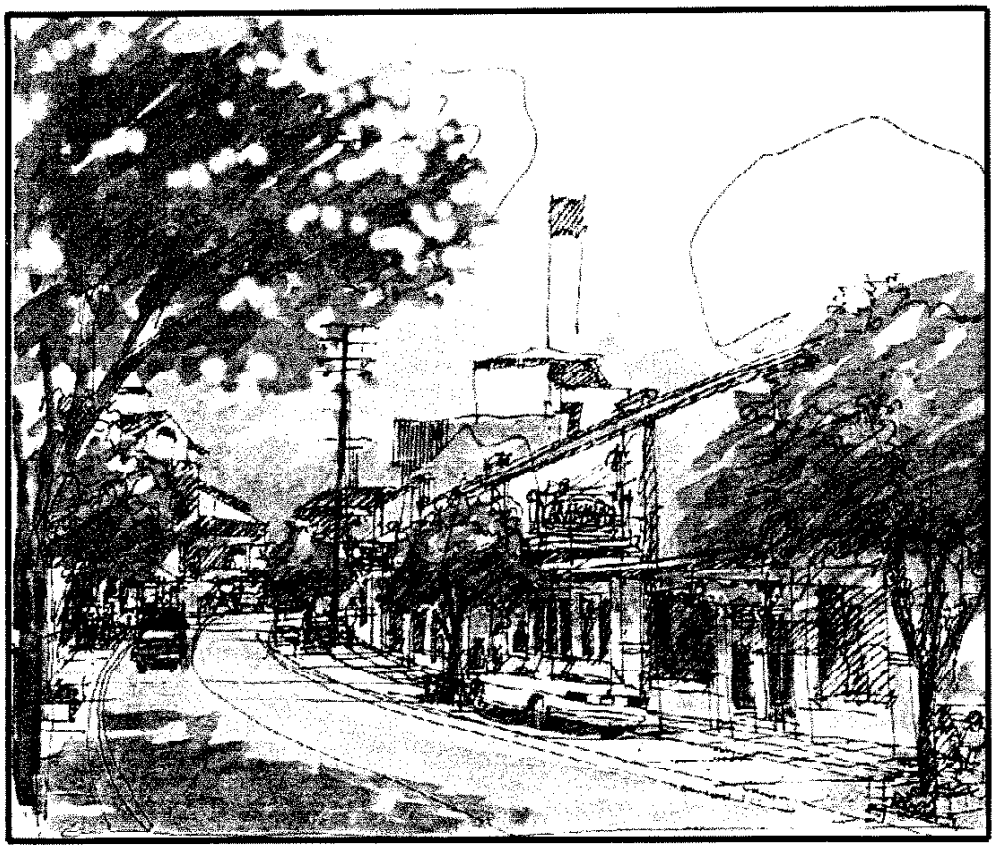
WAIPAHU

Livable Communities Initiative



City and County of Honolulu
Planning Department

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May 1998

WAIPAHU LIVABLE

COMMUNITIES INITIATIVE

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I. INTRODUCTION

1. Introduction

The Waipahu Livable Communities Initiative project is intended to improve the quality of transportation facilities and to promote economic revitalization in Waipahu. The project will help implement the Waipahu Town Plan, a community-based plan which was adopted by the Honolulu City Council in 1996.

The Waipahu Livable Communities Initiative project integrates the planning and development of pedestrian-oriented, transit services and facilities in the implementation of the Waipahu Town Plan. This pedestrian- and transit-oriented focus serves as an important mechanism to infuse the livable communities initiative concept into an older town, such as Waipahu, in need of revitalization. It provides the opportunity to establish transportation improvements needed to implement the land use plan stemming from the Waipahu Town Plan and renew the economic vitality of Waipahu. In turn, it is also intended to positively respond to the socio-economic impacts on businesses and residents of Waipahu resulting from the closure of Oahu Sugar Company's sugar mill and operations and the loss of jobs, as well as from the growth of new commercial and industrial developments in the region.

The Waipahu Livable Communities Initiative consists of three major plan components:

1. An integrated transportation plan which includes a public transit plan with convenient access to services and places of interest within the town center; pedestrian/bicycle circulation that link activity elements; and, the roadway network.

2. Urban design guidelines to enhance the visual appearance of Waipahu Town in selected areas along major thoroughfares, including bikeways and walkways, landscape, streetscape amenities, building frontage and scale, and open space.

3. An implementation plan to include project scope, implementing body, potential project timetable, cost estimates, and potential sources of funding.

2. Background

The Waipahu Livable Communities Initiative project is intended to extend the Waipahu Town Plan effort by identifying specific implementation projects. The integrated

transportation plan is a key component in the implementation of the Waipahu Town Plan. The creation of a livable community for Waipahu requires improvements to the transportation network within Waipahu and integration of the roadway, public transit, bikeway and pedestrianways to support the existing, planned and proposed land uses in Waipahu Town.

The Waipahu Livable Communities Initiative is part of a national Livable Communities Initiative program funded by the Federal Transit Administration (FTA). The primary purpose of the Livable Communities Initiative is to help communities develop a comprehensive, integrated (multi-modal) transportation plan coordinated with logical patterns of land use. The objectives of the Livable Communities Initiative are to improve mobility and quality of services available to residents of neighborhoods by:

- strengthening the link between transit planning and community planning, including land use policies and urban design supporting the use of transit and ultimately providing physical assets that better meet community needs;

- stimulating increased participation by community organizations and residents, minority and low-income residents, small and minority businesses, persons with disabilities and the elderly in the planning and design process; and,

- coordinating commercial and social service program development and activities to increase employment opportunities, improve neighborhoods, and promote the investment in and use of transit and other pedestrian-oriented transportation facilities and services.

Key characteristics of Livable Communities include: 1) full community participation in the decision-making process by residents, neighborhood organizations and the business community, including small and minority businesses; and, 2) transit, pedestrian and bicycle access that is compatible with land use, zoning and urban design to reduce dependence on the automobile.

3. Waipahu Town Plan

The Waipahu Town Plan (Plan) was prepared to economically revitalize and enhance the land use, circulation, and urban design aspects of Waipahu. This Plan is an outgrowth of Honolulu City Council Resolution No. 94-309, C.D. 1 dated January 25, 1995 which directed the City and County of Honolulu Planning Department's preparation of a

community-based Special Area Plan for Waipahu. The Resolution called for the Waipahu Town Plan to provide comprehensive, long-range objectives to guide land use and public improvements, as well as specific plans for certain improvements, including transportation improvements, which would address the needs and concerns of the community and enhance the long-term livability and economic vitality of Waipahu.

The Waipahu Town Plan is the first of two Special Area Plans to be prepared pursuant to the City and County of Honolulu Development Plan (DP) revision program for the Central Oahu region. This process incorporated the preparation of Special Area Plans to address certain communities or areas undergoing change or facing special problems or opportunities. For Waipahu, the closing of the Oahu Sugar Company marks the end of an era and of Waipahu's role as a sugar mill town. Furthermore, Waipahu's commercial and industrial areas have been adversely affected by the growth of new commercial and industrial developments elsewhere in Ewa and Central Oahu, requiring a search for new service and market opportunities to revitalize the business areas.

The Plan boundaries include the area of Waipahu bounded by the H-1 Freeway to the north, Kunia Road to the west, Kamehameha Highway to the east, and Waipio Peninsula to the south. The Plan also gives consideration to the needs of surrounding mauka communities, including Village Park and Waikele. Employing a community-based planning process, the Plan was formulated through extensive meetings and discussions with the community, including monthly meetings with the Waipahu Town Plan Task Force, two public workshops, and a community meeting. Major components of the Waipahu Town Plan include:

Land Use:	locating future uses which provide for compatible economic development and address community needs.
Economic Revitalization:	opportunities for economic revitalization which generate jobs and attract people to Waipahu while minimizing impacts to existing businesses.
Circulation:	circulation plan to improve traffic flow and encourage a pedestrian- and transit-oriented circulation system.
Urban Design:	urban design plan which promotes Waipahu's identity and heritage, and improves the Town's visual appearance.

Implementation: sequencing and considerations for implementing recommendations of the Plan.

The Preferred Plan is a synthesis of the collective desires of the community to integrate economic development with social, cultural, and recreational enhancements. The Plan provides for the following land uses within Waipahu Town: a private school, market residential development, a memorial park or churches (as alternatives to residential use), light industrial, commercial, a heritage park/center, YMCA, Filipino Community Center, expansion of Hans L'Orange Park, a mini park and ride facility co-located with either an independent living facility or elderly day care facility, an Old Town Commercial area, provision of canopy trees along the Farrington Highway median, shoreline park/preservation area along the Pearl Harbor Shoreline, a shoreline bike path, and long-term restoration of the OR&L right-of-way. Within Waipio Peninsula, proposed land uses include a water-oriented theme park, a sports complex, a shoreline passive park, commercial recreation, and agriculture.

A number of roadway improvements are incorporated in the Waipahu Town Plan to accommodate the proposed land uses in the town core area, as well as facilitate vehicular access into and within Waipahu. These include improvements to Manager's Drive, Paiwa Street to Waipahu Street connector roads, Waipahu Street and Waipahu Depot Road (makai of Farrington Highway), Farrington Highway frontage road modifications, Waipio Peninsula access improvements, and the Village Park connector road. The Plan also addresses the potential for an internal transit system and transit and pedestrian elements.

4. Community-Based Planning Process

In keeping with the intent of the objectives and characteristics of the Livable Communities Initiative program, numerous meetings and discussions with the community have been held, including six meetings of the Waipahu Livable Communities Initiative Task Force from November 1996 to December 1997. The planning process is illustrated in the flow chart in Figure 1-1. In January 1997, a transportation survey of residents and businesses in Waipahu was conducted to help determine the potential usage of different modes of transportation. A major community workshop was conducted in April 1997 to solicit input from the broader community on transportation (alternative transit station sites and conceptual site plans, roadway network, and pedestrian/bikeway concepts) and urban design and streetscape/landscape concepts. In June 1997, a public transit workshop was held to devise a schematic plan for future transit service for the Waipahu area. In September 1997, a community meeting was held to present the recommended

Waipahu Livable Communities Initiative

Planning Process

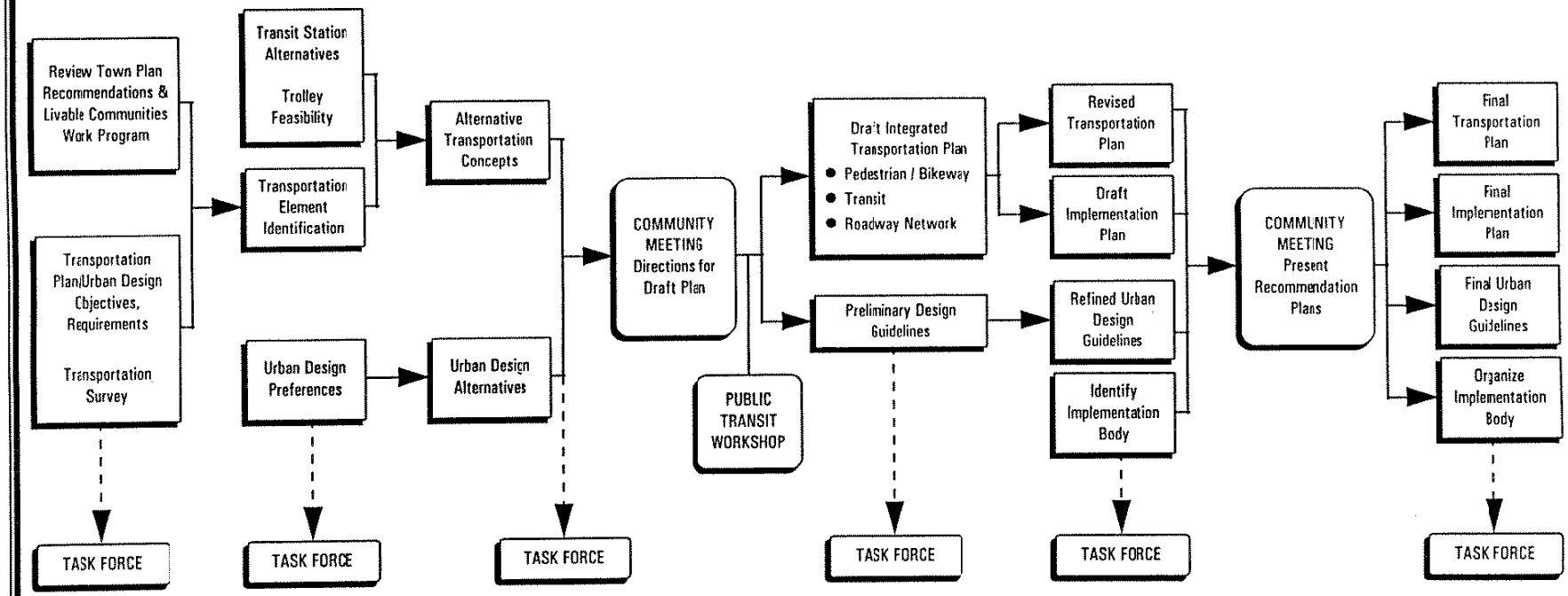

FIGURE 1-1

Integrated Transportation Plan, Urban Design Guidelines, and Implementation Plan and obtain feedback and general approval from the broader community.

Additional opportunities have been undertaken to present the Waipahu Livable Communities Initiative project to other agencies and organizations within the larger community to solicit interest and potential participation. These include presentations to the Waipahu Business Association, the Waipahu Centennial Committee, and the Mayor's Beautification Advisory Committee. The project's revitalization potential was also displayed at the Waipahu Centennial kick-off celebration held on June 21, 1997 at Hans L'Orange Park.

4.1 Waipahu Livable Communities Initiative Task Force

A Waipahu Livable Communities Initiative Task Force has been convened to advise the City Planning Department and provide input into the planning process and development of concepts and proposals. The Task Force membership is derived from and expands upon the original Waipahu Town Plan Task Force. The Task Force represents the various facets of the Waipahu community, including the Waipahu 2000 Update Committee, Waipahu Business Association, Waipahu Neighborhood Board, representative of Amfac/JMB Hawaii, representative of the City Planning Department, members of the State Senate, State House of Representatives, and City Council representing Waipahu, and members from the community. The Task Force has met periodically from November 1996 to December 1997 to review and advise the City Planning Department on the integrated transportation plan elements, urban design and streetscape/landscape concepts and guidelines, and implementation plan elements.

II. INTEGRATED TRANSPORTATION PLAN

1. Introduction

The integrated transportation plan is a key component in the implementation of the Waipahu Town Plan. The creation of a livable community for Waipahu requires improvements to the transportation network within Waipahu and integration of the public transit, pedestrianways, bikeways, and roadway network to support the existing, planned and proposed land uses in Waipahu Town. The transportation plan represents a refinement of the Waipahu Town Plan recommendations through the preparation of a plan for the public transit system and preliminary plans for the pedestrian/bikeway circulation system and roadway network. This effort represents the input and guidance from the Waipahu Livable Communities Initiative Task Force, the broader community, and various line agencies in developing the integrated transportation plan.

2. Planning Approach

The planning approach for development of the integrated transportation plan considers the recommendations from the Waipahu Town Plan and the objectives and criteria of the Livable Communities Initiative program. Although most of the transportation plan elements occur within the boundaries established in the Waipahu Town Plan, consideration was also given to the relationship of Waipahu Town with the surrounding mauka communities, including Village Park, Royal Kunia, Waikele, Waipio, and Crestview/Seaview.

Major elements of the integrated transportation plan include:

Public Transit System: A transit plan which identifies future transit service routes for the Waipahu area, provides for major transfer points or a transit station, and is coordinated with other modes of transportation.

Pedestrian/Bikeway Circulation: Development of continuous pedestrianways and bikeways that link activity elements and are integrated with roadway and transit systems and facilities.

Roadway Network: Right-of-way requirements and preliminary plans for the roadway network to serve the proposed land use elements as set forth in the Waipahu Town Plan.

2.1 Central Oahu Development Plan Revision Program

The City and County of Honolulu is currently revising its Development Plans for the Central Oahu region. Development Plans provide maps and policy statements to

implement the objectives and policies of the City General Plan and serve as a guide for more detailed zoning and public and private sector investment decisions.

The Central Oahu Development Plan (DP) area encompasses Waipahu and the communities north to Mililani and Wahiawa. Central Oahu's role in Oahu's future growth is to provide lands for diversified agriculture, residential development with a variety of housing types, and new employment in existing commercial and industrial areas. This will help limit urban development pressures on other rural and urban fringe areas.

The Central Oahu DP (Public Review Draft, July 1995) notes that Waipahu's future is being addressed as part of the Waipahu Special Area Plan (i.e. Waipahu Town Plan). The DP process incorporated the preparation of Special Area Plans to address certain communities or areas undergoing change or facing special problems or opportunities. Waipahu is planned to be revitalized through policies and programs designed to attract new investment and increase levels of activity in the traditional commercial and civic center areas.

With regard to transportation, the proposed Central Oahu DP provides the following circulation design guidelines for Waipahu:

- *Within the old commercial core, the existing street rights-of-way and alignments shall be maintained except for adjustments to improve traffic flow and safety. This will safeguard the historically and visually significant buildings and maintain the area's pedestrian scale and orientation.*

- *The east-west Waipahu Street corridor shall be improved to enhance traffic capacity and safety.*

- *Existing pedestrian connections to nearby residential areas from the old commercial core and to recreational and cultural facilities located around this area shall be improved, and new ones developed where appropriate. All pathways shall be landscaped in a manner which identifies their role as visual and functional linkages between open spaces and centers of activity. Where possible, they shall be designed to accommodate safe movement for walkers, joggers and bicycle riders.*

- *Landscape improvements to streets and front yards in the Farrington Highway business area shall, where possible, accommodate walkways and bicycle paths which link the different business developments together and connect these areas to adjoining residential neighborhoods.*

- *Sidewalks, traffic signal improvements, and other measures shall be developed to facilitate pedestrian circulation between mauka and makai areas of Waipahu.*

- *Space for a possible future transit corridor shall be reserved along Farrington Highway and higher intensity uses encouraged near future transit nodes along that route.*

2.2 Transportation Plan Objectives

The objectives guiding the Waipahu Livable Communities Initiative's integrated transportation plan are as follows:

1. *Integrate the planning and development of pedestrian-oriented facilities and transit services.* Development of an innovative transportation plan for Waipahu Town which encourages a pedestrian- and transit-oriented circulation system would complement Waipahu's renewal as a livable community.

2. *Improve traffic-congested circulation systems.* The provision of improved transit mobility from nearby residential neighborhoods, as well as pedestrian and bicycle access, would encourage residents to be less dependent on the automobile.

3. *Revitalize the livability and social character of Waipahu Town.* Improvements in transportation mobility and pedestrian accessibility within and around Waipahu Town would enhance its socio-economic vitality as a pedestrian-oriented, livable, mixed-use (business, entertaining, residential) community.

2.3 Transportation Survey for Waipahu

A Transportation Survey for Waipahu was conducted in January 1997 with Waipahu residents and the Waipahu business community in conjunction with the Livable Communities Initiative project. The objectives of the survey were to: 1) assess the residents' interests and needs in being better served by transit and improved sidewalk and

bicycle systems to get around Waipahu; and, 2) assess the business community's needs and interests in improving transit/bus facilities and services for better access to businesses by employees and customers.

Waipahu residents and the business community were separately surveyed. Waipahu residents were surveyed through mailed questionnaires and in-person interviews, resulting in 141 respondents. For Waipahu businesses, mailed questionnaires were used, resulting in 69 respondents. Appendix A contains the survey questionnaire, methodology, and tabulation of findings.

Importantly, the survey found that a majority of residents (55%) would be inclined to leave their car at home if more and better facilities for the bus, walking or biking were available. Presently, most of the respondents (69%) get around Waipahu by car.

Business respondents indicated that 91% of their employees drove to work. Customers did likewise, 83% of the time. Most businesses (61%) generally felt there were adequate bus services and facilities for their customers and employees. Of those who did not, more bus shelters and more frequent bus service were felt to be needed. Most businesses (57%) were not in favor of helping fund a shuttle bus or trolley system around Waipahu. Further discussion of survey results are contained in the sections which follow.

2.4 Waipahu Public Transit Workshop

In June 1997, the Waipahu Livable Communities Initiative Task Force and the City Planning Department sponsored a public transit workshop for Waipahu. The purpose of the workshop was to develop a schematic plan for future transit service for the Waipahu area. Participants included members of the Waipahu Livable Communities Initiative Task Force, City Planning Department and its consultant, and staff from the City Department of Transportation Services (DTS) and Oahu Transit Services, Inc. (OTS).

The workshop participants helped to develop general guidelines for transit service in Waipahu and outlined proposals for transit service routing. OTS presented an overview of the principles of a good transit system and possible issues which should be addressed in the Waipahu system. Workshop participants were also provided an opportunity to identify issues which the Waipahu transit system should address.

Workshop participants were organized into three teams for the purpose of developing alternative transit system proposals. While each proposal represented distinct perspectives and approaches to public transit, the following general objectives were common to all:

- Connect the communities; include the following areas in the system: Village Park/Royal Kunia, Waikele, Waipio, and Crestview/Seaview.

- Provide faster access to points beyond Waipahu.

- Centralize service to some kind of transit center (node or major transfer point).

After review of the community's comments and recommendations by DTS and OTS and, based on anticipated operating conditions, Short-Range and Mid-Range Transit Plans for Waipahu were developed. These transit plans are discussed in Section 4.1.1.1.

3. Land Use and Transportation Systems

The creation of a more livable community in Waipahu requires the consideration of land use and transportation systems. Facilitating the movement of people within, into and out of Waipahu by providing improved facilities and services which expand the travel options of residents and patrons will increase accessibility and promote social, recreational and economic opportunities.

The Waipahu Town Plan proposes the revitalization of the central Waipahu Town core by providing new economic development and cultural uses, establishing a plantation design theme, and improving roadways and streetscape. Additional recreational opportunities are envisioned in the Waipio Peninsula area and along the shoreline. These proposed uses will require good access with the surrounding community, including the existing and surrounding residential areas in Waipahu, commercial centers along Farrington Highway and Waikele, existing industrial areas, public facilities and parks.

Existing and proposed land uses in Waipahu are briefly described below. This is followed by an examination of existing travel patterns and the potential for Waipahu residents to consider using alternative travel modes and travel ways. Finally, transportation needs are assessed for Waipahu's roadways, public transit and pedestrian/bikeway systems.

3.1 Existing and Proposed Uses

3.1.1 Residential

Waipahu is a major residential community which is comprised mostly of middle income single-family residences and lower income apartment areas. In 1995, the population of Waipahu including the residential subdivisions mauka of Waipahu was 54,770. Existing residential areas in Waipahu include the following subareas: August Ahrens School, Waipio Peninsula, Waipahu Triangle, Waipahu Estates, Waipahu Town, Waipahu Gardens, Waipahu Industrial Area, Waipahu Town Center, and Robinson Heights (see Figure 2-1). Within the greater Waipahu area are the newer residential subdivisions of Village Park, Royal Kunia, Waikele, Waipio Gentry and Seaview-Crestview.

Future residential areas include several residential developments. In Waipahu Town, the State of Hawaii is developing an independent living apartment project consisting of 24 units in the vicinity of the Civic Center. In lower Waipahu below Farrington Highway off the Waipio Point Access Road, Queen Emma Foundation proposes to develop an

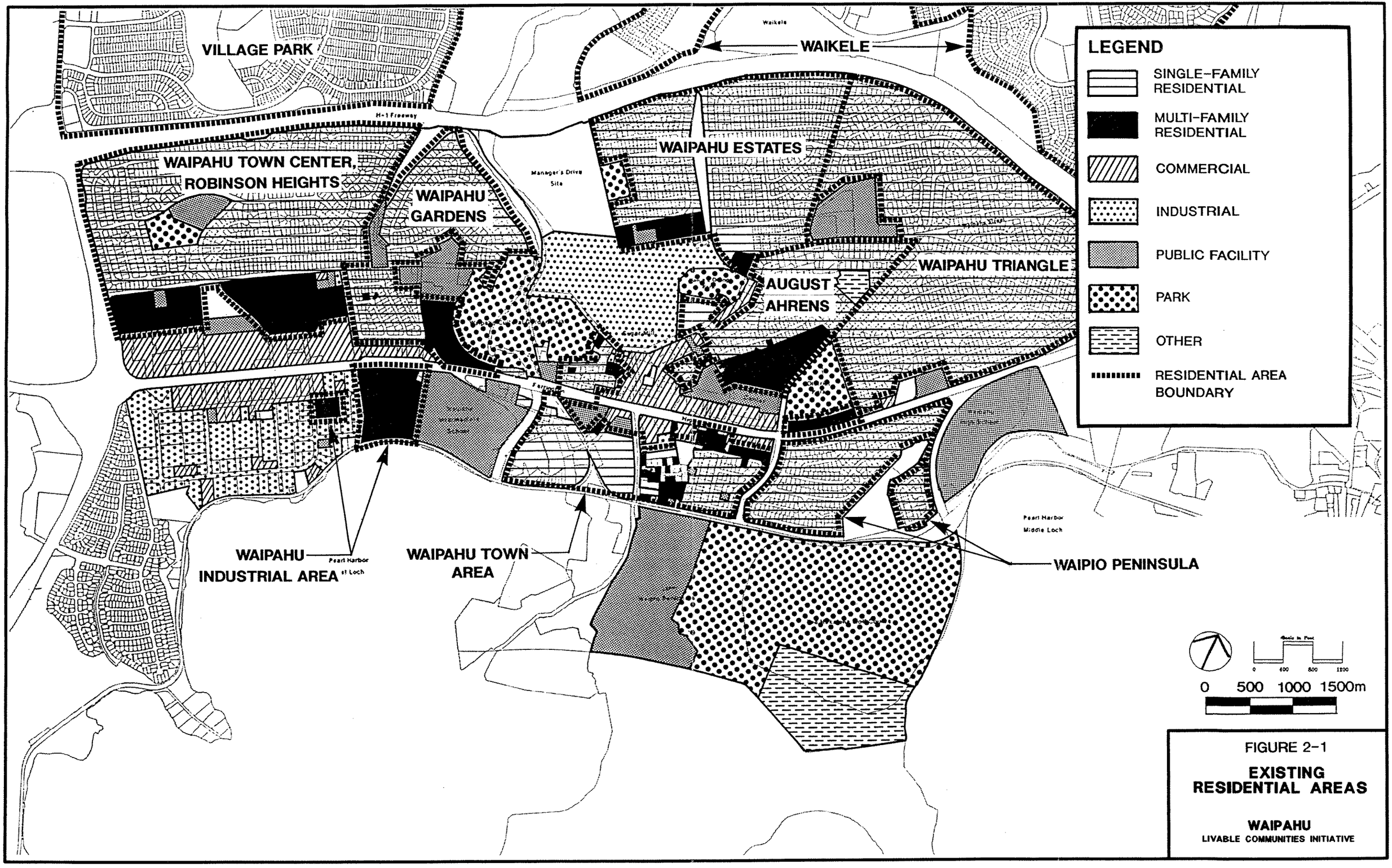

FIGURE 2-1

EXISTING RESIDENTIAL AREAS

WAIPAHU
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elderly care facility on 13 acres including a 90-bed skilled nursing facility and 50 assisted care units. At Manager's Drive, residential development is called for in the Waipahu Town Plan which could potentially result in the development of 120 single-family residential units on 20 acres. In Royal Kunia, future phases include the potential for an additional 2,500 residential units.

3.1.2 Commercial

Commercial uses are concentrated along Farrington Highway and within the historic town core along Waipahu Street and Waipahu Depot Road. Areas of new commercial development are in the west end of Waipahu mauka of Farrington Highway, and mauka of the H-1 Freeway at the Waikele Commercial Center and at the Royal Kunia (Wal-Mart/Times) Shopping Center.

The site of the former Oahu Sugar Mill is planned for commercial development which could potentially include a business park based on the theme of a former sugar mill.

3.1.3 Light Industrial

A large portion of lands makai of Farrington Highway are devoted to light industrial uses, particularly in the West Waipahu area. Gentry-Waipio has a light industrial subdivision development with light industrial and commercial developments. On the site of the Oahu Sugar Company mill, Amfac JMB is currently developing a 38-acre light industrial subdivision.

3.1.4 Recreation

There are several parks in Waipahu. Waipahu District Park on Paiwa Street has a field, gym and recreational facilities for organized sports, classes and other activities. Community parks in the area include Crestview, Waikele, and Hoaeae. Hans L'Orange, Honowai, Pupuole, Waikele, Waipahu Uka and Waipio are neighborhood parks. Hans L'Orange Park includes a baseball field and stadium. Waipahu Cultural Garden Park, also known as Hawaii's Plantation Village, is a cultural center with historic exhibits of plantation life and open space. The region also includes West Loch Shoreline Park.

Future park developments include a 3-acre expansion of Hans L'Orange Park, the Waipio Peninsula which would provide a soccer stadium and up to 24 soccer fields, and the Waiola area above Waikele which is currently undergoing planning which could include various playing fields for organized sports. The Pouhala Marsh will also be undergoing

restoration by the State of Hawaii to provide enhanced habitat for endangered Hawaiian waterbirds.

3.1.5 Public and Cultural Facilities

Various government services in Waipahu Town include the State Civic Center, Waipahu Public Library, and elderly rental housing on Mokuola Street. In the Waipio Peninsula area, facilities include a major sewer pump station, a refuse convenience center, a police training academy and equipment maintenance facilities. A new post office is currently under construction on the west side of Waipahu.

Planned private non-profit facilities include a new community YMCA facility, a proposed Filipino Community Center, and a Heritage Center/park at the former Sugar Mill site.

3.2 Travel Patterns

The existing travel patterns of Waipahu residents are important to understand to better plan for transportation needs. According to Census data, approximately 20% of the jobs in Waipahu are filled by workers living in Waipahu. The remaining 80% of jobs in Waipahu are filled by workers who commute to and from areas outside of Waipahu. Likewise, the remaining 80% of workers living in Waipahu commute to jobs in areas outside of the community.

In addition to work trips, approximately 20% of the traffic demand within Waipahu Town can be considered non-work related or pass-by trips. These trips are defined as external trips not associated with employment or trip ends that originate or are destined to areas outside of Waipahu Town. Non-work-related trips or pass-by trips typically occur during non-commuter peak volume periods. The trips that do occur during the peak commuter volume periods would generally use the major arterial roadway or Interstate Freeway systems.

In 1991, a *Comprehensive Home-End Travel Needs Survey for the Ewa-Central Oahu Region* was conducted by SMS Research for LOTMA to provide travel information to plan more effectively for growth in the region. Central Oahu residents included Waipahu and mauka residential communities such as Village Park and Waipio-Gentry to and including Mililani Town.

The type of trips taken by Central Oahu residents differed during average weekdays and weekends. On an average weekday, residents made a little more than one round trip away from home (1.3). On weekdays, the majority of trips are work-related (58,200 or

52%). Residents also made an estimated 17,600 (16%) round trips to shop and 11,400 (10%) for school or child care. 30% of the trips are made to Honolulu, while 44% are made within the Central Oahu area.

On weekends, many of the trips (34%) are still for work, but over 40% are for trips other than work, shopping, school, or child care. Fewer trips are made within the Central Oahu area (28%), and slightly more trips are made to Honolulu and other areas of Oahu.

3.2.1 Existing Modes of Travel

Travel generated from residential areas which influence the transportation system the greatest is the daily home-to-work and work-to-home trips. Use of the private automobile is significantly higher for residents living in the fringe areas of Waipahu Town as compared to the other modes of travel (see Table 2-1). Residents in the newer residential subdivisions of Waikele, Waipio-Gentry, Seaview-Crestview, Village Park and Royal Kunia average 84% automobile use for job commutes. On the other hand, private automobile use is less and transit use higher near the Town core where transit services and activity centers are more prevalent.

The mode of travel for commuting workers typically reflects to some extent the availability of transit service. However, well over 80% of all commute trips are by private automobile. The commuter's origin and destination, parking, transit availability and fares, accessibility of available travel modes and local policy affect mode choice, vehicle occupancies, and parking characteristics.

In the SMS survey, residents were found to be much more likely to drive than use TheBus. The typical Central Oahu resident is a licensed driver (only 12% are not) and nearly all (96%) of the households have access to at least one vehicle. Only 10% of residents have a bus pass, and these are more likely to be the same people who are not licensed drivers.

Table 2-2 shows the mode of transportation for specific types of activities. Travel patterns for Central Oahu residents remain consistent across activities, with most driving, and a much smaller percentage either riding with someone or catching the bus.

Table 2-1
Journey To Work - Mode of Travel
Waipahu and Surrounding Residential Areas

	Census Tract	Auto	Bus	Walk	Other	At Home	Workers 16+yrs
Waipahu Triangle	87.01	85%	10%	1%	2%	3%	3,372
Waipahu Town	87.02	80%	12%	4%	1%	3%	1,827
Waipahu Industrial	87.98	74%	12%	8%	2%	3%	1,299
Waipahu Estates	88.00	84%	13%	0%	1%	2%	2,960
Robinson Heights	89.01	87%	8%	3%	0%	1%	3,849
August Ahrens	89.12	90%	9%	1%	1%	0%	1,093
Waikele/Waipio	89.11	94%	3%	1%	1%	1%	7,079
Village Park/Kunia	89.05	94%	4%	1%	1%	0%	4,224
Average/Total		**88%**	**8%**	**2%**	**1%**	**1%**	**25,703**

Source: U.S. Bureau of Census, 1990

Table 2-2
Mode of Transportation for Specific Activities
Central Oahu Residents

	Drive	Bus	Ride w/ Someone	Walk	No Usual Way
Grocery Shopping	84.6%	0.9%	9.5%	0.5%	4.6%
Shop for Clothes or Household Goods	87.4%	3.5%	7.3%	0.3%	1.6%
Doctor or Dentist	84.7%	3.5%	6.7%	1.0%	4.2%
Eat Out	85.2%	0.5%	9.1%	0.0%	5.2%
Entertainment	84.4%	0.7%	11.9%	0.0%	3.1%

Source: LOTMA, 1991

In the Transportation Survey for Waipahu conducted as part of this study, similar results were found relative to the use of different modes of travel (see Table 2-3). High percentages of persons in Waipahu drove rather than used the bus or other modes of travel.

Table 2-3
Modes of Travel
Transportation Survey for Waipahu

	Drive	Bus	Bike	Walk	Multi-Modal	Retired /NR
Travel to Work	62%	10%	0%	2%	5%	20%
Travel within Waipahu	69%	9%	2%	8%	12%	2%
Employees of Waipahu Businesses	91%	5%	2%	2%	1%	--

Source: Wilson Okamoto & Associates, Inc., 1997

3.2.2 Inclination for Using Alternative Modes

Decreasing a community's reliance on the automobile is a key component of the livable communities initiative. The SMS Travel Needs Survey found that a viable alternative to the automobile must fulfill four basic qualifications: reliability, safety, accessibility and convenience. Beyond that, a person's preference for travel methods changes with the importance they place on comfort, cost and privacy.

The survey also revealed preferences for modes that are currently not available or are infrequently used, such as telecommuting, ferry, mass transit, and subscription buses. The survey found that although 13% indicated they would use TheBus, only 6% actually do. Inducing more people to use TheBus will depend on planner ability to provide more reliable service, with greater coverage (SMS Research, 1991).

In the Transportation Survey for Waipahu conducted for this study, 55% of those who worked in Waipahu would consider leaving their car at home if better facilities and service were available for taking the bus, walking or bicycling. There also appears to be strong potential for increasing the use of non-automobile forms of transportation, if more and better facilities and services were provided, as shown in Table 2-4.

Table 2-4
Inclination for Alternative Travel Modes
Waipahu Transportation Survey

	Yes	Maybe	No	Don't Know/NR
Walking if Sidewalks Improved	63%	20%	10%	7%
Bike Paths if more provided	56%	18%	20%	6%
Using the Bus if better facilities/services provided	64%	19%	11%	6%
Using Park & Ride	48%	16%	21%	15%
Using a Shuttle	75%	14%	6%	5%

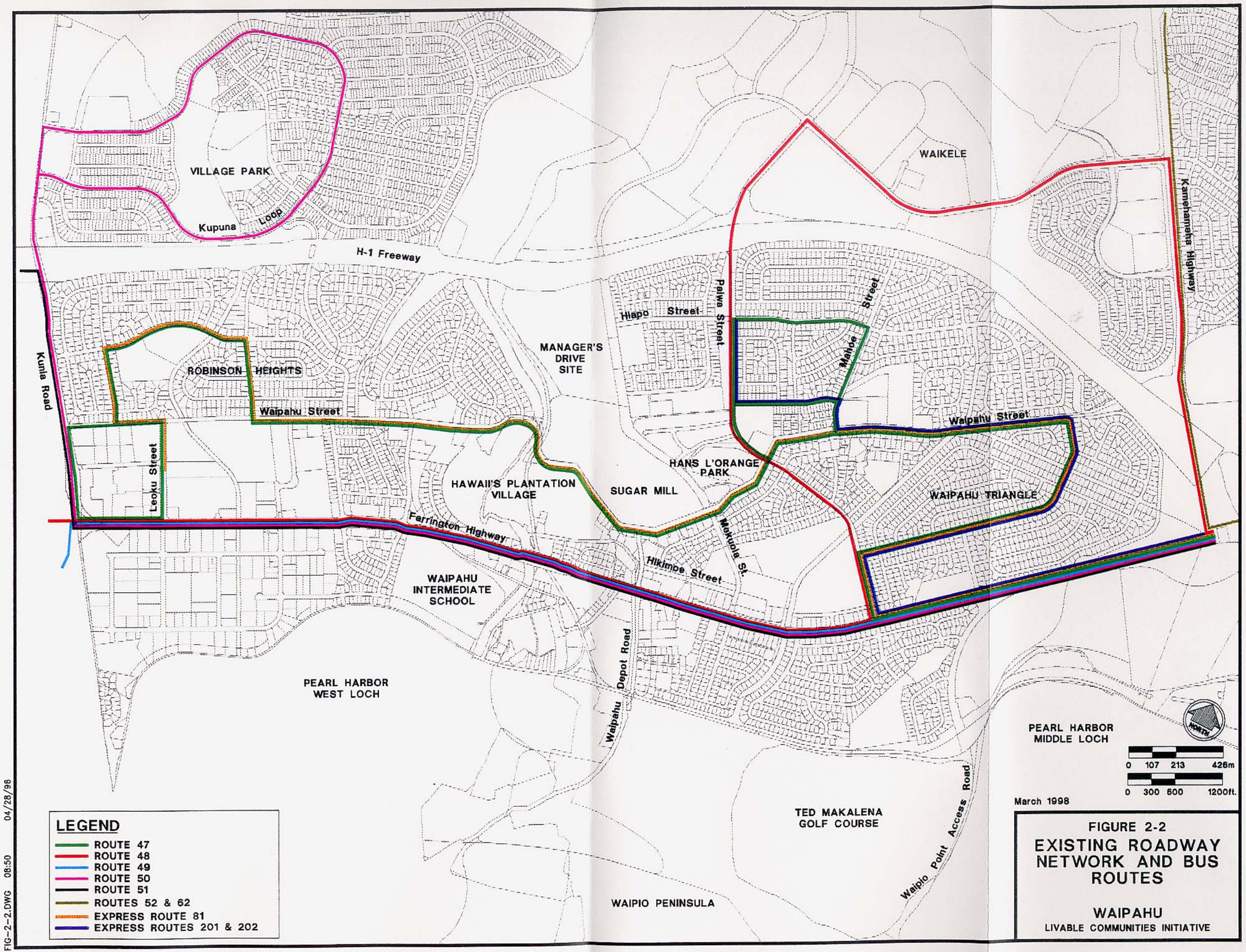
Source: Wilson Okamoto & Associates, Inc., 1997

3.3 Transportation System Needs

This section describes Waipahu's transportation system and associated characteristics and needs.

3.3.1 Roadway Network Needs

The streets in the Waipahu road network can be functionally classified into four general categories: principal arterial, minor arterial, collector, and local. The categories are based on geometric and traffic characteristics of each street type. Immediately north of Waipahu Town is the Interstate H-1 Freeway that services east-west travelers. The arterials through Waipahu are Farrington Highway, which also services east-west traffic movement, and Kamehameha Highway and Kunia Road, both north-south roadways located within the east and west fringes of Waipahu Town. Waipahu Street which traverses in an east-west direction between the H-1 Freeway and Farrington Highway is a minor arterial street. North-south major collector streets include Paiwa Street and Waipahu Depot Road between Farrington Highway and Waipahu Street. Mokuola Street which traverses in a north-south direction is a local road. Figure 2-2 shows the existing Waipahu Town road network.


VILLAGE PARK
Kupuna Loop
H-1 Freeway
WAIKELE
Kamehameha Highway
Kunia Road
ROBINSON HEIGHTS
Waipahu Street
Leoku Street
MANAGER'S DRIVE SITE
Hiapo Street
Paiwa Street
Mailoa Street
Waipahu Street
HANS L'ORANGE PARK
HAWAII'S PLANTATION VILLAGE
SUGAR MILL
WAIPAHU TRIANGLE
Farrington Highway
Hikimpe Street
Mokuola St.
WAIPAHU INTERMEDIATE SCHOOL
PEARL HARBOR WEST LOCH
Waipahu Depot Road
PEARL HARBOR MIDDLE LOCH
TED MAKALENA GOLF COURSE
Waipio Point Access Road
WAIPIO PENINSULA
LEGEND
ROUTE 47
ROUTE 48
ROUTE 49
ROUTE 50
ROUTE 51
ROUTES 52 & 62
EXPRESS ROUTE 81
EXPRESS ROUTES 201 & 202
NORTH
0 107 213 426m
0 300 600 1200ft.
March 1998
FIGURE 2-2
EXISTING ROADWAY NETWORK AND BUS ROUTES
WAIPAHU
LIVABLE COMMUNITIES INITIATIVE
FIG-2-2.DWG 08:50 04/28/98

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The achievement of a balanced system of streets is an important goal to best serve the varying types of trips which take place. The general guidelines are that no more than 10 percent of the total vehicular trips should occur on local streets, and that collector streets should take no more than 20 percent. This leaves a minimum of 70 percent of the total traffic demand to be carried on the arterial and freeway system. To accommodate the traffic demands, road improvements may be required to achieve an appropriate balance between the different roadway functional classifications and to provide adequate roadway operating capacity.

Traffic Circulation: Traffic circulation within Waipahu Town is provided by roads that represent a grid-like system. This basic framework functions well because densities and levels of activity are basically uniform and scattered throughout the community. The roadway system provides service to all areas of the community at approximately the same level of efficiency. However, this type of system also encourages through trips on local streets as traffic congestion on arterials and collectors increase.

General travel patterns within and around Waipahu Town are evaluated for continuity, ease of through traffic movement through or past the area, and circulation between different sites and activity centers. It is important that major movements between the areas' major access routes and major internal sites be provided with continuous routes. The configuration of internal streets which encourage or require heavy turn movements, especially left turns, should be avoided. The street system should also be configured to facilitate transit access to major generators and activity centers. The potential transit routes and the streets on which they run should be as continuous as possible.

Roadway Network Needs: For the purposes of this study, future roadway needs are based on accessibility and safety rather than on traffic volumes and capacity.

In the vicinity of the former Sugar Mill site, Amfac JMB will be widening Manager's Drive bridge and the road down to Hiapo Street, extending Mokuola Street up through the mill site, and developing connector roads X and Y to provide access through the light industrial subdivision. The Mokuola Street extension to Manager's Drive will provide a new north-south collector roadway which should provide good access to the new uses on the mill site and Manager's Drive.

On Waipahu Street, previous studies have shown the need for the widening of Waipahu Street from its present two lanes to provide either three or four lanes. The Waipahu Town Plan recommended the three-lane alternative. Increased development in the Town Center area warrants consideration for improving traffic flow to relieve congestion as well as improve safety on the current roadway configuration. The absence of left-turn

lanes and bus pull-outs on the two-lane roadway greatly restricts traffic flow, while the sharp turns required on Waipahu Street in the vicinity of Hawaii's Plantation Village poses a safety concern for buses and trucks. From the Livable Communities standpoint, however, widening may be less conducive to fostering a pedestrian-oriented atmosphere for Waipahu Street.

Improved access is also needed from Village Park to Waipahu Town to provide a more direct route for the benefit of Village Park residents and Waipahu businesses.

Improved access to Waipio Peninsula is also needed to accommodate planned recreational improvements. To supplement the current access to the Peninsula from Waipahu Depot Road, an alternate accessway should be provided through Waipio Point Access Road.

3.3.2 Public Transit Needs

Public transit is an essential public transportation service. It increases capacity in heavily traveled corridors, reduces reliance on car trips, and supports densely developed areas and activity centers. It also provides mobility for the elderly, physically impaired and others who may not be able to or afford to drive.

Bus transit is the primary form of public transport in Waipahu. The bus service operates in mixed traffic over City streets and highways. Eleven bus routes service the Waipahu area, including 5 regular routes and 6 express routes (see Table 2-5 below and Figure 2-2). All of the buses use some portion of Farrington Highway in traversing Waipahu Town.

In the Transportation Survey for Waipahu, many of the expressed needs and concerns were aimed at bus service and facilities. The need was expressed for more bus shelters, more express buses, more buses in general, and the need for more shuttle buses. The timeliness and reliability of service was a concern to many respondents. Although the rapid transit project was terminated by the City, rapid transit was still mentioned by a number of people as being needed.

Table 2-5
Transit Service - Waipahu & Vicinity

Regular Routes		Stops In Waipahu	Frequency Per Hour	Passenger Peak Average Load AM	PM
47	Waikiki-Honolulu-Waipahu	30	2.0	53	26
48	Honolulu-Waikele-Ewa Mill	20	1.0	37	42
49	Honolulu-Ewa Beach	10	2.0	58	46
50	Honolulu-Village Park-Makakilo	17	1.5	60	47
51	Honolulu-Makaha	10	3.0	66	50
Express Routes					
81	Waipahu Express	13	4.0	48	41
94	City of Kapolei Express	3	1.3	28	19
97	Village Park Express	2	0.4	50	41
103	Paiwa-Waikele Express	7	2.5	45	30
201	Waipahu via Farrington Exp	3	3.0	43	37
202	Waipahu via Paiwa Express	2	2.0	49	34

Source: Oahu Transit Services
Note: Peak Average Load - average number of passengers during morning and afternoon peak hours (5:30 to 9:00 am, 2:00 to 6:00 pm) at a designated point in/near Waipahu. Bus seating capacity is 45 persons.

A public transit workshop held in June 1997 as part of the Livable Communities Initiative provided additional guidance on the transit needs of Waipahu. The workshop was intended to identify the community's public transportation needs, identify ways to meet these needs, identify important transit facilities, and design a Waipahu Public Transportation System. The workshop identified the following transit needs for Waipahu:

- **Connect all communities within the greater Waipahu area**, including Village Park/Royal Kunia, Waikele, Crestview/Seaview, and Waipio. Local circulator service could be used to link individual communities with regional or "through" transit routes along Farrington Highway and Waipahu Street.

- **Centralize service to some kind of transit center.** Transit centers are seen as major transfer points with the potential to act as activity centers with opportunities for redevelopment. A transit center site should be located at the convergence of transit routes, have good access and circulation, and be at a location which attracts people or has the potential to be an activity center.

- **Provide faster access to points beyond Waipahu.** Transit connection is needed from Central Oahu to Waipahu. More frequent and reliable service was also felt to be needed.

3.3.3 Pedestrian/Bikeway Needs

Sidewalks are provided along some of the streets in Waipahu, but many of the major thoroughfares still do not have adequate pedestrian access. Prominent among these are Farrington Highway, particularly along the makai frontage between Waikele Stream and Paiwa Street, and along portions of Waipahu Street. Some older sections of Mokuola Street and Paiwa Street also do not have sidewalks. Pedestrian accessways to and along the Pearl Harbor shoreline have also not been developed.

The interior of Waipahu Town presently does not have any bike lanes or dedicated bike paths. There are bike paths on peripheral areas such as Kunia Road and Fort Weaver Road, and a portion of the shoreline bike path along the West Loch Shoreline Park and from Pearl City to Waipio Point Access Road has been completed. Although there are plans for the designation of bike routes, the Transportation Survey for Waipahu revealed safety concerns over the use of bicycles on City streets without dedicated bike lanes or bike paths.

There is the need for identifying and developing pedestrianways and bikeways to connect the existing residential areas with activity centers and recreational areas. Bike paths need to be identified and separated bikeways developed if possible to increase usage and safety along major streets and corridors. The proposed shoreline bike path needs to be integrated with other mauka areas of Waipahu, including the Hawaii's Plantation Village, the Civic Center, Old Town Commercial Area, and the Sugar Mill/Hans L'Orange Park

area. Opportunities for integrating these uses are available through use of the OR&L Right-of-Way, Hikimoe Street, Mokuola Street, Waipahu Street, and Waipahu Depot Road.

3.3.4 Interrelationship of Transportation System Needs

The interrelationship of the various transportation system needs enhances the livability of the area by increasing the availability of travel mode choices for people. Alternative travel mode choices are facilitated by effectively integrating locational and design considerations of the roadway network, public transit and pedestrian/bikeway elements. The interconnection of streets improves circulation patterns by increasing the number of direct routes for motorists and pedestrians, shortening walking and biking distances, and improving transit accessibility and circulation. Safe, pedestrian-friendly streets are essential in promoting walking, transit use, and bicycling. Enhanced pedestrian mobility increases the potential for transit use and reduces automobile trips. Likewise, public transit routes and amenities strategically integrated with pedestrian and bikeway facilities would further encourage use of these travel modes. The provision of enhanced bikeway facilities offers bicyclists better protection from motorized traffic and improved access to activity areas, thereby encouraging bicycling as a safe travel mode choice.

4. Transportation Plan

The transportation plan integrates the public transit system, pedestrian/bikeway circulation, and roadway network in creating a more livable community for Waipahu. The integrated pedestrian/bikeway circulation and roadway network components are depicted in Figure 2-3. The public transit system is depicted in Figures 2-4 and 2-5. This section focuses on and documents the planning analysis, plan elements and rationale involved for the three major transportation components of the integrated plan.

4.1 Public Transit System

The public transit system consists of future public transit (bus) service and facilities in the Waipahu area. The transit system identifies enhancements to major transfer points, and accommodates transit riders and visitors with convenient opportunities to retail and service facilities within the Waipahu Town area. The transit system provides both access to and internal circulation within the Waipahu area, linking major land uses and activity and employment areas, thereby reducing dependence on the automobile. In general, activity anchors established in the Waipahu Town Plan have been identified as destinations in the development of the public transit system.

4.1.1 Recommended Public Transit Projects

This section describes the recommended public transit projects for the Waipahu area.

4.1.1.1 Waipahu Public Transit Plan

Starting with community-based transit system proposals developed at the June 1997 Waipahu public transit workshop, the City DTS and OTS developed a public transit plan for Waipahu based on anticipated operating conditions and capabilities. The plan identifies Short-Range and Mid-Range actions. The plan's general features are as follows:

- *Provide shuttle service to link individual communities within the greater Waipahu area.* The current transit system in Waipahu does not provide a link between the individual communities within the greater Waipahu area. This is especially prevalent in the lack of a transit link between the communities mauka of the H-1 Freeway (Village Park/Royal Kunia, Waikele, and Seaview/Crestview) with the makai Waipahu Town core area. Shuttle service linking the various communities, including

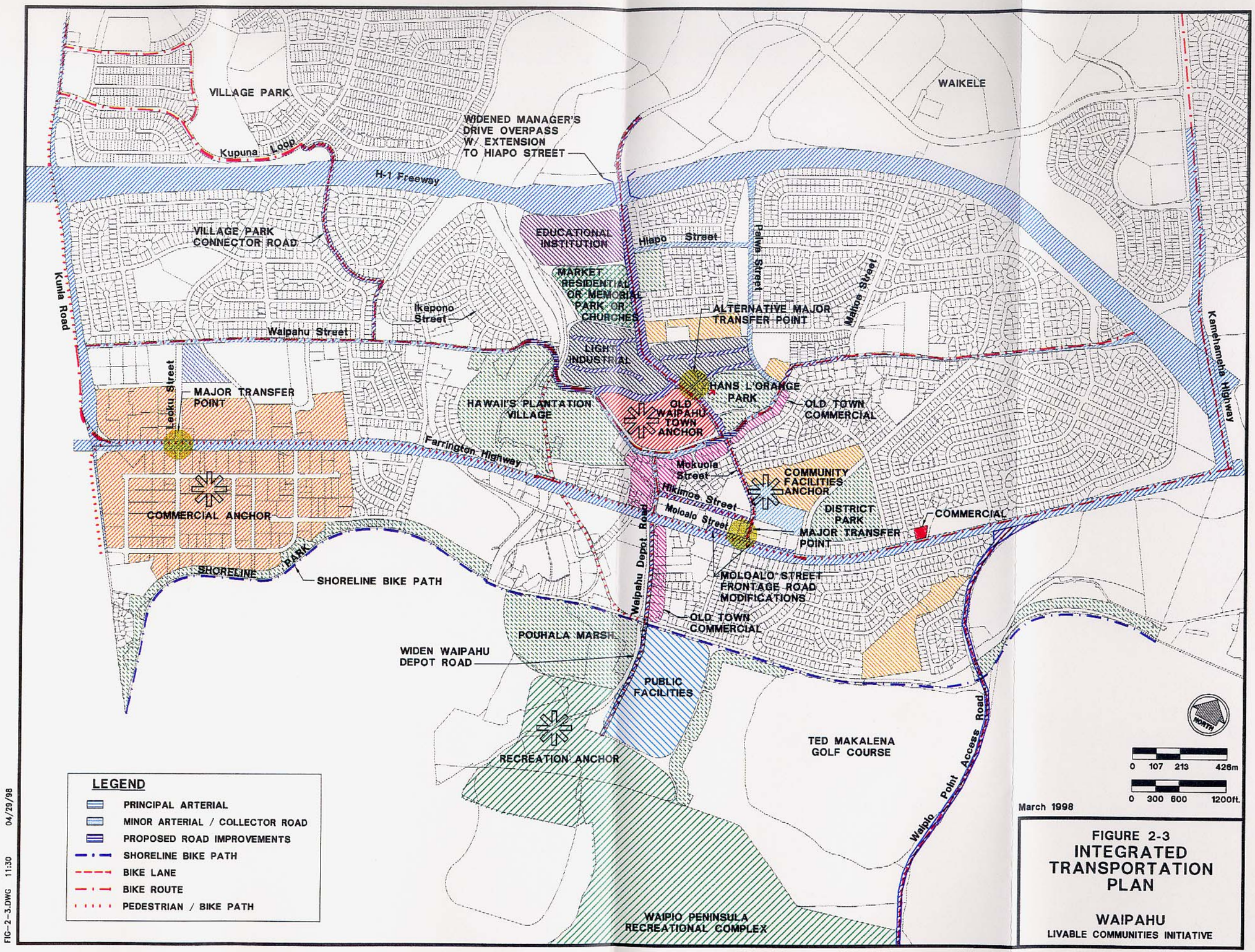

FIG-2-3.DWG 11:30 04/29/98

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FIGURE 2-3
INTEGRATED TRANSPORTATION PLAN

WAIPAHU
LIVABLE COMMUNITIES INITIATIVE

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Leeward Community College and the proposed Waipio Peninsula Recreation Complex, would provide residents with a convenient mode of transportation to various destinations within the area, as well as provide integrated accessibility within the greater Waipahu area.

- *Link shuttle service with regional or "through" transit routes along Farrington Highway and Waipahu Street.* The linking of the shuttle service with the major transit routes along Farrington Highway and Waipahu Street would further integrate the area's transit system and enhance the regional system. This link would provide for the convenient transport of area residents to the major transit routes for further transport to destinations outside of Waipahu.

- *Provide transit connections from Central Oahu.* Currently, bus service to and from Central Oahu to downtown Honolulu (Route 62 - Honolulu-Ala Moana Ctr./Halawa Valley/Wahiawa Heights-Wahiawa) bypasses Waipahu via Kamehameha Highway. There is a desire to provide a transit connection from Central Oahu through Waipahu to afford residents convenient access between these two regions. This connection would also provide a convenient opportunity for Central Oahu residents to patronize retail and service facilities within the Waipahu area.

The features of the public transit plan for Waipahu are as follows:

Short-Range Transit Plan (1997 - 1998):

The Short-Range Transit Plan links the Central Oahu route with Waipahu Town via Waikele, and re-routes specific bus routes from Farrington Highway to the H-1 Freeway via the Paiwa Interchange to access the planned "zipper lane" during the morning peak traffic period. This will allow buses to access the "zipper lane" at the designated entry point on the Honolulu side of Paiwa Street fronting the Waikele Commercial Center. Specific actions include:

1. Re-route Route 62 (Honolulu-Ala Moana Ctr./Halawa Valley/Wahiawa Heights-Wahiawa) to traverse into Waipahu via Lumiaina Street in Waikele and Paiwa Street (see Figure 2-4).

2. Re-route Route 51 (Honolulu/Makaha) to traverse from Farrington Highway onto Paiwa Street, then to the H-1 Freeway to access the "zipper lane".

3. Use the H-1 Freeway via the Paiwa Interchange for faster linkage to downtown Honolulu and utilize the "zipper lane" on the H-1 Freeway during the morning peak period (Express services).

4. Evaluate/adjust the main lines to ensure that they run "on-time".

5. Keep the public informed - Public Participation Process.

Mid-Range Phase I Transit Plan (1999 - 2001): (see Figure 2-4)

The Mid-Range Phase I Transit Plan would re-route two bus routes from Paiwa Street to the planned Mokuola Street extension, and extend the Waipahu Street transit route to service the Village Park area, further integrating the transit system within Waipahu. Specific actions include:

1. Re-route Routes 48 (Honolulu/Waikele & Ewa Mill) and 62 from Paiwa Street to Lumiaina Street/Manager's Drive/Mokuola Street.

   (NOTE: If Manager's Drive is not constructed within this timeframe, Route 62 will continue to traverse on Paiwa Street. When the route is moved from Paiwa Street to Mokuola Street, the existing route segment running mauka/makai from Lumiaina Street to the H-1 Freeway would be eliminated.)

2. Extend Route 47 (Waikiki/Honolulu & Waipahu) to include the Village Park area.

   (NOTE: Route 50 (Makakilo/City of Kapolei/Village Park & Honolulu) would no longer service Village Park.)

Mid-Range Phase II Transit Plan (2002 - 2005): (see Figure 2-5)

The Mid-Range Phase II Transit Plan would retain most of the major trunk routes along Kamehameha and Farrington Highways. Major enhancements would be the establishment of local circulator service linking the Waipahu, Village Park and Royal Kunia areas, as well as Waipahu with Leeward Community College; and, the designation of major transfer points for the convergence of major trunk routes. Specific actions include:

1. The major trunks on Kamehameha and Farrington Highways (Routes 48 (Honolulu/Waikele & Ewa Mill), 49 (Honolulu/Ewa Beach), 50, and 52 (Honolulu-Ala Moana Ctr./Halawa Valley/Wahiawa-Circle Isle)) would be retained, with slight deviations to Routes 47, 51, and 62.

ROYAL KUNIA
VILLAGE PARK
KUPUNA LOOP
H-1 FREEWAY
WAIKELE
LUMIAINA STREET
KAMEHAMEHA HIGHWAY
SEAVIEW
MANAGER'S DRIVE SITE
HIAPO STREET
PAIWA STREET
MAHOE STREET
HAPAPA ST.
HONOWAI STREET
KUNIA ROAD
WAIPAHU STREET
LEOKU STREET
HANS L'ORANGE PARK
SUGAR MILL
MOKUOLA ST.
KAHUANUI STREET
FARRINGTON HIGHWAY
MOLOALO ST.
FORT WEAVER ROAD
WAIPAHU INTERMEDIATE SCHOOL
WAIPAHU DEPOT ROAD
WAIPAHU HIGH SCHOOL
LEEWARD COMMUNITY COLLEGE
TED MAKALENA GOLF COURSE
WAIPIO POINT ACCESS ROAD
NORTH
0 107 213 426m
0 350 700 1400ft.

Legend:

- ——— Current Fixed Route Service (Routes 48, 49, 50, 51 & 52)
- – – – – Routes moved to Lumiaina St. from Paiwa (Routes 48 & 62)
- ---------- Route 47 Extension
- —·—·— Route 62 Modification

March 1998

FIGURE 2-4
MID-RANGE PHASE I TRANSIT PLAN 1999-2001

WAIPAHU
LIVABLE COMMUNITIES INITIATIVE

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ROYAL KUNIA
VILLAGE PARK
KUPUNA LOOP
H-1 FREEWAY
VILLAGE PARK CONNECTOR ROAD
HONOWAI STREET
KUNIA ROAD
LEOKU STREET
WAIPAHU STREET
FARRINGTON HIGHWAY
FORT WEAVER ROAD
WAIPAHU INTERMEDIATE SCHOOL
MANAGER'S DRIVE SITE
SUGAR MILL
HANS L'ORANGE PARK
MOKUOLA ST.
MOLOALO ST.
WAIPAHU DEPOT ROAD
WAIKELE
LUMIANA STREET
HIAPO STREET
PAIWA STREET
MAHOE STREET
HAPAPA ST.
KAHUANUI STREET
KAMEHAMEHA HIGHWAY
SEAVIEW
WAIPAHU HIGH SCHOOL
LEEWARD COMMUNITY COLLEGE
TED MAKALENA GOLF COURSE
WAIPIO POINT ACCESS ROAD
PROPOSED WAIPIO PENINSULA RECREATION COMPLEX

Legend:
- Major Trunks
- Civic Center/Royal Kunia Circulator
- Civic Center/Crestview Circulator
- Waipahu Street Corridor Trunk
- Central Oahu Connection
- Waipio Peninsula Shuttle
- Leeward Community College Shuttle
- Possible shuttle to turn around
- Major Transfer Point

NORTH

0 107 213 426m

0 350 700 1400ft.

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FIGURE 2-5
MID-RANGE PHASE II
TRANSIT PLAN
2002-2005

WAIPAHU
LIVABLE COMMUNITIES INITIATIVE

FIG-2-5.DWG 03/24/98 09:55

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2. Route 47 would provide trunk service to Village Park and traverse on Waipahu Street through Waipahu Town.

3. Route 62 would deviate off of Kamehameha Highway and traverse on Lumiaina Street/Manager's Drive/Mokuola Street, and back to Farrington and Kamehameha Highways.

4. Local circulator service would be created within the Waipahu, Village Park and Royal Kunia areas. This would include service between Leeward Community College and the designated major transfer point at the Farrington Highway and Mokuola Street intersection. Existing roadway access may need to be improved in order to provide transit service to Leeward Community College.

5. Shuttle service would be created between the proposed Waipio Peninsula Recreation Complex and the major transfer point designated at the intersection of Farrington Highway and Moloalo Street via Waipio Point Access Road and Waipahu Depot Road.

6. Two major transfer points are identified in Waipahu Town (see Figure 2-3):

   1) the existing major transfer point at Leoku Street and Farrington Highway; and,

   2) at the Mokuola Street and Farrington Highway intersection.

   An area within the planned light industrial area off Mokuola Street mauka of the sugar mill should be evaluated as an alternative site for a major transfer point.

   Major transfer points provide identifiable locations for transit functions and are located where a number of existing or proposed routes converge. These include locations where trunk lines cross one another, branches turn back, and collector/distributor routes connect with line haul routes. At a minimum, each major transfer point should have a covered shelter for waiting passengers.

   For the major transfer points identified above, there is the future potential to develop them into major transit stations with accompanying mixed urban uses in the surrounding area.

It is noted that specific transit routes may be adjusted to satisfy the requests of the community, comply with budget constraints, blend with the overall Waipahu community

plan, conform with roadway geometry, and meet Americans With Disabilities Act (ADA) requirements for accessibility. It should also be noted that modifications to the public transit plan may be required in the future in consideration of transit technology, potential for new transit vehicle types, and route changes due to passenger demand.

Internal Transit System: As a supplement to the planned public transit local circulator service, an internal transit system would provide an alternative mode of transportation and provide access to and internal circulation within the Waipahu Town core area. The City Planning Department has initiated discussions with the operator of the Waikele Center Trolley regarding the possibility of providing a future extension of the trolley service from the Waikele Commercial Center to serve the Waipahu Town core area. The extended trolley service would serve as a feeder system to the public bus transit system, ultimately transporting visitors between the Waikele Commercial Center and the Waipahu Town core. Possible service routes could include Waipahu Street, Hawaii's Plantation Village, and Amfac's planned development at the sugar mill site. On weekends and certain holidays, additional shuttle buses are employed to transport Waikele Center employees from the stores to the employee parking lot located makai of the H-1 Freeway along Paiwa Street. The trolley operator has preliminarily expressed interest in providing such a service, noting there is a wait time for these vehicles of several hours in between shuttle runs. Further discussions with the operator would be required, including consideration of associated costs in operating such a system.

4.1.1.2 Transit Station

For the Waipahu Livable Communities Initiative, a transit station facility is a development option at one of the designated major transfer points. A transit station is a facility designed to accommodate more than one bus at a time to make transfers convenient and to provide space for buses to layover between trips. Transit stations are seen as major transfer points with the potential to serve as activity centers as opportunities for redevelopment occur. Transit stations usually have extensive information signage to help passengers plan their trips. Other facility amenities would include a passenger loading/unloading area, a sheltered passenger seating area, information kiosk, and bicycle racks.

A transit station would serve the community and broader region, while benefitting Waipahu both socially and economically. By serving as a regional transit convergence point, the retail and service establishments and other attractions in Waipahu would benefit from passenger activity resulting from the transit station.

Transit Station Planning Criteria: General locational guidelines for transit stations and functional characteristics of a typical transit station are identified below. These planning criteria were used in evaluating the suitability and feasibility of each of the 10 alternative sites identified in the subsequent Section for a transit station.

General Locational Guidelines for Transit Stations:

1. Provide direct connection to express lines or major arterials.
2. Interface with other travel modes (bikeways, pedestrian paths, auto).
3. Available land area.
4. Located near the express lines.
5. Are removed from points of peak land value.
6. Proximity to major employment or activity centers.
7. Not adjacent to residential areas.

Functional Characteristics of a Typical Transit Station:

1. Direct pedestrian connections to other modes, including trolley service.
2. Separate commuter/express bus loading and unloading areas.
3. Provision for platform shelters (center platform loading ideal).
4. Parallel unloading areas with passing lanes for commuter/express buses.

Amenities at major transfer points should minimally include covered shelters at passenger waiting areas. All transit amenities should be designed to comply with ADA requirements for accessibility.

A transit station facility should include amenities which provide convenience and comfort for its users. Canopy-type shelters over passenger waiting areas and loading/unloading areas on open lots are important for patron convenience and protection. Facilities for bicycle parking should be located close to the passenger platform area for convenience purposes. In addition to the standard bike racks, consideration should also be given to

provision of anti-theft bicycle storage facilities to encourage the use of bicycles. Space permitting, such facilities could include storage lockers which would also provide protection from the elements. Well-designed bicycle lockers could also serve other utilitarian purposes through integration with seating areas or information kiosks. The bicycle lockers could be coin operated or rented from a vendor. It is noted that on Oahu, there are provisions for interfacing bicycle travel with public transit with the use of bicycle racks on buses.

If there is adequate space, a small parking lot would allow people to park and wait for transit riders to return in the afternoon/early evening. The parking lot could be striped for short-term and long-term parking, with the short-term parking stalls located closer to the passenger platform area.

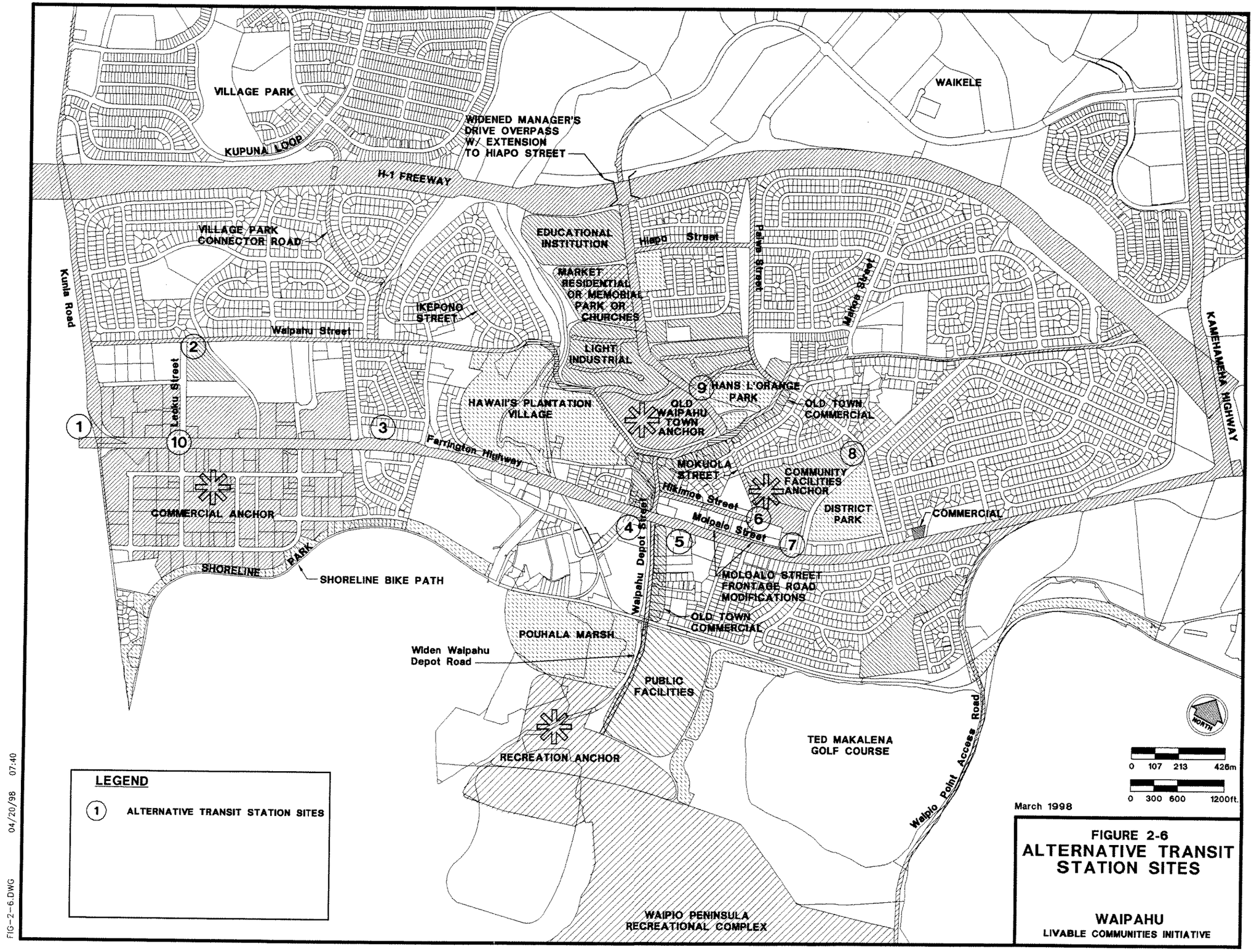
Alternative Transit Station Sites: A total of 10 sites located within the Waipahu Town area were preliminarily identified as alternative sites for a transit station in Waipahu (see Figure 2-6). The sites were identified based on various factors, including proximity to activity centers and major transit routes, and availability of land within reasonable proximity to the foregoing factors.

Site 1: Northwest corner of the intersection of Farrington Highway and Kunia Road. Location is good from a regional standpoint (as a hub for buses to Ewa, Makakilo, Waianae, etc.) and proximity to the H-1 Freeway. Disadvantage is the site's distance from activity centers.

Site 2: Near the intersection of Leoku and Waipahu Streets within a portion of the new Waipahu Post Office site. The site is sizeable and there is the potential availability of land. Disadvantage is the site's distance from activity centers and major trunk routes.

Site 3: Vicinity of the Westgate Shopping Center near the intersection of Pupukahi Street and Farrington Highway. A transit facility at this site could utilize the frontage road (Pupupani Street) for off-street circulation and as queuing areas for passenger loading/unloading activities. Disadvantages are the lack of proximity to major activity centers and not being located directly adjacent to a major intersection which may cause pedestrian-related concerns.

Sites 4 and 5: Farrington Highway/Waipahu Depot Road intersection. Ideal location in terms of proximity to planned land uses in the area, including the redeveloped sugar mill site, as well as the Waipio Peninsula area.


VILLAGE PARK
KUPUNA LOOP
WIDENED MANAGER'S DRIVE OVERPASS W/ EXTENSION TO HIAPO STREET
WAIKELE
H-1 FREEWAY
VILLAGE PARK CONNECTOR ROAD
EDUCATIONAL INSTITUTION
Hiapo Street
Kunia Road
Paiwa Street
Makaa Street
KAMEHAMEHA HIGHWAY
MARKET RESIDENTIAL OR MEMORIAL PARK OR CHURCHES
IKEPONO STREET
Waipahu Street
LIGHT INDUSTRIAL
HANS L'ORANGE PARK
OLD TOWN COMMERCIAL
HAWAII'S PLANTATION VILLAGE
OLD WAIPAHU TOWN ANCHOR
Lecku Street
Farrington Highway
MOKUOLA STREET
COMMUNITY FACILITIES ANCHOR
Hikimoe Street
DISTRICT PARK
COMMERCIAL
COMMERCIAL ANCHOR
Waipahu Depot Street
Malpalo Street
SHORELINE PARK
SHORELINE BIKE PATH
MOLOALO STREET FRONTAGE ROAD MODIFICATIONS
OLD TOWN COMMERCIAL
POUHALA MARSH
Widen Waipahu Depot Road
PUBLIC FACILITIES
TED MAKALENA GOLF COURSE
Waipio Point Access Road
RECREATION ANCHOR
WAIPIO PENINSULA RECREATIONAL COMPLEX
NORTH
0 107 213 426m
0 300 600 1200ft.
March 1998
LEGEND
1 ALTERNATIVE TRANSIT STATION SITES
FIG-2-6.DWG 04/20/98 07:40
FIGURE 2-6
ALTERNATIVE TRANSIT STATION SITES
WAIPAHU
LIVABLE COMMUNITIES INITIATIVE

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Site 6: Vicinity of the Waipahu Civic Center area. Location is good due to its proximity to Mokuola Street and the nearby sugar mill redevelopment, as well as to future pedestrian/bikeway facilities.

Site 7: Former Cornet Store site along Moloalo Street near Farrington Highway. A transit station at this site could make use of the frontage road (Moloalo Street) which could also provide off-street circulation.

Site 8: East end of the Waipahu Civic Center site near Paiwa Street. The site is within proximity to freeway access, but has a small frontage area.

Site 9: Near the sugar mill in the vicinity of the planned Mokuola Street extension and Hans L'Orange Park. Location is good due to its close proximity to existing and future activity centers and to freeway access via Paiwa Street.

Site 10: Leoku Street and Farrington Highway intersection. Currently serves as a major transfer point for the public transit system. Location is good due to its close proximity to major trunk routes and proposed circulator routes and to commercial areas.

To illustrate how a transit station would look and function, conceptual site plans were developed for two of the alternatives: the former Cornet Store site (Site 7) and the site near the sugar mill (Site 9). These plans depict the layout of facilities that may be associated with a typical transit station (see Figures 2-7 and 2-8). In general, these sites are identified as feasible transit station sites based on locational criteria, including providing direct connection to bus lines and a major arterial (Farrington Highway); proximity to other travel modes including future planned bikeways and pedestrian paths; proximity to employment or activity centers including the planned redeveloped sugar mill; and, the distant location from residential areas.

Preferred Transit Station Site: The preferred site for a transit station is at the intersection of Mokuola Street and Farrington Highway. The site is designated as one of the major transfer points in the Waipahu public transit plan (see Figure 2-3).

The subject site is identified as a preferred site based on its locational criteria, including its proximity to major bus routes and a major arterial (Farrington Highway), as well as its proximity to future transit service as identified in the Waipahu Public Transit Plan described in Section 4.1.1.1. Other considerations include the site's proximity to other travel modes including future planned bikeways and pedestrian paths, proximity to employment and activity centers including Amfac's planned sugar mill redevelopment,

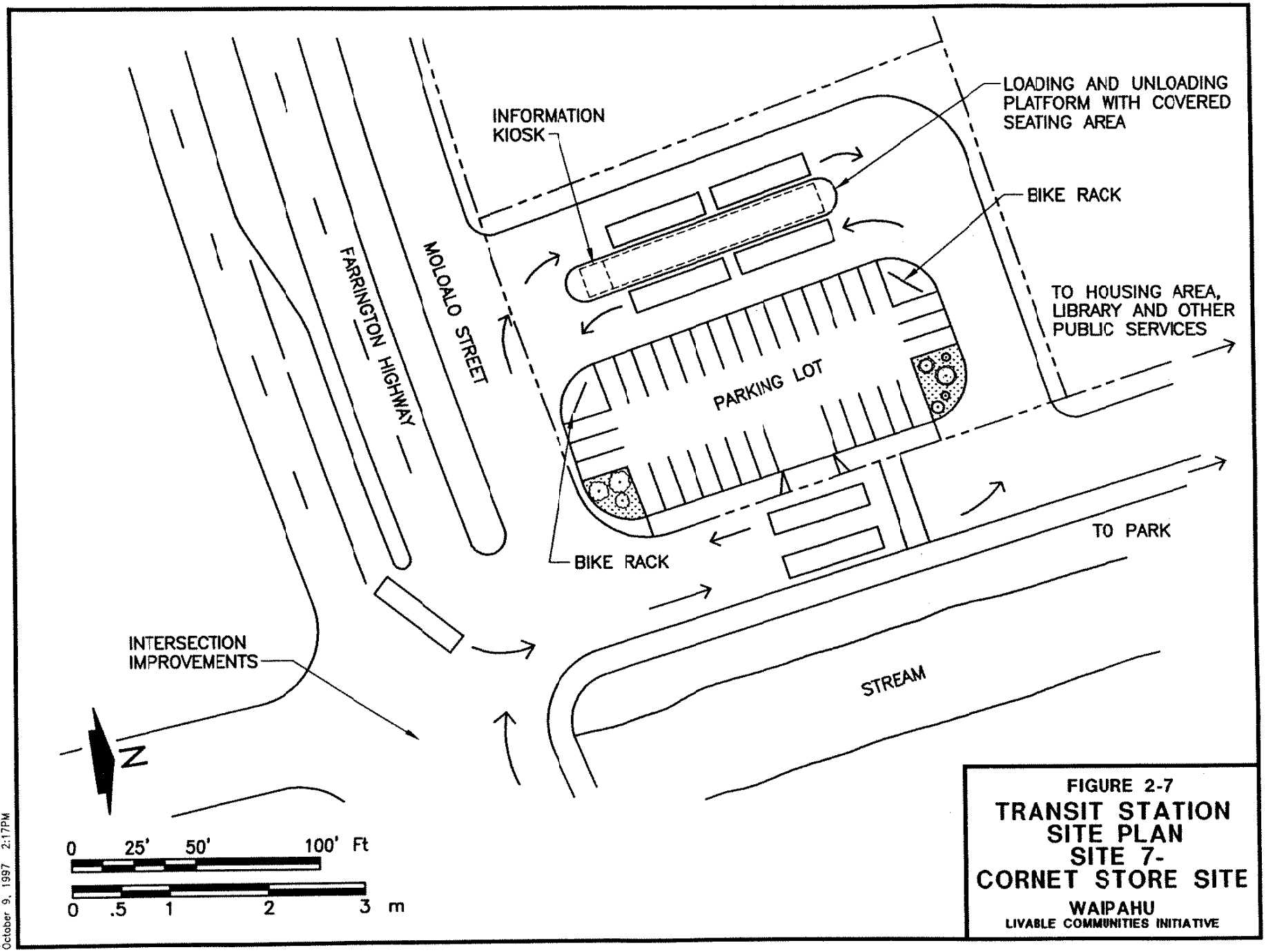

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FIGURE 2-7

TRANSIT STATION SITE PLAN SITE 7- CORNET STORE SITE

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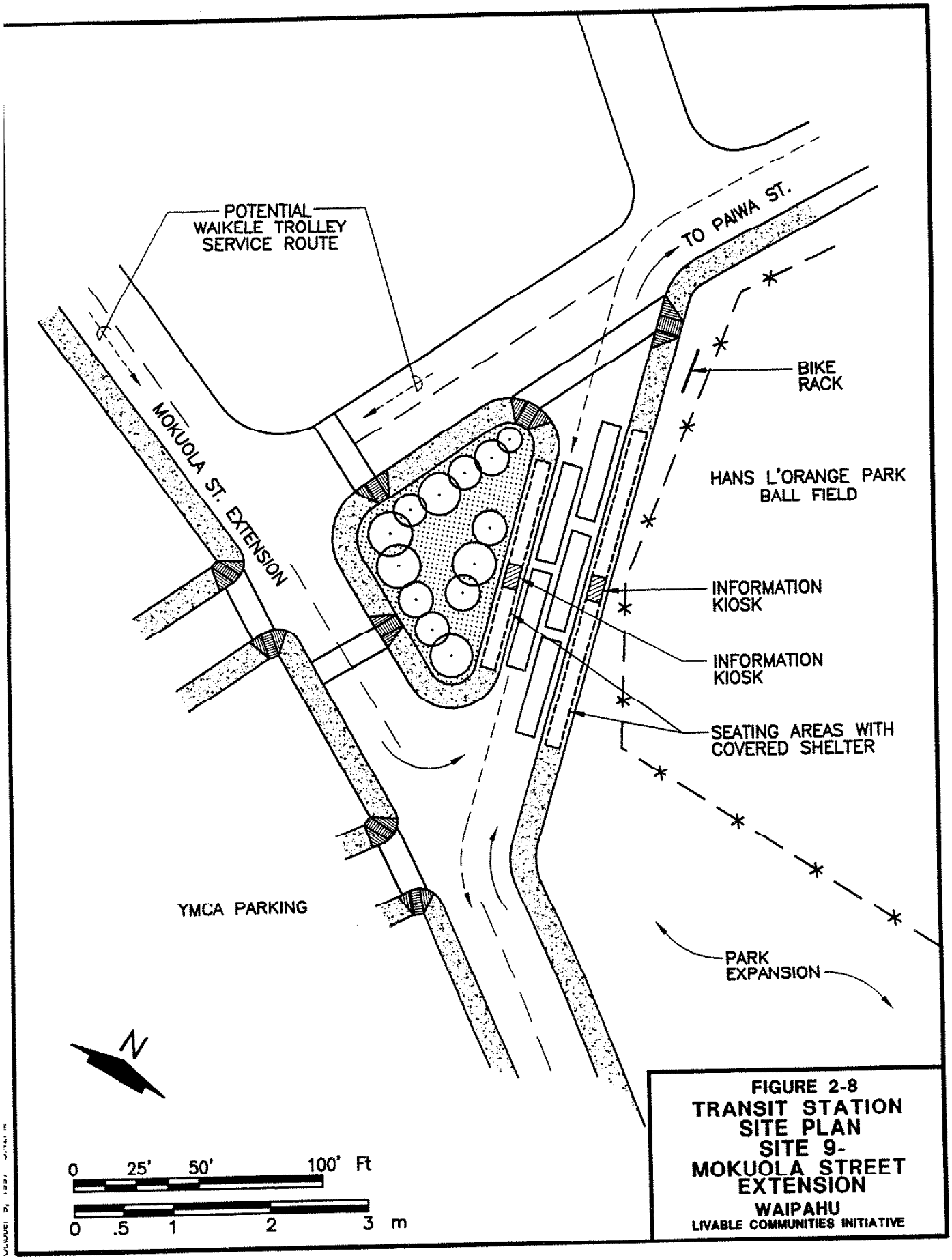

FIGURE 2-8
TRANSIT STATION SITE PLAN SITE 9- MOKUOLA STREET EXTENSION
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proximity to the Civic Center, and its distant location from residential areas. The eventual development of a transit station in the vicinity of the Civic Center recognizes existing commercial uses in the area and further development of these areas into mixed-use areas.

Leoku Street Transit Station: The proposed revised Central Oahu DP (Public Review Draft, July 1995) envisions future residential (primarily multi-family)/commercial mixed-use areas in the vicinity mauka of the existing major transfer point at Leoku Street and Farrington Highway. Location of an additional transit station in this area would be appropriate to serve such future land uses.

4.2 Pedestrian/Bikeway Circulation

Currently, the only designated bikeway facilities in the Waipahu area are segmented facilities along the fringes of the town, with no connections to the town core. Pedestrian sidewalk facilities are more prevalent within the town core, although much of these facilities are in need of improvement and new facilities are needed to further link existing and proposed activity areas. The proposed pedestrian/bikeway system is intended to effectively serve and connect inter-community routes between major destinations in Waipahu and provide convenient access to the public transit system. The pedestrian/bikeway system is intended to encourage alternative modes of travel between the various land use facilities in Waipahu. The integration of the proposed bikeway system with other existing and planned bikeway systems in the area accommodates a broad range of bicyclists, including recreational, commuter/utilitarian, and bicycling enthusiasts. The proper placement of improved sidewalks and paths also encourages increased pedestrian activity between activity centers within the town core.

4.2.1 Bikeway Designations

In discussing facilities for bicycles, it is important to distinguish the specific types of bikeway facilities being proposed for designated areas. The term "bikeway" is used to define any trail, path, part of a highway or shoulder, sidewalk, or other travelway specifically signed and/or marked for bicycle travel. The term is applicable whether or not the facility is reserved for the exclusive use of bicycles or is shared with some other type of vehicle or with pedestrians. The various designations of bikeways are defined as follows:

Bike Path: A completely separate right-of-way for the exclusive or semi-exclusive use of bicycles. Where such a facility forms part of the 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). Bike paths are primarily proposed in areas of special scenic value, or where integration with existing travel corridors would otherwise prove hazardous.

Bike Lane: A portion of a roadway that has been designated for the preferential or exclusive use of bicycles. Through travel by motor vehicles is not allowed. While there are many variations on the general concept, there are only two different types of bike lanes -- protected and unprotected. A protected bike lane is separated from adjacent vehicular traffic by a physical barrier such as concrete bumper stops, placement of the lane between parked cars and the curb, a median buffer landscape strip, or other similar means. An unprotected bike lane is delineated by a painted white line or a row of pavement markers. The minimum width of a bike lane is 4 feet.

Bike Route: A street or system of streets that meets certain minimum standards and is officially designated and marked as a "bike route". Bicycles share the roadways with moving vehicles. Bike routes are generally used to provide continuity between urban centers, especially in the more rural and less heavily used travelways outside the central business and commercial districts. In some cases, where sufficient space for a bike lane is not available, especially in congested urban areas, bike routes provide continuity on a bikeway. A minimum travelway width of 12 feet is required for the designation of bike routes.

4.2.2 Recommended Pedestrian/Bikeway Projects

This section describes the recommended pedestrian/bikeway projects for the Waipahu area.

4.2.2.1 Bike Plan Hawaii

The proposed pedestrian/bikeway system considers the bikeway improvements recommended in the State Department of Transportation Highways Division's *Bike Plan Hawaii* (April 1994). The *Bike Plan Hawaii* recommends the distribution of new bikeway facilities along the general perimeter of the islands of Oahu, Hawaii, Maui, and Kauai as well as throughout various community locations. The objectives and implementing activities of the *Bike Plan Hawaii* are as follows:

1. Provision of an integrated system of bikeways.
2. Expansion of commuter and recreational bicycling.
3. Improvement of the safety of bicyclists and motorists on shared roadways.

4. Coordinated implementation of the bikeway system.
5. Systematic evaluation and revision of bikeway system plans.

The *Bike Plan Hawaii* identifies the following existing bikeway facilities within the Waipahu area (see Figure 2-3):

1. A bike route along Kunia Road between Farrington Highway and Waipahu Street. The bike route transitions to a bike path from Waipahu Street to the area mauka of the H-1 Freeway in the vicinity of Village Park.

2. A bike path along Fort Weaver Road from Farrington Highway makai into Ewa Town.

3. A shoreline bike path along the West Loch shoreline to the vicinity of the Waipahu light industrial area. The shoreline bike path continues from Waipio Point Access Road east to the Rainbow Bay Marina area in Aiea.

The *Bike Plan Hawaii* recommends the following bikeway facilities for the Waipahu area (see Figure 2-3):

1. Extension of the shoreline bike path connecting the northern end of the existing West Loch bike path to Lehua Avenue in Pearl City along the OR&L right-of-way. (Note: The segment of the shoreline bike path from Waipio Point Access Road to Lehua Avenue has recently been constructed.)

2. Designation of a bike route along Farrington Highway from Kunia Road to Kamehameha Highway. The bike route would also extend along Farrington Highway west of Kunia Road to the Waianae Coast. Due to safety considerations, however, a bike path would be more suitable along the segment of Farrington Highway between Kunia Road and Paiwa Street. The bike path could be integrated with the provision of sidewalks and landscaping proposed along the makai side of Farrington Highway. Due to right-of-way width constraints, bike routes would be designated along the segments crossing Waikele Stream Bridge, Waipahu Canal Bridge and between Paiwa Street and Kamehameha Highway.

3. Provision of a bike lane along Waipahu Street between Kunia Road and Kamehameha Highway. However, due to the inadequate width of the

existing Waipahu Street right-of-way, a bike route is the most that can be designated along Waipahu Street.

4. Provision of a bike lane along Waipahu Depot Road between Waipahu Street and the shoreline OR&L right-of-way makai of Farrington Highway. However, due to the inadequate width of the existing segment of Waipahu Depot Road between Waipahu Street and Farrington Highway, a bike route is the most that can be designated along this segment. Also, along the segment of Waipahu Depot Road makai of Farrington Highway, a pedestrian/bike path would be more suitable in consideration of linking the proposed surrounding land use facilities and in light of the proposed character of this street as established in the Waipahu Town Plan.

5. Designation of a bike route along Kunia Road from the northern end of the existing Kunia Road bike path mauka to Central Oahu.

6. Designation of a bike route along Kamehameha Highway extending makai from Central Oahu along the eastern boundary of Waipahu. The bike route would transition to a bike lane in the vicinity of the Seaview residential area and continue makai to Farrington Highway.

4.2.2.2 Pedestrian/Bikeway Plan

The proposed pedestrian/bikeway system considers the existing and future bikeways in the Waipahu area, specifically those from *Bike Plan Hawaii*, in providing pedestrian/bikeway connections in the area. The proposed pedestrian/bikeway system improvements consider the access requirements in providing connections between the major communities mauka of the H-1 Freeway and Waipahu Town, within Waipahu Town, and the areas makai of Farrington Highway. The intent is to provide for a pedestrian/bikeway system which is primarily separated from vehicular traffic, thereby ensuring a pleasant, attractive and safe environment for facility users. All proposed pedestrian/bikeway improvements would be designed to comply with ADA requirements for accessibility.

The integrated pedestrian/bikeway system will provide for the following pedestrianway and bikeway connections within the Waipahu area (see Figure 2-3). These proposed pedestrian/bikeway improvements are discussed in further detail in the subsequent sections.

Note: In establishing the proposed typical roadway sections depicted herein, the standard roadway sections as set forth in the City and County of Honolulu's Subdivision Rules and Regulations were used as a point of reference, with modifications made to accommodate the proposed pedestrian/bikeway improvements. These proposed modifications would be confirmed during the respective project's design phase.

Pedestrian/Bikeway Connections of Communities Mauka of the H-1 Freeway with Waipahu Town: The proposed improvements will provide bikeway connections between the Waikele and Village Park/Royal Kunia communities mauka of the H-1 Freeway with Waipahu Town. Pedestrian and bikeway facilities will be provided along the extended Mokuola Street from the Waikele area at the Manager's Drive overpass makai to Farrington Highway. The Village Park/Royal Kunia communities will be directly linked to the Waipahu Town area via bikeway improvements along the proposed Village Park Connector Road. Development of the connector road bikeway will be from Kupuna Loop in Village Park via an improved existing cane haul road and a portion of the U.S. Navy's Waikele Ammunition Depot Road to the proposed Waipahu Street bike route at the makai end. Within Village Park, the bikeway would continue along the makai and mauka segments of Kupuna Loop west to Kunia Road. These segments of Kupuna Loop will be connected via a mauka-makai bikeway connection along Kahaeka Street.

Pedestrian/Bikeway Improvements within Waipahu Town: The proposed pedestrian/bikeway system will build upon the existing and future bikeway facilities within the Waipahu Town area, including those along Farrington Highway, Waipahu Street, Kunia Road, Kamehameha Highway, and Waipahu Depot Road. Pedestrian/bikeway facilities will be provided along the extended Mokuola Street from the Manager's Drive overpass to Farrington Highway. This will provide connections to various land uses and activity areas in the town via pedestrian/bikeway facilities along Waipahu Street and Farrington Highway. Proposed pedestrian/bike path facilities along Hikimoe Street will also provide an important east-west connection between the Civic Center along Mokuola Street and the commercial establishments along Waipahu Depot Road.

Pedestrian/Bikeway Improvements Makai of Farrington Highway: With the emphasis on recreational facilities makai of Farrington Highway, specifically within the Waipio Peninsula area, the proposed pedestrian/bikeway facilities will provide linkages between the Town core area and the Peninsula which are oriented primarily toward recreational users. The primary improvement will be development of the segment of the shoreline bike path along the OR&L right-of-way between the West Loch Shoreline Park and Waipio Point Access Road to provide access to nearby recreational facilities. This will also provide for a continuous shoreline bike path system from the West Loch Shoreline

to Rainbow Bay Marina in Aiea. Another important linkage will be the provision of a pedestrian/bike path facility from the shoreline bike path mauka to Hawaii's Plantation Village. This will link future recreational activities located within Waipio Peninsula to other proposed commercial and recreational facilities within the Waipahu Town core area. Pedestrian/bikeway facilities will also be provided along the two major roadways leading to the Waipio Peninsula area -- Waipio Point Access Road and Waipahu Depot Road. This will provide additional linkages with future recreational facilities located within Waipio Peninsula and other proposed commercial and recreational facilities within Waipahu Town.

4.2.2.2.1 Hikimoe Street Pedestrian/Bike Path

Hikimoe Street provides an important linkage in the Waipahu Town core area. Located between Farrington Highway and Waipahu Street, it provides a strategic connection between the Civic Center along Mokuola Street and the commercial establishments along Waipahu Depot Road (see Figure 2-9). Hikimoe Street currently consists of two travel lanes flanked by parking lanes and sidewalks within a 58-foot wide, 1,200-linear foot right-of-way.

Hikimoe Street is prevalent with commercial establishments, and serves as the primary service loading area for businesses located along its makai side. Future development along the mauka side of the street is proposed to include a commercial business and an elderly day care facility. The proposed pedestrian/bike path improvements to Hikimoe Street are intended to enhance its role as a key vehicular and pedestrian connection, with an emphasis on improving its streetscape to create a more pedestrian/bicycle-friendly environment. At the east end of Hikimoe Street, the pedestrian/bike path would connect to the proposed bike lane along Mokuola Street which will continue mauka to future commercial/light industrial and recreational areas and the Waikele residential and commercial development. At the west end of Hikimoe Street, the pedestrian/bike path would connect to the future bike route along Waipahu Depot Road mauka of Farrington Highway.

Proposed Project: The Hikimoe Street improvements are proposed to include two travel lanes, a parking lane, and a sidewalk along the makai side (see Figure 2-10). On the mauka side of the street, the roadway would be reconstructed to expand the existing sidewalk area to include a concrete pedestrian/bike path and a landscaping strip. The proposed improvements would be accommodated within the existing 58-foot wide right-of-way. Development of approximately 650 lineal feet of the proposed improvements within the eastern portion of Hikimoe Street would need to be coordinated with

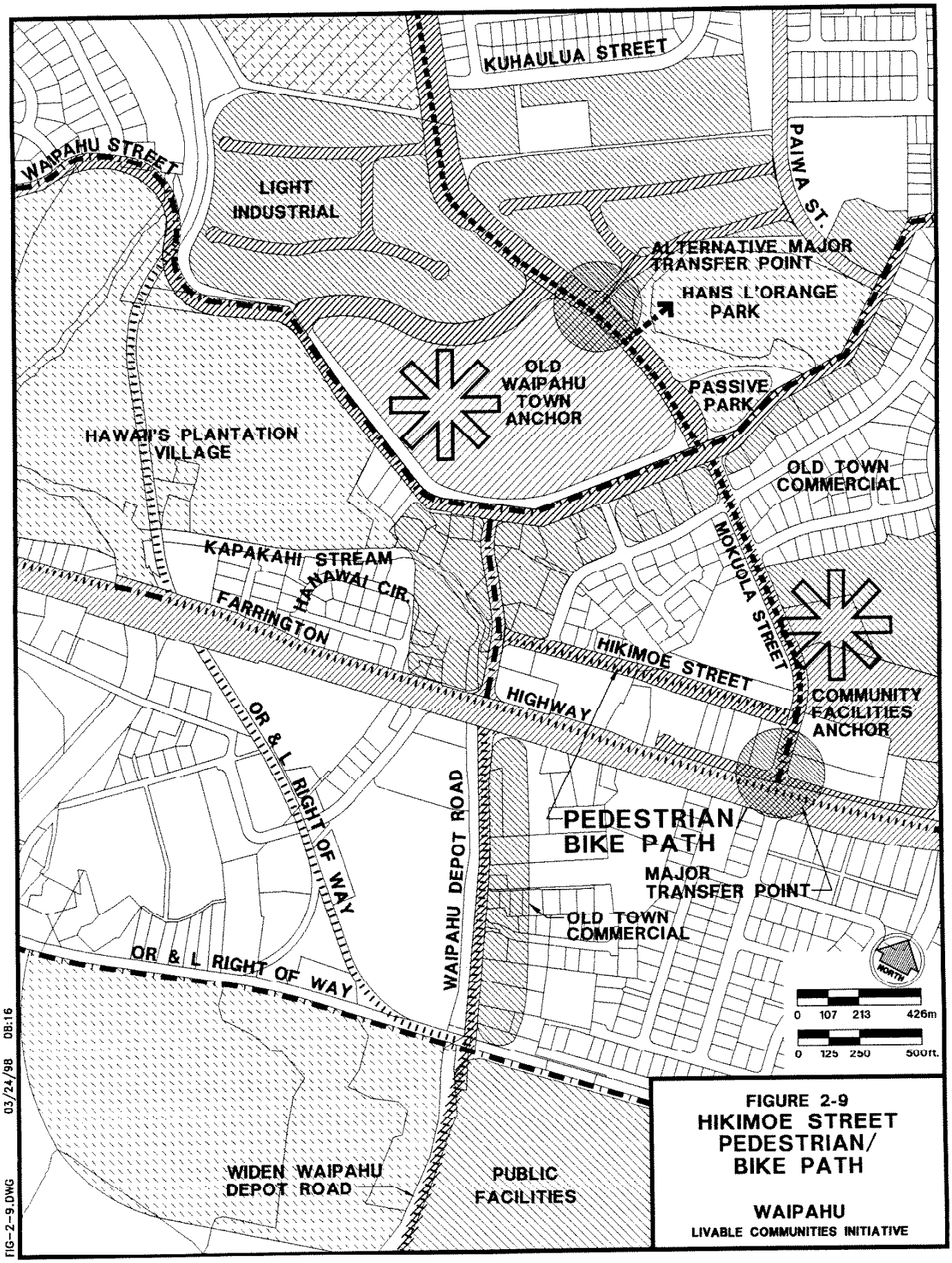

FIGURE 2-9
HIKIMOE STREET PEDESTRIAN/ BIKE PATH

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FIG-2-9.DWG 03/24/98 08:16

landowner State Housing Finance and Development Corporation. The remainder of Hikimoe Street is under the jurisdiction of the City and County of Honolulu.

4.2.2.2.2 Shoreline Bike Path

The shoreline bike path currently skips Waipahu, traversing along the abandoned OR&L right-of-way along West Loch, and continuing between Waipio Point Access Road and the Rainbow Bay Marina in Aiea. This bike path provides an important greenbelt connection between the various shoreline parks along Pearl Harbor as well as recreational opportunities. The proposed bike path along the shoreline of Pearl Harbor through the length of Waipahu would link the existing shoreline bike path system, providing a continuous system from the West Loch Shoreline Park to the Rainbow Bay Marina area near the stadium. The bike path would allow access to future adjacent recreational facilities as well as provide opportunities for expanded security and emergency service vehicle access to areas currently not accessible. Development of the bike path would also enable clean-up and beautification of the shoreline area. In addition to extending recreational opportunities along the Pearl Harbor shoreline, the proposed shoreline bike path would provide connection points to planned mauka/makai pedestrian/bikeways along Waipahu Depot Road and the existing OR&L right-of-way spur running west of and parallel to Waipahu Depot Road.

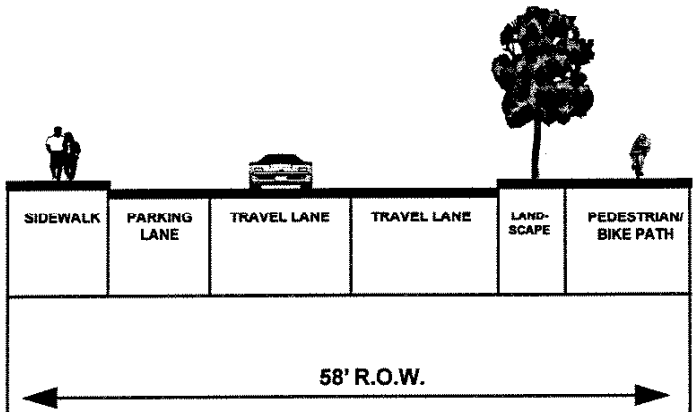

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FIGURE 2-10
PROPOSED TYPICAL SECTION - HIKIMOE STREET

Proposed Project: The proposed shoreline bike path will be located within the existing 40-foot OR&L right-of-way located along the Pearl Harbor shoreline through Waipahu (see Figure 2-11). The project consists of the design and construction of an asphaltic concrete bike path with landscaping strips on both sides along approximately 11,080 linear feet (2.1 miles) of shoreline of Waipahu from the northern end of the West Loch bike path to Waipio Point Access Road (see Figure 2-12). A topographic survey may be required to delineate the OR&L right-of-way. The shoreline bike path would require at-grade crossings where it intersects with Waipahu Depot Road and Waipio Point Access Road. This would require coordination with the City DTS and appropriate signage or other measures for safe crossing by pedestrians/bicyclists and motorists.

Development of the shoreline bike path would require coordination with the various landowners of the OR&L right-of-way. The segment of the OR&L right-of-way between the northern end of the West Loch bike path and Waipahu Depot Road is under the ownership of the State Department of Transportation. The segment between Waipahu Depot Road and Waipio Point Access Road is under the ownership of various landowners, including Isobe Enterprises, Inc., United States of America, Hawaiian Electric Company, Inc., and the City and County of Honolulu. The bike path design and alignment would also need to be coordinated with the Hawaiian Railway Society in consideration of the Society's potential long-term extension of the OR&L train operations into Waipahu. Coordination would also be required with affected fuel refinery and utility companies and agencies.

4.2.2.2.3 Pedestrian/Bikeway, Hawaii's Plantation Village to Shoreline Bike Path

Pedestrian/bikeway access is needed from the Waipahu Town core and park areas to the shoreline area. A key visitor attraction in the Waipahu Town core is the Hawaii's Plantation Village (also known as Waipahu Cultural Garden Park), a facility which preserves and perpetuates the town's former plantation lifestyle. Access to this facility is currently available only from Waipahu Street.

The proposed pedestrian/bike path would provide an alternative access to Hawaii's Plantation Village, as well as link future recreational activities located within Waipio Peninsula to other proposed commercial and recreational facilities within the Waipahu Town core. The existing abandoned OR&L right-of-way which runs mauka/makai between the shoreline OR&L right-of-way and through a portion of Hawaii's Plantation

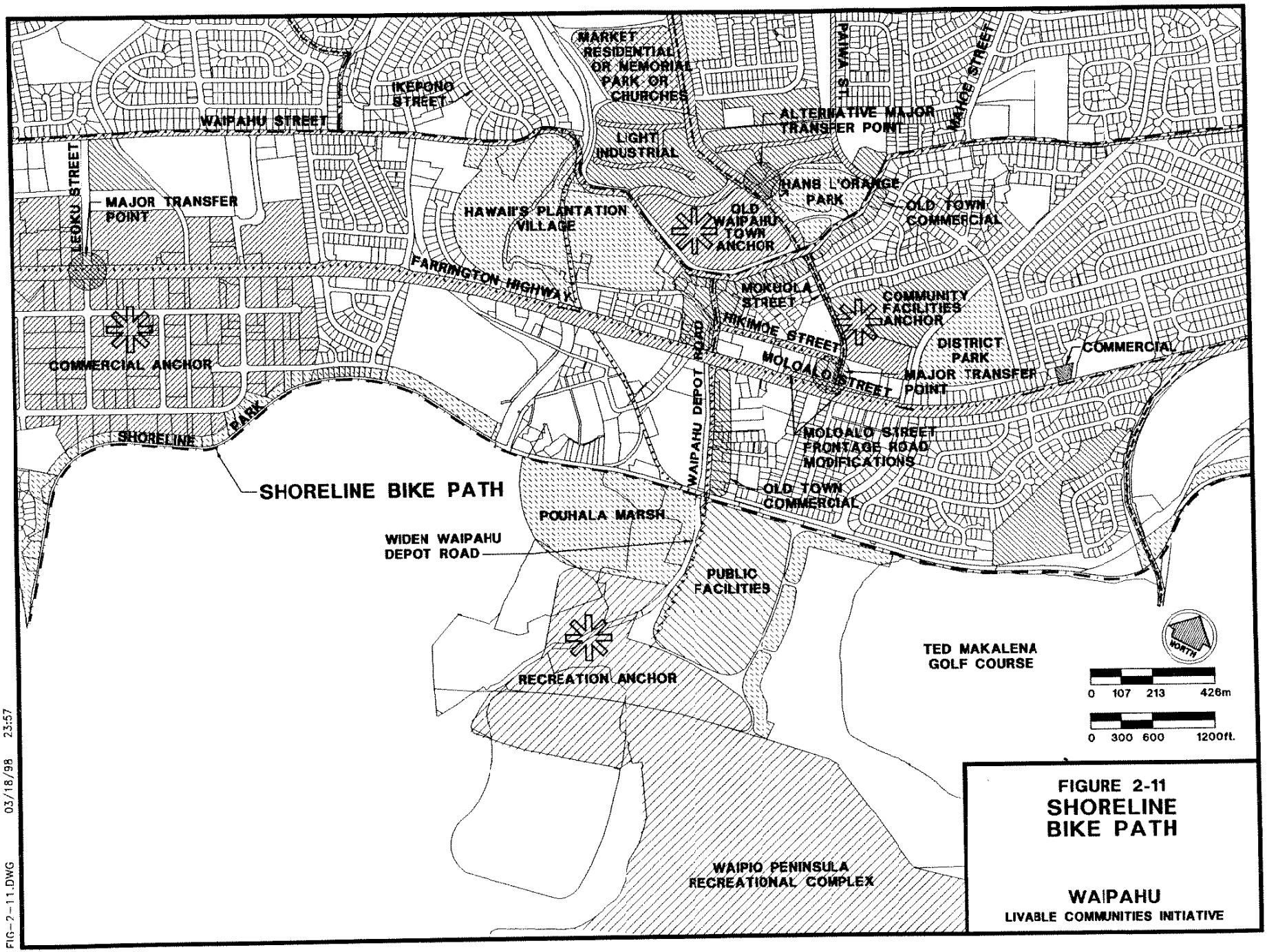

FIGURE 2-11
SHORELINE
BIKE PATH

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FIG-2-11.DWG 03/18/98 23:57

Village site provides a logical conversion for partial use as a pedestrian/bike path connection (see Figure 2-13). In addition to providing an alternative mode of travel within Waipahu Town, the proposed improvements provide opportunities for area beautification of undeveloped lands as well as access to remote areas for security and emergency purposes.

Proposed Project: The proposed project involves the design and construction of an approximately 2,650 linear-foot asphaltic concrete pedestrian/bike path connecting the proposed shoreline bike path with Hawaii's Plantation Village (see Figure 2-14). The pedestrian/bike path will be located within the existing approximately 40-foot wide OR&L right-of-way and include landscaping strips (where applicable) on both sides. A topographic survey would be required to delineate the OR&L right-of-way.

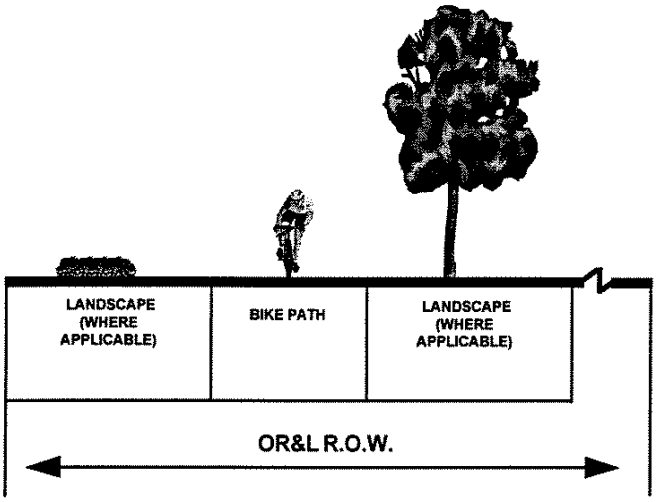

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FIGURE 2-12
PROPOSED TYPICAL SECTION - SHORELINE BIKE PATH

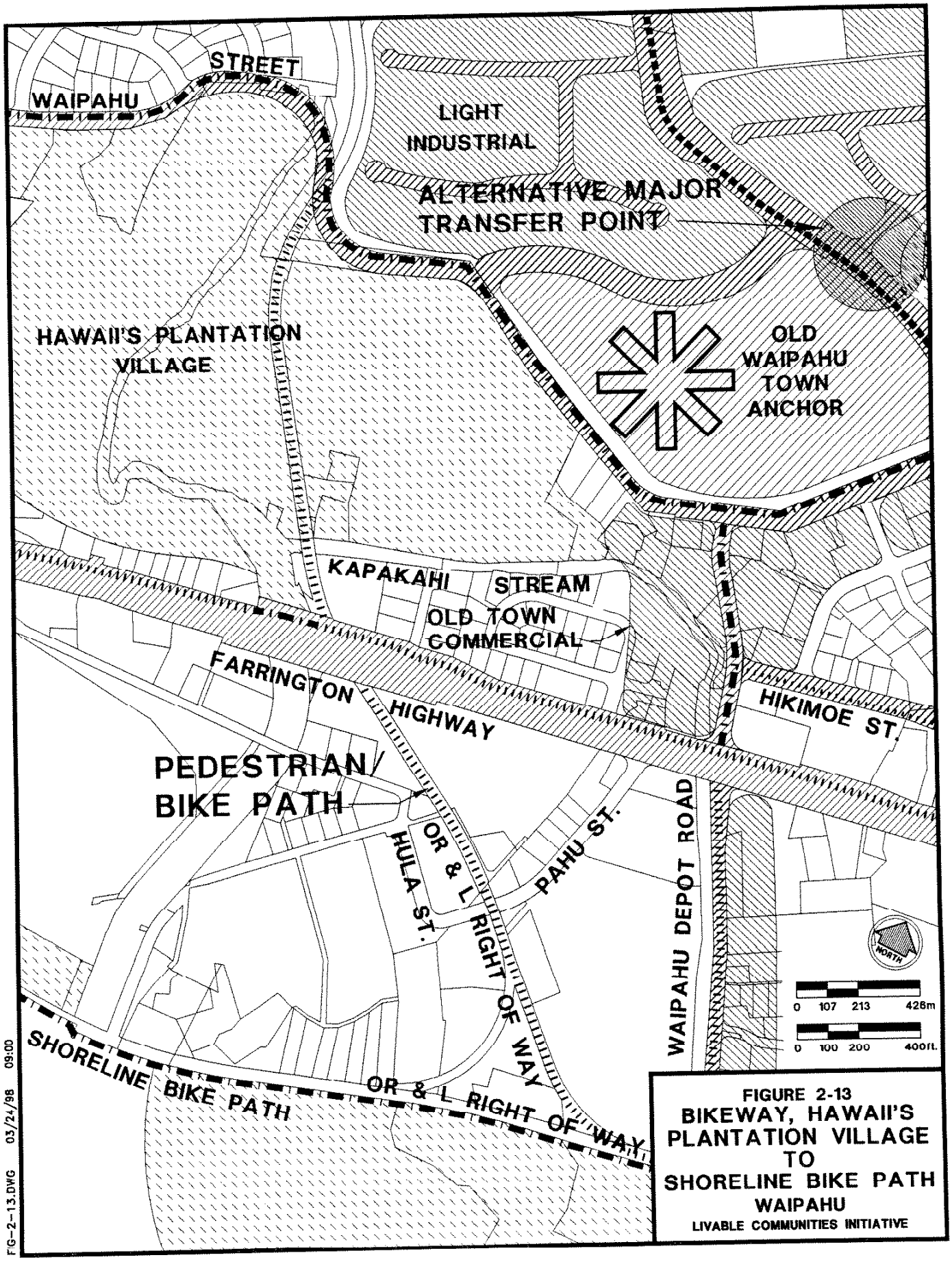

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FIGURE 2-13
BIKEWAY, HAWAII'S PLANTATION VILLAGE TO SHORELINE BIKE PATH
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Development of the proposed pedestrian/bike path would require an at-grade crossing on the westbound lanes of Farrington Highway. This would require State DOT Highways Division approval and should require signalization for safe crossing by pedestrians and bicyclists. Makai of Farrington Highway, the pedestrian/bike path would also require an at-grade crossing where the OR&L right-of-way intersects with Hula and Pahu Streets. This would require coordination with the City DTS and appropriate signage or other measures for safe crossing by pedestrians/bicyclists and motorists. Improvements at this intersection may require the installation of removable steel pole barriers (bollards) along the widths of both sides of the pedestrian/bike path to restrict unauthorized vehicular access onto the bikeway, and appropriate signage to alert pedestrians/bicyclists and motorists of the potential conflicts.

Access to the portion of the pedestrian/bike path within Hawaii's Plantation Village site would need to be controlled for security purposes to coincide with the posted visitation hours of the facility. Implementing measures to address this concern would need to be further coordinated with Hawaii's Plantation Village.

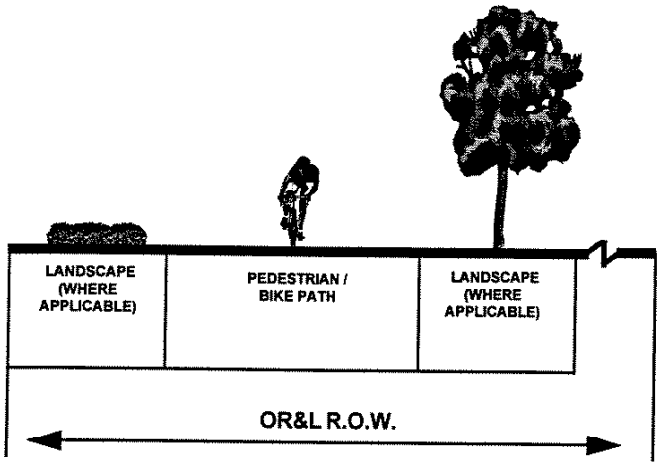

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FIGURE 2-14
PROPOSED TYPICAL SECTION - BIKEWAY, HAWAII'S PLANTATION VILLAGE TO SHORELINE BIKE PATH

Development of the proposed pedestrian/bike path would need to be coordinated between the City and County of Honolulu and the State of Hawaii, landowners of the OR&L right-of-way. The City and County of Honolulu owns the portions of the OR&L right-of-way between the shoreline OR&L right-of-way and approximately 40 feet mauka of Hula and Pahu Streets, a triangular portion adjacent to and makai of Farrington Highway, and the portion mauka of Farrington Highway through Hawaii's Plantation Village site. The remainder of the OR&L right-of-way makai of Farrington Highway is under the ownership of the State DOT. The pedestrian/bike path design and alignment would also need to be coordinated with the Hawaiian Railway Society in consideration of the Society's potential long-term extension of the OR&L train operations to Waipahu and Hawaii's Plantation Village. Coordination would also be required with the City Department of Wastewater Management and Board of Water Supply in consideration of the sewer and waterline easements located within the OR&L right-of-way.

As a long-term endeavor, the Hawaii's Plantation Village and Hawaiian Railway Society are exploring the potential of developing a system to transport visitors between Hawaii's Plantation Village and the proposed heritage park/center at the sugar mill site.

4.2.2.2.4 Mokuola Street Pedestrian/Bikeway

The proposed extension of Mokuola Street mauka to the Manager's Drive overpass provides a major alternate mauka-makai route linking Waikele with the Waipahu Town core area. In addition to providing a link between these two communities, the pedestrian/bikeway facilities proposed along this street would also connect with other pedestrian/bikeways traversing in an east-west orientation through Waipahu (see Figure 2-15). Specifically, the proposed improvements would connect with proposed pedestrian/bikeways at Waipahu Street, Hikimoe Street, and Farrington Highway. The centralized location of this route provides pedestrians and bicyclists with convenient access to major existing and proposed activity areas, including the Civic Center and proposed recreational, commercial, residential, and public transit facilities. Mokuola Street is generally improved with pedestrian facilities from Nalii Street makai to Moloalo Street. Between Waipahu Street and Nalii Street, there are no sidewalks except for the segment along the west side of the street between Waipahu and Kahuailani Streets.

As part of Amfac/JMB Hawaii's redevelopment of the sugar mill site, sidewalks and bike lanes will be developed along the proposed extension of Mokuola Street from Waipahu Street through the sugar mill site and up to the mauka edge of the planned light industrial subdivision. Amfac/JMB will also be providing pedestrian and bikeway facilities along the existing portion of Mokuola Street from Waipahu Street makai to

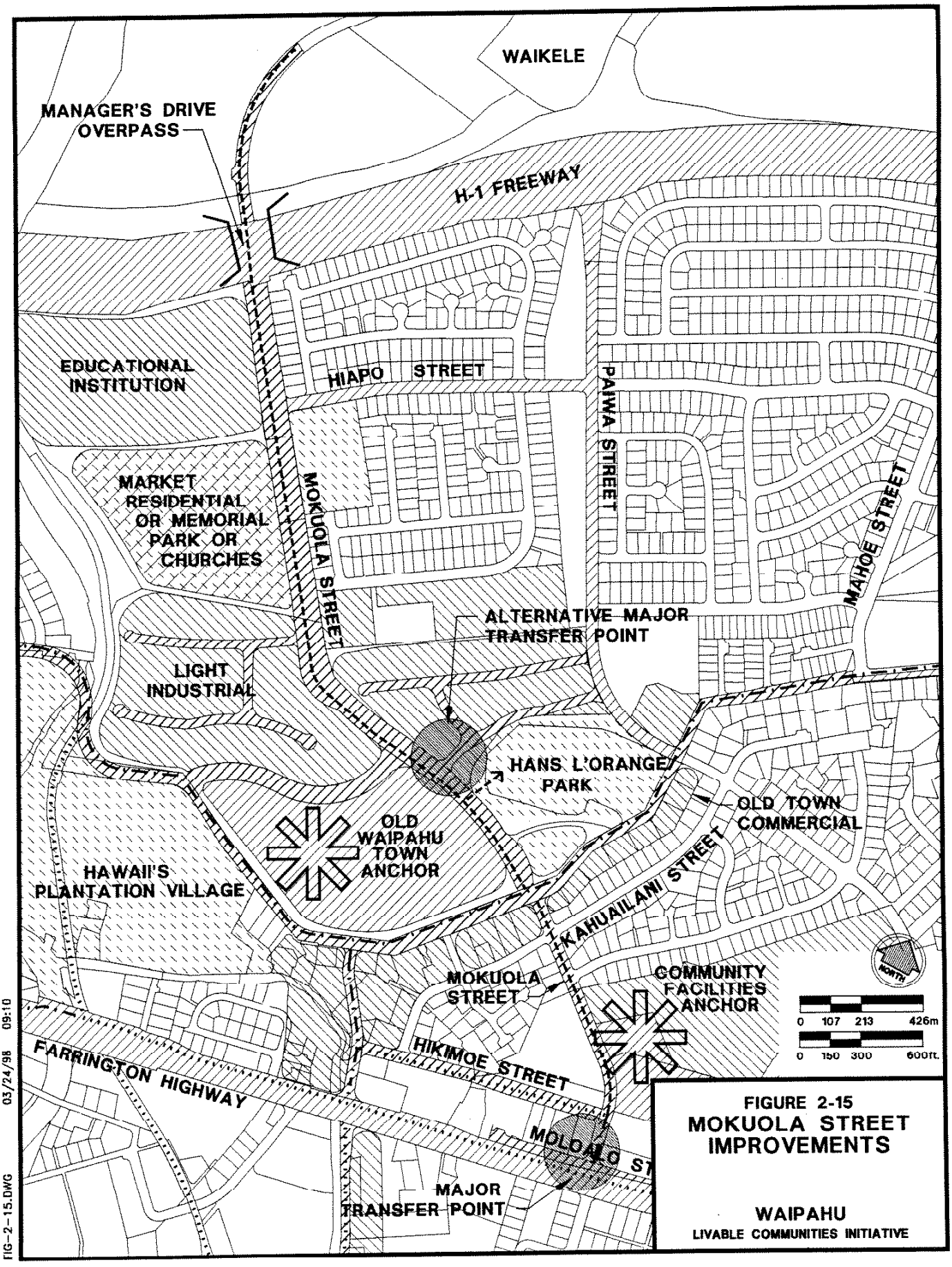

FIGURE 2-15
MOKUOLA STREET IMPROVEMENTS

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FIG-2-15.DWG 03/24/98 09:10

Kahuailani Street, and along the planned widened Manager's Drive overpass makai to Hiapo Street.

Pedestrian and bikeway facilities would also be provided by the City and County of Honolulu along the remaining segment of the Mokuola Street extension located between Hiapo Street and the mauka end of Amfac's planned light industrial subdivision.

Proposed Project: The proposed project involves providing pedestrian/bikeway facilities along the segment of Mokuola Street from Kahuailani Street makai to the Civic Center (see Figure 2-16). The improvements would include bike lanes, concrete sidewalks and landscaping strips along both sides of the street to the vicinity of the Civic Center. From the Civic Center, the bike path would transition to a bike route makai to Farrington Highway. These improvements will be provided along an alignment of approximately 1,050 lineal feet.

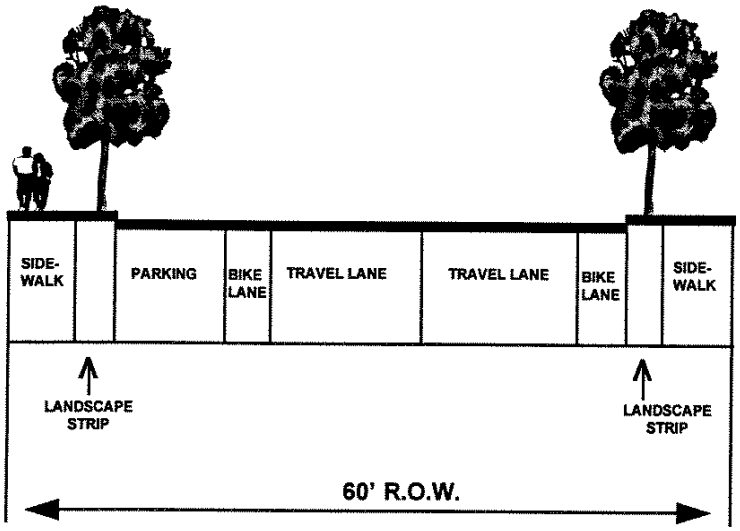

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FIGURE 2-16
PROPOSED TYPICAL SECTION - MOKUOLA STREET (Between Kahuailani Street and Moloalo Street)

The proposed project will also include the provision of bike lanes, sidewalks and landscaping along both sides of the remaining segment of the Mokuola Street extension located between Hiapo Street and the mauka end of Amfac's planned light industrial subdivision (see Figure 2-17). The total length of this segment is approximately 1,050 lineal feet.

4.2.2.2.5 Village Park Connector Road Bikeway

The proposed Village Park Connector Road affords an opportunity to provide a more direct and convenient bikeway link between the Village Park/Royal Kunia development and the Waipahu Town core area. This proposed bikeway will provide bicyclists an alternative route to the existing bike path along Kunia Road from Farrington Highway to just mauka of the H-1 Freeway in the vicinity of Village Park and the proposed bike route extension mauka along Kunia Road (see Figure 2-18). A bike route system will also be provided within a portion of the Village Park/Royal Kunia area to provide for a continuous bikeway system from the connector road. This bike route system will traverse adjacent to the City's existing park-and-ride facility located along Kupuna Loop.

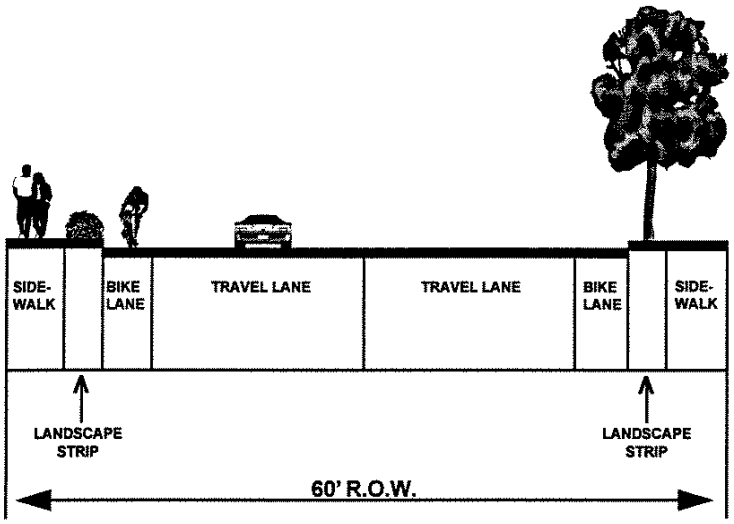

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FIGURE 2-17
PROPOSED TYPICAL SECTION - MOKUOLA STREET EXTENSION (Between Hiapo Street and the mauka end of Amfac's planned light industrial subdivision)

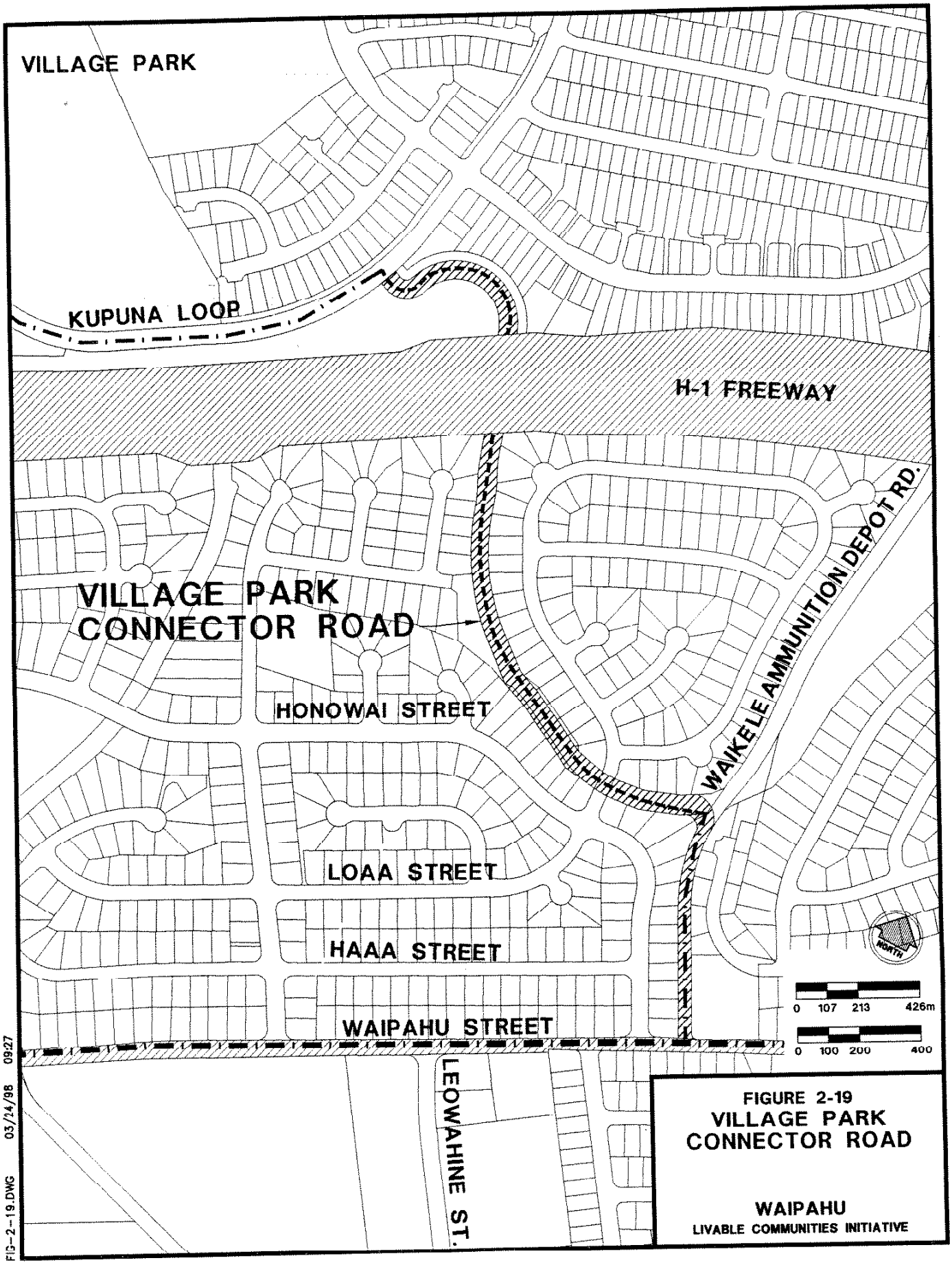

FIGURE 2-19
VILLAGE PARK
CONNECTOR ROAD

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FIG-2-19.DWG 03/14/98 09:27

Kupuna Loop is a collector street with two travel lanes and on-street parking in designated areas within a 60-foot wide right-of-way. Kahaeka Street is a local street consisting of two lanes and on-street parking along both sides within a 40-foot wide right-of-way.

Proposed Project: The proposed project involves the provision of bike lanes within the paved shoulders of the segment of the connector road between Kupuna Loop and Waikele Ammunition Depot Road (see Figure 2-19). A bike route will be designated within the connector road segment along Waikele Ammunition Depot Road, connecting to the proposed bike route along Waipahu Street. The total length of the connector road bikeway is approximately 3,200 feet or 0.6 mile.

The proposed bikeway system will also include the designation of a bike route along the makai segment of Kupuna Loop from its intersection with the connector road west to Kunia Road (see Figure 2-3). A mauka-makai bike route connection will be provided along Kahaeka Street linking the makai segment of Kupuna Loop with the mauka segment of Kupuna Loop. From the mauka end of Kahaeka Street, the bike route will continue west along Kupuna Loop to Kunia Road. The total length of the proposed bike route along the designated segments of Kupuna Loop and Kahaeka Street is approximately 5,300 linear feet or 1 mile.

4.2.2.2.6 Waipio Peninsula Access Pedestrian/Bikeway System

The provision of a pedestrian/bikeway system to the Waipio Peninsula area would link future recreational facilities located within Waipio Peninsula and other existing and proposed commercial and recreational facilities within the Waipahu Town core. The proposed project provides access from Farrington Highway makai to Waipio Peninsula via proposed access improvements to Waipio Point Access Road and Waipahu Depot Road (see Figure 2-20). The proposed improvements along Waipahu Depot Road will also provide a link to existing and future commercial, recreational and community facilities via the proposed bike route along the portion of Waipahu Depot Road mauka of Farrington Highway. The proposed pedestrian/bikeway system would also provide mauka-makai connections between the proposed sidewalks and bike path/bike route along Farrington Highway and the shoreline bike path along the OR&L right-of-way.

Proposed Project: The proposed pedestrian/bikeway system will be developed in two phases in accordance with the phased development of the Waipio Peninsula access improvements as described in Section 4.3.1.5.

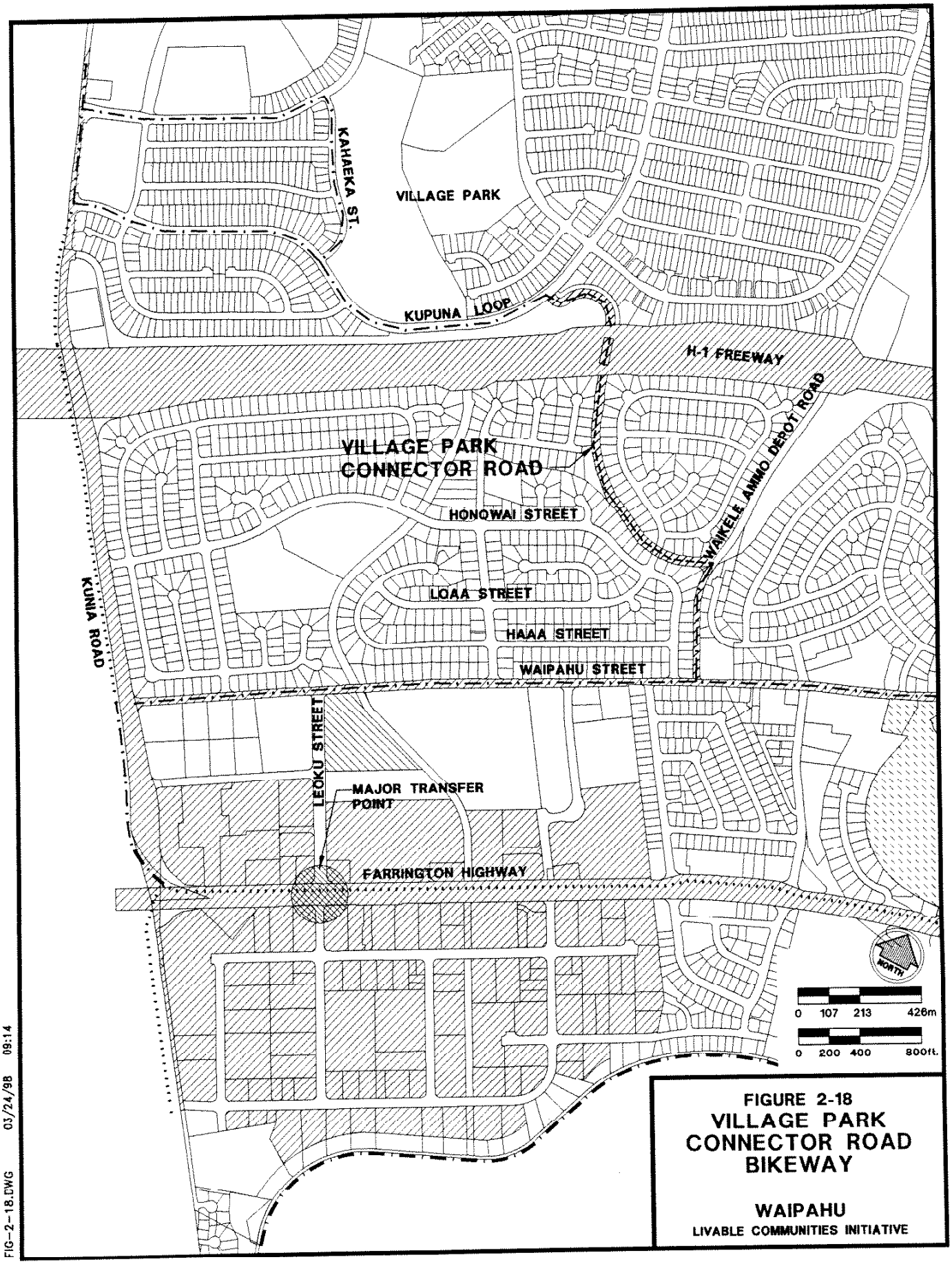

FIGURE 2-18
VILLAGE PARK
CONNECTOR ROAD
BIKEWAY

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FIG-2-18.DWG 03/24/98 09:14

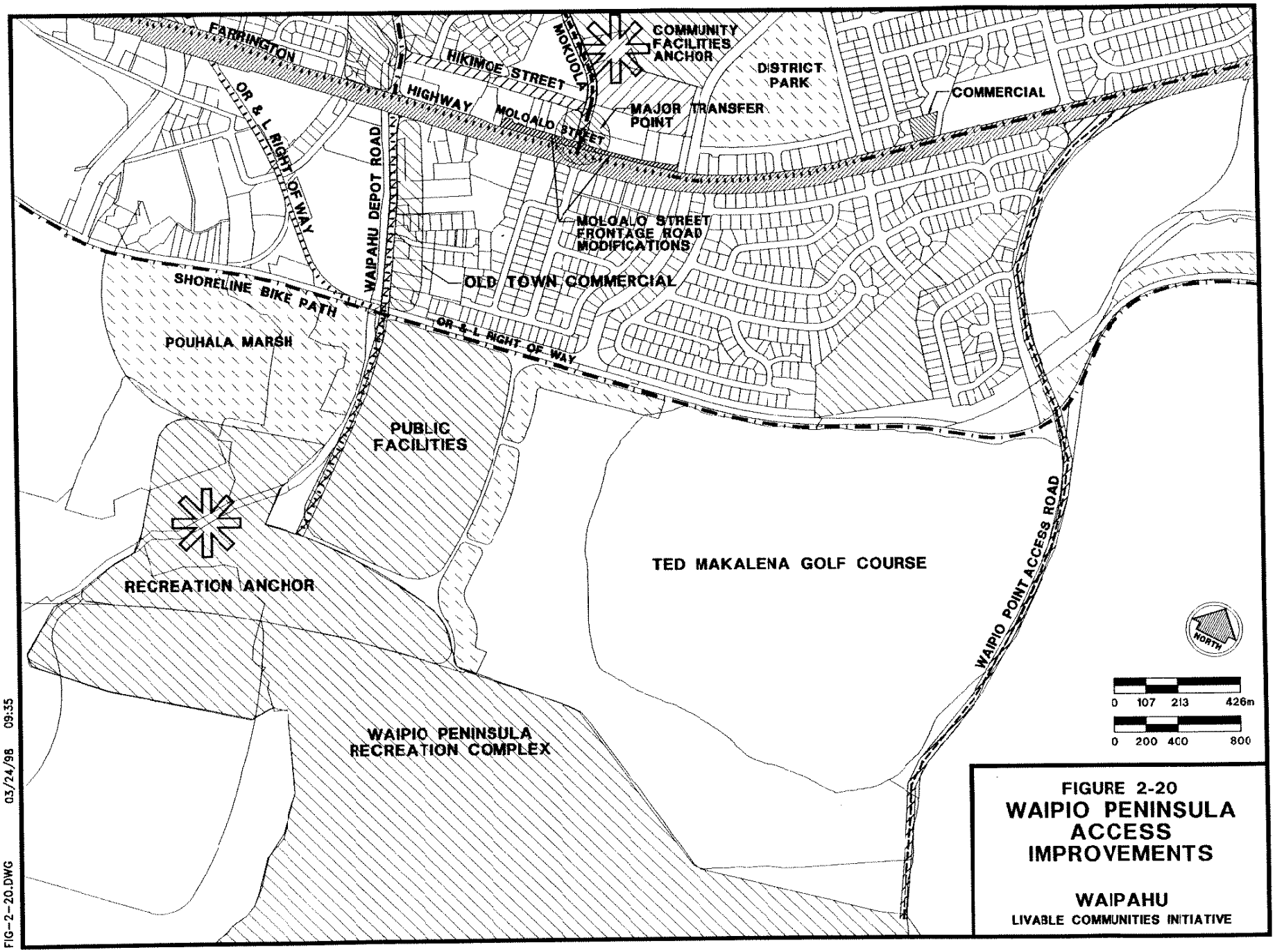


FIG-2-20.DWG 03/24/98 09:35

FIGURE 2-20
WAIPIO PENINSULA ACCESS IMPROVEMENTS

WAIPAHU
LIVABLE COMMUNITIES INITIATIVE

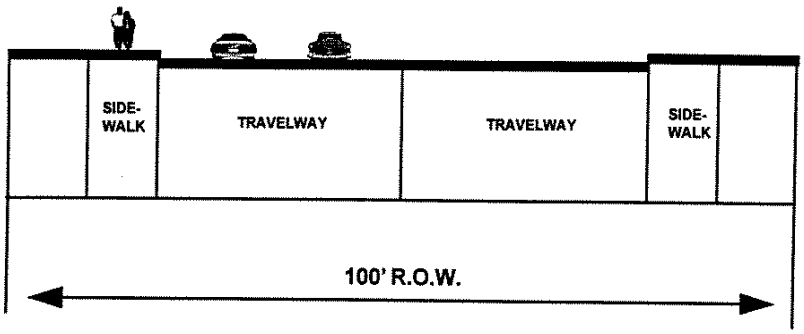
Phase I - Waipio Point Access Road Pedestrian/Bikeway System: The improvements are proposed to include the provision of bike lanes adjacent to the outer two travels lanes of the proposed four-lane improvements to Waipio Point Access Road, and sidewalks along both sides of the Access Road (see Figure 2-21). These improvements will be provided along an alignment approximately 7,500 linear feet in length.

Phase II - Waipahu Depot Road Pedestrian/Bikeway System: The improvements are proposed to include the provision of a meandering pedestrian/bike path along the west side of Waipahu Depot Road, and a sidewalk along the east side the road (see Figure 2-22). The improvements will be provided along an alignment of approximately 2,600 lineal feet in length. It should be noted that the *Bike Plan Hawaii* recommended provision of a bike lane along the segment of Depot Road between Farrington Highway and the OR&L right-of-way. However, the proposed pedestrian/bike path would be more suitable in consideration of linking the proposed surrounding land use facilities and in light of the proposed character of this street as established in the Waipahu Town Plan. As indicated in Section 4.3.1.5, the Depot Road improvements will require the acquisition of additional right-of-way width up to approximately 10 feet along its east side between Farrington Highway and the OR&L right-of-way.

4.2.2.2.7 Pedestrian/Bikeway Amenities

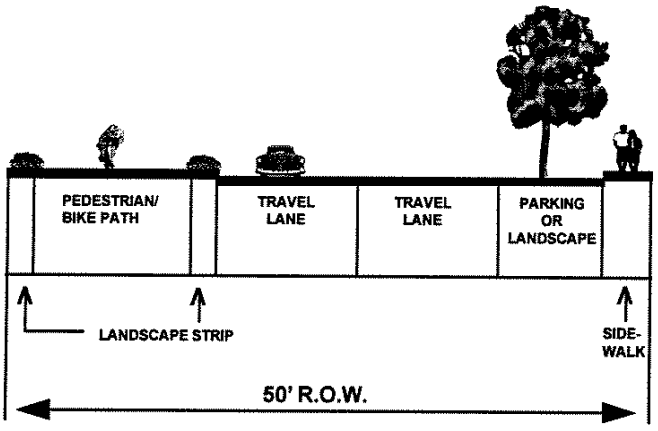
The provision of pedestrian/bikeway facilities should incorporate safety, attractiveness and convenience measures to encourage and promote usage. Amenities for pedestrians and bicyclists should include rest areas or turnouts, preferably with seating accommodations (especially on long, uninterrupted paths such as the shoreline bike path), landscaping to create a pleasant and attractive environment, drinking water fountains, trash receptacles, and adequate illumination. Such amenities should be strategically located and incorporated in consideration of adjacent facilities and land uses.

In an effort to encourage bicycling, the provision of bicycle parking facilities is an essential element. In general, provisions for bicycle parking should be considered at all major traffic generators, especially where vehicle parking is provided. Long-term bicycle parking facilities, preferably secured, should be provided at any potential public transit station facility to encourage intermodal travel. Short-term bicycle parking facilities would be needed at locations such as shopping centers and commercial areas, community facilities, and recreational areas. Such facilities should be convenient and located near building entrances or other highly visible areas which are self policing.



WAIPAHU
LIVABLE COMMUNITIES INITIATIVE

FIGURE 2-21
PROPOSED TYPICAL SECTION - WAIPIO POINT ACCESS ROAD



WAIPAHU
LIVABLE COMMUNITIES INITIATIVE

FIGURE 2-22
PROPOSED TYPICAL SECTION WAIPAHU DEPOT ROAD - MAKAI OF FARRINGTON HIGHWAY

Adequate signing and marking are essential, especially to alert bicyclists and pedestrians to potential conflicts. The use of guide signing to indicate destinations, directions and distances as appropriate, should also be used. The use of pavement marking may be beneficial to indicate directions of travel. To reduce conflict between pedestrians and bicyclists on bike paths, appropriate signage should be used to inform users of the intended shared use of the facility.

4.3 Roadway Network

The proposed enhancement of the existing roadway network within the Waipahu area is intended to efficiently serve the existing, planned and proposed land use elements as set forth in the Waipahu Town Plan, as well as complement the pedestrian- and transit-oriented circulation system. The proposed roadway network improvements are in recognition of the need to adequately accommodate and facilitate the vehicular transportation demands of residents and visitors within the Waipahu area. This in turn is anticipated to help augment the economic revitalization of Waipahu by efficiently accommodating visitors to the town.

4.3.1 Recommended Roadway Projects

The proposed roadway network improvements consider the access requirements in providing adequate and efficient vehicular connections between the major communities mauka of the H-1 Freeway and the Waipahu Town core, within the Town core area, and makai to the Waipio Peninsula area. The integration of proposed and planned vehicular connections with the existing roadway system provides motorists with convenient access to major activity areas and land use facilities while improving traffic-congested circulation systems.

The integrated roadway network will provide for the following major vehicular connections and traffic circulation improvements within the Waipahu area (see Figure 2-3). These proposed roadway network improvements are discussed in further detail in the subsequent sections.

Note: In establishing the proposed typical roadway sections depicted herein, the standard roadway sections as set forth in the City and County of Honolulu's Subdivision Rules and Regulations were used as a point of reference, with modifications made to accommodate the proposed pedestrian/bikeway improvements. These proposed modifications would be confirmed during the respective project's design phase.

Connection of Communities Mauka of the H-1 Freeway with Waipahu Town: The proposed roadway network improvements will provide direct vehicular connections from two communities mauka of the H-1 Freeway with Waipahu Town. A major mauka-makai connection between the Waikele community and Waipahu Town will be provided via an extended Mokuola Street from Waipahu Street mauka to the Manager's Drive overpass. The Mokuola Street extension will also alleviate traffic demands on Paiwa Street by providing an alternate access. To the west, the Village Park and Royal Kunia developments will be directly linked to the Waipahu Town area via the proposed Village Park Connector Road. The connector road will be constructed from Kupuna Loop in Village Park via an improved existing cane haul road and a portion of the U.S. Navy's Waikele Ammunition Depot Road to Waipahu Street at the makai end. In addition to providing a direct and convenient connection to the Waipahu Town core, the Village Park Connector Road is anticipated to relieve traffic demands on Kunia Road.

Roadway Network Improvements within Waipahu Town: Within the Waipahu Town area, the portion of Waipahu Street in the vicinity of the Mokuola Street intersection will be widened to provide left-turn lanes at the intersection. The intent of the improvements is to facilitate traffic flow within the town core area in consideration of the existing and proposed land uses in the immediate vicinity. The proposed improvements will also more efficiently accommodate vehicular traffic accessing the proposed Mokuola Street extension.

With the proposed extension of Mokuola Street to Manager's Drive and the development of nearby commercial and light industrial areas, Mokuola Street is expected to become a major mauka-makai road aligned through the middle of the town core. The Mokuola Street extension will serve as the primary spine road for the proposed land uses in conjunction with redevelopment of the sugar mill site and the City's adjacent Manager's Drive parcel. The extended Mokuola Street will also provide direct vehicular connection to the Waipahu Estates residential development in the Hiapo Street area and to the proposed east-west connector roads within the sugar mill site linking Paiwa Street with Waipahu Street. At the makai end of Mokuola Street, improvements will be provided at its intersection with Moloalo Street to improve traffic operations and safety by reducing traffic movement options for motorists at the intersection.

Waipio Peninsula Access Improvements: The proposed development of recreational facilities in the Waipio Peninsula area will require significant improvements to the two major roadways providing access to the area -- Waipio Point Access Road and Waipahu Depot Road makai of Farrington Highway. The major recreational facility which the roadways would serve is the proposed Waipio Peninsula Recreation Complex, a competitive soccer facility to be located makai of the Ted Makalena Golf Course.

Primary access to the recreation complex will be via Waipio Point Access Road with Waipahu Depot Road serving as the secondary access. The proposed Waipio Point Access Road improvements will provide a convenient route for motorists driving in from Central Oahu and Honolulu via Farrington Highway to the recreation complex. The Access Road improvements will also facilitate access to other existing and planned uses in the vicinity, including the Ted Makalena Golf Course, Waipahu High School, the nearby residential area, Queen Emma Foundation's planned elderly care facility, and potential agricultural developments on Waipio Peninsula. Proposed improvements to Waipahu Depot Road will facilitate access to the existing public facilities and proposed adjacent Old Town commercial and recreational uses from Farrington Highway. It will also provide an improved mauka-makai vehicular connection to the Waipahu Town core area mauka of Farrington Highway.

Provisions should be made to have all roadway improvements include adequate street lighting. Lighting requirements should conform to City and County of Honolulu and/or State DOT standards.

4.3.1.1 Waipahu Street Improvements

Waipahu Town has experienced increased traffic in recent years with the development of commercial areas and residential housing in nearby Waikele. As one of the arterial streets in Waipahu, Waipahu Street requires widening to increase roadway capacity and improve traffic circulation and safety through Waipahu Town. Also, the "Z" curve alignment on Waipahu Street east of Ikepono Street presents a safety hazard as well as a restriction to free flow two-way traffic operations.

Waipahu Street is a two-lane minor arterial road with varying right-of-way widths. Pavement widths also vary throughout the length of the roadway ranging from about 22 feet to about 44 feet. There are certain sections of roadway that permit parallel parking, primarily near the former sugar mill area. Near Waikele Stream, Waipahu Street is relatively narrow and has two tight curves that are difficult for buses and large vehicles to maneuver without encroaching the roadway centerline into the on-coming lane.

As part of its redevelopment of the sugar mill site, Amfac JMB/Hawaii will be widening the segment of Waipahu Street at the Mokuola Street intersection to three lanes, providing left-turn lanes at the intersection. The street will be widened from Makaaloha Street to approximately 320 feet west of Mokuola Street, a distance of approximately 680 feet. Bus pull-outs will also be provided at bus stops along this segment to allow buses to service passengers without interfering with traffic on the through lanes. The

improvements will require additional right-of-way along the mauka side from the existing driveway to the sugar mill site west to Makaaloha Street.

Proposed Project: The proposed project will include the widening and realignment of the existing "Z" curve to an "S" curve to increase safety for motorists and to accommodate both existing and anticipated future traffic demands. This realignment will require construction of a new bridge crossing Waikele Stream further south of the existing bridge.

To further facilitate traffic operations, studies will be needed to determine other necessary improvements to Waipahu Street, including major cross street intersections.

4.3.1.2 Mokuola Street Improvements

With the planned redevelopment of the sugar mill site and other land use facilities proposed in the Waipahu Town core area, there is a need to provide another major mauka-makai route between Waikele and Farrington Highway to alleviate traffic demands on Paiwa Street. The project will also provide an alternate access by providing a direct link between Waikele and the areas makai of the H-1 Freeway (see Figure 2-15). The proposed public project would improve the segments of Mokuola Street in the vicinity of Hiapo Street and makai of Waipahu Street by continuing the improvements planned in conjunction with the extension of Mokuola Street mauka to the Manager's Drive overpass.

Mokuola Street is a two-lane road which runs mauka-makai between Waipahu Street and Farrington Highway within a 60-foot wide right-of-way. On-street parking is permitted along designated portions of the street.

As part of the redevelopment of the sugar mill site, Amfac/JMB Hawaii will be extending Mokuola Street mauka from Waipahu Street through the sugar mill site and up to the mauka edge of the planned light industrial subdivision. The Mokuola Street extension will have a minimum 60-foot right-of-way width with 44 feet of roadway between curbs. Improvements are proposed to include two travel lanes, bike lanes, sidewalks, drainage, street lighting, and landscaping and irrigation systems along an alignment of approximately 1,700 lineal feet. Improvements at its intersection with Waipahu Street will include an exclusive left-turn lane onto Waipahu Street. Intersection improvements will also be provided at the Mokuola Street intersections with the planned east-west connector roads adjacent to and makai of the planned light industrial subdivision.

Amfac/JMB Hawaii will also be improving the segment of Mokuola Street from Waipahu Street makai to Kahuailani Street. The improvements will include pavement widening to 44 feet to include two travel lanes and an exclusive left-turn lane onto Waipahu Street. Other improvements will include the construction of a bikeway, concrete sidewalks on both sides of the roadway, concrete curbs, gutters (as necessary), underground surface drainage systems, and adequate street lighting. These improvements would be provided within an approximately 60-foot wide right-of-way.

Amfac/JMB Hawaii also plans to widen the existing two-lane Manager's Drive overpass over the H-1 Freeway from 26 feet to 44 feet with pedestrian/bikeway facilities. The widening improvements will also include the portion of the Manager's Drive roadway makai of the H-1 Freeway overpass to Hiapo Street. The Manager's Drive overpass will link areas mauka of the H-1 Freeway with Waipahu Town.

As the last segment in the extension of Mokuola Street, an approximately 1,050-linear foot section located between Hiapo Street and the mauka end of Amfac's planned light industrial subdivision will be constructed by the City and County of Honolulu. Two Request for Proposals (RFPs) for development of the City's 39.59-acre Manager's Drive parcel, of which the 1,050-linear foot segment of the Mokuola Street extension is a part of, were issued by the City Department of Housing and Community Development in late 1996.

Proposed Project: The proposed project to be undertaken by the City and County of Honolulu involves improving the portion of Mokuola Street from Kahuailani Street makai to Moloalo Street. The improvements would include two travel lanes with bike lanes, landscaping strips and concrete sidewalks along both sides of the street from Kahuailani Street to the vicinity of the Civic Center (see Figure 2-16). On-street parking may be provided along one side of the street. From the Civic Center, the bike lanes would transition to a bike route makai to Farrington Highway. These improvements will be provided within an approximately 60-foot wide right-of-way and along an alignment of approximately 1,050 lineal feet. Development of approximately 770 lineal feet of the proposed improvements within the segment approximately 50 feet south of Nalii Street to approximately 100 feet north of Moloalo Street would need to be coordinated with landowner State Hawaii Housing Authority. The remainder of Mokuola Street is under the jurisdiction of the City and County of Honolulu.

To tie-in with Amfac's roadway improvements and complete the Mokuola Street extension at the mauka end, the proposed project will also include developing two travel lanes with bike lanes, sidewalks and landscaping along both sides of the remaining segment of the Mokuola Street extension located between Hiapo Street and the mauka

end of Amfac's planned light industrial subdivision (see Figure 2-17). These improvements will be provided along a total length of approximately 1,050 lineal feet.

4.3.1.3 Village Park Connector Road

The Village Park and Royal Kunia developments are physically separated from Waipahu Town by the H-1 Freeway and separated from Waikele by Waikele Gulch. Under existing roadway conditions, motorists from Village Park/Royal Kunia use either Kunia Road or Paiwa Street via the H-1 Freeway to access areas makai of the Freeway. The proposed Village Park Connector Road will provide a direct link to the Waipahu Town core via an improved existing cane haul road and a portion of the U.S. Navy's Waikele Ammunition Depot Road. In addition to providing a direct and convenient connection to the Waipahu Town core, the Village Park Connector Road is anticipated to relieve traffic demands on Kunia Road.

Prior to undertaking this project, it is recommended that a study be conducted to determine the amount of vehicular traffic that would utilize the Connector Road and to assess the feasibility of developing the road. The assessment should also include further evaluation of the location of the Connector Road's access point at Waipahu Street and roadway alignment in order to meet standard requirements.

Proposed Project: The proposed project to be undertaken by the City and County of Honolulu involves developing a new two-way collector road from Kupuna Loop in Village Park at the mauka end to Waipahu Street on the makai end via an existing cane haul road and the Navy's Waikele Ammunition Depot Road (see Figure 2-19). The total length of the connector road is approximately 3,200 feet or 0.6 mile. In general, the connector road would include two travel lanes with pedestrian and bikeway facilities.

Within the connector road alignment, the cane haul road portion extends along Kupuna Loop, crosses at-grade under the H-1 Freeway, and intersects with Loaa Street in the Harbor View Subdivision and with the Navy's Waikele Ammunition Depot Road. The connector road alignment then continues makai along a portion of the Waikele Ammunition Depot Road to Waipahu Street. The cane haul road portion of the alignment is approximately 2,400 linear feet with a pavement width of about 40 feet within an approximately 60-foot right-of-way. Improvements to this section of the connector road will include two travel lanes, bike lanes along both sides of the road, curbs, gutters, and sidewalks with landscape strips within an approximately 60-foot wide right-of-way (see Figure 2-23). The Waikele Ammunition Depot Road portion of the alignment is approximately 800 linear feet with a pavement width of approximately 30 feet within an approximately 40-foot wide right-of-way. Improvements to this section

of the connector road will include two travel lanes, curbs, gutters and sidewalks within an approximately 40-foot wide right-of-way (see Figure 2-24). A bike route will be designated along this segment of the connector road.

The connector road will be constructed to City and County of Honolulu standards. Intersection improvements of the connection points at Kupuna Loop, Loaa Street and Waipahu Street will include corner rounding, pavement striping, and signage. The project will also include the installation of pavement markings and the construction of a street lighting system according to City standards. Construction of a wall along designated areas of the connector road alignment may be necessary in order to buffer traffic noise impacts to adjacent residents. A noise study is recommended to be conducted to determine the requirement for such a wall.

Formal inquiries with landowners Robinson Trust (owner of the cane haul road) and the U.S. Navy (owner of the Waikele Ammunition Depot Road) have been initiated regarding the possibility of acquiring or obtaining an easement or a joint use agreement for use of the respective roads. Both landowners have preliminarily expressed interest in further discussing use of the respective roads with the City. Development of the connector road will be subject to further discussions and agreement between the respective landowners and the City.

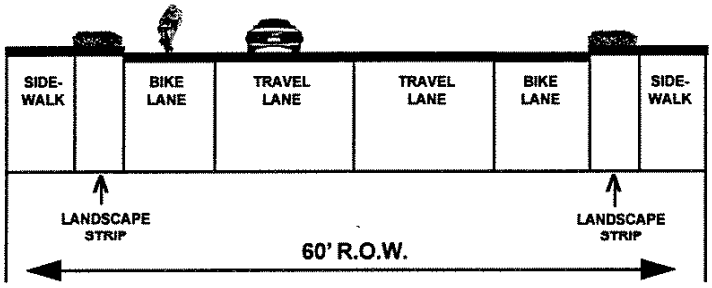


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FIGURE 2-23
PROPOSED TYPICAL SECTION - VILLAGE PARK CONNECTOR ROAD (CANE HAUL ROAD SEGMENT)

4.3.1.4 Farrington Highway Frontage Road Modifications

The intersection of Moloalo Street and Mokuola Street currently experiences conflicting and hazardous vehicular traffic movements. With the proposed extension of Mokuola Street to Manager's Drive and the development of nearby commercial and light industrial areas, Mokuola Street is expected to become a major mauka-makai road aligned through the middle of the town core. The proposed project should improve traffic operations at the intersection as well as improve safety by reducing traffic movement options for motorists. As part of the Waipahu Town Plan, preliminary plans for the frontage road modifications were presented to nearby businesses for review and comment, with most businesses generally in favor of the proposed modifications.

Moloalo Street operates as a two-way street within a 40-foot wide right-of-way. Currently, left-turn and right-turn ingress/egress movements are permissible at its intersection with Mokuola Street.

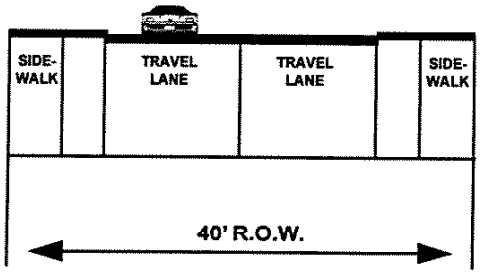

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FIGURE 2-24
PROPOSED TYPICAL SECTION - VILLAGE PARK CONNECTOR ROAD (WAIKELE AMMUNITION DEPOT ROAD SEGMENT)

Proposed Project: The proposed project involves modifying Moloalo Street by providing a new two-way driveway connection to Farrington Highway towards the west end of Moloalo Street, and limiting ingress/egress at the Mokuola Street intersection to right-turn in and right-turn out movements only (see Figure 2-25). To restrict illegal traffic movements, the right-turn-in and right-turn-out movements will be controlled by raised channelized curb islands on both sides of Mokuola Street. A landscape strip will be

4.3.1.5 Waipio Peninsula Access Improvements

With the proposed development of recreational facilities in the Waipio Peninsula area, improvements to the two major roadways providing access to the area will be required. A major proposed recreational facility is the Waipio Peninsula Recreation Complex which will provide competitive soccer facilities, including approximately 24 soccer fields and a stadium for tournaments and other activities. These activities will be relatively high trip generators of traffic. Both Waipio Point Access Road and Waipahu Depot Road makai of Farrington Highway will require significant improvements in order to accommodate the anticipated peak traffic loads (see Figure 2-20). Other planned and proposed recreational facilities in the Peninsula area include the State's Pouhala Marsh Wildlife Sanctuary along Waipahu Depot Road and shoreline park improvements. In addition to the proposed Recreation Complex, the Waipio Point Access Road improvements will also facilitate access to other existing and planned uses in the vicinity, including the Ted Makalena Golf Course, Waipahu High School, the nearby residential area, Queen Emma Foundation's planned elderly care facility, and potential agricultural developments on Waipio Peninsula.

Waipio Point Access Road is currently a two-lane road providing access to Waipio Peninsula from Farrington Highway. The Access Road right-of-way is approximately 60 feet wide in the vicinity of Farrington Highway, transitioning to a width of approximately 100 feet from about 900 feet makai of Farrington Highway. The road is paved to the vicinity of the U.S. Navy's FCC site, at which point it is unpaved along its remaining alignment through the Peninsula.

Waipahu Depot Road, between Farrington Highway and the OR&L right-of-way, is a two-lane paved road within an approximately 40-foot wide right-of-way. Makai of the OR&L right-of-way, Waipahu Depot Road is maintained as a paved two-way road up to the former City incinerator site.

Mauka of Farrington Highway, Waipahu Depot Road is a two-lane paved collector road within a 50-foot wide right-of-way.

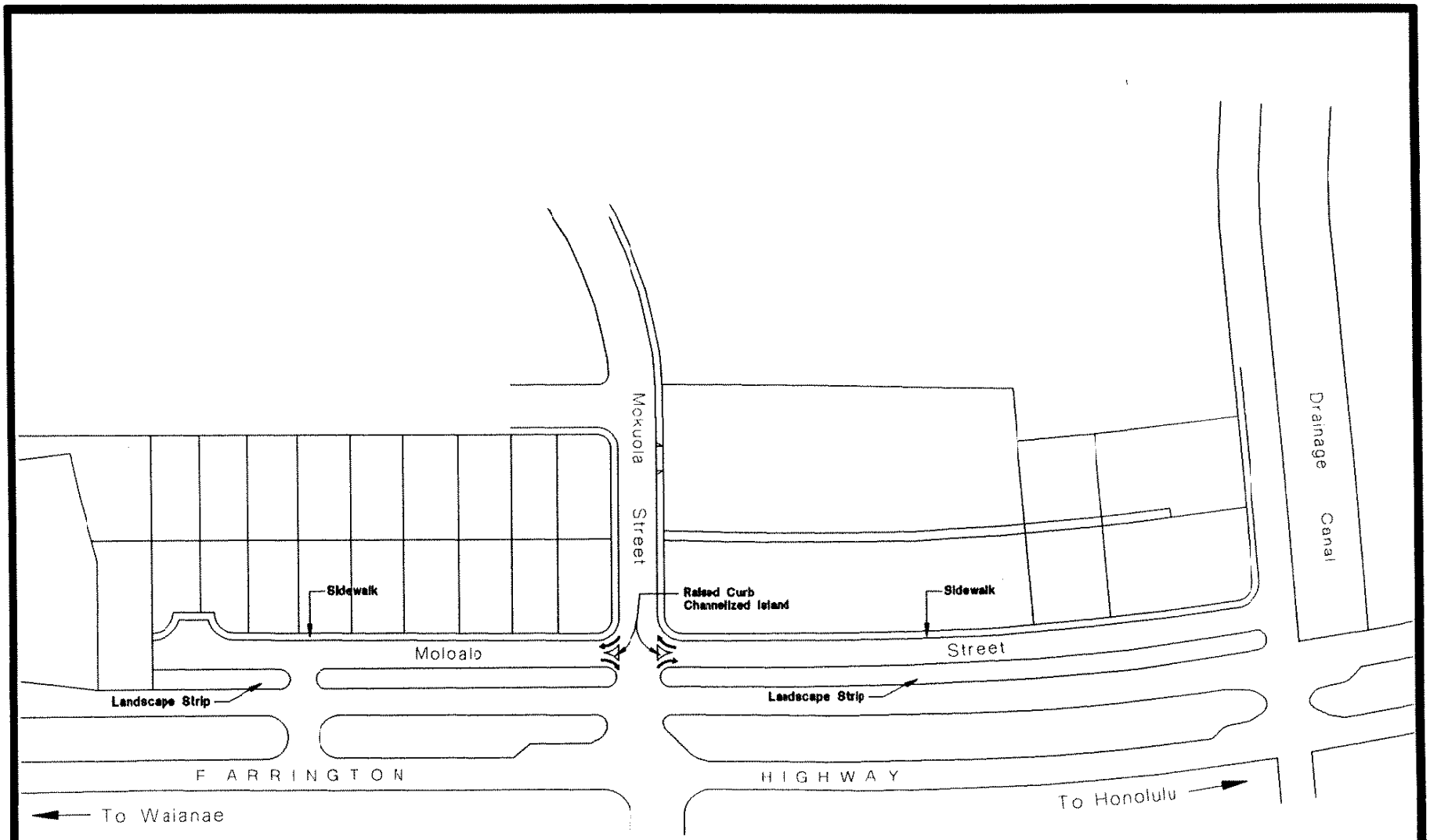


FIGURE 2-25

FARRINGTON HIGHWAY FRONTAGE STREET MODIFICATION

WAIPAHU

LIVABLE COMMUNITIES INITIATIVE

Proposed Project: Access improvements to Waipio Point Access Road and Waipahu Depot Road will be developed in two phases to coincide with phased development of the Waipio Peninsula Recreation Complex.

Phase I - Waipio Point Access Road: Primary access to the recreation complex as well as facilitated access to other nearby land uses within the Peninsula will be accommodated by improvements to Waipio Point Access Road. These improvements are proposed to include four travel lanes with bike lanes, parking lanes and sidewalks along both sides of the road, drainage systems, street lighting, and landscaping and irrigation systems (see Figure 2-21). These improvements will be provided within an approximately 100-foot wide right-of-way and along an alignment approximately 7,500 lineal feet in length. Related improvements to the Farrington Highway intersection may include pavement striping, traffic signal modifications, and channelization.

Prior to undertaking the proposed improvements, it is recommended that a study be conducted to determine the amount of vehicular traffic that would utilize Waipio Point Access Road to verify the laneage requirements.

Phase II - Waipahu Depot Road: Secondary access to the complex will be provided via Waipahu Depot Road makai of Farrington Highway. Waipahu Depot Road will be improved to provide two travel lanes, a parking lane along one side of the road, a meandering pedestrian/bike path along the west side adjacent to Kapakahi Stream, a sidewalk along the east side, street lighting, drainage systems, and landscaping and irrigation systems (see Figure 2-22). Related improvements to the Farrington Highway intersection may include pavement striping, traffic signal modifications, and channelization. These improvements will be accommodated within an approximately 50-foot wide right-of-way, along an alignment approximately 2,600 lineal feet in length. The Depot Road improvements will require the acquisition of additional right-of-way width up to approximately 10 feet along its east side between Farrington Highway and the OR&L right-of-way. Right-of-way acquisition may be reduced with the incorporation of tree wells within the parking lane.

In the future, Waipahu Depot Road mauka of Farrington Highway should be further studied to identify improvements that may enhance its functional characteristics.

4.4 Interrelationship of Recommended Improvements

The recommended project improvements contribute to community livability by integrating the various travel modes (public transit, pedestrian/bikeway and roadway) in providing alternative transportation facilities for the area. The extension of Mokuola Street

provides a major alternate mauka-makai route between Waikele and the Waipahu Town core area for motorists, while providing improved accessibility and circulation for pedestrians/bicyclists and public transit. Likewise, the Village Park Connector Road provides a direct connection between the Village Park and Royal Kunia developments and Waipahu Town, while also providing for pedestrian/bikeway and public transit linkage between the two areas. Accessibility to and circulation within the Waipio Peninsula area will be enhanced with improvements to Waipio Point Access Road and Waipahu Depot Road for motorists, pedestrians/bicyclists and public transit riders. All of these improvements further integrate with other proposed improvements providing contiguous access to other areas within Waipahu via the various travel modes. Enhanced pedestrian and bikeway facilities along the designated major arterials, collector streets and Mokuola Street serve to increase the potential for public transit use along these streets, thus enhancing a strong relationship between public transit and pedestrian activities.

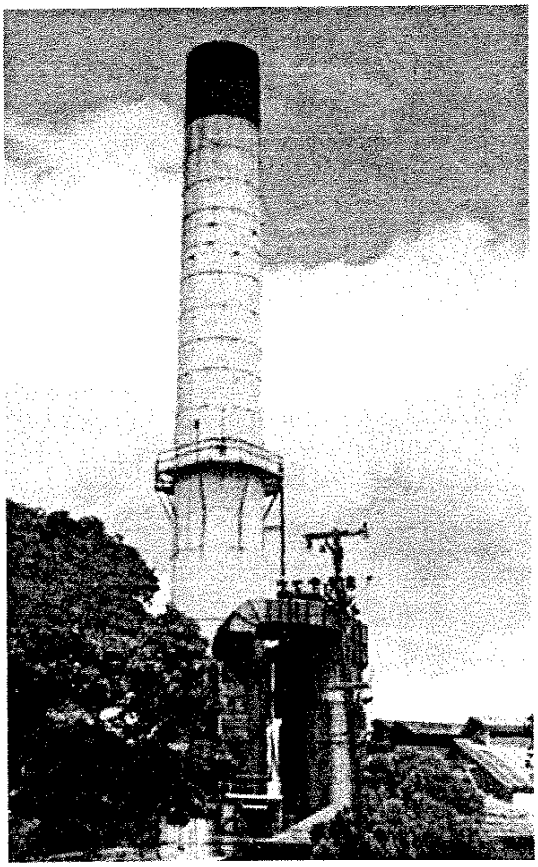
III. URBAN DESIGN GUIDELINES

INTRODUCTION

A town's physical image, seen as a combination of built forms, roadways, open spaces and landscaping, generally portrays its urban design. How well these components fit together determine whether the town embodies a special sense of place, a spirit of living, and a respect of community and cultural values.

Waipahu's rich and colorful history was strongly influenced by the establishment of the Oahu Sugar Company in 1897, a sugar plantation which flourished because of the vast expanses of land, abundant water and the OR&L Railroad which linked the town to Honolulu Harbor. The plantation's ethnically diverse mixture of immigrant workers introduced their own cultures, traditions and lifestyles and over generations, special qualities of each evolved to form a unique sense of community which is best exemplified as a plantation heritage. Physical remnants of this plantation heritage, i.e., the mill smokestack, Waipahu store, Waipahu Theater, and Fire Station, combined with the memories still present in the minds of long time residents of the community, provide the foundation for establishing urban design guidelines for Waipahu.

This section of the Livable Communities Initiative project presents an urban design guidelines for Waipahu. The genesis for this plan was established by the Waipahu Town Plan, a community-based plan adopted by the City and County of Honolulu in 1996. This section addresses the urban design of Waipahu and introduces a number of design guidelines which are aimed at improving the physical character of the place. By implementing these guidelines, the hope is that over time, the town will revitalize itself and once again enjoy the spirit that once lived in its plantation past.



Oahu Sugar Company smokestack stands as a visual landmark of Waipahu.

COMPONENTS OF URBAN DESIGN

Urban design, in the context of this plan, consists of the following components:

- Building Forms
- Movement Systems
- Landscape and open space

Each of these components are further elaborated as elements which help toaddress specific design details. Collectively, these components and elements form the urban design of Waipahu.

Station No. 12, Waipahu Fire Station built in 1931

Old Waipahu Theater, a distinctively dominant architectural landmark in the town core.

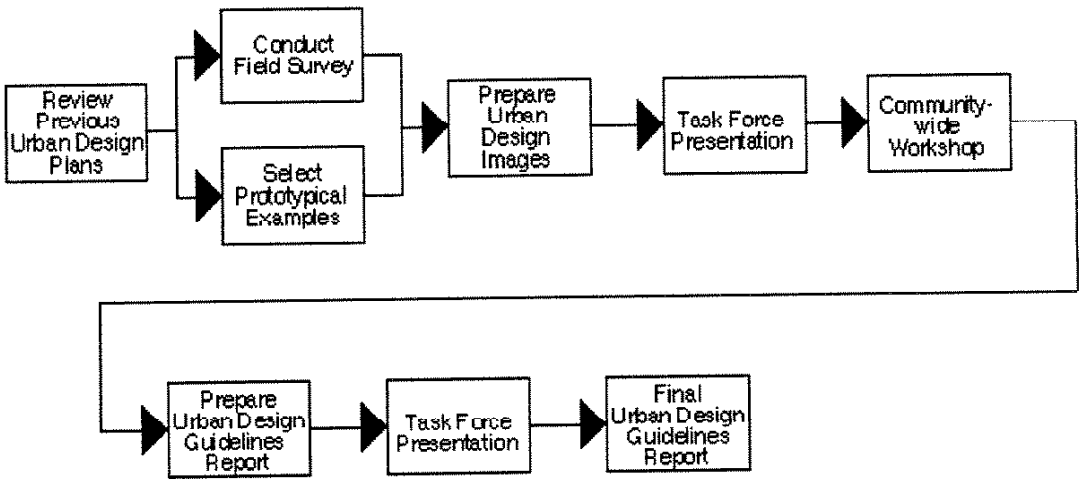
URBAN DESIGN OBJECTIVES

Urban design objectives provide the framework for visualizing the desired future physical image of the town and set guidelines for achieving that future. For Waipahu, appropriate objectives include:

- Develop guidelines which help revitalize the economy of Waipahu,
- Encourage a cooperative effort among property owners to implement guidelines rather than force compliance,
- Achieve an organized, unified theme reminiscent of the plantation heritage,
- Develop guidelines which avoid or minimize changes to the existing Land Use Ordinance or other existing controls.

URBAN DESIGN PROCESS

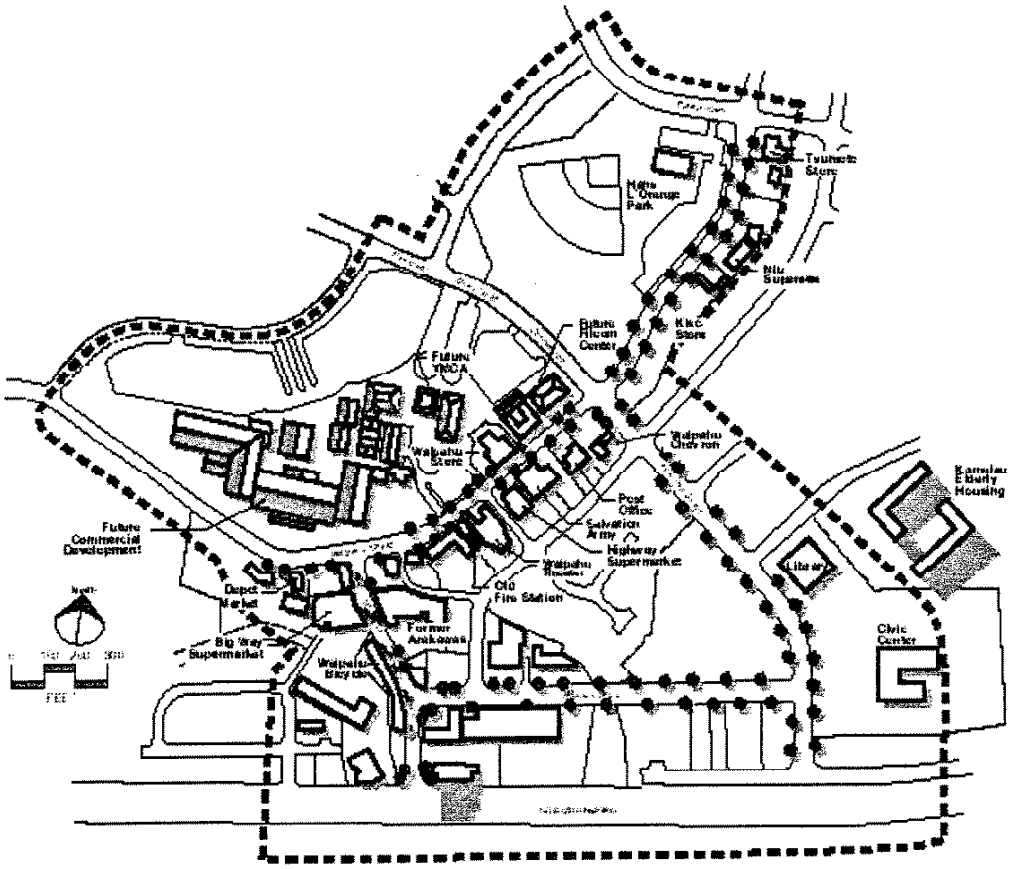
The urban design guidelines for Waipahu were generated by following an interactive, community involvement planning process. Steps of the process are illustrated in the process diagram below. After receiving notice to proceed, the urban design team, consisting of a planner, landscape architect and architect, met to determine a plan of action for developing urban design guidelines. Using previously prepared plans and studies as the starting point, the team determined that the most effective method of conveying urban design concepts to the community would be to select existing conditions in the community and graphically demonstrate how the application of urban design guidelines could be used to improve their physical image. A field survey was conducted to select and photograph these existing situations. At the task force meeting, urban design images which showed photographs of existing conditions were placed next to a sketch which demonstrated possible changes through the application of urban design guidelines. The Task force approved the images and allowed the images to be shown to the larger community at a community workshop. Comments received were incorporated into the final design guidelines which are presented in this report.



The Urban Design Process for developing guidelines for Waipahu's town core.

URBAN DESIGN FOCUS AREA

The urban design guidelines prepared in this section apply to the area defined in the Waipahu Town Plan, defined as the area of Waipahu bounded by the H-1 Freeway to the north, Kunia Road to the west, Kamehameha Highway to the east, and Waipio Peninsula to the south. References specific to the town core focus on the area along Waipahu Street from Paiwa Street to Hawaii Plantation Village, along Waipahu Depot Road from Waipahu Street to Farrington Highway, and along Hikimoe Street from Waipahu Depot Road to Mokuola Street.



Waipahu Town Core Urban Design Planning Area

WAIPAHU TOWN PLAN URBAN DESIGN PRINCIPLES

The urban design guidelines presented in this section are meant to implement the urban design principles set forward in the Waipahu Town Plan. These principles are:

- The scale and sense of Waipahu as a small town shall be preserved.
- The visual dominance of the sugar mill shall be maintained.
- Structures having historic, cultural, and/or visual significance shall be retained and renovated as needed.
- Waipahu's designated Old Town Commercial Area shall have a special image signifying its historic character and role as the cultural and business center for Waipahu.
- The visual appearance and pedestrian/bicycle linkages within and between the Old Town Commercial Area and surroundings areas, and along Farrington Highway shall be upgraded.
- Open spaces, the shoreline and other available natural areas shall be developed for use by the public and integrated in the built environment.
- Existing and planned parks and open space areas shall, wherever possible but particularly within the town core, be connected by a series of tree-lined pedestrian pathways, jogging paths and bikeways.
- Roads and pathways shall be landscaped in a manner which identifies their role as visual and functional linkages between open spaces and centers of activity.
- Renovations to the sugar mill for adaptive reuse shall retain the visual qualities and building character that defined the mill's original purpose.
- The compactness of the town's historic shopping area shall be maintained, with new uses encouraged to infill between existing buildings along Waipahu Street and Waipahu Depot Road.
- The character of Waipahu Street and Waipahu Depot Road shall be maintained except for adjustments to improve traffic flow and safety, to safeguard the historically and visually significant buildings and maintain the area's pedestrian scale and orientation.
- Existing significant historic structures shall be identified, maintained and restored wherever possible, and adaptive reuse encouraged where necessary to ensure their continued viability and use.
- The architectural character of new buildings should reflect the plantation era architecture of Waipahu's historic past. Basic design principles, texture, construction materials and colors should be compatible with styles from this era.
- Strong pedestrian orientation shall be encouraged and maintained through the expansion of "storefront" businesses, enhancement of the streetscape and walking environment, and consolidation of off-street parking behind buildings.
- New buildings or additions should be located close to the street, creating a tradi-

tional "street line" of facades, with buildings forming an attractive edge to the roadway.

- Storefronts should be oriented to the street and include elements such as canopies, overhangs, porches, and trellises to scale down building heights and enhance the street-level environment.

- Buildings shall be limited to two or three floors in height in keeping with the area's historic scale and to preserve views of existing mill structures.

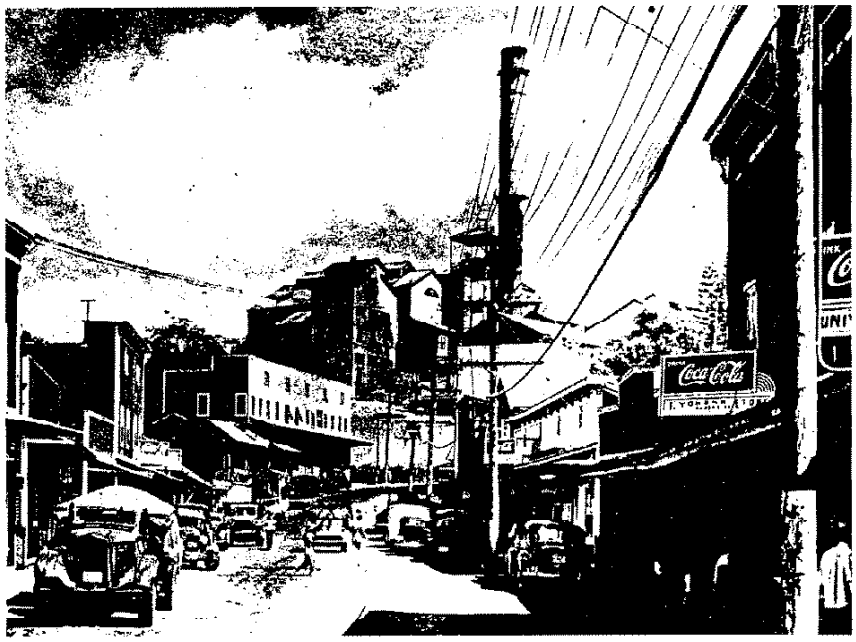
- Buildings should avoid awkward or overscaled forms, and long building forms should be broken down or offset into small masses or more residential proportions.

URBAN DESIGN GUIDELINES

BUILDING FORMS

Topic: Establish a Plantation Design Theme for the Waipahu town core

Discussion: The town core has its roots in the plantation era. The town's heritage, pride, and community spirit are built on its plantation roots and the culture it nurtured over many generations. The Waipahu Sugar Mill, with its tall smokestack stands as a visual landmark and reference point in an otherwise low rise development area.



An archive photo of Oahu Sugar Mill and Waipahu Depot Road provides design ideas for establishing a plantation urban design theme.

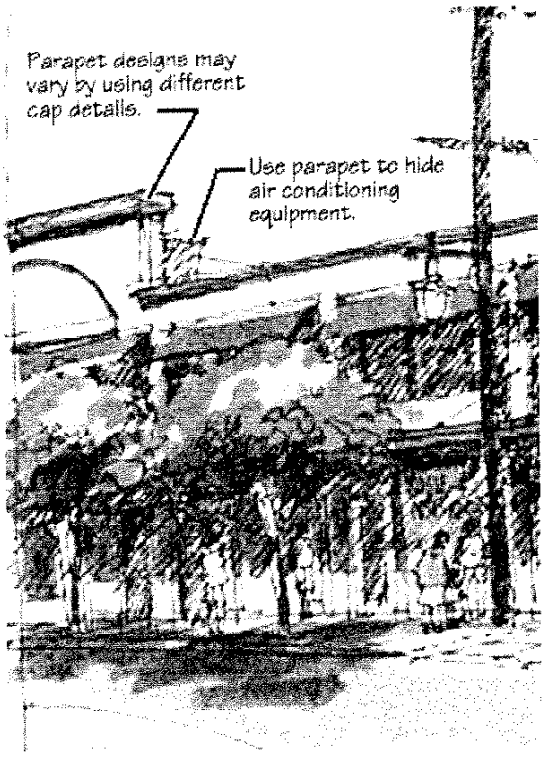
GUIDELINE: Encourage storefronts in the town core to integrate design elements reminiscent of plantation era buildings.

- Analyze historically prominent buildings in the Waipahu Town core i.e., Waipahu Theater, Waipahu Store, Waipahu Fire Station, for their essential building elements and incorporate these elements into building facades of existing or new buildings.

The stepped roof parapet, ornamental cornice and awning of the old Waipahu Store are design elements reminiscent of plantation era buildings.

- In addition, when renovating existing contemporary buildings or for new construction within the town core, consider including design elements common to buildings of the plantation era such as roof parapets, simple cornice details, and awnings.

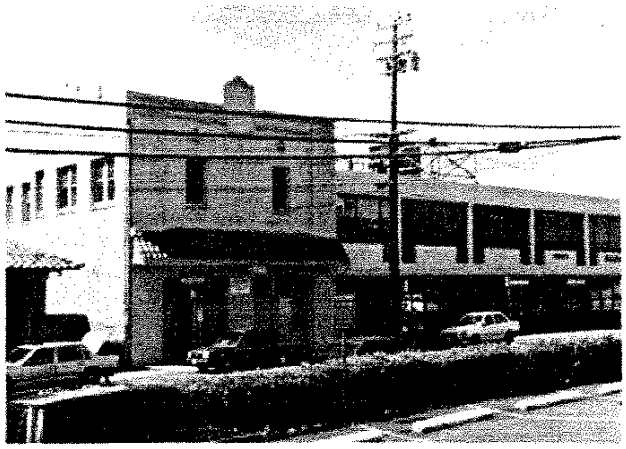
Roof parapet and cornice details of the old Waipahu Store.



Parapets can be effectively used to create a historic theme when renovating existing buildings.

Topic: Building Relationships and Form

Discussion: The town core consists predominantly of one and two story buildings which are built next to each other without sideyard setbacks and intervening alleyways. Most buildings have storefronts at the sidewalk edge without front yard setbacks. The scale and proportions of building forms are not massive nor overpowering and allow a more intimate interface between the public and private domain.

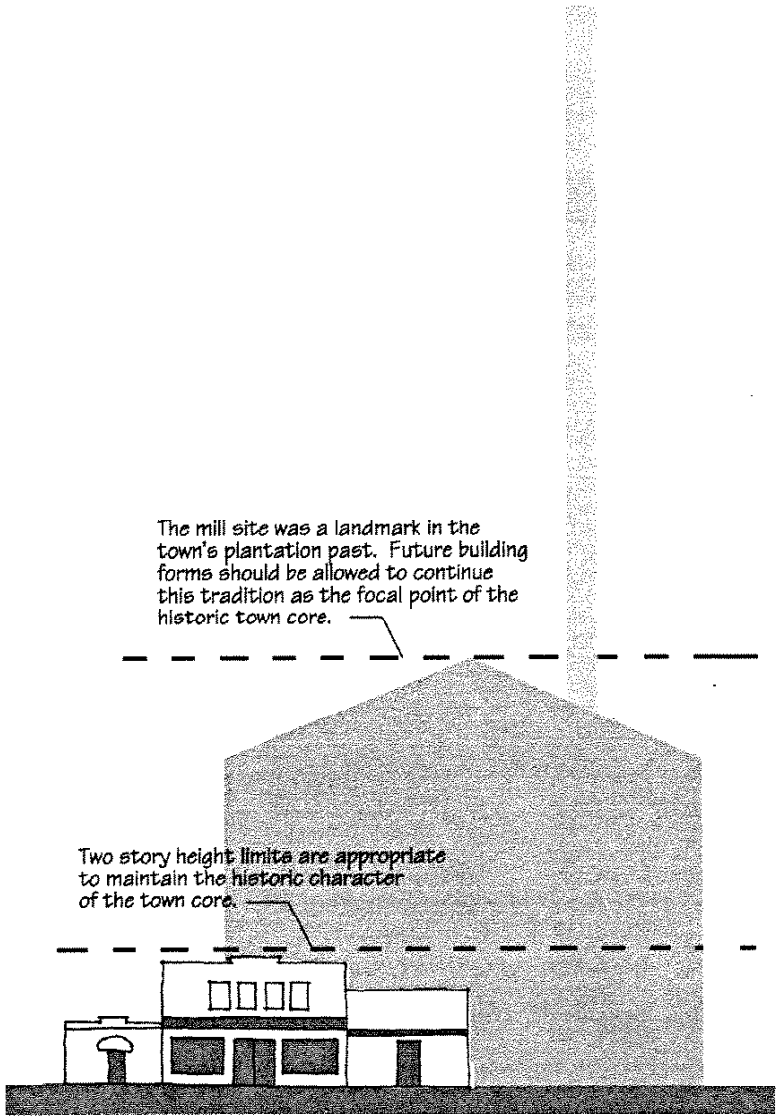


The old Waipahu Fire Station and office buildings along Waipahu Street.

GUIDELINE: Maintain the pedestrian scale of building forms within the town core but allow the mill site to continue to function as the visual landmark of the town.

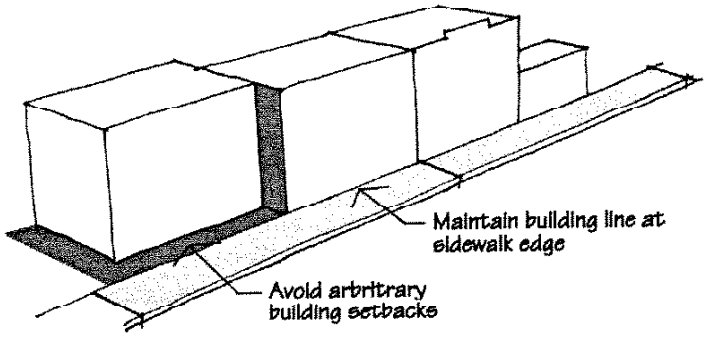
- Limit building heights to two stories in accordance with provisions of the LUO.

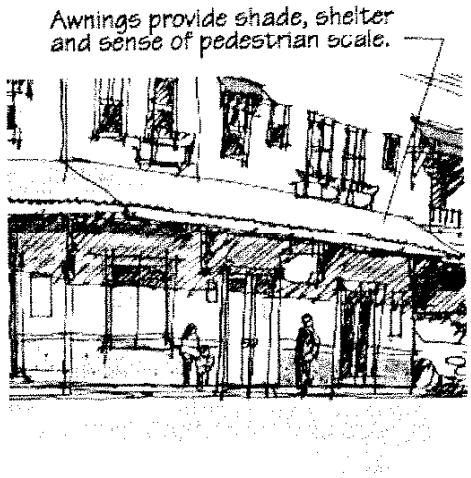
- Allow building forms within the mill site to function as the focal point of the town center. Industrial building forms of the plantation were large and massive. Adaptive reuse of the mill site should recreate such building forms to reinforce the site's historic significance.



GUIDELINE: Encourage storefronts in the town core to maintain the line of the storefront at the sidewalk edge.

- Avoid arbitrary front yard setbacks for new buildings. Maintaining the line of the storefront at the sidewalk edge provides continuity and adds interests for pedestrians.

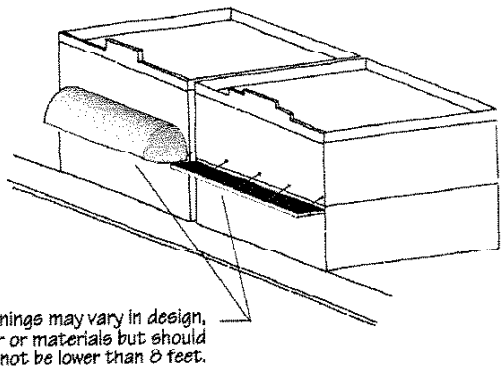


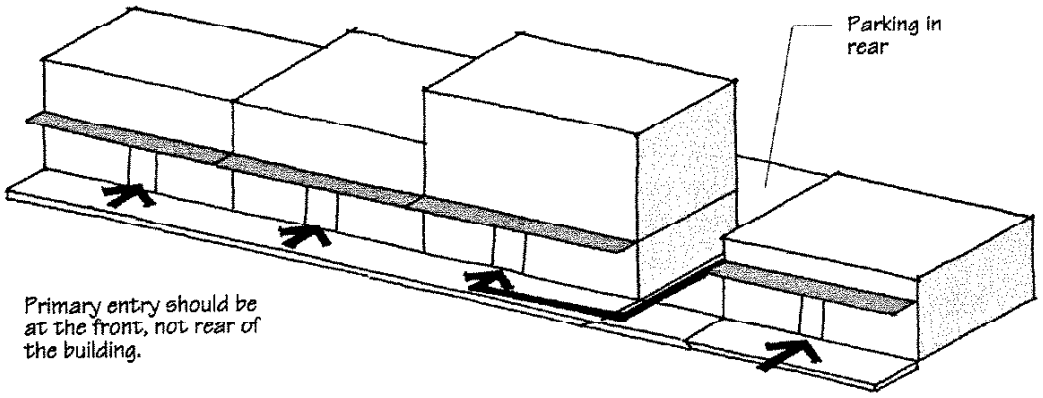


GUIDELINE: Provide awnings as an important unifying design element for the town core.

- Existing and new buildings should be encouraged to provide awnings or sidewalk overhangs at the storefront. Awnings provide shelter from the hot sun and rain and adds visual interest to the facade of the building.

- Awnings should be low enough to provide protection from the sun and rain but no lower than 8 feet.
- The design of awnings can vary throughout the town core. Variation in design, color, materials are encouraged provided they blend into the overall design context of the street.

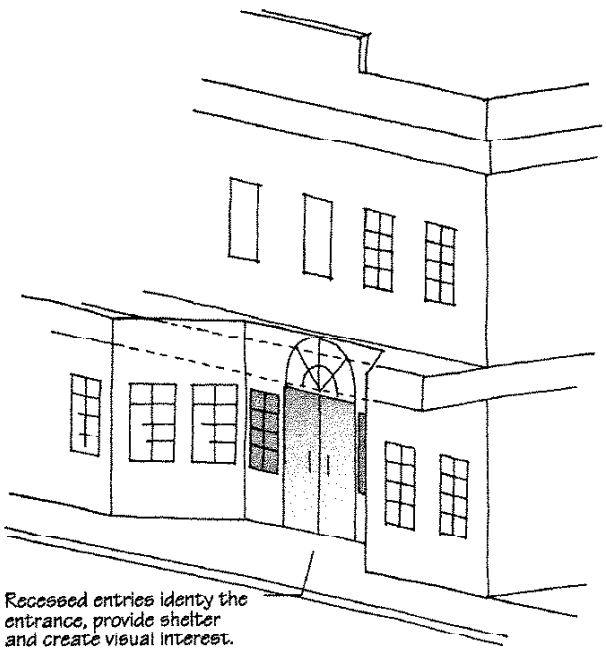




Topic: Storefront Entry Designs

GUIDELINE: Storefront Entry Design should encourage pedestrian activity.

- The primary entry should be at the storefront. Avoid rear or side entries when parking areas are provided at the rear of the building.
- Use doors which have large openings and distinctive designs.
- Where appropriate, use recessed entries to identify the entrance.
- Where appropriate, provide storefront openings without doors to create an open market atmosphere.



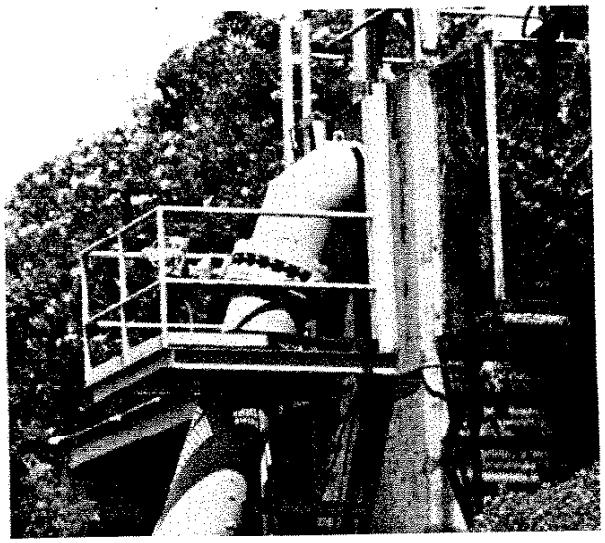
GUIDELINE: Storefront window designs should encourage pedestrian activity.

- Provide windows which allow visual penetration of the activity within the building.
- Provide window displays to break the monotony of long storefront walls.
- Display merchandise at store-front windows.

Windows should display merchandise and help to increase pedestrian interest.

GUIDELINE: Encourage visually interesting activity at the sidewalk edge.

- Consider providing open air eating areas (within private property boundaries) to create pedestrian activity at the sidewalk.
- Provide display cases on walls to break the monotony of long building walls.
- Consider incorporating historic plantation artifacts as design accents. Such artifacts may be oversized pipe line valves, sugar cane flumes, or other sugar mill artifacts.



Sugar mill equipment could be used as design artifacts to add interest to the pedestrian street scene.

Topic: Building Sign Designs

Discussion: Signage within the town core is inconsistent, unattractive and, at times, inadequate.

GUIDELINE: Develop a coordinated signage system with a plantation theme in the town core.

- sign designs must be in accordance with the requirements of the LUO and sign ordinance.
- consider the use of hanging signs under awnings perpendicular to the building facade.
- encourage representational signs, i.e., a sign in the shape of a bicycle for a bicycle shop.
- use materials such as wood, metal and cut out letters
- avoid garish, cheap looking signs which are overly large and out of character.
- lighting signs should be done tastefully. Avoid flashing lights, strobes or other visually distracting sign lighting systems.

Topic: Building Colors for New and Existing Buildings within the town core.

Discussion: The building color scheme of the plantation era was limited to basic whites for the building background with contrasting trim colors which were typically dark green. Building colors should include colors that are compatible with this limited pallet.

GUIDELINE: Use building color schemes that are compatible with the overall plantation theme of the town core.

- encourage the use of basic whites or muted earth tones for the building background with contrasting trim colors.
- avoid the use of overly dark or bright colors for the building background such as dark brown, or bright orange, yellows or blues.

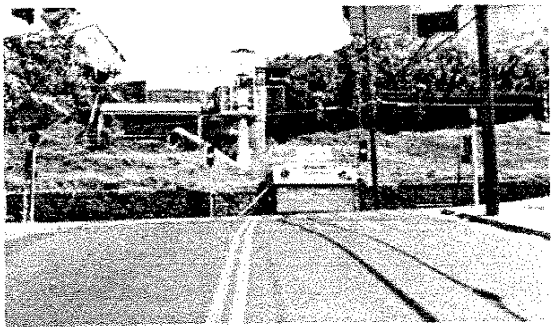
ACTIVITY NODES, FOCAL POINTS AND GATEWAYS

Topic: Reinforce existing activity nodes and focal points within the Waipahu Town core.

Discussion: During the heydays of the sugar industry, Waipahu Sugar Mill was the focal point in Waipahu Town. Waipahu Street wound its way around the mill bringing people and goods to the center of the town. Waipahu Depot Road provided the mauka-makai connection between the train depot once located at the makai end of the road and the mill. Waipahu Depot Road provided an important view corridor as it pointed directly toward the mill and its smokestack landmark. The Waipahu Depot Road and Farrington Highway intersection is heavily traveled by fast moving vehicles. An opportunity exists to create a sense of arrival at this important crossroads to the town core.

GUIDELINE: Reinforce the Waipahu Street and Waipahu Depot Road intersection as an important focal point of the town core.

- Install a community bulletin board with a plantation design theme in the general location previously set aside by the mill for that purpose. The bulletin board creates a sense of community and announces upcoming community events.
- Provide landscaping elements which reinforce the importance of the intersection.
- Maintain the wedelia groundcover as the prominent landscape material since it is a recognizable visual element of the mill.



Waipahu Depot Road intersection and existing community bulletin board.

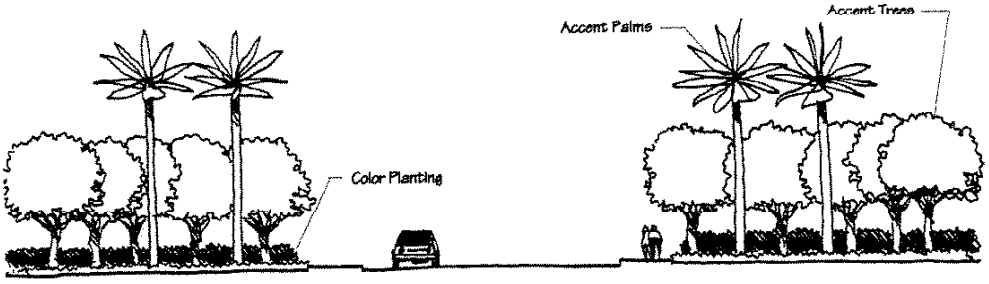
GUIDELINE: Enhance the Waipahu Depot Road and Farrington Highway intersection as an important gateway to the town core.

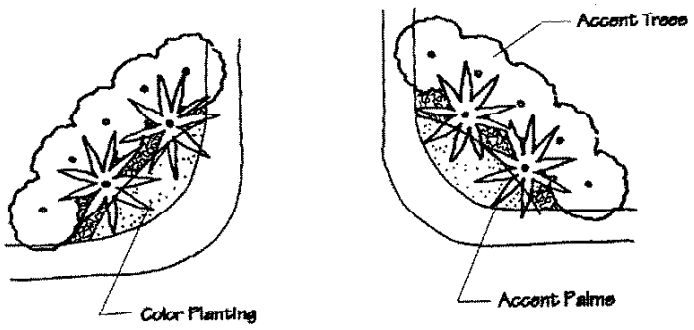
- Create an entry feature on the mauka/ewa corner of the intersection with permission from the property owner.
- The entry feature could include a "Welcome to Historic Waipahu" sign or other appropriately worded sign and a landmark feature such as a clock tower or other element symbolic of the plantation theme.

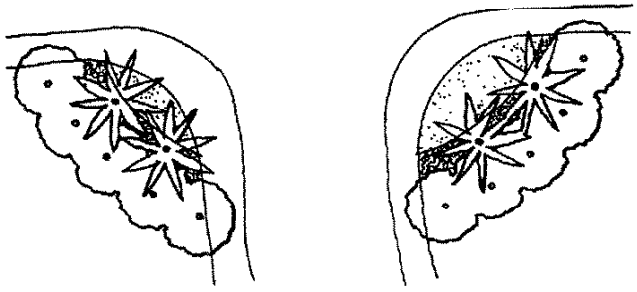
- Provide landscaping elements which reinforce the importance of the intersection such as tall vertical trees and colorful ground cover, flowers or other appropriate landscape material.

Waipahu Depot Road and Farrington Highway intersection.

Section of Waipahu Depot Road and Farrington Highway intersection enhanced with appropriate landscaping.







Plan of intersection.

MOVEMENT SYSTEMS
STREETS AND ROADWAYS

Topic: Adding Definition to Roadways

Discussion: Many streets in the Waipahu town core are ill-defined with no sidewalks or boundaries defining the roadway from the private property boundary. While this may add to the rural ambiance of certain areas, the lack of definition leads to dysfunctional situations where private property owners encroach upon the space provided for pedestrians or vehicles and vice versa.

GUIDELINE: Provide standard curb, gutters and sidewalks throughout the town core and along major thoroughfares.

- consider the use of distinctive pavement texture or materials for the town core.
- where high pedestrian activity is encouraged, consider the use of distinctive walkway street crossings, special paint markings or other design patterns.
- in areas where the streetfront property line is not occupied by the building, define edges between public and private property by using fences, shrubbery or low walls.

Undefined edges between public and private property.

Topic: Waipahu Street Improvements

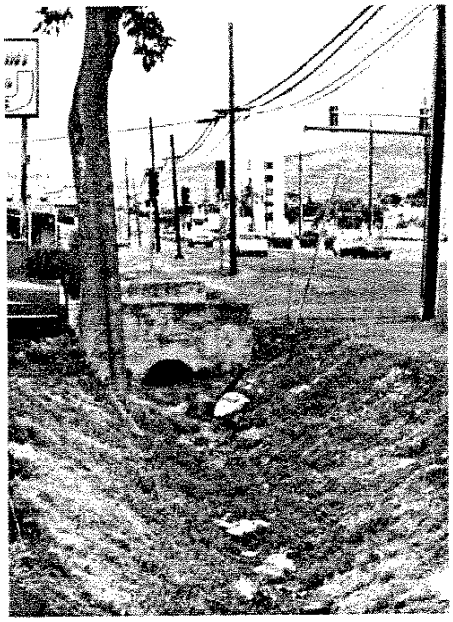
GUIDELINE: Improve Waipahu Street to facilitate traffic movement and reduce traffic congestion without diminishing the historic character of the town core..

- Waipahu Street between Paiwa and Depot Road is important to the historic character of the town core.
- Roadway improvements should favor pedestrian traffic over vehicular traffic.
- Plant street trees to replace trees lost to widening.

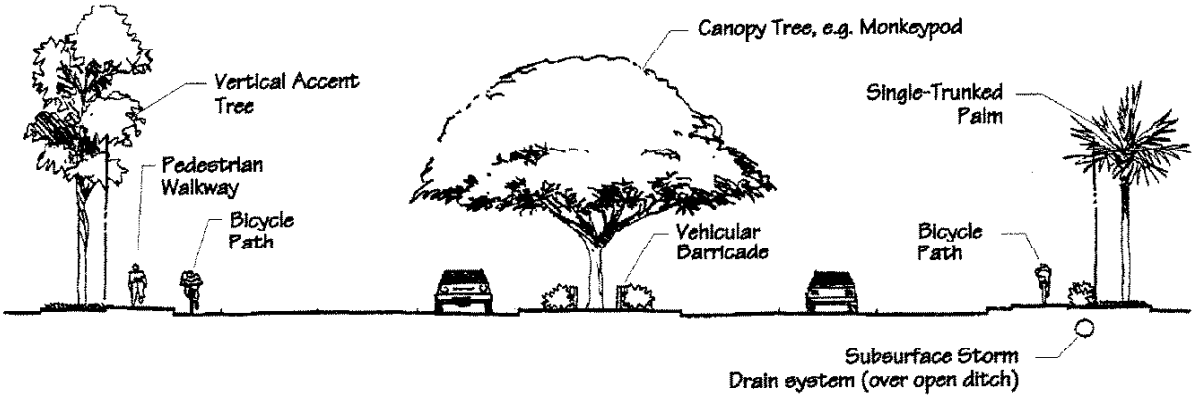
Topic: Farrington Highway Improvements

GUIDELINE: Provide Farrington Highway improvements to enhance its visual appearance, improve safety, and aid in direction

- Provide large canopy trees in the medial strip in accordance with the design requirements of the State Department of Transportation.
- Provide landscape improvements on both sides of Farrington Highway.
- Cover the open drainage channel on the makai side of the highway.
- Consider placing utility lines underground if funds are available.
- Organize commercial identification signs at various shopping complexes by erecting a sign with a single shopping complex name or one that lists tenants of that complex.
- Provide a dedicated bikeway along the makai side of the highway.
- Provide continuous pedestrian sidewalk.



Open drainage swale along Farrington Highway should be covered.



Farrington Highway Improvements

Topic: Hikimoe Street Improvements

Discussion: Hikimoe Street is an important linkage in the town core. It provides an important connection between various civic center facilities and commercial establishments along Waipahu Depot Road. Very little effort has been placed on improving the appearance of buildings along the street. Along the makai side, the rear of many existing establishments face the street. During the early morning hours, traffic flow and parking availability are often hampered by loading activities of delivery trucks. Along the mauka side, development is discontinuous with pockets of vacant land.

GUIDELINE: Provide Hikimoe Street improvements as an important pedestrian and vehicular connection.

- Provide street trees for shade and pedestrian interest and to improve visual appearance, particularly along the makai side of the street where the rear of business establishments face the street.
- Encourage the use of low walls or fences to help define the edge between the private property and pedestrian walkways.
- Consider converting Hikimoe Street to a one way Honolulu bound street from Waipahu Depot Road to Mokuola Street.
- Explore the provision of angled parking on both sides of the street if the one way system is implemented. If pursued, traffic calming measures to increase safety for pedestrians and motorists would be needed.

Hikimoe Street is an important pedestrian linkage between the civic center and businesses of the town core.

Topic: Parking within the town core

GUIDELINE: Continue to allow on-street, metered parking within the town core.

- On-street parking increases pedestrian activity and acts as a buffer between moving traffic and pedestrians.
- On-street parking also creates larger turning radii at intersections for buses and emergency vehicles.

GUIDELINE: Encourage development of parking pockets at the rear of business establishments within the town core.

- Provide clearly marked entry points to parking lots
- Encourage joint use of parking.
- Avoid parking lots which front on the main streets.

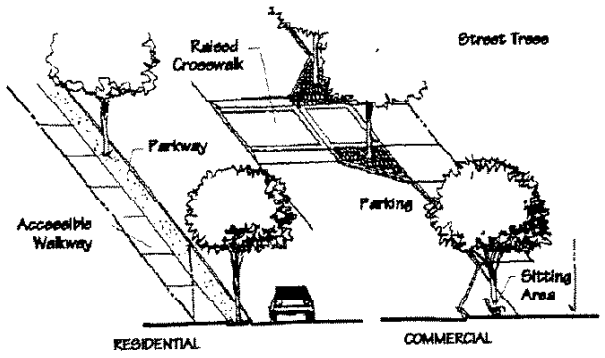
Topic: Pedestrian Linkages and Sidewalks

GUIDELINE: Create pedestrian linkages which encourage increased pedestrian activity and connect important activity centers within the town core. Such linkages or paths can be designated along specific streets or dedicated for pedestrians only as shortcuts.

- Develop a network of pedestrian linkages which connect activity centers such as the Waipahu Cultural Gardens, the Civic Center, the mill redevelopment area, and the town core.
- Consider distinctive landscape treatment such as a distinctive specimen street tree.
- Consider provision of special signage or sidewalk markings which identify the path.
- Ensure that sidewalks meet Americans with Disability Act (ADA) requirements.

GUIDELINE: Design sidewalks to encourage pedestrian activity, safety and interest.

- In high pedestrian areas, consider the use of distinctively different sidewalk patterns, materials or colors.
- Ensure continuity of sidewalks and avoid excessive curb cuts for driveways.
- Sidewalk widths increase with pedestrian density. Provide additional sidewalk width at transit stops, if feasible.
- Ensure that sidewalks meet ADA requirements.



Examples of Residential and Commercial Streetscapes.

GUIDELINE: Transit Stops and other Rest Areas

- Design transit stops which meet ADA requirements.
- Consider developing transit stops which also serve as rest areas for pedestrians. Attractive landscaping could provide a shady rest area for pedestrians.

Bus stop design example.

Topic: Bikeways

GUIDELINE: Encourage development of a bikepath network through Waipahu.

- Implement the railroad right-of-way shoreline bikepath.
- Provide mauka-makai routes along designated roads from the shoreline bikepath.
- Provide a bike lane along the makai side of Farrington Highway.
- Allow bike traffic within the town core.

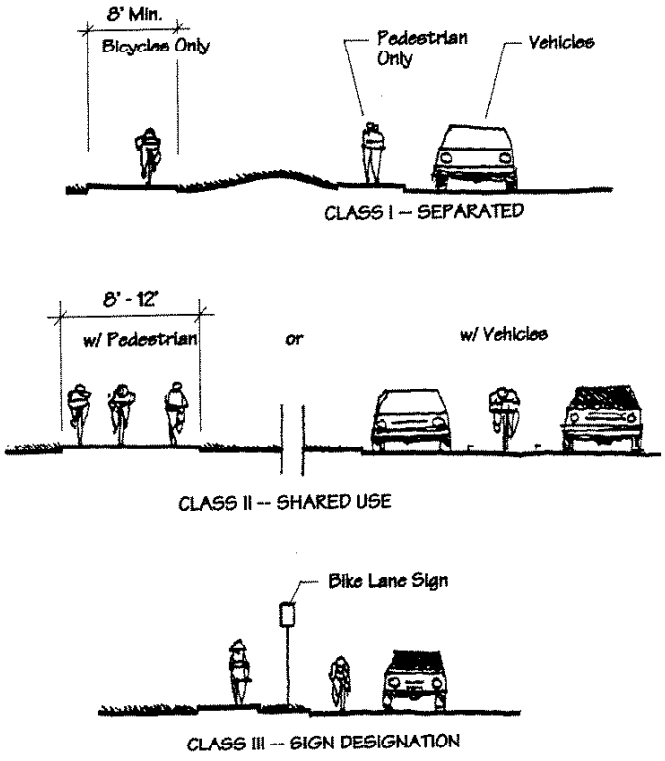
Topic: Street Lights and Furniture

GUIDELINE: Retain the overhead power lines and utility poles within the town core.

- Consider replacing street light fixtures with period style lighting fixtures.

GUIDELINE: Consider placing overhead power lines underground along Farrington Highway as funding becomes available.

- Unlike the historic character overhead lines portray within the town core, contemporary, underground utilities would improve the visual quality of this heavily traveled roadway.



Bikeway Standards

LANDSCAPE AND OPEN SPACE

Topic: Waipahu's Existing Open Space Network

Discussion: Important elements of an urban structure are places the community identifies with and where its members gather to meet and play, e.g., the Town Square. Examples in Waipahu are Hans L'Orange Field and Recreation Complex, the Mill site, and Cultural Park and Recreation Center.

GUIDELINE: Reinforce and enhance the existing character and quality of the open space elements.

- Add trees to match existing types,
- Improve visual access from plublic areas.

GUIDELINE: Develop community-wide linkages and improve pedestrian and non-motorized access to open space elements.

- Provide clearly defined pathways and bicycle routes throughout the Waipahu Community.
- Conform to current Americans with Disability Act (ADA) standards.

Topic: Streetscape Quality and Character.

Discussion: Many of Waipahu's streets lack definition. The major element in articulating the streetscape are trees of appropriate scale, form and character.

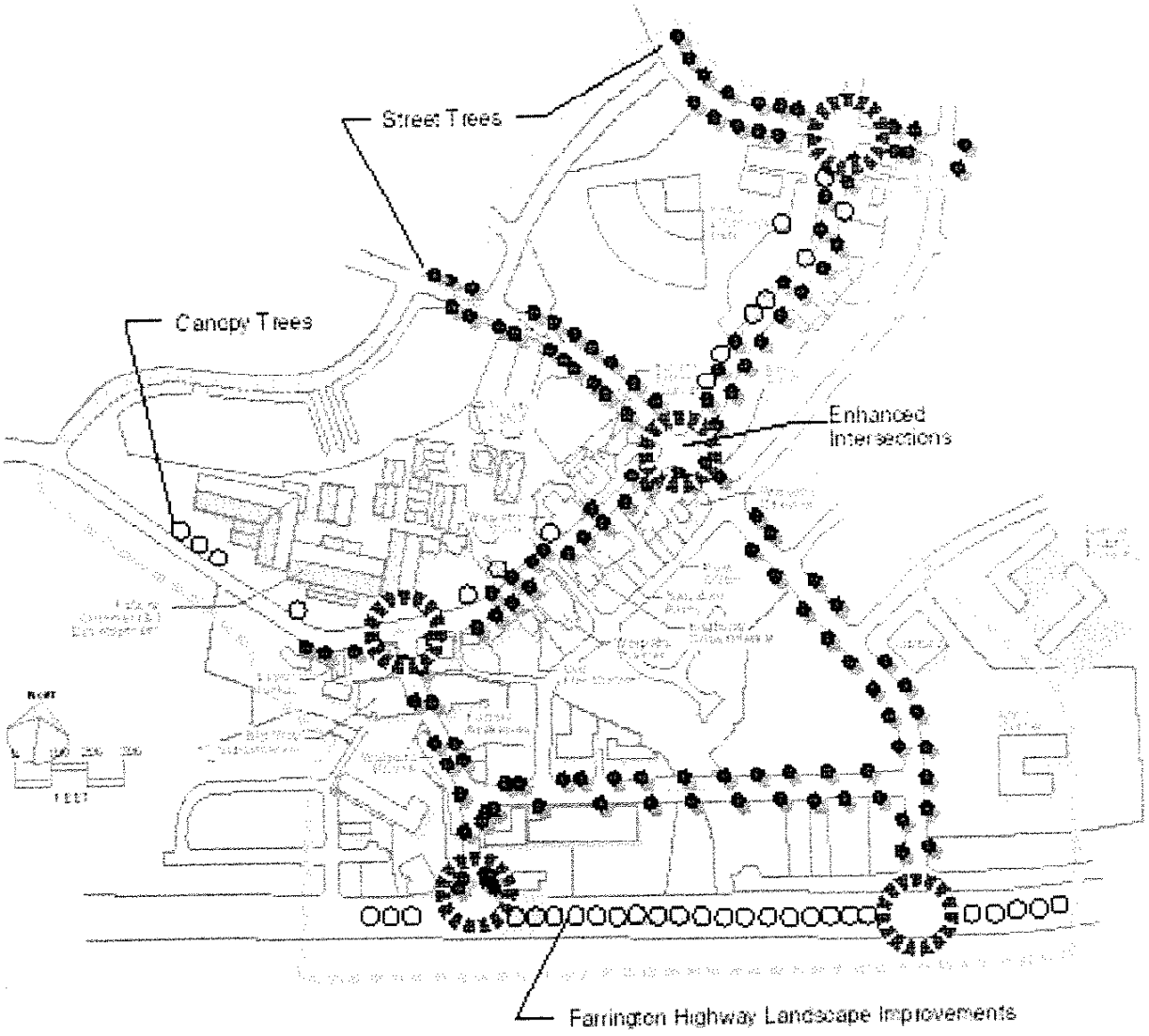
GUIDELINES: Add trees along Waipahu's streets, both within the existing rights-of-way and adjacent private properties to reinforce the streetscape. Recomended tree types for each major street are:

- Farrington Highway (median) -- Monkeypod
- Farrington Highway (sides) -- Gold Tree, African Tulip
- Waipahu Depot Road -- Rainbow Shower
- Waipahu Street -- Monkeypod (as allowed), Giant Crepe Myrtle
- Hikimoe Street -- Giant Crepe Myrtle
- Paiwa Street -- Silver Trumpet Tree
- Mokuola Street -- Rainbow Shower or Hong Kong Orchid

GUIDELINE: Create landscape features at major intersections.

- Create visually distinct plantings or features to indicate importance of the intersection, e.g., Farrington Highway and Waipahu Depot Road and Mokuola Street (future), Paiwa Street and Farrington Highway and Waipahu Street.
- Suggested plant types include vertical material, such as Royal Palm or Gold Tree.

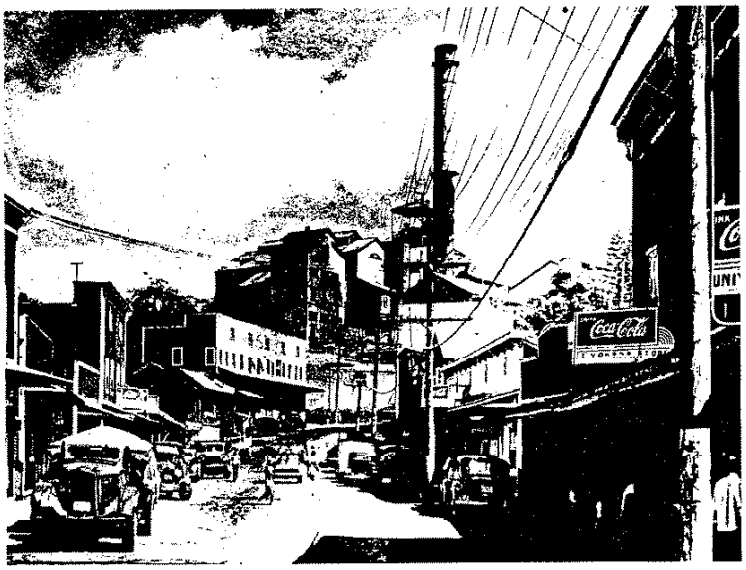
A conceptual landscape plan illustrating the location of street trees, canopy trees, intersections proposed for enhanced landscape treatment and improvements for Farrington Highway is shown below.



Conceptual landscape plan for the town core.

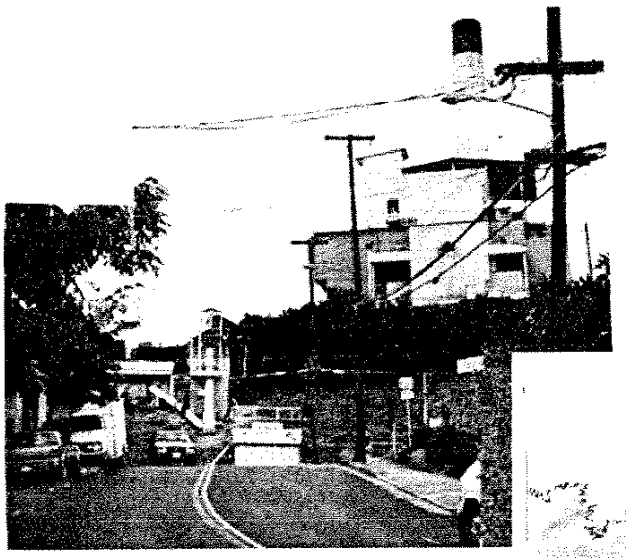
URBAN DESIGN IMAGES

The following images demonstrate how the application of urban design guidelines previously discussed can be applied to existing situations.

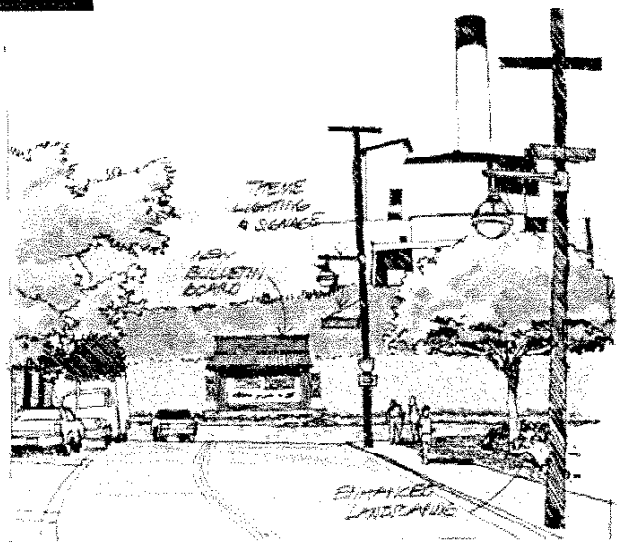


An archive photo of Waipahu Depot Road looking mauka. Note the common building elements including false fronts, roof parapets and a variety of awning types.

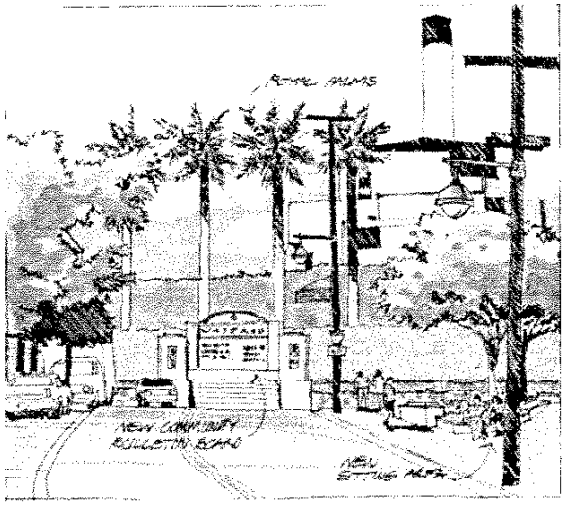
The introduction of street trees and pedestrian friendly storefronts will help capture the charm of this historic street.



A mauka view of Waipahu Depot Road and the existing community bulletin board.



A possible enhancementof this high visibility intersection could include a new community bulletin board, theme lighting and signage as well as enhanced landscaping.



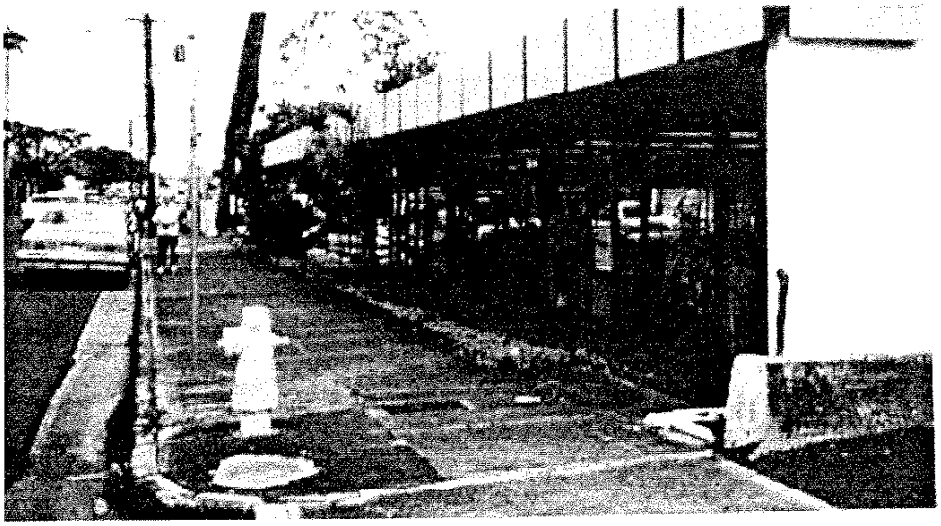
An optional enhancement of this intersection on a grander scale would include Royal Palms to echo the vertical mill smoke stack and a community bulletin board using design elements found on the older style plantation buildings.

An existing building on the corner of Waipahu Street and Waipahu Depot Road which has probably outlived its useful life.

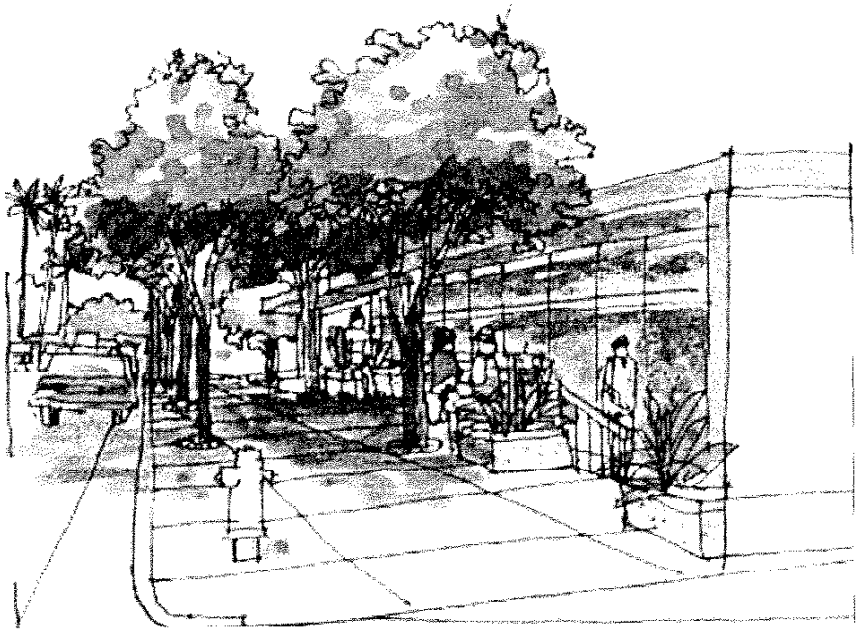
An example of a new commercial building at the same location. The building incorporates building elements such as a stepped roof parapet, a lower awning and a more pedestrian friendly street level facade.

Old and new buildings along Waipahu Street have comfortable pedestrian scales. However, undefined sidewalks and competing architectural styles detract from a pleasant pedestrian experience.

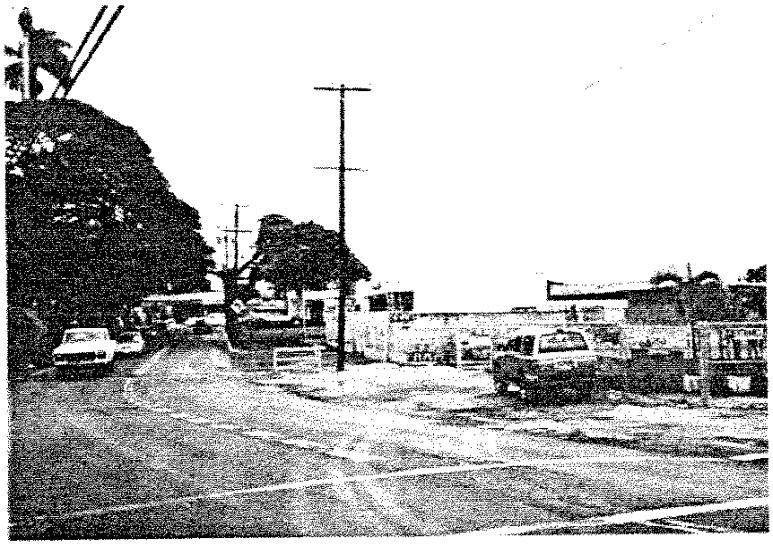
An example of the application of a "Plantation Theme" includes facade renovations to the newer building and signage, lighting and painting details to the older building. Sidewalk improvements provide continuous walkways uninterrupted by driveways. Facade improvements to the newer building include a new parapet to hide mechanical equipment, awnings and "period" style street lights.



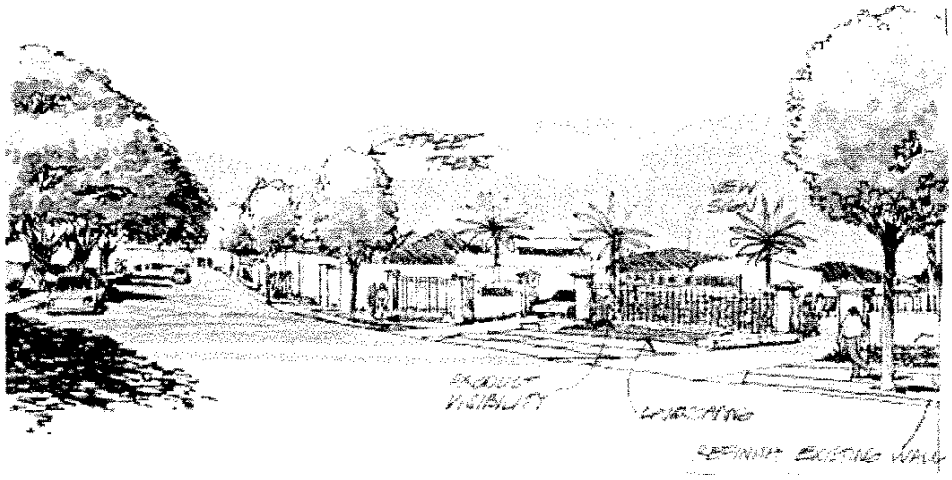
The Salvation Army building poses an interesting design challenge because the storefront edge is depressed below the sidewalk.



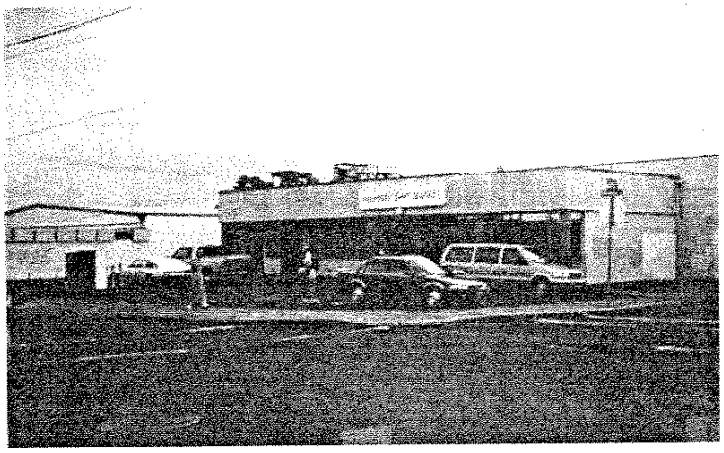
Possible improvements include the addition of canopy shade trees and benches where people can sit, relax and interact with others in the community.



An integral part of the Waipahu business community is this rock, sand and landscape ornamental products store.

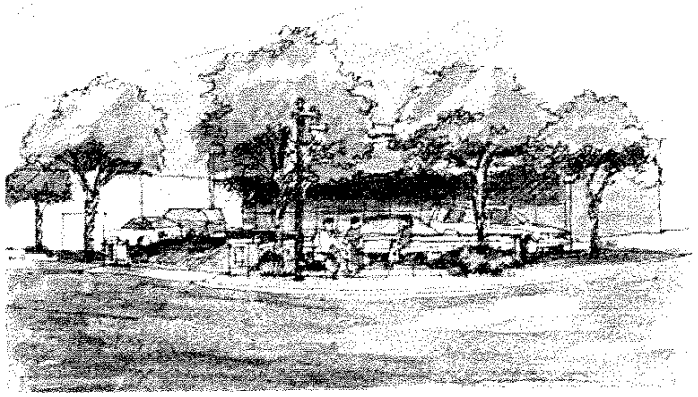


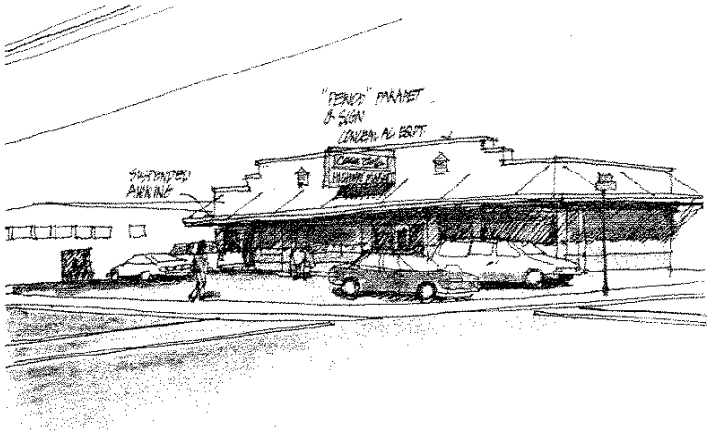
This example illustrates how the landscape ornamental products can be displayed as part of a new wall design which helps to better define entry points to the storage yard. New sidewalks and landscaping would help to better define the roadway.



This retail store represents a typical design layout with parking provided at the front of the building. The edge between the parking lot and pedestrian sidewalk is undefined.

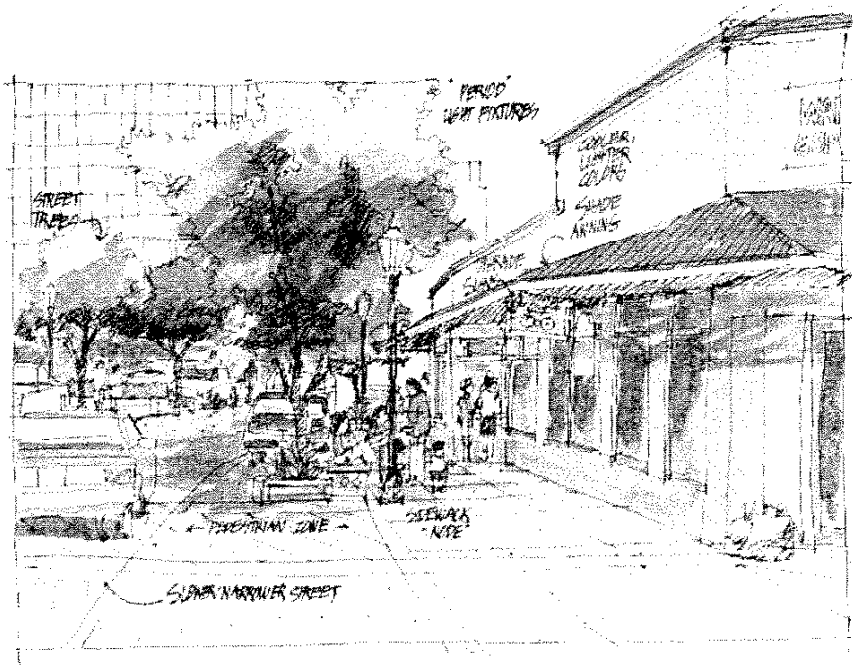
This sketch demonstrates how the streetscape can be made more appealing to pedestrians by providing a shady rest stop where people can sit and relax. The addition of shade trees help to define the boundaries between the parking lot and pedestrian sidewalks.





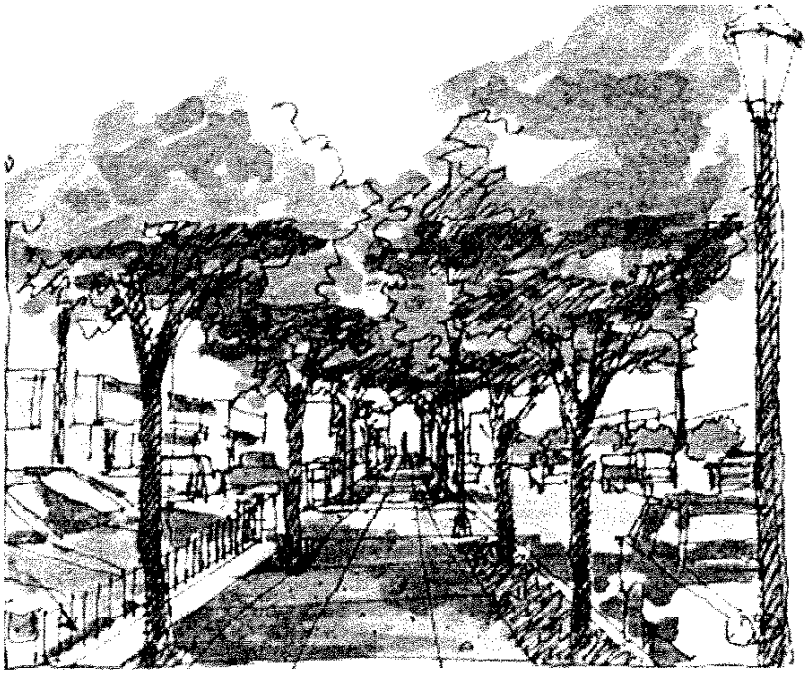
Future renovation of the storefront facade could be designed according to a "Plantation Theme" with the simple addition of roof parapets, signs and suspended awning.

A view of the Waipahu Bicycle building looking makai along Waipahu Depot Road. Street trees have been planted in the road right-of-way and are protected by planter islands.

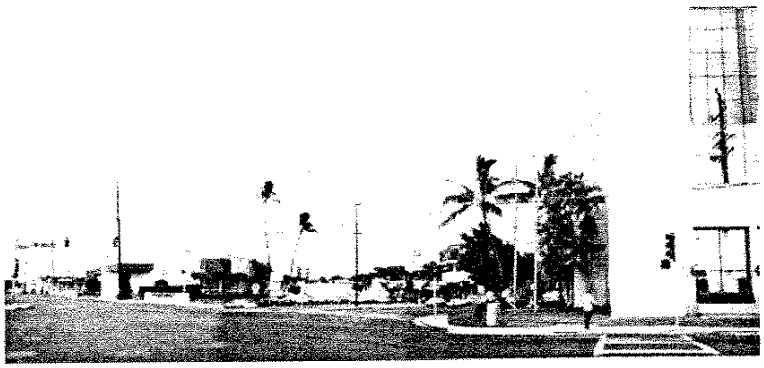


Hanging signs, shade awning, roof parapets with cornices and cooler, lighter paint colors would improve the facade of this long established business. Period light fixtures would add to the historic theme of the street. Wider sidewalks to increase the pedestrian zone would encourage traffic to slow down. Traffic lanes would remain the same width.

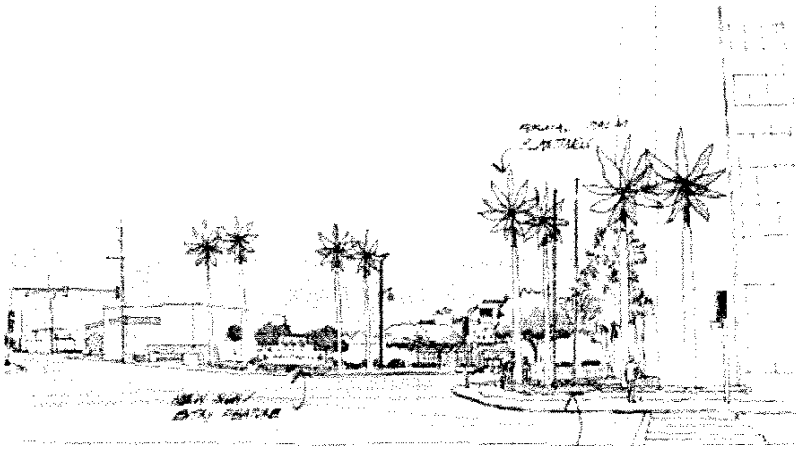
Hikimoe Street will be a major pedestrian linkage between commercial establishments on Waipahu Depot Road and the Civic Center facilities along Mokuola Street.



The pedestrian experience can be improved with the addnion of medium-sized shade trees, low walls or fences to screen parking areas from the sidewalk and to better define the edge between public and private spaces.

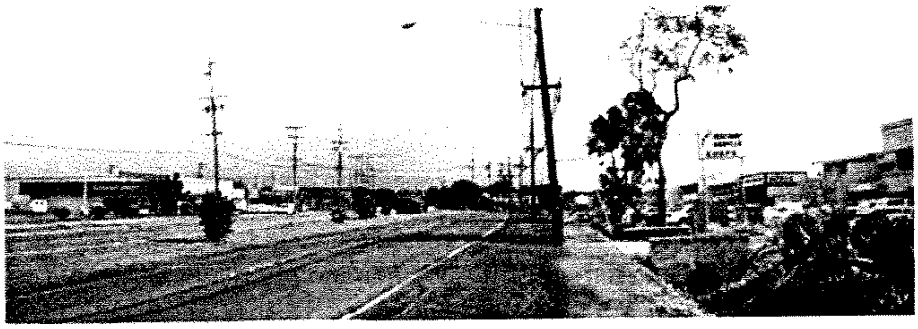


Farrington Highway/Waipahu Depot Road intersection is a major activity node of the town core.



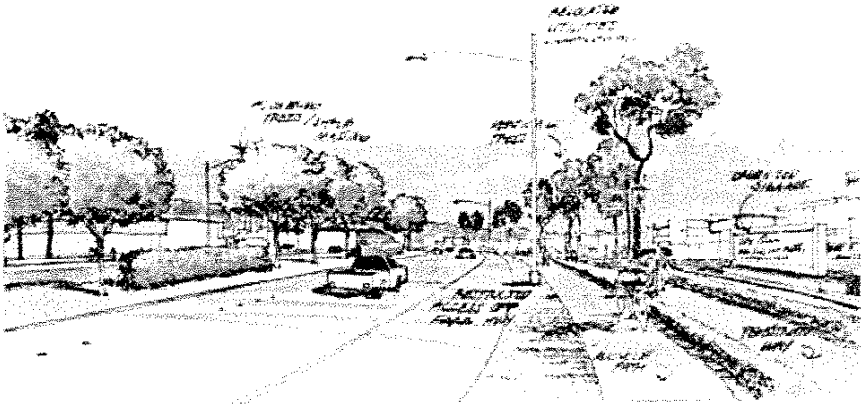
Improvements could include a new entry sign and feature, colorful plantings to enhance the intersection and tall Palm trees for a formal entry statement.

Or, a focal point feature, such as a clock tower and flowering canopy trees are another design suggestion to help draw attention to this important intersection.



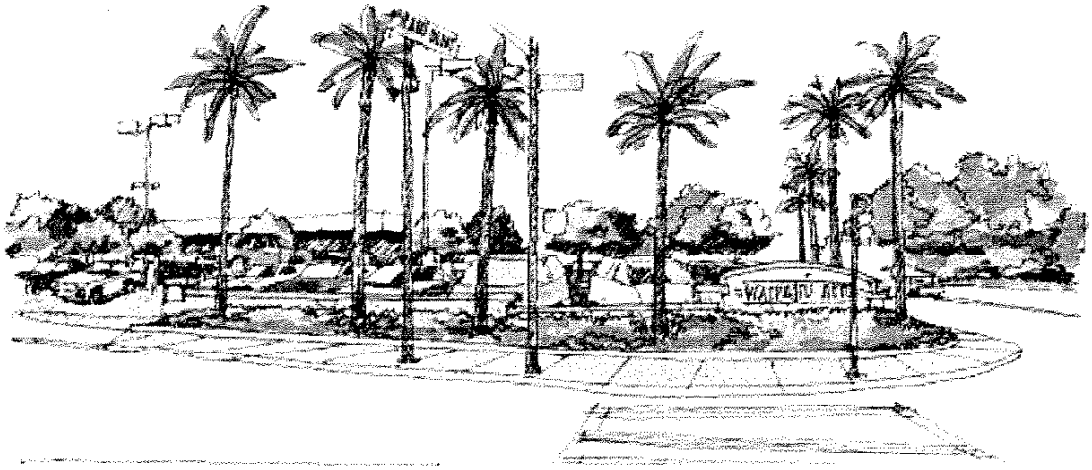
A view of Farrington Highway looking towards Honolulu. Note the lack of trees in the highway median, overhead utility lines and open drainage swale.

This option illustrates large canopy trees in the highway median,single trunked palms and low, colorful planting on both sides of the highway. A Class II Shared Use Bike Path, continuous pedestrian sidewalks and unified signage improve the highway edge. The open drainage swale is covered. Existing overhead utility lines remain.



An alternative landscape designg includes flowering trees with shrub massing in the highway median, vertical trees and edge-defining planting along the highway edge. A dedicated bicycle path and separate pedestrian path is proposed along with utilities relocated underground. The existing open drainage swale is covered.

The lack of curbs and sidewalks causes confusion as to where the sidewalk, roadway and private property are located. No curbs and sidewalks also create safety risks to pedestrians.



The addition of landscaping and a low wall with well designed sign creates a high quality appearance for a typical auto dealership. The addition of sidewalks defines the pathway and improves pedestrian safety.

IV. IMPLEMENTATION PLAN

1. Introduction

Approval of the Waipahu Town Plan by the Honolulu City Council in February 1996 (Resolution No. 96-14) marked the beginning of implementation of the Waipahu Town Plan. The Town Plan provides the overall guidance for the future land use, circulation, and urban design improvements to Waipahu Town.

The Waipahu Livable Communities Initiative project has provided further definition of the Town Plan's transportation and urban design elements towards making Waipahu a more pedestrian-friendly community which is less reliant on the automobile. The Livable Communities Initiative has refocused community attention to the Waipahu Town Plan and developed more detailed plans which can be pursued by the public and private sectors in the implementation phase.

This Implementation Plan provides the framework and strategy for pursuing action and funding of the various land use, transportation and urban design elements of the Town Plan. The focus of the Implementation Plan is on establishing an overall timeframe, sequence and responsibilities for potential government actions which are proposed. The Implementation Plan also addresses to a lesser extent the private sector actions which along with government actions help to achieve the Town Plan's goals. The Plan helps to organize the Town Plan and Livable Communities recommendations such that community groups and interested parties can monitor the progress of and keep projects on track towards completion.

2. Implementation Responsibilities and Schedule

The responsible entities for implementation of the various projects called for in the Waipahu Town Plan and Livable Communities Initiative are listed in Table 4-1.

A generalized schedule has been developed to indicate the approximate timeframe and sequencing for implementing the various projects of the Waipahu Town Plan and Livable Communities Initiative. See Table 4-2. The schedule is organized by area, with the sequencing and timeframes reflective of the relative priority of the implementing action.

Ongoing Community Role. With the completion of the Waipahu Livable Communities Initiative, the Task Force which has overseen the development of Plan recommendations

Table 4-1
WAIPAHU TOWN PLAN AND LIVABLE COMMUNITIES INITIATIVE
IMPLEMENTATION RESPONSIBILITIES

	CITY								STATE		PRIVATE		
Implementing Action	Building	PD	DLU	DTS	OTS	DHCD	DPW	DPR	DOT-HWY	DLNR	Town Plan Impl. TF	Amfac/ JMB	Other Private
1. SUGAR MILL AREA													
1.1 Mokuola Street Extension												●	
1.2 Manager's Drive Bridge Widening												●	
1.3 Manager's Drive Extension to Mokuola Street				●		●	●						
1.4 Hans L'Orange Park Expansion												●	
1.5 Amfac Light Industrial Subdivision												●	
1.6 Amfac Commercial Development			●									●	
1.7 Community Facilities Development													
1.7.1 YMCA													●
1.7.2 FilCom Center													●
1.7.3 Heritage Park/Center													●
1.8 Manager's Drive Properties						●							●
2. WAIPAHU TOWN													
2.1 Waipahu Street Improvements				●			●	●					
2.2 Floodway Improvements - Waikele Stream							●						
2.3 Entry Features Construction								●					
2.4 Village Park Connector Road				●			●						
2.5 Internal Transit Shuttle				●									●
2.6 Old Town Revitalization Program/Organization		●								●	●		
2.7 Hikimoe Street Pedestrian/Bike Path				●			●						
2.8 Paiwa and Mokuola Street Landscaping				●			●	●					

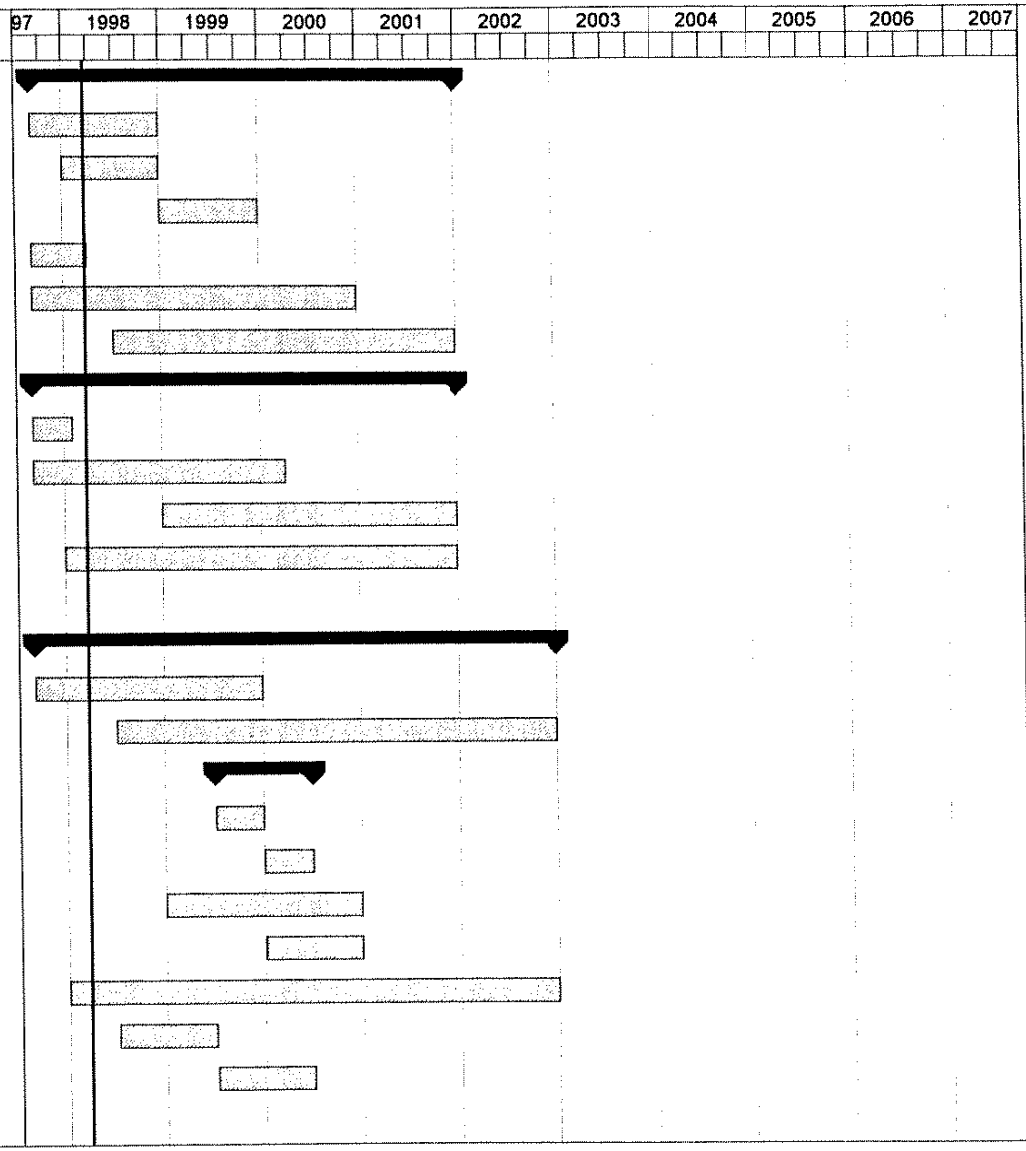
Table 4-1 (cont.)
WAIPAHU TOWN PLAN AND LIVABLE COMMUNITIES INITIATIVE
IMPLEMENTATION RESPONSIBILITIES

	CITY								STATE		PRIVATE		
Implementing Action	Building	PD	DLU	DTS	OTS	DHCD	DPW	DPR	DOT-HWY	DLNR	Town Plan Impl. TF	Amfac/ JMB	Other Private
3. FARRINGTON HIGHWAY													
3.1 Median Landscaping and Sidewalks/Bikeway									●				
3.2 Moloalo Street Frontage Modifications				●			●						
3.3 OR&L Bike Path to Plantation Village				●			●						
4. WAIPIO PENINSULA													
4.1 Shoreline Bike Path				●			●	●	●				
4.2 Pouhala Marsh Restoration							●			●			
4.3 Waipio Point Access Road				●			●						
4.4 Waipahu Depot Road Improvements				●			●						
4.5 Waipio Peninsula Recreation Complex	●							●					●
4.6 Shoreline Park Improvements		●	●					●					
4.7 OR&L Right-of-Way Train Restoration													●

TABLE 4-2

WAIPAHU TOWN PLAN IMPLEMENTATION

Project	Start	Finish
1 SUGAR MILL AREA	9/1/97	12/31/01
1.1 Mokuola Street Extension	9/1/97	12/31/98
1.2 Manager's Drive Bridge Widening	1/1/98	12/31/98
1.3 Manager's Drive Extension to Mokuola St.	1/1/99	12/31/99
1.4 Hans L'Orange Park expansion	9/1/97	3/30/98
1.5 Amfac Light Industrial Subdivision	9/1/97	12/31/00
1.6 Amfac Commercial Development	7/1/98	12/31/01
1.7 Community Facilities Development	9/1/97	12/31/01
1.7.1 YMCA	9/1/97	1/31/98
1.7.2 FilCom Center	9/1/97	3/31/00
1.7.3 Heritage Park/Center	1/1/99	12/31/01
1.8 Manager's Drive Properties	1/1/98	12/31/01
2 WAIPAHU TOWN	9/1/97	12/31/02
2.1 Waipahu St. Improvements	9/1/97	12/31/99
2.2 Floodway Improvements - Waikele Stream	7/1/98	12/31/02
2.3 Entry Features Construction	7/1/99	6/30/00
2.3.1 Waipahu St/Depot Rd	7/1/99	12/31/99
2.3.2 Depot Rd/Farrington	1/1/00	6/30/00
2.4 Village Park Connector Road	1/1/99	12/31/00
2.5 Internal Transit Shuttle	1/3/00	12/31/00
2.6 Old Town Revitalization Program/Organization	1/1/98	12/31/02
2.7 Hikimoe St. Pedestrian/Bike Path	7/1/98	6/30/99
2.8 Paiwa and Mokuola Street Landscaping	7/1/99	6/30/00



Project: Waipahu Livable Communities
Prepared by: Wilson Okamoto and Associates, Inc.
Date: 3/16/98

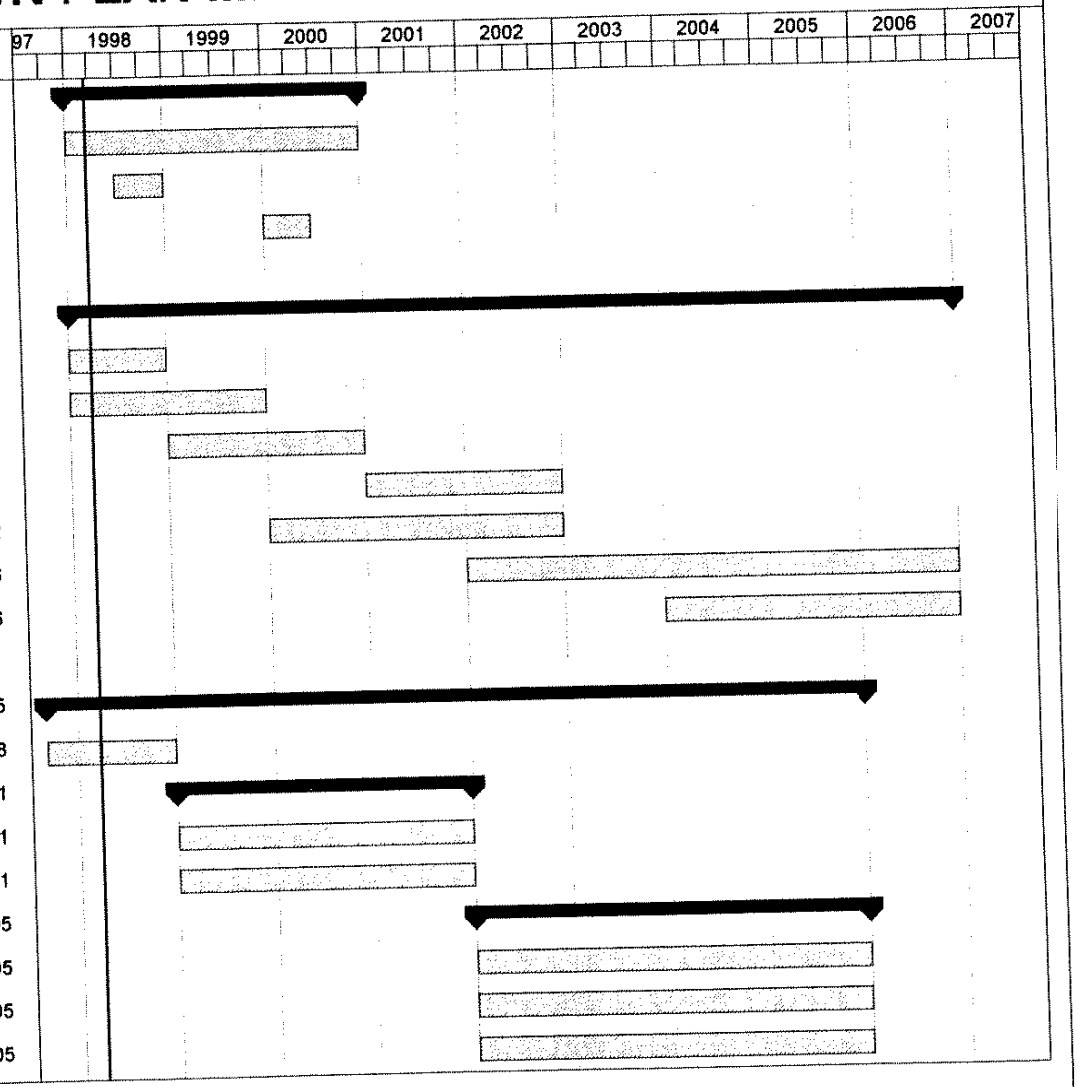
Task

Summary

TABLE 4-2

WAIPAHU TOWN PLAN IMPLEMENTATION

Project	Start	Finish
3 FARRINGTON HIGHWAY	1/1/98	12/31/00
3.1 Median Landscaping and Sidewalks/Bikeway	1/1/98	12/31/00
3.2 Moloalo Street Frontage Modifications	7/1/98	12/31/98
3.3 OR&L ROW Bike Path to Cultural Gardens Park	1/1/00	6/30/00
4 WAIPIO PENINSULA	1/1/98	12/31/06
4.1 Shoreline Bike Path	1/1/98	12/31/98
4.2 Pouhala Marsh Restoration	1/1/98	12/31/99
4.3 Waipio Point Access Road	1/1/99	12/31/00
4.4 Waipahu Depot Road Improvements	1/1/01	12/31/02
4.5 Waipio Peninsula Recreation Complex	1/1/00	12/31/02
4.6 Shoreline Park Improvements	1/1/02	12/31/06
4.7 OR&L Right-of-Way Train Restoration	1/1/04	12/31/06
5 PUBLIC TRANSIT PLAN	9/1/97	12/31/05
5.1 Short-Range Plan	9/1/97	12/31/98
5.2 Mid-Range Plan	1/1/99	12/31/01
5.2.1 Mokuola Street	1/1/99	12/31/01
5.2.2 Village Park	1/1/99	12/31/01
5.3 Long-Range Plan	1/1/02	12/31/05
5.3.1 Trunk Route Changes	1/1/02	12/31/05
5.3.2 Waipahu Shuttle Service	1/1/02	12/30/05
5.3.3 Transfer Points	1/1/02	12/31/05



Project: Waipahu Livable Communities
Prepared by: Wilson Okamoto and Associates, Inc.
Date: 3/16/98

Task

Summary

will also be completing its work. However, there is the need for continued monitoring to ensure the implementation of the Town Plan and Livable Communities recommendations. As such, there is a need for a group to be identified or a new group established to ensure that the momentum for implementation continues. Possibilities for this ongoing role could be in the form of an independent body, perhaps a merger of the Waipahu 2000 group with the Livable Communities Task Force, or forming a new committee under the Waipahu Neighborhood Board.

3. Project Descriptions

3.1 Private Projects

For private projects, the implementation status and descriptions are summarized as follows:

Mokuola Street Extension: Amfac/JMB is currently constructing the Mokuola Street Extension as part of the initial phase of their light industrial subdivision development. The extension extends for approximately 1,070 lineal feet from the mauka end of the light industrial subdivision to Waipahu Street. The road which will be developed within a 60-foot right-of-way, will include two travel lanes, bike lanes and sidewalks.

Manager's Drive Bridge Widening: Amfac/JMB will be widening the Manager's Drive Bridge over the H-1 Freeway from 26 feet to 44 feet. Roadway improvements will extend down to Hiapo Street.

Hans L'Orange Park Expansion: The 3-acre expansion to the existing 6.9-acre park will be along the southern boundary of the park in the vicinity of Makaaloha Street. The expansion will allow for the extension of the Park's left field line, create more passive park area, and provide additional parking area.

Amfac Light Industrial Subdivision: Amfac/JMB will be developing the 38-acre light-industrial subdivision in 2 phases. The first phase consisting of 23 lots is expected to be completed in 1998. The second phase will be initiated when the first phase lots are sold.

Amfac Commercial Development: Amfac/JMB will be initiating design and construction of a 14.5-acre commercial site upon the approval of zoning change by the City and County of Honolulu, expected in mid-1998.

YMCA: Renovations for the Leeward YMCA to occupy a 2-acre site at the Sugar Mill's former administration building were completed in early 1998. The facility is expected to eventually include exercise and child-care facilities, offices, meeting rooms, locker/shower rooms, multi-purpose room, outdoor swimming pool, play area, and parking.

FilCom Center: The development of the 2-acre Filipino Community Center at the Sugar Mill site near the intersection of Mokuola and Waipahu Streets is expected to commence with fundraising and design in 1998. The FilCom Center will support cultural events and activities, a senior center, children and youth services, family counseling services and conference and meeting facilities.

Heritage Park/Center: The planning of a Heritage Park/Center is still under consideration by the Hawaii's Plantation Village and Friends of Waipahu Cultural Garden Park. Possibilities for the 2.1-acre Heritage Center include: 1) a repository for historic artifacts and records, including the Hawaii Sugar Planter's Association, 2) a sugar museum focusing on the sugar industry processing aspects (Hawaii's Plantation Village covers the social aspects of plantation life), 3) a State history museum, and 4) an open market area.

Old Town Revitalization Program/Organization: The revitalization of the Old Town Commercial area requires a collaborative effort among businesses involved in a program such as the Main Street Program which has been used successfully in towns such as Haleiwa, Hilo and Wailuku. The Main Street's approach of organization, promotion, design and economic restructuring helps stimulate business activity which complements cultural traditions and lifestyles. A program coordinator to facilitate activities and a Board of Directors are usually employed in Main Street programs. The State Historic Preservation Division previously assisted communities in this program with funding and through the Hawaii Main Street Council. Over the past several years Federal and State government funding support for the program has been cut, but some County support continues for some of the established programs on the Neighbor Islands. For Waipahu, the initiation of a Main Street-type program has a good start in the Waipahu Town Plan and urban design guidelines prepared as part of the Livable Communities Initiative project. Other sources of funding such as the State's Community Based Economic Development Program or City Community Development Block Grant Program should be pursued to provide the needed start-up monies.

Internal Transit Shuttle: The use of a privately operated transit shuttle to improve transportation within Waipahu Town has been explored. Based on results from the

Transportation Survey for Waipahu conducted as part of this study, Waipahu businesses are reluctant to pay for a private shuttle. Preliminary discussions with the operators of the Waikele Center's shuttle, however, indicates that some arrangement with the City may be possible for the temporary use of their shuttle buses during mid-day hours between shuttling visitors from Waikiki.

OR&L Train Restoration: The Hawaiian Railway Society which has restored train operations along the historic Oahu Railway and Land Company (OR&L) right-of-way from Ewa Town to Ko Olina is seeking to extend the railway line to Nanakuli.

Eventual extension of the train line to Waipahu is supported by the Hawaiian Railway Society in concept, but its planning and execution are beyond the present means of the Society. A combined effort involving Federal, State and City agencies along with private organizations such as the Hawaiian Railway Society, Friends of Waipahu Cultural Garden Park and Historic Hawaii Foundation are needed to implement this long range plan. As a long-term endeavor, the Hawaii's Plantation Village and Hawaiian Railway Society are exploring the potential of developing a system to transport visitors between the Plantation Village and the proposed heritage park/center at the Sugar Mill site.

3.2 Public Projects

Project fact sheets have been developed for each public project proposed as part of the Waipahu Town Plan and Livable Communities Initiative. The intent of the project sheets is to summarize the rationale, scope of work and costs for pursuing funding through various government agencies and other programs. Project need, description and estimated project costs are provided to assist in the procurement of funds for implementation, which may include further planning, design, and construction monies.

The State Department of Land and Natural Resources Division of Forestry and Wildlife is developing a wildlife sanctuary at the Pouhala Marsh located immediately makai of the OR&L right-of-way and west of lower Waipahu Depot Road.

Project fact sheets were prepared for the following projects:

Project No.	Title	Location
WTP-1	Waipahu and Mokuola Street Improvements	Waipahu Street
WTP-2	Shoreline Bike Path	Pearl Harbor Shore

WTP-3	Village Park Connector Road	Village Park
WTP-4	Farrington Highway Frontage Road Modifications	Mokuola/Moloalo St.
WTP-5	Waipio Peninsula Access Improvements	Waipio Peninsula
WTP-6	Hikimoe Street Pedestrian/Bike Path	Hikimoe Street
WTP-7	Pedestrian Bike Path, HPV to Shoreline Path	Plantation Village
WTP-8	Farrington Highway Median Landscaping/Sidewalks	Farrington Highway
WTP-9	Landscaped Entry Features at Waipahu Depot Road	Waipahu Town
WTP-10	Paiwa and Mokuola Street Landscaping	Paiwa/Mokuola St.
WTP-11	Residential/Memorial Park Development	Manager's Drive
WTP-12	Private School Development	Manager's Drive
WTP-13	Old Town Revitalization Program	Waipahu Town
WTP-14	Flood Study and Improvements	Waikele Stream
WTP-15	Waipio Peninsula Recreation Complex	Waipio Peninsula
WTP-16	Shoreline Park/Preservation Area	Pearl Harbor shore

4. Capital Improvement Program, Oahu Transportation Improvement Program, and City Council-Initiated Projects

A number of transportation-related projects are planned for implementation in the Waipahu area through the State DOT Highways Division Capital Improvement Project (CIP) Program (Fiscal Year (FY) 1997/1998 and FY 1998/1999); the Oahu Transportation Improvement Program (TIP) (FY 1996 through FY 1998); and, City Council-Initiated Projects (FY 1998). The Oahu TIP describes and prioritizes the surface transportation programs and projects that the Oahu Metropolitan Planning Organization (OMPO) Policy Committee has selected for implementation during the program period. The Oahu TIP, as adopted by the Policy Committee and approved by the Governor (or his designee), is the Oahu element of the Statewide TIP (STIP). The STIP is the document upon which the Federal Department of Transportation bases its obligation of federal transportation funds for projects in Hawaii. The transportation-related projects programmed for the Waipahu area include the following:

Oahu TIP Project (FY1996 through FY 1998):

- Farrington Highway Improvements, Fort Weaver Road towards Waipahu High School (State).

CIP Program Projects (FY) 1997/1998 and FY 1998/1999):

- Farrington Highway Improvements, Waipahu Depot Road to Aniani Street (State).
  (Design for the vertical realignment of Farrington Highway from Waipahu Depot Road to Aniani Street to include bridge replacement, utility relocation, test pits, borings and other improvements.)
- Farrington Highway, Sidewalks between Paiwa and Leoole Streets (State).
  (Construction of sidewalks along the makai side of Farrington Highway between Paiwa (Awanui) and Leoole Streets.)
- Farrington Highway Medial Strip (State).
  (Plans, design and construction for a medial strip for Farrington Highway from Kamehameha Highway to Fort Weaver Road.)

City Council-Initiated Projects (FY 1998):

- Waipahu Street Widening with Sidewalks and Landscaping.
- Waipahu Street Sidewalk Improvements, Waipahu Depot Road to Plantation Drive.

WAIPAHU TOWN PLAN PROJECT SHEET

PROJECT NAME: **Waipahu Street Realignment and Mokuola Street**

LOCATION: Waipahu Street, Oahu (between Ikepono Street and Kopaa Street)
Mokuola Street, Oahu (between Kahuailani Street and Moloalo Street, and between Hiapo Street and the mauka end of Amfac's planned light industrial subdivision)

TMK: 9-4-pors. 2, 13, 17

IMPLEMENTING BODY:
C&C of Honolulu Department of Transportation Services
C&C of Honolulu Department of Public Works
C&C of Honolulu Department of Housing and Community Development
C&C of Honolulu Department of Parks and Recreation

PROJECT NEED/BACKGROUND:

Waipahu Street: Waipahu Town has experienced increased traffic in recent years with the development of commercial areas and residential housing in nearby Waikele. As one of the arterial streets in Waipahu, Waipahu Street requires widening to increase roadway capacity and improve traffic circulation and safety through Waipahu Town. Narrow roadway widths and curving alignments result in vehicular capacity constraints and safety concerns for the motoring public.

Amfac/JMB will provide improvements at the Waipahu Street/Mokuola Street intersection to provide left turn lanes and bus pull-outs extending approximately 300 feet on each side of the intersection.

Mokuola Street: With the planned redevelopment of the sugar mill site and other land use facilities proposed in the Waipahu Town core area, there is a need to provide another major mauka-makai route between Waikele and Farrington Highway to alleviate traffic demands.

Amfac/JMB will be extending Mokuola Street into the Sugar Mill site up to the mauka edge of their planned light industrial subdivision. The Mokuola Street extension will have a minimum 60-foot wide right-of-way incorporating two travel lanes and bike lanes on both sides of the roadway, along with curbs, gutters and sidewalks. Similar improvements will also be made to a short makai portion of Mokuola Street between Waipahu Street and Kahuailani Streets. Amfac/JMB will also widen the existing two-lane Manager's Drive overpass over the H-1 Freeway from 26 feet to 44 feet with pedestrian/bikeway facilities. The widening improvements will extend makai to Hiapo Street.

Waipahu Street Realignment and Mokuola Street (Cont.)

DESCRIPTION OF PROPOSED PROJECT/CONSTRUCTION:

Waipahu Street: On the western end from Kopaa Street to Ikepono Street, widen and realign the roadway from a "Z" curve to an "S" curve. Construct a new bridge crossing Waikele Stream further south of the existing bridge.

Studies will be needed to determine other necessary improvements to Waipahu Street, including major cross street intersections, to further facilitate traffic operations.

Mokuola Street: Makai of Waipahu Street, improve Mokuola Street from Kahuailani Street to the Civic Center. The improvements will include two travel lanes with bike lanes, landscaping strips and sidewalks. On-street parking may be provided along one side of the street. The bike lanes will transition to a bike route from the Civic Center to Farrington Highway.

Along the remaining segment of the Mokuola Street extension between Hiapo Street and the mauka end of Amfac's planned light industrial subdivision, improvements will include two travel lanes with bike lanes, sidewalks and landscaping.

PHASING/SCHEDULE:

Design/Permits:	1998
Construction:	1999

COST ESTIMATE:

Design/Permits:	$450,000
Construction:	$3,100,000

(Note: Excluding land acquisition costs)

POTENTIAL FUNDING SOURCE: Public

DATE: 3/16/98 **PROJECT NO:** WTP-1 **TYPE:** Public

WAIPAHU TOWN PLAN PROJECT SHEET

PROJECT NAME: Shoreline Bike Path

LOCATION: Waipahu, Oahu
TMK: 9-1-por. 17
9-4-pors. 1, 8, 11, 15, 18, 20, 39, 48, 49, 50
9-6-por. 1

IMPLEMENTING BODY:
C&C of Honolulu Department of Transportation Services
C&C of Honolulu Department of Park and Recreation
C&C of Honolulu Department of Public Works
State of Hawaii Department of Transportation

PROJECT NEED/BACKGROUND:
The proposed bike path will be aligned along the shoreline of Pearl Harbor through the length of Waipahu. The bike path would link the existing bike paths at West Loch and east of Waipio Point Access Road to Pearl City/Rainbow Bay Marina to provide a continuous system around West and Middle Lochs of Pearl Harbor. The path would allow access to future recreational facilities as well as provide opportunities for expanded security and emergency vehicle access to areas currently not accessible.

DESCRIPTION OF PROPOSED PROJECT/CONSTRUCTION:
The project consists of the design and construction of an asphaltic concrete bike path along approximately 11,080 linear feet (2.1 miles) of shoreline of Waipahu from the northern end of the West Loch bike path to Waipio Point Access Road. The bike path will be located within the existing 40-foot OR&L right-of-way and include landscaping strips on both sides. A topographic survey is needed to delineate the OR&L right-of-way. At-grade crossings at Waipahu Depot Road and Waipio Point Access Road would require coordination with the City DTS. The path shall comply with Americans With Disabilities Act (ADA) requirements for accessibility. The bike path design and alignment should also be coordinated with the Hawaiian Railway Society and affected petroleum and utility companies and agencies.

PHASING/SCHEDULE:
Design: 1998
Construction: 1998

COST ESTIMATE:
Design: $100,000
Construction: $700,000

POTENTIAL FUNDING SOURCE: Public

DATE: 3/16/98 **PROJECT NO:** WTP-2 **TYPE:** Public

WAIPAHU TOWN PLAN PROJECT SHEET

PROJECT NAME: Village Park Connector Road

LOCATION: Waipahu, Oahu
TMK: 9-4-55, 146, 147
9-4-pors. 31, 34, 113

IMPLEMENTING BODY: C&C of Honolulu Department of Transportation Services
C&C of Honolulu Department of Public Works

PROJECT NEED/BACKGROUND:
The Village Park and Royal Kunia developments are physically separated from Waipahu Town by the H-1 Freeway and separated from Waikele by Waikele Gulch. The proposed Village Park Connector Road will provide a direct link to the Waipahu Town core via an improved existing cane haul road and a portion of the U.S. Navy's Waikele Ammunition Depot Road. In addition to providing a direct and convenient connection to the Waipahu Town core, the Village Park Connector Road is expected to relieve traffic demands on Kunia Road.

DESCRIPTION OF PROPOSED PROJECT/CONSTRUCTION:
Develop a new road from the Village Park Subdivision to Waipahu, from Kupuna Loop in Village Park at the mauka end to Waipahu Street on the makai end via an existing cane haul road and the Navy's Waikele Ammunition Depot Road. The connector road would include two travel lanes with pedestrian and bikeway facilities.

The existing cane haul road is approximately 2,400 feet in length with a pavement width of about 40 feet within an approximately 60-foot right-of-way. Improvements will include two travel lanes with bike lanes on both sides of the road, curbs, gutters, and sidewalks with landscape strips.

The Waikele Ammunition Depot Road segment is approximately 800 lineal feet with an approximately 40-foot wide right-of-way. Improvements will include two travel lanes, curbs, gutters, and sidewalks. A bike route will be designated along this segment of the connector road. From the mauka end of the connector road, a bike route will be designated along a portion of Kupuna Loop and Kahakea Street within Village Park to Kunia Road.

PHASING/SCHEDULE:
Design: 1999
Construction: 2000
Contingent upon discussion with owners of the former cane haul road and the Navy's Waikele Ammunition Depot Road.

COST ESTIMATE:
Construction: $1,500,000
(Note: Excluding land acquisition costs)

POTENTIAL FUNDING SOURCE: Public

DATE: 3/16/98 **PROJECT NO:** WTP-3 **Type:** Public

WAIPAHU TOWN PLAN PROJECT SHEET

PROJECT NAME: Farrington Highway Frontage Road Modifications

LOCATION: Mokuola Street at Moloalo Street, Waipahu, Oahu
TMK: 9-4-17 por. 49

IMPLEMENTING BODY:
C&C of Honolulu Department of Transportation Services
C&C of Honolulu Department of Public Works

PROJECT NEED/BACKGROUND:
The intersection of Moloalo Street and Mokuola Street currently experiences conflicting and hazardous vehicular traffic movements. With the proposed extension of Mokuola Street to Manager's Drive and the development of nearby commercial and industrial areas, Mokuola Street is expected to become a major mauka-makai road aligned through the middle of the town core. The project should improve traffic operations at the intersection as well as improve safety by reducing traffic movement options for the motorist.

As part of the Waipahu Town Plan, preliminary plans for the frontage road modifications were presented to nearby businesses for review and comment, with most businesses generally in favor of the proposed modifications.

DESCRIPTION OF PROPOSED PROJECT/CONSTRUCTION:
Modify Moloalo Street by providing a new two-way driveway connection to Farrington Highway towards the west end of Moloalo Street, and limit ingress/egress at Mokuola Street to right-turn-in and right-turn-out movements only. To restrict illegal traffic movements, the right-turn-in and right-turn-out movements will be controlled by raised channelized curb islands on both sides of Mokuola Street. Provide landscaped strip between Moloalo Street and Farrington Highway.

PHASING/SCHEDULE:
Design: 1998
Construction: 1999

COST ESTIMATE:
Construction: $50,000

POTENTIAL FUNDING SOURCE: Public

DATE: 3/16/98 **PROJECT NO:** WTP-4 **TYPE:** Public

WAIPAHU TOWN PLAN PROJECT SHEET

PROJECT NAME: Waipio Peninsula Access Improvements

LOCATION:
Waipio Point Access Road
TMK: 9-4-por. 8 & 9-3-por. 2
Waipahu Depot Road (makai of Farrington Highway)
TMK: 9-3-por. 2 & 9-4-pors. 14, 15, 20

IMPLEMENTING BODY: C&C of Honolulu Department of Transportation Services
C&C of Honolulu Department of Public Works

PROJECT NEED/BACKGROUND:

The proposed Waipio Peninsula Recreation Complex will provide competitive soccer facilities, including approximately 24 soccer fields and a stadium for tournaments and other activities which will be relatively high trip generators. Both Waipio Point Access Road and Waipahu Depot Road makai of Farrington Highway will require significant improvements in order to accommodate the anticipated peak traffic loads. The Waipio Point Access Road improvements will also facilitate access to other existing and planned uses in the vicinity, including the Ted Makalena Golf Course, Waipahu High School, the nearby residential area, Queen Emma Foundation's planned elderly care facility, and potential agricultural developments on Waipio Peninsula.

In addition, the Waipahu Livable Communities Initiative proposes extension of the planned bikeway (which is slated to run between Farrington Highway and the OR&L right-of-way) to continue along Waipahu Depot Road to the site of the proposed recreation complex.

Waipio Peninsula Access Improvements (Cont.)

DESCRIPTION OF PROPOSED PROJECT/CONSTRUCTION:

Access improvements to Waipio Point Access Road and Waipahu Depot Road will be developed in two phases to coincide with phased development of the Waipio Peninsula Recreation Complex.

PHASE I: Primary access to the recreation complex as well as facilitated access to other nearby land uses within the Peninsula will be accommodated by improvements to Waipio Point Access Road. Improvements will include four travel lanes with bike lanes, parking lanes and sidewalks along both sides of the road, drainage systems, street lighting, and landscaping and irrigation systems within an approximately 100-foot wide right-of-way. It is anticipated these improvements will be accomplished through the use of federal matching funds. Prior to undertaking the proposed improvements, it is recommended that a study be conducted to determine the amount of vehicular traffic that would utilize Waipio Point Access Road to verify the laneage requirements.

PHASE II: Secondary access to the complex will be provided via Waipahu Depot Road makai of Farrington Highway, which will be improved to provide two travel lanes, a parking lane along one side of the road, a meandering pedestrian/bike path along the west side adjacent to Kapakahi Stream, a sidewalk along the east side, street lighting, drainage systems, and landscaping and irrigation systems. These improvements will be provided within an approximately 50-foot wide right-of-way which will require the acquisition of additional right-of-way width. Right-of-way acquisition may be reduced with the incorporation of tree wells within the parking lane.

In the future, Waipahu Depot Road mauka of Farrington Highway should be further studied to identify improvements that may enhance its functional characteristics.

PHASING/SCHEDULE:

PHASE I: Waipio Point Access Road Improvements:
Planning/Design: 1998
Construction: 1999

PHASE II: Waipahu Depot Road Improvements:
Planning/Design: 1999
Land Acquisition: 1999
Construction: 2000

COST OPINION:

PHASE I: Waipio Point Access Road Improvements
$14.80 million (Federal: $11.84 million; City: $2.96 million)

PHASE II: Waipahu Depot Road Improvements
$3.35 million (City)

WAIPAHU TOWN PLAN PROJECT SHEET

PROJECT NAME: Pedestrian/Bike Path, Hawaii's Plantation Village to Shoreline Bike Path

LOCATION: Waipahu, Oahu
TMK: 9-4-pors. 10, 11

IMPLEMENTING BODY:
C&C of Honolulu Department of Transportation Services
C&C of Honolulu Department of Public Works

PROJECT NEED/BACKGROUND:
Bikeway and pedestrian access is needed from the Waipahu Town core and park areas to the shoreline area. The proposed project provides access from the Hawaii's Plantation Village (also known as Waipahu Cultural Garden Park) and Town core to the proposed Shoreline Bike Path along the shore of Waipahu. The pedestrian/bike path would link future recreational facilities located within Waipio Peninsula and other proposed commercial and recreational facilities within the Town core. The bike path also provides alternative modes of travel within Waipahu Town and provides opportunities for area beautification of undeveloped lands as well as access to remote areas for security and emergency purposes.

DESCRIPTION OF PROPOSED PROJECT/CONSTRUCTION:
Design and construct an asphaltic concrete pedestrian/bike path connecting the proposed Shoreline Bike Path with the Hawaii's Plantation Village. The pedestrian/bike path will be located within the existing OR&L right-of-way and include landscaping strips (where applicable) on both sides. A topographic survey would be required to delineate the OR&L right-of-way. The path shall comply with Americans With Disabilities Act (ADA) requirements for accessibility.

An at-grade crossing on the westbound lanes of Farrington Highway would require State DOT Highways Division approval and should require signalization. An at-grade crossing at Hula and Pahu Streets would require coordination with the City DTS. Access to the portion of the pedestrian/bike path within the Hawaii's Plantation Village would need to be controlled for security purposes and coordinated with the Plantation Village.

PHASING/SCHEDULE:
Design: 2000
Construction: 2001

COST ESTIMATE:
Construction: $160,000
(Note: Easement/land acquisition costs not included)

POTENTIAL FUNDING SOURCE: Public

DATE: 3/16/98 **PROJECT NO:** WTP-7 **TYPE:** Public

WAIPAHU TOWN PLAN PROJECT SHEET

PROJECT NAME: **Farrington Highway Median Landscaping and Sidewalks/Bikeway**

LOCATION: Farrington Highway, Waipahu, Oahu
TMK: N/A

IMPLEMENTING BODY: State of Hawaii Department of Transportation
C&C of Honolulu Department of Transportation Services
C&C of Honolulu Department of Public Works

PROJECT NEED/BACKGROUND:
The installation of large canopy trees and sidewalks is needed to provide aesthetic relief from the expansive highway and create a pedestrian-friendly atmosphere, enhancing Farrington Highway's functional role as a pedestrian linkage between open spaces and centers of activity. A bikeway facility along Farrington Highway between Kunia Road and Kamehameha Highway as designated in the *Bike Plan Hawaii* would effectively serve and connect with existing and planned bikeway routes in the area.

DESCRIPTION OF PROPOSED PROJECT/CONSTRUCTION:
Install large canopy trees and groundcover within the median of Farrington Highway. The trees would be spaced about 50 feet apart and should be 15 feet high (with 10- to 12-foot spread and 6- to 8-inch caliper). Provide additional protective barriers such as guardrails along the row of trees. Install an irrigation system within the median. Provide sidewalks and landscaping along the makai side of Farrington Highway from Leoole Street to Paiwa (Awanui) Street.

Provide a bike path along Farrington Highway through the Waipahu area. The bike path could be integrated with the provision of sidewalks and landscaping along the makai side of the highway. Due to right-of-way width constraints, bike routes would be designated along the segments crossing Waikele Stream Bridge, Waipahu Canal Bridge and between Paiwa Street and Kamehameha Highway.

PHASING/SCHEDULE:
Design: 1998
Construction: 1998

COST ESTIMATE:
Median Landscaping: $1,800,000
Sidewalks: $1,200,000

POTENTIAL FUNDING SOURCE: Public

DATE: 3/16/98 **PROJECT NO.:** WTP-8 **TYPE:** Public

WAIPAHU TOWN PLAN PROJECT SHEET

PROJECT NAME: **Landscaped Entry Features at Waipahu Depot Road**

LOCATION: Waipahu Street at Waipahu Depot Road
Farrington Highway at Waipahu Depot Road

TMK: N/A

IMPLEMENTING BODY: C&C of Honolulu Department of Transportation Services
C&C of Honolulu Department of Parks and Recreation

PROJECT NEED/BACKGROUND:
Distinctive landscaped entry features will make an attractive entry statement and provide a sense of place in Waipahu. Preliminary design concepts were prepared as part of the Waipahu Livable Communities Initiative urban design guidelines.

DESCRIPTION OF PROPOSED PROJECT/CONSTRUCTION:
Construct landscaped entry features in Waipahu, at the center of the Old Town Commercial area at the intersection of Waipahu Depot Road (community billboard area) and Waipahu Street, and on Farrington Highway at Waipahu Depot Road.

PHASING/SCHEDULE:

Design:	1999
Construction:	2000

COST ESTIMATE:
$150,000

POTENTIAL FUNDING SOURCE: Public

DATE: 3/16/98 **PROJECT NO.:** WTP-9 **TYPE:** Public

WAIPAHU TOWN PLAN PROJECT SHEET

PROJECT NAME: **Paiwa and Mokuola Street Landscape and Streetscape Improvements**

LOCATION: Waipahu, Oahu
TMK: N/A

IMPLEMENTING BODY: C&C of Honolulu Department of Transportation Services
C&C of Honolulu Department of Public Works
C&C of Honolulu Department of Parks and Recreation

PROJECT NEED/BACKGROUND:
Paiwa and Mokuola Streets are the main mauka-makai street collectors traversing through Waipahu's commercial and civic areas. Landscape and streetscape improvements will define their role as a pedestrian linkage between open spaces and centers of activity.

DESCRIPTION OF PROPOSED PROJECT/CONSTRUCTION:
Provide street trees along both sides of Paiwa and Mokuola Streets, spaced 50 feet apart.

PHASING/SCHEDULE:
Design: 2000
Construction: 2001

COST ESTIMATE:
$60,000

POTENTIAL FUNDING SOURCE: Public

DATE: 3/16/98 **PROJECT NO.:** WTP-10 **TYPE:** Public

WAIPAHU TOWN PLAN PROJECT SHEET

PROJECT NAME: Residential/Memorial Park Development

LOCATION: Managerś Drive, Waipahu, Oahu
TMK: 9-4-2:5, Makai portion

IMPLEMENTING BODY: C&C of Honolulu Department of Housing and Community Development

PROJECT NEED/BACKGROUND:
Waipahuś centralized location to major employment centers in the Primary Urban Center, Kapolei and Central Oahu makes it an attractive site for residential development. The Managerś Drive site has good roadway and freeway access through the Paiwa Interchange, and pending Mokuola Street improvements will provide a north-south collector roadway to Waipahu Town. The project site has also been designated as a potential site for a memorial park given identified demands by mortuary companies. Potential church sites have been designated due to the communityś concern regarding the strong need and lack of sites to develop churches in Waipahu.

DESCRIPTION OF PROPOSED PROJECT/CONSTRUCTION:
A Request for Proposal (RFP 027) was issued by the City Department of Housing and Community Development for development of the makai portion of the Managerś Drive site. Development is encouraged to follow the preferred plan of the Waipahu Town Plan, which was accepted by the City Council through adoption of Resolution 96-14. The RFP may result in the sale of the City property to a private entity for development of the site.

In accordance with the Waipahu Town Plan, the development may include approximately 120 single-family residential dwellings, church sites, or a memorial park on approximately 20 makai acres of the Managerś Drive property.

PHASING/SCHEDULE:
December 12, 1996: Deadline for submission of a proposal.
Selection of a proposer and City Council approval are pending.

COST ESTIMATE:
To be included by proposer in the RFP. Proposer shall bid on 1) fee simple purchase price, 2) lease rent and development premium, or 3) development premium in the case of Joint Development.

POTENTIAL FUNDING SOURCE: Private.

DATE: 3/16/98 **PROJECT NO:** WTP-11 **TYPE:** Public

WAIPAHU TOWN PLAN PROJECT SHEET

PROJECT NAME: Private School Development

LOCATION: Managers Drive, Waipahu, Oahu
TMK: 9-4-2:5, Mauka portion

IMPLEMENTING BODY: C&C of Honolulu Department of Housing and Community Development

PROJECT NEED/BACKGROUND:
Ewa and Central Oahu are the fastest growing regions on Oahu, with a population of over 300,000 residing in the surrounding region (Halawa to Waianae and up to the North Shore). However, the region has few private schools to meet the growing population demand, and most private-school students residing in these areas must commute to schools in Central Oahu. Waipahus centralized location within the region offers locational advantages, as well as good accessibility.

DESCRIPTION OF PROPOSED PROJECT/CONSTRUCTION:
A Request for Proposal (RFP 037) has been issued by the City Department of Housing and Community Development for development of the mauka portion of the Managers Drive site. Development is encouraged to follow the preferred plan of the Waipahu Town Plan, which was accepted by the City Council through adoption of Resolution 96-14.

Development may include the construction of a private school campus on approximately 20 mauka acres of the Managers Drive property. The school could support grade levels from kindergarten through 12 and have an enrollment of approximately 1,000 students. Facilities could include classrooms, a gymnasium, cafeteria and athletic fields.

PHASING/SCHEDULE:
December 12, 1996: Deadline for submission of a proposal.
Selection of a proposer and City Council approval are pending.

COST ESTIMATE:
To be included by proposer in the RFP. Proposer shall bid on 1) fee simple purchase price, 2) lease rent and development premium, or 3) development premium in the case of Joint Development.

POTENTIAL FUNDING SOURCE:. Private

DATE: 3/16/98 **PROJECT NO.:** WTP-12 **TYPE:** Public

WAIPAHU TOWN PLAN PROJECT SHEET

PROJECT NAME: Old Town Revitalization Program/Organization

LOCATION: Waipahu, Oahu
Approximately 10.3-acre area encompassing the area adjacent to and along a portion of Waipahu Street (vicinity of Hans LOrange Park and the sugar mill site), continuing along both sides of Waipahu Depot Road mauka of Farrington Highway.

IMPLEMENTING BODY: Waipahu Main Street Program, with assistance from the Hawaii Main Street Council, State Historic Preservation Division

PROJECT NEED/BACKGROUND:
A principal objective of revitalizing the existing commercial areas in Waipahu is to help existing businesses maintain and improve economically by attracting new consumers to Waipahu. The "historic" ambiance of the commercial area along Waipahu Street and Waipahu Depot Road in the vicinity of the sugar mill fosters the opportunity to revitalize the existing businesses and to create an "Old Town" commercial area.

Thematic architecture in the form of streetscape and building form guidelines have been established to enhance the Old Town identity. A pedestrian-oriented theme is intended to be incorporated in the Old Town commercial area to encourage shoppers and other patrons to stroll through the area. A revitalization program needs to be organized along the lines of the Main Street Program.

DESCRIPTION OF PROPOSED PROJECT/CONSTRUCTION:
- Organize and establish the Waipahu Main Street Program (or similar body) to coordinate the rehabilitation and physical improvements to Waipahu Towns designated Old Town Commercial Area.
- Encourage business owners to redevelop in accordance with the urban design guidelines prepared for the Waipahu Town Plan.
- Seek public funding for streetscape improvements consistent with urban design guidelines.

PHASING/SCHEDULE:
Organize Main Street Program: 1998
Rehabilitation/Revitalization: 1998 to 2002

COST ESTIMATE:
Undetermined. Could be done on voluntary basis until government funding is restored.

POTENTIAL FUNDING SOURCE:
Business contributions, Federal government

DATE: 3/16/98 **PROJECT NO.:** WTP-13 **TYPE:** Private

WAIPAHU TOWN PLAN PROJECT SHEET

PROJECT NAME: Flood Study and Improvements (Waikele Stream)

LOCATION: Waikele Stream, Waipahu, Oahu

IMPLEMENTING BODY: C&C of Honolulu Department of Public Works

PROJECT NEED/BACKGROUND:
According to the Flood Insurance Rate Map (FIRM, Community Panel Number 150001-0110-D, Revised September 30, 1995), much of the central portion of Waipahu Town has been designated within the Floodway. This includes most of the Hawaiiš Plantation Village, areas east and west of Waipahu Depot Road to Wailani Canal, and areas makai of the OR&L right-of-way between Kapakahi Stream and Waikele Stream. While existing structures can be grandfathered, new developments are typically prohibited within the Floodway zone unless it can be shown that flood elevations will not increase with the development. Revitalization and redevelopment efforts towards implementation of the Waipahu Town Plan, in particular the historic Town core, will be impeded by the restrictions on development.

DESCRIPTION OF PROPOSED PROJECT/CONSTRUCTION:
A flood control and drainage study is required to investigate the flooding situation in the vicinity of Waikele Stream and Kapakahi Stream and determine potential solutions which could alleviate flooding conditions which result in much of Waipahu Town being situated within the designated floodway. Alternative remedial measures will need to be explored , a cost-effective recommendation proposed, and design of remedial measures undertaken to address the flood hazards. Appropriate documentation to the Federal Emergency Management Agency is also required to seek removal of the floodway designation upon the completion of proposed improvements.

PHASING/SCHEDULE:
Conduct Study: 1998
Design: 1999

COST ESTIMATE:
$300,000

POTENTIAL FUNDING SOURCE:
CIP, City and County of Honolulu

DATE: 3/16/98 **PROJECT NO.:** WTP-14 **TYPE:** Public

WAIPAHU TOWN PLAN PROJECT SHEET

PROJECT NAME: **Waipio Peninsula Recreation Complex**

LOCATION: Waipio Peninsula, Waipahu, Oahu

IMPLEMENTING BODY: C&C of Honolulu Building Department
C&C of Honolulu Department of Parks and Recreation

PROJECT NEED/BACKGROUND:
There presently is no stadium facility set up specifically for organized soccer events and competitions. Islandwide, there is also a shortage of soccer fields and practice fields for youth soccer leagues. The development of a soccer stadium complex would provide commercial recreation uses as well as recreational opportunities and an economic stimulus for the Waipahu community.

DESCRIPTION OF PROPOSED PROJECT/CONSTRUCTION:
Development of a soccer stadium complex at the Waipio Peninsula would provide competitive soccer facilities, including approximately 24 soccer fields and a stadium for tournaments and professional competition. To the extent possible, facilities will be developed within the Navy's blast zone.

PHASING/SCHEDULE:
Planning/Design: 1998-99
Construction: 2000-2002

COST ESTIMATE:
Planning: $50,000
Design: $500,000
Construction: $12,000,000

POTENTIAL FUNDING SOURCE:
CIP, City & County of Honolulu

DATE: 3/16/98 **PROJECT NO.:** WTP-15 **TYPE:** Public/Private

WAIPAHU TOWN PLAN PROJECT SHEET

PROJECT NAME: Shoreline Park/Preservation Area

LOCATION: Manager's Drive, Waipahu, Oahu
TMK: 9-4-2: 5, Makai portion

IMPLEMENTING BODY: C&C of Honolulu Department of Parks and Recreation
C&C of Honolulu Department of Land Utilization
C&C of Honolulu Planning Department

PROJECT NEED/BACKGROUND:
The creation of a shoreline park will improve the visual appearance of the shoreline area, provide increased recreational opportunities and a greenbelt connection between the various shoreline parks along Pearl Harbor from West Loch to Rainbow Bay Marina near Aloha Stadium.

DESCRIPTION OF PROPOSED PROJECT/CONSTRUCTION:
A 150-foot setback from the shoreline is designated for a shoreline park/preservation area. Recreational opportunities could include nearshore fishing and boating in the Pearl Harbor West Loch waters. Due to uncertainty of the existing shoreline's location, a shoreline certification to establish the effect on existing uses would be required. The park would extend through portions of or entire parcels of the West Waipahu light industrial area and adjacent residential area near Waipahu Intermediate School, and may preclude the redevelopment or existing structures in the affected parcels.

Parcels falling within the 150-foot setback would be rezoned to Preservation. Existing uses could remain but would be nonconforming. Land acquisition may be required if no economic uses remain.

PHASING/SCHEDULE:
Rezone parcels: 2002

COST ESTIMATE:
Dependent on acquisition needs.

POTENTIAL FUNDING SOURCE:
CIP, City and County of Honolulu

DATE: 3/16/98 **PROJECT NO.:** WTP-16 **TYPE:** Public

V. REFERENCES

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APPENDIX A

TRANSPORTATION SURVEY FOR WAIPAHU

TRANSPORTATION SURVEY FOR WAIPAHU

Two methods were employed in surveying Waipahu residents -- mail-out and in-person surveys. For the mail-out survey, 99 residents were selected from mailing lists of the Waipahu Town Plan and Waipahu Neighborhood Board, and sign-in lists from the Waipahu Town Plan community workshop of July 27, 1995 and the community meeting of November 30, 1995. In-person surveys were conducted on January 7 and 11, 1997 with 102 randomly-selected residents at various locations in Waipahu (Daiei, Times Supermarket, Bank of America, Safeway, Longs, and the Waipahu Civic Center).

A mail-out survey was used in surveying the Waipahu businesses. A total of 156 businesses were selected from mailing lists of the Waipahu Business Association and Waipahu Town Plan, and sign-in lists from the Waipahu Town Plan community workshop of July 27, 1995 and the community meeting of November 30, 1995.

The survey questionnaire and tabulation of findings are appended herein.

January 3, 1997

Transportation Survey for Waipahu

The City & County of Honolulu Planning Department is undertaking a planning project to improve the mobility and quality of transportation facilities available to residents in Waipahu. As part of this project, the Planning Department is conducting a survey to assess residents' interests and needs in being better served by transit and improved sidewalk and bicycle systems to get around in Waipahu.

1. In what area of Waipahu do you live? (Waipahu Triangle, Robinson Hts, etc.)

   _____

2. How do you travel to work?

   ☐Walk ☐Bike ☐Bus ☐Drive

   Where is your place of work? (district) _____

   (If you work in Waipahu) Would you consider leaving your car at home if better facilities/services for taking the bus, walking or bicycling were available?

   ☐Yes ☐Maybe ☐No ☐Don't Know

3. How do you currently get around in Waipahu? (shopping, recreation, banking)

   ☐Walk ☐Bike ☐Bus ☐Drive

4. If **sidewalks** were improved (widened, landscaped) in Waipahu, would you or your family consider **walking** around more in this area?

   ☐Yes ☐Maybe ☐No ☐Don't Know

5. If there were more **bicycle paths** in Waipahu, would you or your family consider using them?

   ☐Yes ☐Maybe ☐No ☐Don't Know

6. If more and better **bus facilities** were provided in Waipahu (such as an enhanced bus station/transfer facility), would you or your family be more likely to use the bus in commuting to and from Waipahu?

   ☐Yes ☐Maybe ☐No ☐Don't Know

7. If there was a convenient place to **park your car and ride the bus** to your place of work, would you consider using it?

   ☐Yes ☐Maybe ☐No ☐Don't Know

8. If **a shuttle bus or trolley system** (maybe an extension of the trolley service in Waikele Center) was provided to serve Waipahu, would you consider using it?

   ☐Yes ☐Maybe ☐No ☐Don't Know

9. Do you have other observations concerning transportation in Waipahu that you would like to share with us? _____

   _____

   _____

   _____

Please fold and mail your completed survey to us by Friday, January 10, 1997.
Thank you for your kokua!!

January 3, 1997

Transportation Survey for Waipahu

The City & County of Honolulu Planning Department is undertaking a planning project to improve the mobility and quality of transportation facilities available to residents in Waipahu. As part of this project, the Planning Department is conducting a survey to assess the business community's needs and interest in improving transit/bus facilities and services for better access to businesses by employees and customers.

1. What kind of business do you operate? _____

2. On what street is your business located? _____

3. How many employees do you have? _____

4. How do your **employees** usually travel to work?

	Percent		Percent
by bus	_____	walk/bike	_____
by car	_____	other _____	_____

5. How do **customers** usually travel to your business?

	Percent		Percent
by bus	_____	walk/bike	_____
by car	_____	other _____	_____

6. Do you feel there are adequate **bus facilities and services** for your customers and your employees?

☐Yes ☐No

If No, what is needed to improve bus service?

- ☐ Bus shelters (weather-protected)
- ☐ More frequent bus service
- ☐ Bus stops convenient to the following locations: _____

  _____
- ☐ Bus routes should service the following places: _____

  _____
- ☐ Other (please specify): _____

  _____

7. If a **shuttle bus or a trolley system** around Waipahu (such as an extension of the trolley service in Waikele Center) was provided to your business, would you as a business be willing to share in its cost?

☐Yes ☐Maybe ☐No

8. Do you have other observations concerning transportation in Waipahu that you would like to share with us? _____

_____

_____

_____

Please fold and mail your completed survey to us by Friday, January 10, 1997.
Thank you for your kokua!!

Transportation Survey for Waipahu

Printed: 1/22/97

Resident Tally

Mailed Surveys:	99
In-Person Surveys:	102
Total Surveys:	201

Mailed Surveys:	99
Mail Respondents:	39
Mail Response Rate:	39%

1. *In what area of Waipahu do you live?*

Waipahu SAP	131	65.2%
Surrounding Areas	64	31.8%

2a. *How do you travel to work?*

Walk	4	2.0%
Bike	0	0.0%
Bus	21	10.4%

Drive	125	62.2%
Multimodal	10	5.0%
Retired / NR	41	20.4%

2b. *If you work in Waipahu would you consider leaving your car home?*

Yes	16	55.2%
Maybe	7	24.1%
No	6	20.7%
Don't Know	0	0.0%

Total Responses = 29

Percentages for 2b are based only on those forms with responses and does not include blank responses.

3. *How do you currently get around Waipahu?*

Walk	15	7.5%
Bike	3	1.5%
Bus	17	8.5%

Drive	138	68.7%
Multimodal	24	11.9%
No Response	4	2.0%

4. *Would you consider walking if sidewalks were improved?*

Yes	126	62.7%
Maybe	40	19.9%
No	21	10.4%
Don't Know/NR	14	7.0%

5. *Would you consider using bike paths*

Yes	112	55.7%
Maybe	37	18.4%
No	41	20.4%
Don't Know/NR	11	5.5%

6. *Would you consider using the bus?*

Yes	129	64.2%
Maybe	38	18.9%
No	23	11.4%
Don't Know/NR	11	5.5%

7. *Would you consider park and ride?*

Yes	96	47.8%
Maybe	33	16.4%
No	42	20.9%
Don't Know/NR	30	14.9%

8. *Would you consider using a shuttle?*

Yes	96	75.1%
Maybe	29	14.4%
No	11	5.5%
Don't Know/NR	10	5.0%

Transportation Survey for Waipahu

Printed: 1/22/97

Resident District

Mailed Survey:	99
In-Person Surveys:	96
Total Surveys:	195

Mailed Survey:	99
Mail Respondents:	39
Mail Response Rate:	39%

131 *people live in* ***Waipahu SAP***

2a. How do you travel to work?

Walk	3	2.3%
Bike	0	0.0%
Bus	14	10.7%
Drive	72	55.0%
Multimodal	9	6.9%
No Response	42	32.1%

3. How do you get around in Waipahu?

Walk	13	9.9%
Bike	2	1.5%
Bus	13	9.9%
Drive	83	63.4%
Multimodal	20	15.3%
No Response	0	0.0%

64 *people live in* ***Surrounding Areas***

2a. How do you travel to work?

Walk	1	1.6%
Bike	0	0.0%
Bus	6	9.4%
Drive	50	78.1%
Multimodal	0	0.0%
No Response	7	10.9%

3. How do you get around in Waipahu?

Walk	1	1.6%
Bike	1	1.6%
Bus	2	3.1%
Drive	54	84.4%
Multimodal	3	4.7%
No Response	3	4.7%

Resident Comments:

Bike Path, Sidewalk, Safety	A safe bike/walkway connecting Pearl City and Waipahu is needed. Currently none exists. People have to go alongside the roadway, which is dangerous.
Bus Facilities	Rest stops/rooms
Bus Facilities	Need for bus shelter at Waikele Shopping Center.
Bus Facilities	Put bus shelter in Waikele
Bus Facilities	Transportation facility is good.
Bus Route/Schedule	More express buses, bring back rail.
Bus Route/Schedule	Better bus system (always bunched up)
Bus Route/Schedule	We need more buses. Three express buses up at Village Park more often than every hour. Including the Waipahu area also.
Bus Route/Schedule	Need more buses.
Bus Route/Schedule	More buses to Waikele
Bus Route/Schedule	Shuttle bus around Waipahu would be convenient.
Bus Route/Schedule	More buses on Waipahu street.
Bus Route/Schedule	Better bus schedule and more convenient.
Bus Route/Schedule	Need more buses in the morning and late afternoon.
Bus Route/Schedule	Suggest we have a shuttle service to Pearl Ridge and can transfer to the many buses that come from the other part of the island.
Bus Route/Schedule	A more staggered bus time schedule, more buses in morning.
Bus Route/Schedule	Maybe a better transportation system between the shopping centers and the different areas in Waipahu.
Bus Route/Schedule	Better Scheduling
Bus Route/Schedule	More buses to Downtown Honolulu.
Bus Route/Schedule	Bus routes within the residential areas. Since bus stops are too far a distance for walking.
Bus Route/Schedule	Better bus schedules and posted at bus stops. Average wait is from 20-30 minutes.
Bus Route/Schedule	A bus circle to Walmart, Waikele, Waipahu every hour on the hour. Also the schedule of buses that affects Waipahu should be mailed to the residents of Waipahu so they can actively participate...Waipahu is so spread so it would greatly help to have mini shuttles like what Waikele has now.
Bus Route/Schedule	Need dedicated bus service in greater Waipahu area.
Bus Route/Schedule	There is a need for more convenient bus stops that would serve people living in the Harborview area across from the cane haul road. The problem, however, is to find residents along Honowai Street that would not object to a bus stop in front of their homes.
Bus Route/Schedule	County bus takes long time.
Bus Route/Schedule, Bike Path	We need a better bus system. Also question #8, being I work up Waikele, the trolley and van system needs improvement before considering for the people that live in Waipahu. We need bike paths in Waipahu. From where I live I can walk to Big Way Store, which I would.
Mass Transit	Rail System
Mass Transit	Need Rapid Rail system now before traffic gets worse.
Mass Transit	Trolley System
Mass Transit	Rapid Transit to town.
Mass Transit	Want Mass Transit

Misc	Not really, but an improvement is a must!
Misc	Car pool.
Misc	Make another shopping center in Ewa Beach.
Misc	Real Bad
Misc	Drivers need to be more considerate to others.
Misc	Need better public transportation for elderly--see few taxis--too expensive; not affordable for ???.
Misc	Don't increase the bus fare any higher.
Misc	Handy van for Senior Citizens
Misc Bus	I used to ride the Waikele bus but because of chronic illness I decided to drive into work instead. I would consider going back to the express bus if the windows could be opened to allow fresh air to come in. When the flu and sick season arrives with people so close together on the bus and no way for fresh air to come in I found myself becoming ill on a regular basis. My health has improved since leaving the bus.
Road Repair/Improvement	Roads are work out, too small, should consider widening some heavily traveled roads.
Road Repair/Improvement	The City and County is very slow in repairing damaged roads like for example by Farrington Hwy close to Waipahu church.
Road Repair/Improvement	Drainage in parts of Waipahu should be improved so it isn't hazardous to drive in rainy weather if we need to drive. For example, Depot & Farrington near Times.
Road Repair/Improvement	Waipahu street needs to be widened.
Road Repair/Improvement	Complete widening Waipahu Street!! Widen Farrington Highway with bike path.
Road Repair/Improvement, Bike Path	They should widen the old Kapolei Road and make more bike paths.
Road Repair/Improvement, Bike Path, Safety	When are you going to fix Farrington Hwy? (storm damage) You need to separate road for bike paths. Too many fast drivers on the road, It's unsafe.
Safety	Bus stops are sometimes too close to homes and apartments-the fumes are not healthy to inhale. Try to have bus stops in lighted areas and with much Aloha's here in Hawaii bus drivers should be aware of strangers hanging around these areas, making it unsafe for people leaving the bus.
Safety	Reckless Driving.
Safety	People drive too fast--need to enforce speed limits.
Safety	None But--The speed limit, no one obeys it.
Safety	Waipahu needs more police.
Safety	Safety for children. Speeding
Safety, Bike Path	For those of us on the H-2 side of Kam Highway, getting anywhere by anything other than car is difficult. This is especially true for Crestview and Sea View because of hills, narrow roads, lots of cars parked on streets, no cuts in curbs. Bike riding is DANGEROUS.
Safety, Mass Transit	Security of vehicles left to use mass transit would be victimized by criminal activity. Resolve the laws to prosecute teenagers. People would feel more secure to leave their vehicles and ride.
Sidewalk	A survey of areas throughout Waipahu is needed for sidewalks and curbing.
Sidewalk	Below Farrington Highway, from Waipahu High School, There's no sidewalk--thru out the streets, No Side Walk.
Sidewalk	Rubbish pickup, grass along Kunia Road, sidewalks, especially in Robinson Heights.

Sidewalk	Within Village Park, sidewalks were installed. Because of the short driveways, many cars block the sidewalk. Therefore, many people are jogging in the roadway.
Sidewalk	Waipahu Street is inconvenient to walk; too narrow sidewalks.
Sidewalk	Have you observed pedestrian overpasses in Japan? They are ideal because the flow of traffic is not interrupted and pedestrians do not have to wait as they do with our regular traffic light controlled crosswalks. You should have those types of pedestrian overpasses. There's one at Waipahu Elementary School.
Sidewalk, Bikepath	There are parts of Waipahu that have no sidewalks. Please work on improvements so there are definite sidewalks for walking. Also develop more continuous bike paths.
Sidewalk, Bus Route/Schedule	Inadequate sidewalks; more frequent buses-2 hour trip in Waipahu (backroads) now; would use shuttle service-more convenient.
Traffic	Wal Mart has had a terrible effect in the village park area--they should have been required to develop entrances directly into their parking lot.
Traffic	Heavy traffic during morning and afternoon.
Traffic	Lot of traffic in Waipahu. Need more parking.
Traffic	Waikele Back-up traffic.
Traffic	Heavy Traffic
Traffic	Waikele area is always congested on weekends.
Traffic, Road Repair/Improvement	Traffic and Construction. Road damage-terrible roads.

Transportation Survey for Waipahu

Printed: 1/22/97

Business Tally

Mailed Surveys:	156
Mail Respondents:	69
Mail Response Rate:	44.2%

1. What kind of business do you operate?

Automotive	*8*	12.1%
Govt/Inst	*6*	9.1%
Manufacturing/Industrial	*9*	13.6%
Professional	*8*	12.1%
Recreation	*2*	3.0%
Retail	*13*	19.7%
Service	*22*	33.3%
No Response	*1*	1.5%

2. General business location:

Waipahu SAP	*58*	84.1%
Surrounding Area	*11*	15.9%

3. How many employees do you have?

Total employees	1,387

4. How do your employees usually travel to work?

Bus:	72	5.2%
Car:	1266	91.3%
Walk/bike:	39	2.8%
Other:	9	0.6%

5. How do your customers usually travel to your business

Bus:	3.5%
Car:	83.3%
Walk/bike:	4.5%
Other:	2.9%

6. Do you feel there are adequate bus facilities and services for your customers and your employees?

Yes	42	60.9%
No	27	39.1%

If No, what is needed to improve bus service?

Bus Shelter	13	48.1%
More Frequent	10	37.0%
Bus Stops	6	22.2%
Bus Routes	7	25.9%

7. If a shuttle bus or trolley system around Waipahu was provided to your business, would you, as a business, be willing to share in its cost?

Yes	3	4.3%
Maybe	18	26.1%
No	39	56.5%
No Response	9	13.0%

Business Comments:

Bus	It is hard for employees to ride the bus from town to Waipahu.
Bus Route/Schedule	Provide Shelter on all bus stops.
Bus Route/Schedule	Transportation within Waipahu is okay. Look for express bus system to and from Honolulu & its corridor.
Bus Route/Schedule, crime	Security at the bus stops on Leoku & Farrington is lacking. There are problems with criminals, littering, and trespassing on adjacent business properties.
Mass Transit	We need Rapid Mass Transit to Downtown.
Mass Transit, Traffic	Mass transit was right for Leeward. Traffic on the Highway will become a major problem in the near future.
Misc	Seems to be doing real good.
Misc	I'm a handicap and am very lucky, I go church twice a month, but others cannot travel.
Parking	Police need to tow cars that are in no-parking after 3:30 p.m. I would like traffic flow out of industrial area much smoother.
Parking	Need public parking areas.
Road Improvements, Traffic	We stagger office hours to avoid traffic times. Otherwise access is very good. We recommend road repairs be done at night to avoid daytime congestion.
Safety, Bus Service	Majority of our students catch bus but about 15% of our students need to use the city bus line. Certain buses only come once every hour (#48) and has caused problems for our health and safety of our students. Need to increase buses for this route.
Shuttle Bus	For question 7, would not benefit our type of business.
Shuttle Bus	For question 7, our business is not making profit so can't afford.
Shuttle Bus	(Number 7 is "not possible unless the State authorizes it.")
Sidewalks, Street Lights,	Need concrete sidewalk on both sides of Farrington Highway. Take measures to prevent jay-walking. Get rid of "yellow" street lights @ Pupupuhi & Farrington Highway. Looks like xmas lights w/ red & green traffic lights @ night. Traffic signals need timing adjustments.
Traffic	Traffic fronting the school is tremendously congested during peak hours--8:00 a.m. and 3:00 p.m.
Traffic	Ford island bridge should be a major community bridge...a feeder into H-1...for growing Ewa population.
Traffic	Please do not block the entrance to Moloalo St. (at the intersection of Moloalo and Mokuola St.).
Traffic	Off ramps and on ramps to Waipahu, exits from Industrial area makai of Farrington Hwy.
Traffic Lights	Light operations at Leoole and Farrington could be improved. Creates backlog trying to get out of Waipahu Industrial Park.
Traffic Lights, Road Improvements	Traffic lights should be synchronized. Widen Waipahu Street to accommodate influx of traffic coming off freeway and from Waikele area.