

#### **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 Kalanianaʻole 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 Kalanianaʻole 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 Kalanianaʻole 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 Maunaloa 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 non-home-based trips and trips made by visitors.<sup>1</sup>

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**

<b>Route Number</b>	<b>Route Type</b>	<b>General Service Area Within East Honolulu</b>
1	Urban Trunk	Kalaniana'ole Highway; Aina Haina; Hahaione Valley; Lunalilo Home Road
21	Urban Collector	Waialae Iki/Waialae Nui
22	Urban Collector	Kalaniana'ole Highway; Hanauma Bay; Sandy Beach; Makapuu
58	Suburban Trunk	Kalaniana'ole Highway; Lunalilo Home Road; Kalama Valley; Makapuu
80	Express	Kalaniana'ole Highway; Lunalilo Home Road; Park & Ride
80A	Express (UH)	Kalaniana'ole Highway; Lunalilo Home Road; Kalama Valley; Park & Ride
80B	Express (Downtown)	Kalaniana'ole Highway; Aina Haina
82	Express	Kalaniana'ole Highway; Kalama Valley; Park & Ride
95	Express	Kalaniana'ole 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.

<sup>1</sup> Barton-Aschman Associates, Inc. Comprehensive Operations Analysis of TheBus System (August 1993), p. 1-3 to 1-4.

### 4.1.3 BIKEWAY SYSTEM

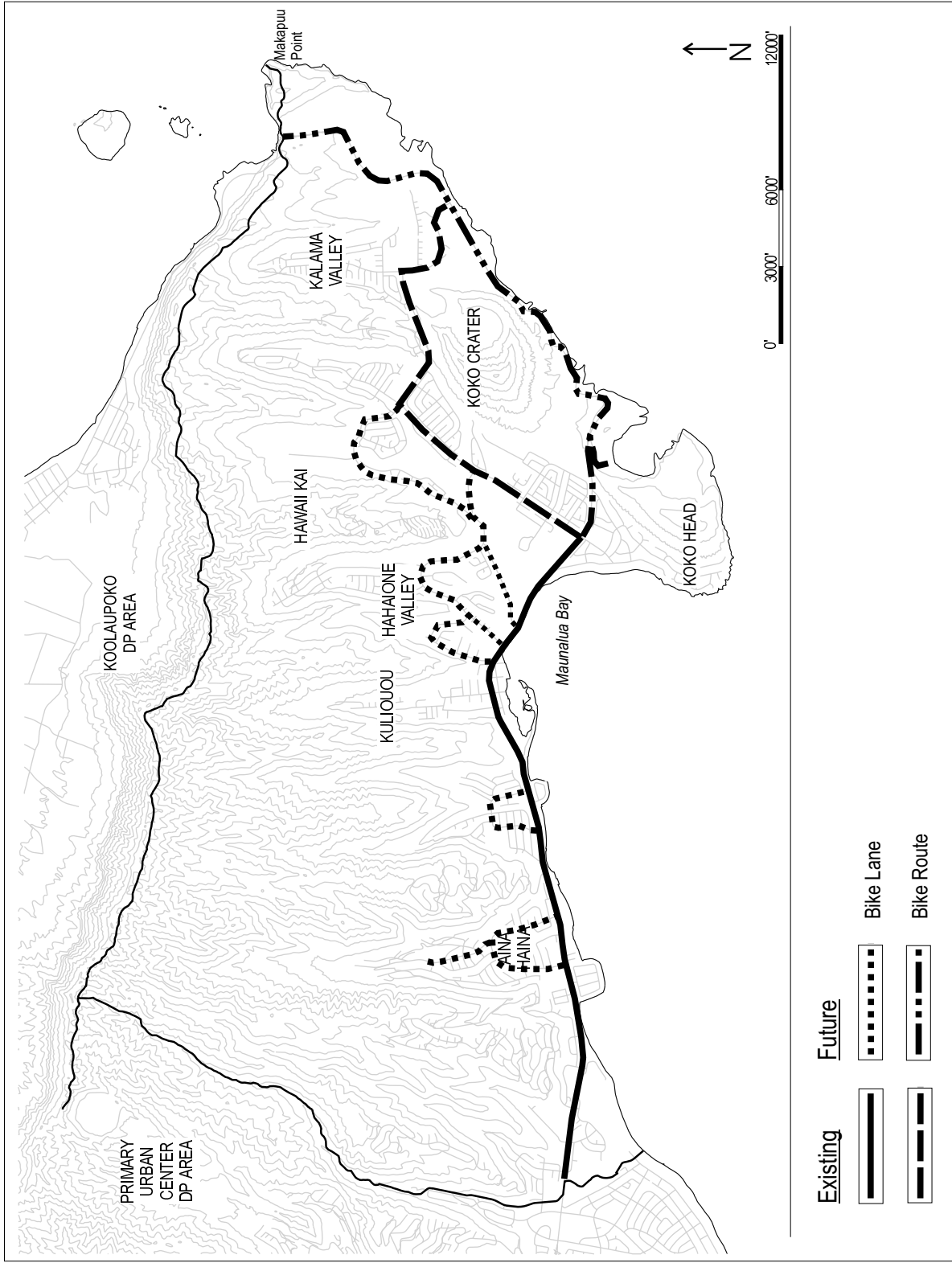
Oahu has 55.4 miles of existing bikeways. Bike Plan Hawaii (1994), a State master plan for bikeways, proposes another 293.1 miles islandwide. The timetable for development will depend upon construction feasibility (including right-of-way acquisition) and funding. Bike Plan Hawaii defines the various 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 Kalanianaʻole 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 Kalanianaʻole Highway into Aina Haina, Niu Valley, Hahaione Valley, and Hawaii Kai. A bike route is proposed to be established along Kalanianaʻole 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**

<b>Description</b>	<b>Type</b>	<b>Length (miles)</b>	<b>Priority<sup>1</sup></b>
Kalaniana'ole Highway (Lunalilo Home Rd. to Kilauea Ave.)	Lane	5.6	Existing
Kealahou Street (Kalaniana'ole 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 (Kalaniana'ole Hwy. To Hawaii Kai Dr.)	Route	1.8	Existing
Kawaihae Street (Kalaniana'ole Hwy. to Hawaii Kai Dr.)	Lane	0.9	2
Hawaii Kai Drive (Kawaihae St. to Wailua St.)	Lane	1.3	2
Keahole Street (Kalaniana'ole 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 (Kalaniana'ole Hwy. to Kalaniana'ole Hwy.)	Lane	0.8	2
Hawaii Kai Drive (Kalaniana'ole Hwy. To Kawaihae St.)	Lane	0.4	2
Kalaniana'ole Highway (Lunalilo Home Rd. to Nawiliwili St.)	Lane	0.4	3
Kalaniana'ole Highway (Kealahou St. to Wailea St.)	Route	4.8	3
Hanauma Bay Road	Route	0.3	3
Kalaniana'ole Highway (Nawiliwili St. to Kealahou St.)	Route	2.8	3
Hawaii Kai Drive Extension (Kamilonui Valley area)	Route	1.4	3

<sup>1</sup> 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 multi-modal 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 Kalanianaʻole 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 multi-purpose 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<sup>2</sup> of untapped sustainable yield remaining in the islandwide groundwater supply to be developed.

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.<sup>3</sup>

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.

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<sup>2</sup> Accounts for interim flow standards.

<sup>3</sup> Wilson Okamoto & Associates. Oahu Water Management Plan, Initial Revision of Technical Reference Document (October 1996).

#### 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.

#### 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.<sup>4</sup> 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.

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<sup>4</sup>Belt Collins Hawaii. "East Mamala Bay Final Wastewater Facilities Plan" (December 1993), p. 1-7.

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 Kalanianaʻole 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 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 sub-stations 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 multi-family 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 Kalaniana'ole 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 non-point 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.

Facility	Enrollment	Capacity
<b>Elementary</b>		
Aina Haina	490	700
Hahaione	560	800
Koko Head	380	800
Wailupe Valley	170	280
Kamiloiki	580	630
<b>Intermediate</b>		
Niu Valley	530	910
<b>High School</b>		
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
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.