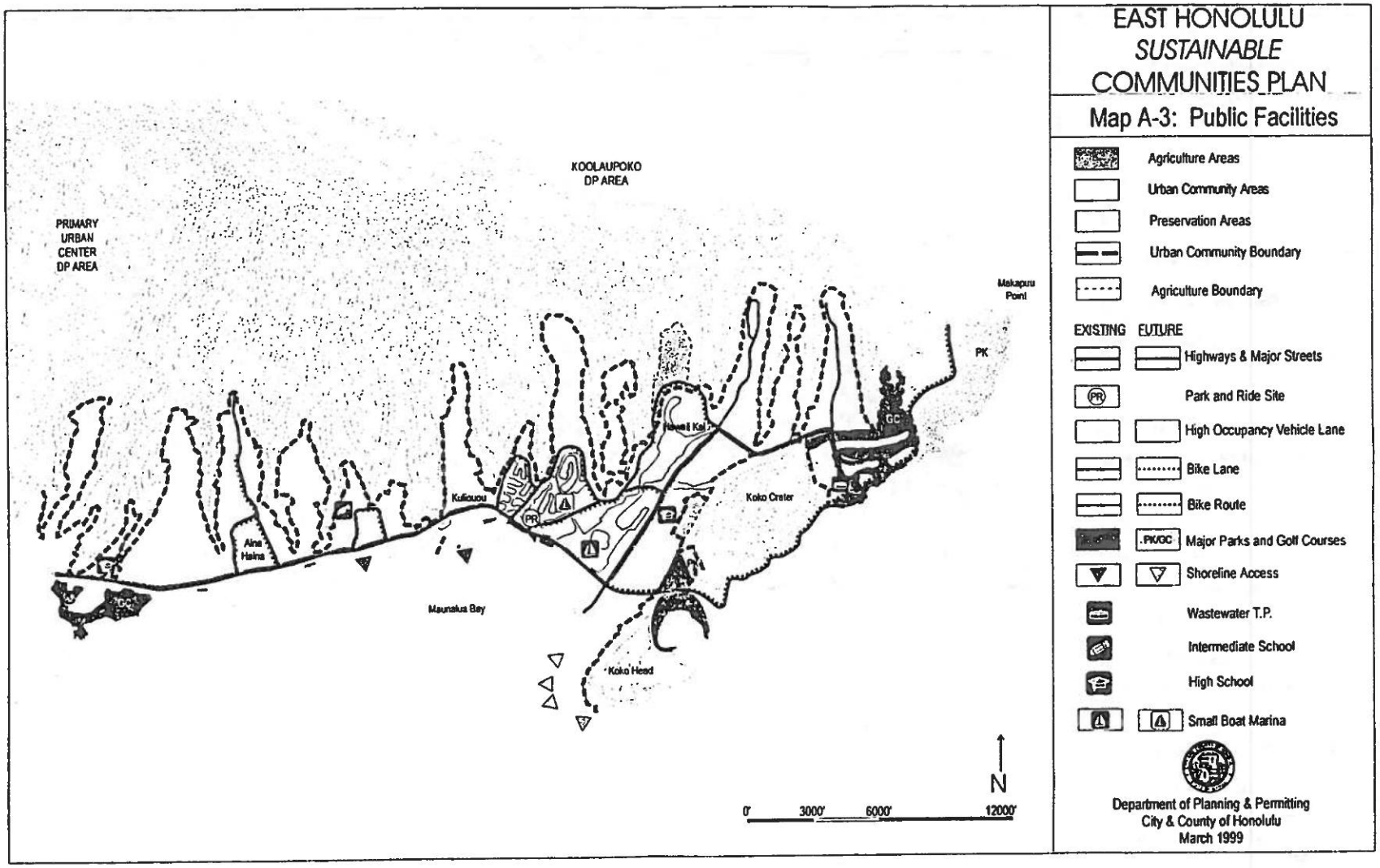
In addition, this map depicts the Hawaii Kai marina as a series of connected light blue shapes.

A.6 MAP A-3: PUBLIC FACILITIES

Map A-3 illustrates major existing and future public facilities and major privately owned facilities including the golf course at the Waialae Country Club. Its purpose is to display the public resources or assets available within the region.

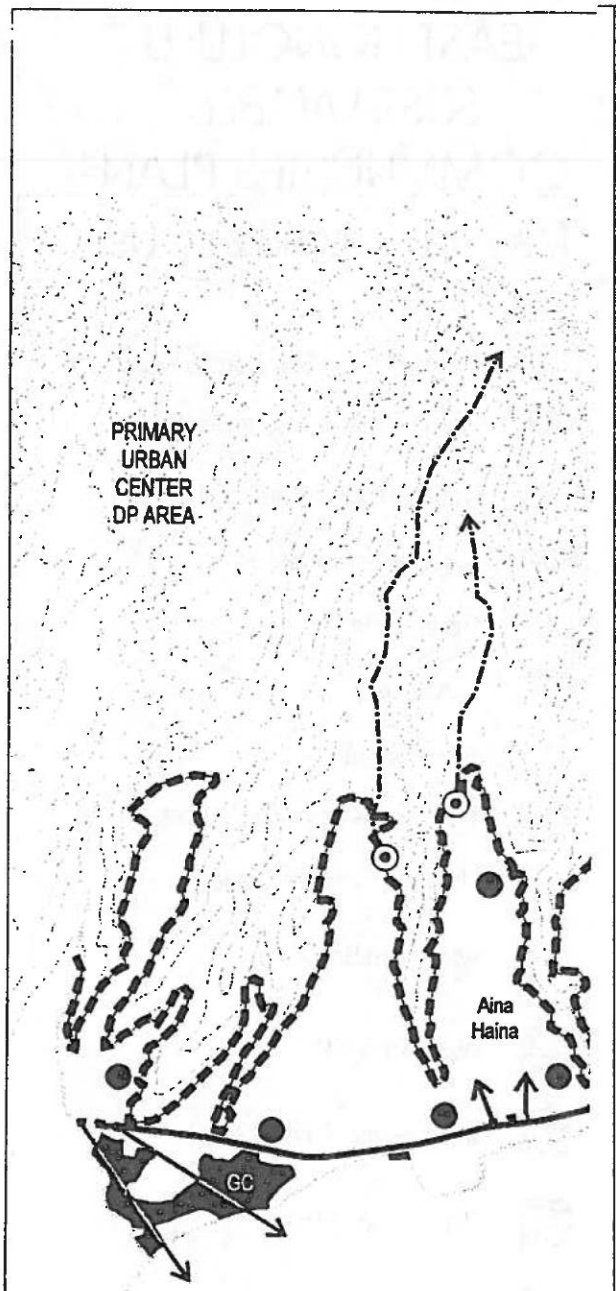

EAST HONOLULU
SUSTAINABLE
COMMUNITIES PLAN
Map A-1: Open Space
Preservation Areas
Agriculture Areas
Regional, District, and Beach Parks
Community and Neighborhood Parks
Golf Courses
Small Boat Marina
Panoramic Views
Mountain Access
Shoreline Access
Urban Areas
Urban Community Boundary
Agriculture Boundary
Highway
Landscaped Boulevard/Greenway
Department of Planning & Permitting
City & County of Honolulu
March 1999
KOOLAUPOKO DP AREA
PRIMARY URBAN CENTER DP AREA
Makapuu Point
Kalama Valley
Hawaii Kai
Koko Crater
Aina Haina
Maunalua Bay
Koko Head
N
0'
3000'
6000'
12000'


EAST HONOLULU
SUSTAINABLE
COMMUNITIES PLAN
Map A-2 Urban Land Use
Residential and Low Density Apartment
Medium Density Apartment
Neighborhood Commercial Center
Regional Town Center
Resort Area
Agriculture
Preservation
Major Parks and Golf Courses
Urban Community Boundary
Agriculture Boundary
Wastewater T.P.
Intermediate School (State)
High School (State)
Small Boat Marina
Highway
Department of Planning & Permitting
City & County of Honolulu
March 1999
KOOLAUPOKO
DP AREA
PRIMARY
URBAN
CENTER
DP AREA
Makapuu
Point
Kuliouou
Ana
Haina
Maunalua Bay
Koko Crater
Koko Head
N
0'
3000'
6000'
12000'


EAST HONOLULU
SUSTAINABLE
COMMUNITIES PLAN
Map A-3: Public Facilities
Agriculture Areas
Urban Community Areas
Preservation Areas
Urban Community Boundary
Agriculture Boundary
EXISTING
FUTURE
Highways & Major Streets
Park and Ride Site
High Occupancy Vehicle Lane
Bike Lane
Bike Route
Major Parks and Golf Courses
Shoreline Access
Wastewater T.P.
Intermediate School
High School
Small Boat Marina
Department of Planning & Permitting
City & County of Honolulu
March 1999
KOOLAUPOKO
DP AREA
PRIMARY
URBAN
CENTER
DP AREA
Makapuu
Point
PK
GC
Hawaii Kai
Koko Crater
Kuliouou
PR
Aina
Haina
Maunalua Bay
Koko Head
N
0'
3000'
6000'
12000'

EAST HONOLULU *SUSTAINABLE* COMMUNITIES PLAN

Map A-1: Open Space



- Preservation Areas
- Agriculture Areas
- Regional, District, and Beach Parks
- Community and Neighborhood Parks
- Golf Courses
- Small Boat Marina
- Panoramic Views
- Mountain Access
- Shoreline Access
- Urban Areas
- Urban Community Boundary
- Agriculture Boundary
- Highway
- Landscaped Boulevard/Greenway

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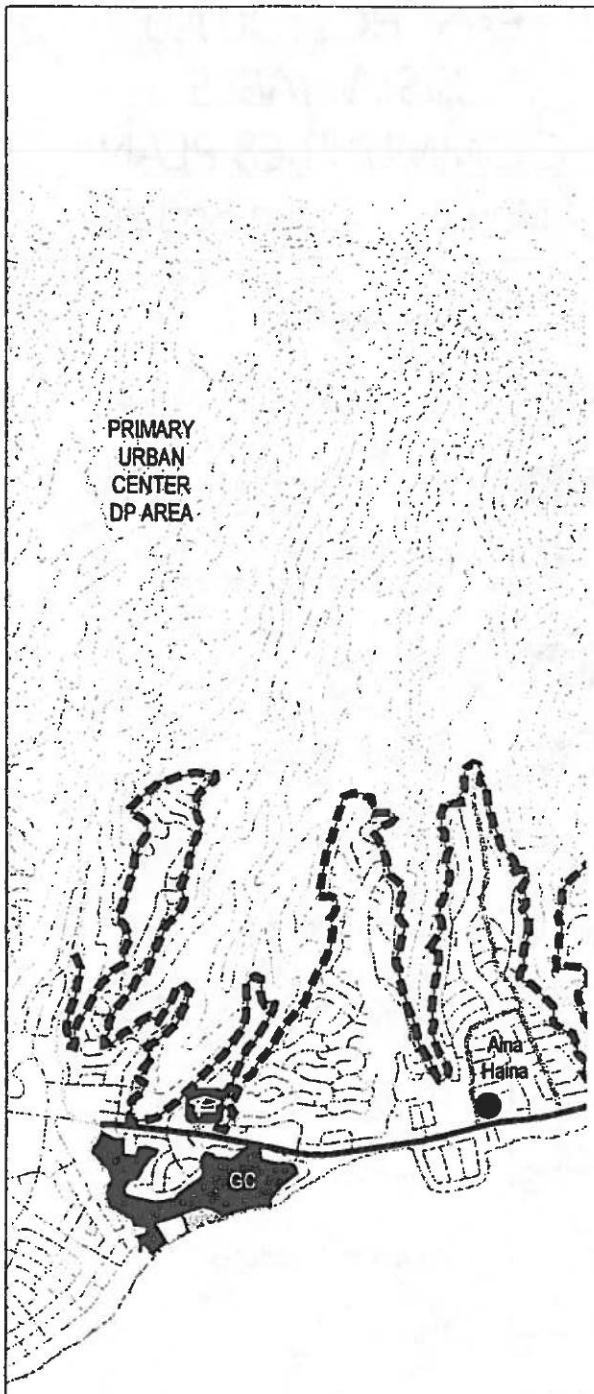
EAST HONOLULU *SUSTAINABLE* COMMUNITIES PLAN

Map A-2 Urban Land Use



- Residential and Low Density Apartment
- Medium Density Apartment
- Neighborhood Commercial Center
- Regional Town Center
- Resort Area
- Agriculture
- Preservation
- Major Parks and Golf Courses
- Urban Community Boundary
- Agriculture Boundary
- Wastewater T.P.
- Intermediate School (State)
- High School (State)
- Small Boat Marina
- Highway

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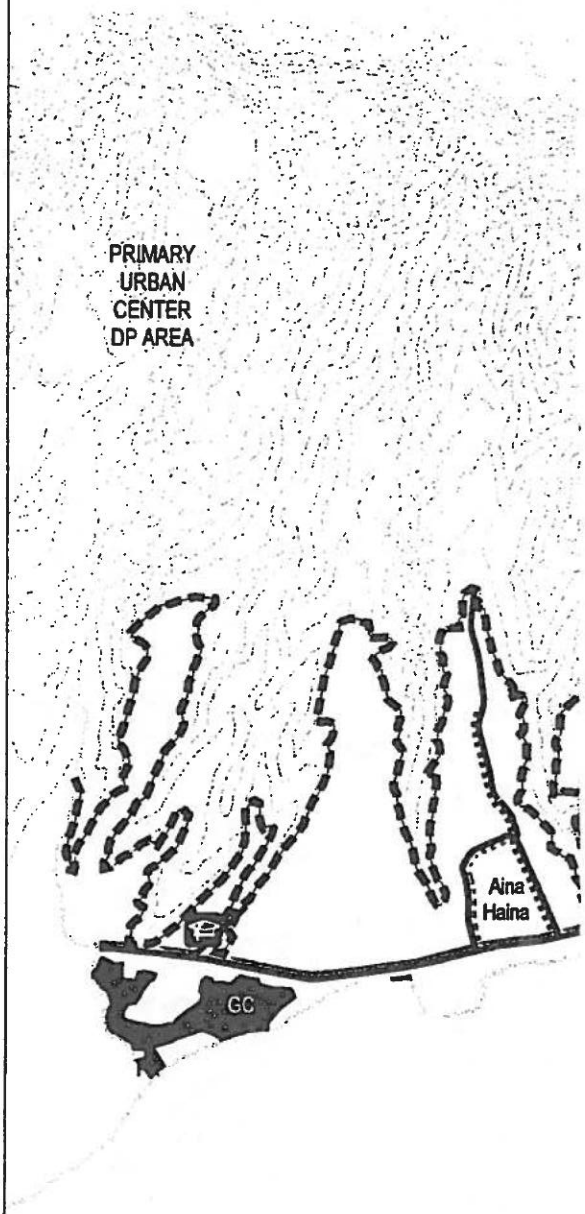
EAST HONOLULU *SUSTAINABLE* COMMUNITIES PLAN

Map A-3: Public Facilities



Agriculture Areas

Urban Community Areas

Preservation Areas

Urban Community Boundary

Agriculture Boundary

EXISTING FUTURE

Highways & Major Streets

Park and Ride Site

High Occupancy Vehicle Lane

Bike Lane

Bike Route

Major Parks and Golf Courses

Shoreline Access

Wastewater T.P.

Intermediate School

High School

Small Boat Marina

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