

# WAIPAHU NEIGHBORHOOD TRANSIT-ORIENTED DEVELOPMENT PLAN



## EXISTING CONDITIONS REPORT

SEPTEMBER 27, 2007

VAN METER WILLIAMS POLLACK, LLP.  
WESLIN  
DECISIONS ANALYSTS HAWAII, INC.  
BILLS ENGINEERING

# EXISTING CONDITIONS REPORT

---

## TABLE OF CONTENTS

### 1. INTRODUCTION

PROJECT OVERVIEW	1.1
LOCATION AND CONTEXT	1.2
PROJECT SCHEDULE AND COMMUNITY PARTICIPATION	1.3
WHAT IS TOD?	1.4

### 2. ONGOING AND PREVIOUS STUDIES

WAIPAHU TOWN PLAN	2.1
WAIPAHU LIVABLE COMMUNITIES INITIATIVE	2.2
CENTRAL OAHU SUSTAINABLE COMMUNITIES PLAN	2.3
HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT	2.4

### 3. PLANNING AREA OVERVIEW

EXISTING LAND USE	3.1
EXISTING ZONING	3.2
TOPOGRAPHY	3.3
PROPERTY OWNERSHIP	3.4
CULTURAL PLACES	3.5
PRESERVATION AND CHANGE	3.6
WATER AND OPEN SPACE	3.7

### 4. EXISTING TRANSPORTATION

EXISTING TRANSPORTATION CONDITIONS	4.1
THE ROADWAY NETWORK	4.2
SIDEWALKS AND CROSSWALKS	4.3
BIKE LANES AND SIGNS	4.4
BUS ROUTES AND FACILITIES	4.5

### 5. EXISTING INFRASTRUCTURE

WATER INFRASTRUCTURE	5.1
SEWER INFRASTRUCTURE	5.2
DRAINAGE INFRASTRUCTURE	5.3

### 6. EXISTING ECONOMICS

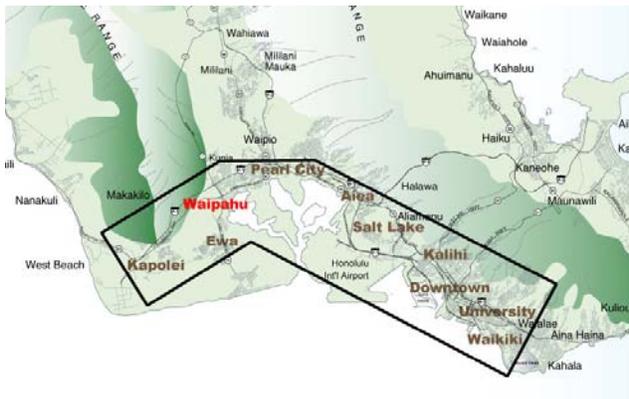
EXISTING ECONOMIC AND MARKET CONDITIONS	6.1
ADVANTAGES FOR DEVELOPMENT IN WAIPAHU	6.2
OUTLOOK FOR DEVELOPMENT	6.3
ECONOMIC IMPACTS AND BENEFITS	6.4

---

# I. INTRODUCTION

## I.1 PROJECT OVERVIEW

The people of Oahu are about to make an important investment in their future by funding a fixed guideway system connecting Waipahu with the City of Kapolei to the west and with the Primary Urban Center to the east. This system will provide a viable alternative to the private automobile while promoting the opportunity to create new compact walkable neighborhoods and improving existing neighborhoods through infill development. In order to capitalize on this tremendous opportunity and financial investment, development around future transit stations needs to be **focused, balanced and well-planned**. The Waipahu Neighborhood Transit Oriented Development (TOD) Plan will be the first in a series of focused community-driven planning efforts led by the Honolulu Department of Planning and Permitting for future station areas along the transit line. The Plan focuses on the areas within 1/2 mile and 1/4 mile of the proposed transit stations.



## I.2 LOCATION AND CONTEXT

Waipahu is located just mauka of Pearl Harbor between the fast-growing Ewa region and the primary urban center. Waipahu is strategically located along Interstate H-1 and enjoys a close proximity to the Honolulu International Airport. The Waipahu Neighborhood TOD Plan focuses on two proposed transit stations at the intersections of **Farrington / Leoku** and **Farrington / Mokuola Streets**.



The Waipahu Neighborhood TOD Plan focuses on the areas within 1/2 mile and 1/4 mile of the proposed transit stations.



*The Waipahu Neighborhood TOD Plan is focussed around a series of four community workshops.*



*Successful TODs depend on participation from all stakeholders including government, residents, business and community organizations, landowners and developers and the financial sector.*

### **1.3 PROJECT SCHEDULE AND COMMUNITY PARTICIPATION**

The Waipahu Neighborhood TOD Plan is focussed around a series of **four community workshops**. Beginning in August 2007, the planning process will include identification of issues, opportunities and constraints, the creation of draft station area alternatives, refinements of the alternatives and creation of preferred station area plans. The City's planning team will then make recommendations on phasing, implementation, and revisions to development standards for the area around two Waipahu Station.

Successful transit-oriented development depends on **participation and broad-based support** from government, residents, businesses community organizations, landowners developers and the financial sector. Good TOD projects come after careful listening of all concerns and needs by all parties that result in a common set of goals.

An **Advisory Committee**, comprised of individuals from a broad range of interests and affiliations, has been created to an advisory body and sounding board to the City's planning team. The Committee will also network with the larger Waipahu community in order to encourage attendance and participation at the Community Workshops.

## I.4 WHAT IS TOD AND SMART GROWTH?

Transit-oriented developments (TODs) are **compact, mixed-use developments** situated at and around transit stops. TODs focus a mix of land-uses, such as residential, office, retail, civic uses and entertainment within easy walking and biking distance from a transit station (generally 1/4 mile to 1/2 mile, 5-10 minutes). This mix of uses, combined with thoughtfully designed community spaces, plazas and parks, forms a vibrant village-like neighborhood where people can live, work and play. Transit-oriented developments provide an opportunity to encourage transit ridership, while discouraging sprawl, improving air quality and helping to foster a sense of community for Honolulu residents.

*Smart growth recognizes connections between development and quality of life. It leverages new growth to improve the community. The features that distinguish smart growth in a community vary from place to place. New smart growth is more [inter-connected] town-centered, is transit and pedestrian oriented, and has a greater mix of housing, commercial and retail uses. It also preserves open space and many other environmental amenities. Successful communities do tend to have one thing in common—a vision of where they want to go and of what things they value in their community—and their plans for development reflect these values.*

- Smart Growth Network



TODs contain a mixture of uses along with thoughtfully designed community spaces, plazas and parks which form a vibrant village-like neighborhood.



Successful communities (such as this neighborhood in Vancouver, BC) do tend to have one thing in common - a vision of where they want to go and of what things they value in their community - and their plans for development reflect these values

## 2. ONGOING AND PREVIOUS STUDIES

### 2.1 WAIPAHU TOWN PLAN

The Waipahu Town Plan, completed in 1995, presents a vision for Waipahu as a harmonious blend of the old and the new. Within the framework of this vision, Waipahu Town would retain and embrace its cultural plantation heritage. Waipahu Town would be revitalized for the betterment of the business community and would provide gainful employment serving the regional community. There would be a mixture of old style plantation with more contemporary building designs. Streets would be landscaped and more pedestrian friendly with ample roads to get around and through the town. Greenery and open spaces would be preserved and enhanced for the current and future residents to use and enjoy with the shoreline being reopened for fishing, boating and picnicking.

The Plan identifies the Farrington / Leoku site as a **commercial anchor** while the Farrington / Mokuola station site isn't specifically designated. Just east of the Farrington / Mokuola site, the area around the intersection of Farrington and Waipahu Depot Street is designated as a pedestrian-oriented "old-town" commercial district with thematic architecture, specialty stores, restaurants, goods and services. Existing businesses are encouraged to revitalize their building facades and new businesses encouraged to infill into the area.

### 2.2 WAIPAHU LIVABLE COMMUNITIES INITIATIVE

The Waipahu Livable Communities Initiative, completed in 1998, includes a transit-oriented focus as an opportunity to revitalize the older areas of Waipahu. The Initiative includes strategies to respond to the socioeconomic impacts from the closure of Oahu Sugar Company's sugar mill operations as well as from the growth of new commercial and industrial developments in the region. The Initiative also includes an integrated transportation plan, urban design guidelines and an implementation plan.

The Initiative identifies both the Farrington / Leoku and Farrington / Mokuola station sites as major transfer points in the public transportation network. Major transfer points provide identifiable locations for transit functions and are located where a number of existing or proposed routes converge. The Initiative identifies future potential for both station areas to develop into major transit stations with accompanying **mixed urban uses** in the surrounding area.



The Town Plan identifies the Farrington / Leoku site as a commercial anchor while the Farrington / Mokuola station site isn't specifically designated.

## 2.3 CENTRAL OAHU SUSTAINABLE COMMUNITIES PLAN

The Central Oahu Sustainable Communities Plan (SCP), adopted in 2002 and currently being updated, consists of policies, principles, and guidelines intended to guide land use and infrastructure decision to the year 2025. The Plan's vision and implementing policies support sustaining Central Oahu's unique character, lifestyle, and economic opportunities by focusing future residential development on master planned suburban communities within an Urban Community Boundary and on redevelopment around two transit nodes in Waipahu.

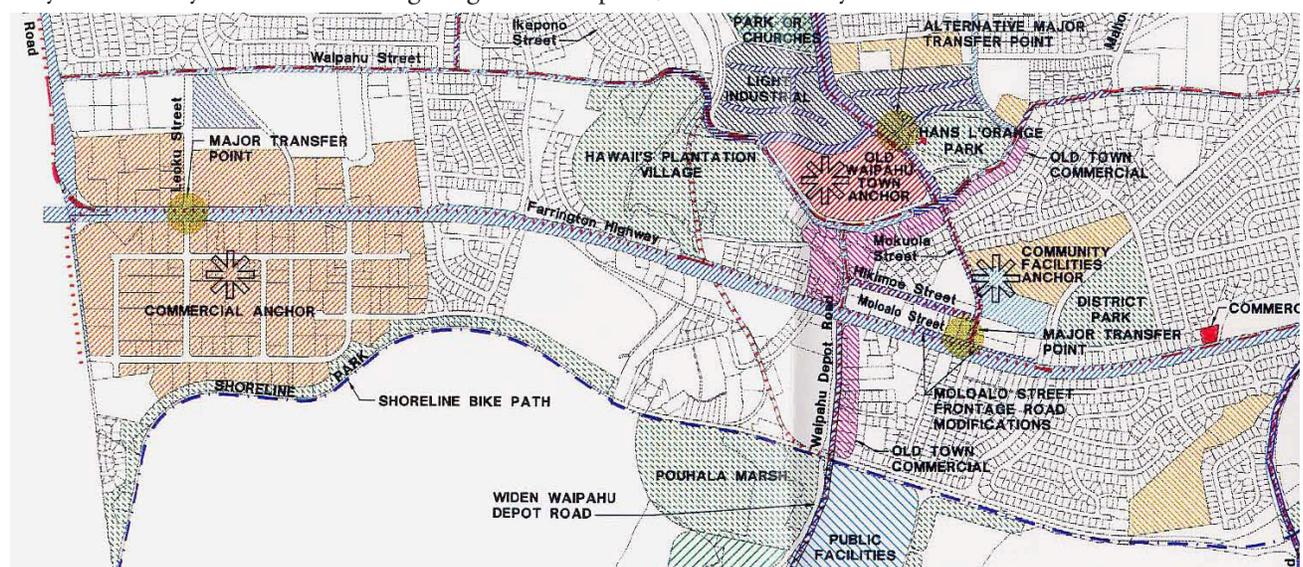
The Central Oahu SCP identifies two transit nodes in Waipahu at the intersections of: (1) Leoku Street and Farrington Highway; and (2) Waipahu Depot Road and Farrington Highway. With the exception of the Old Town Commercial Center, areas within one-quarter mile of transit nodes would be the **center of mixed use, medium-density residential and commercial development**. The area is envisioned as having shops, entertainment centers, restaurants, offices and residences within easy walking distance of the transit center. The Central Oahu SCP also contains a general policy which specifically calls for a commercial and light industrial area centered around the intersection of Leoku Street and Farrington Highway.

The Central Oahu SCP identifies the area surrounding the planned Farrington/Mokuola station as a **Regional Town Center**, an area which serves as a center for shopping, civic activity, and municipal services for the region. The Regional Town Center is envisioned as offering a wide range of shopping and dining opportunities and professional, business and industrial services.

## 2.4 HONOLULU HIGH-CAPACITY TRANSIT CORRIDOR PROJECT

The Honolulu High-Capacity Transit Corridor Project is studying how to **improve the ability of people to move** in the highly congested east-west corridor between Kapolei and the University of Hawaii at Manoa. Over sixty percent of Oahu's population currently lives within the area served by this corridor. This area is projected to continue to grow faster than the rest of Oahu.

A wide range of options for improving travel throughout the corridor are being evaluated against many criteria, including shortening travel times, project costs, environmental impacts, ease of implementation, support of the City and County of Honolulu's long-range land use plans, and community benefits.



The Livable Communities Initiative identifies both the Farrington / Leoku and Farrington / Mokuola station sites as major transfer points in the public transportation network.

### 3. PLANNING AREA OVERVIEW

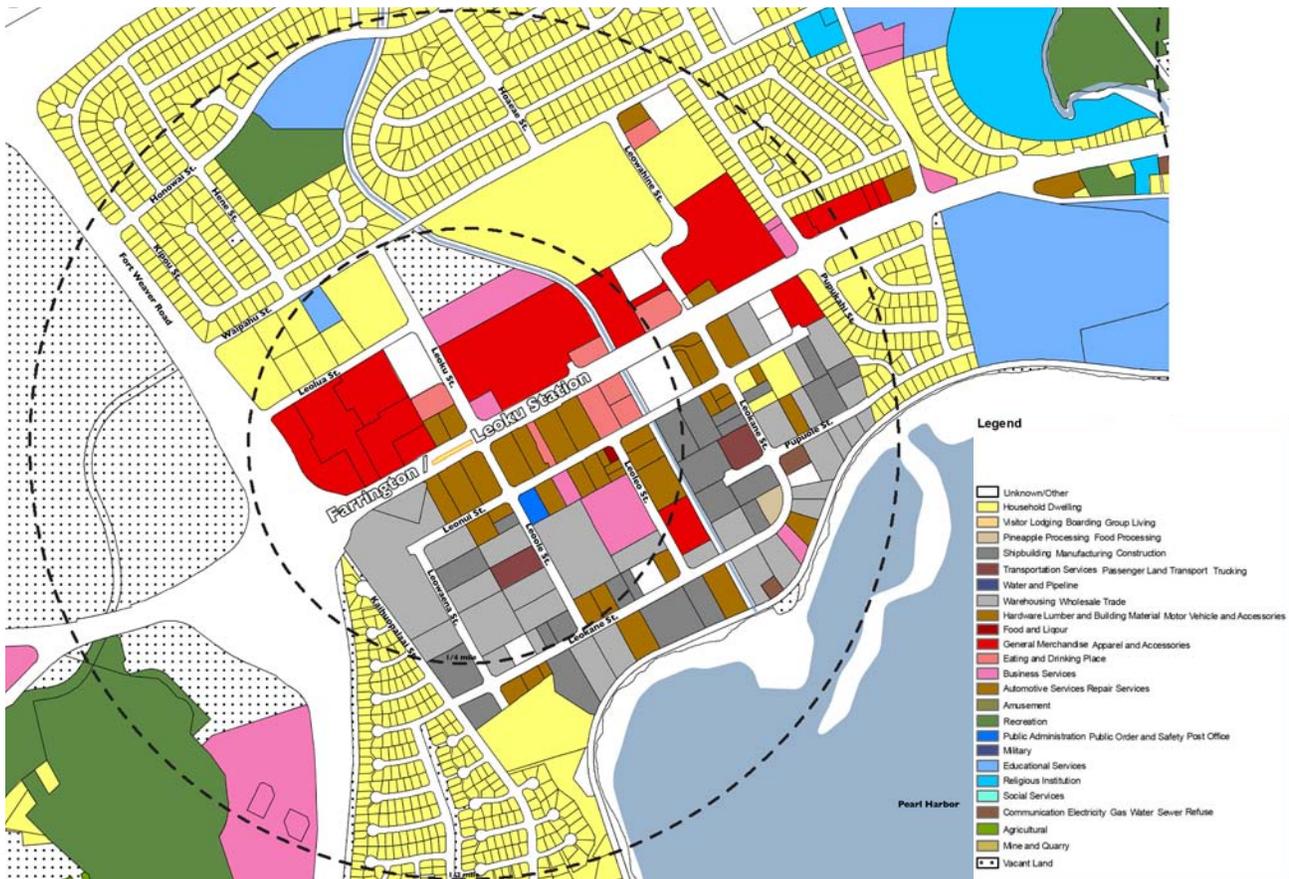


Large shopping centers are the primary land uses directly mauka of Farrington Highway.

#### 3.1 EXISTING LAND USE

Within 1/4 mile of the Farrington / Leoku station, the existing land use consists primarily of **retail, light industrial and auto service uses**. On the mauka side of Farrington Highway are two large shopping centers and a number of smaller fast food restaurants. Leolu Street marks a noticeable transition into a multi-family neighborhood. On the Makai side of Farrington there are currently a number of auto dealers and service uses. Along Leowaena, Leoole and Leoleo streets heading makai towards Pearl Harbor the businesses are primarily light industrial and warehousing.

The land uses within 1/4 and 1/2 mile of Farrington / Leoku are similar to those closer to the station with the exception of a large single-family neighborhood mauka of Waipahu Street and ewa of Kaihuopalaai Street towards Fort Weaver Road. There is also a small densely packed multi-family neighborhood directly adjacent to the light industrial area along Pupukahi Street.



The Farrington / Leoku station area consists primarily of retail, light industrial, auto service, multi-family and single-family uses.

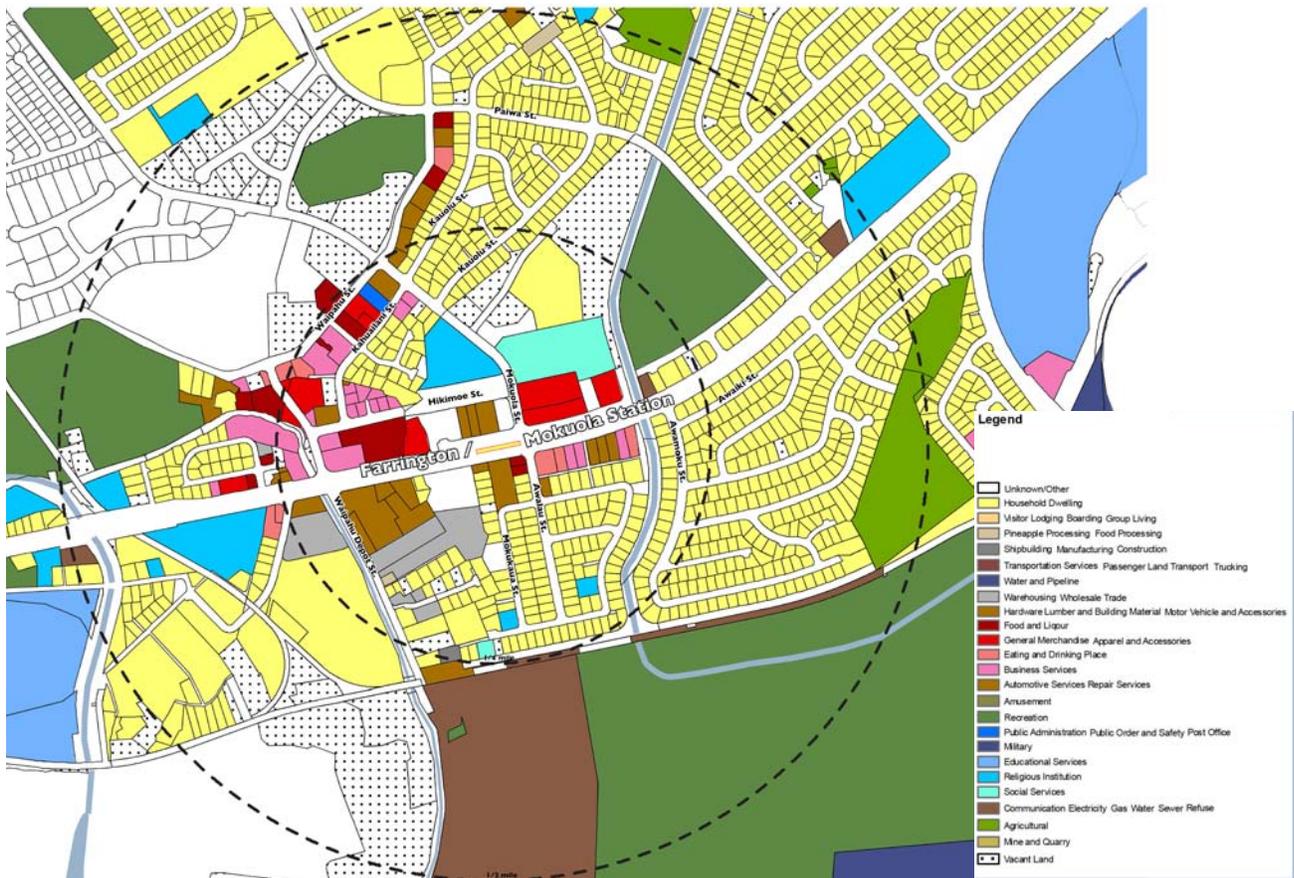
The Farrington / Mokuola station area has a different character than Farrington / Leoku and contains a greater mixture of uses and a more **fine-grained street and block network**. This area is defined by its plantation town character with the old Waipahu Sugar smokestack acting as an icon for the neighborhood. Several historic buildings line Waipahu Depot Road mauka of Farrington.



Several historic buildings line Waipahu Depot Road mauka of Farrington

Within 1/4 mile of the Farrington / Mokuola station, the existing land use consists primarily of small retail centers, business service, single and multi-family residential, auto service and civic uses. The Waipahu bus transfer station, civic center and library are approximately 500 feet from the proposed station

The land uses within 1/4 and 1/2 mile of Farrington / Mokuola include primarily single-family neighborhoods along with several recreational parks, the YMCA, the Filcom Center and the Hawaii Plantation Village which act as gathering places for Waipahu as well as the entire Oahu community.



The Farrington / Mokuola Station area consists primarily of small retail center, business service, residential, auto service and civic uses.



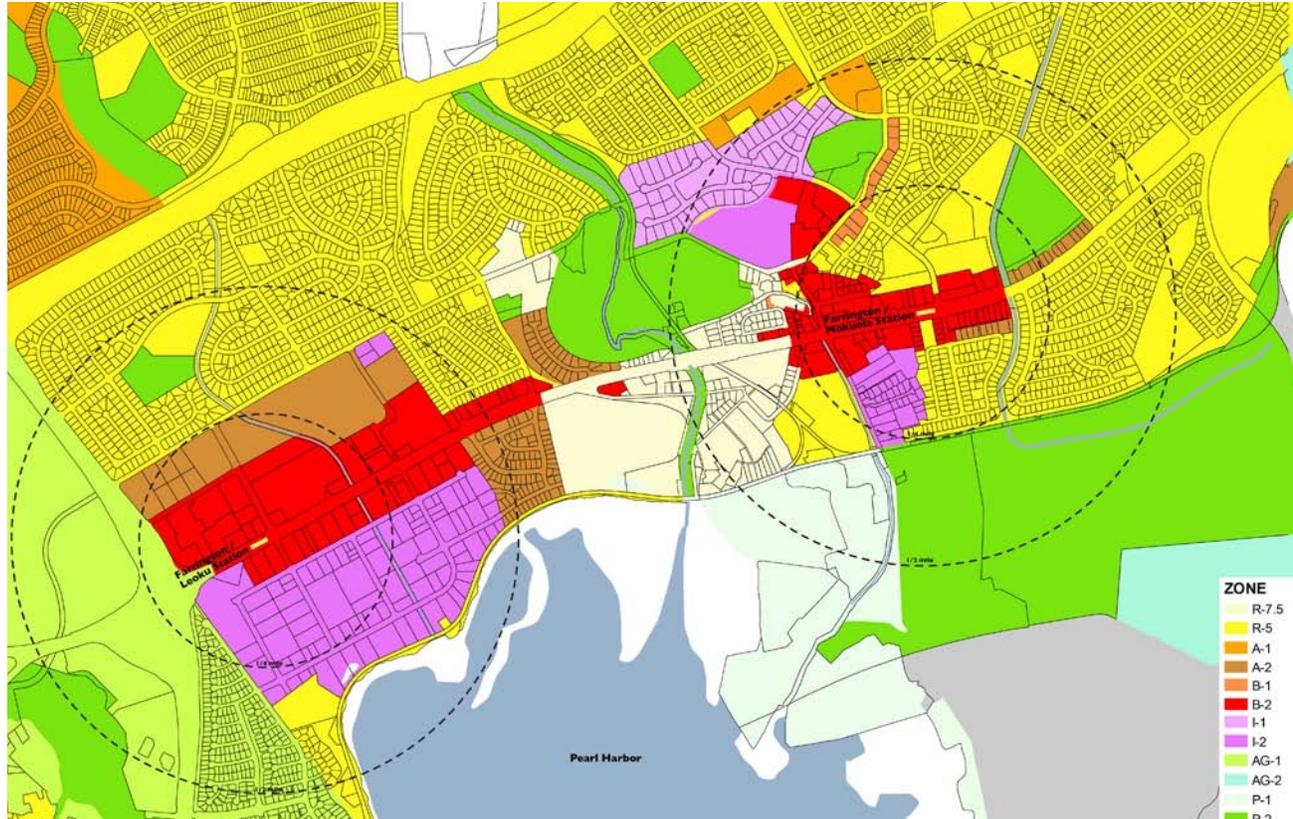
The B-2 district, typically applies to lots along major streets such as Farrington Highway

### 3.2 EXISTING ZONING

The parcels directly surrounding both of the station areas are designated **B-2 (Business District)** which is intended to provide areas for community business establishments, serving several neighborhoods. To the makai side of the B-2 zones are large areas designated **I-1 (Limited Industrial)** which is intended to provide areas for some of the industrial employment and service needs of rural and suburban communities while accommodating light manufacturing and high technology industries.

The Farrington / Leoku Station are consists of several large residential areas designated **A-2 (Medium Density Apartment)** which is intended to provide areas for medium density, multifamily dwellings. Both station areas contain single-family neighborhoods designated **R-5 and R-7.5 (Residential)** which are intended to provide areas for urban residential development along with open space areas designated P-1, P-2 and AG-1.

	B-2	I-1	A-2	R-5	R-7.5
<b>Min Lot Area</b>	5,000 sf	7,500 sf	10,000 sf	3,750-5,000 sf	7,000-14,000 sf
<b>Max Building Area</b>	50%	80%	40%-60%	50%	50%
<b>Max Density</b>	2.5 FAR	1.0 FAR	up to 0.9 FAR	n/a	n/a
<b>Max Height</b>	per map	40'	per map	25'-30'	25'-30'



The Station Areas contain a variety of zoning designations including B-2, I-1, A-2 and R5.

### 3.3 TOPOGRAPHY

The overall topography of Waipahu slopes moderately towards Pearl Harbor. Several gulches run through the station areas providing both natural and improved drainage channels. Within the station areas, several bluffs create viewpoints of Pearl Harbor, Diamond Head and downtown Honolulu. The old Waipahu Sugar Company smokestack sits upon a bluff emphasizing it's verticality and providing a landmark for the Farrington / Mokuola station area.

The mauka edge of the Farrington / Leoku 1/2 mile station area is approximately **125 feet** above sea level with the station site located at **25 feet** above sea level.

The mauka edge of the Farrington / Mokuola 1/2 mile station area is approximately **100 feet** above sea level with the station site located at **15 feet** above sea level.

### 3.4 PROPERTY OWNERSHIP

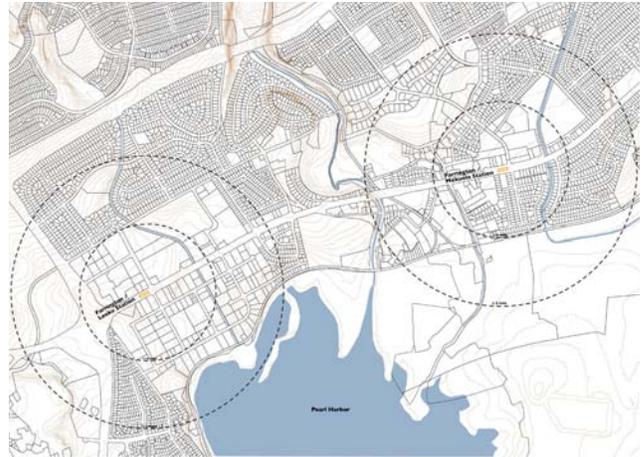
Working with the major property owners adjacent to the transit stations is essential to the Waipahu Neighborhood TOD Plan. Major property owners within the 1/4 mile station areas include:

#### **Farrington / Leoku Station:**

Waipahu LLC  
Waipahu Properties LLC  
Kalama Land CO LTD  
Robinson JLP Limited Partnership  
Pearl City Community Church  
Pitbull Properties  
Pflueger Properties  
Pacific Machinery LLC  
Cutter Development Company

#### **Farrington / Mokuola Station:**

TC Investments  
CE Nishoka LTD Partnership  
GO Financial Corporation  
Hetty HI Leasing  
BP Bishop Estate  
Gulsons LLC  
Servico Pacific  
Tropicana K LLC  
Housing and Community Development Corp of HI



*The overall topography of Waipahu slopes moderately towards Pearl Harbor*



*Waipahu Depot Street rises moderately toward a bluff with the landmark smokestack at its pinnacle.*



The Leeward YMCA and the historic smokestack are important cultural resources in the Farrington / Mokuola Station Area

### 3.5 CULTURAL PLACES

Waipahu includes a number of important cultural places and resources. The focus of the cultural heritage of Waipahu is within the Farrington / Mokuola station area along the old “main street” of Waipahu Depot Street leading mauka from Farrington to the site of the Oahu Sugar Company and Waipahu plantation. This street contains a number of historic buildings along with more recent development. A few blocks from this area lies the Hawaii Plantation Village which showcases the lifestyles and experience of Hawaii’s plantation workers. Waipahu’s parks and open spaces such as Waipahu District Park, Hans L’ Orange Park and Ted Makalena Golf Course along with the Leeward YMCA draw visitors from a wide radius. These cultural amenities help to make Waipahu unique and should be **preserved and enhanced**. The Waipahu TOD Neighborhood TOD Plan will seek to build on these cultural amenities, preserve while respecting the past and creating a vibrant community for the future.

- OLD TOWN COMMERCIAL AREA
- CIVIC/PUBLIC BUILDINGS
- PARKS
- CHURCHES
- ☆ HISTORIC BUILDINGS (1950 or earlier)
- PEARL HARBOR HISTORIC TRAIL - PED./BIKE



The Farrington / Leoku station area is lacking in important cultural places



The Farrington / Mokuola station area contains several important cultural places

### 3.6 PRESERVATION AND CHANGE

The tremendous public investment in transit can create the impetus for changes and neighborhood improvements around both Waipahu station areas. A greater amount of change can be expected within the 1/4 mile transit radius with change being less intensive moving outward toward the 1/2 mile radius. The exception of this is when large under utilized sites are owned by landowners with the goal of redevelopment. Typically, single-family neighborhoods and areas with small parcel sizes and a large number of land owners are least effected by change. Areas also less affected are community-oriented open spaces, historic buildings and other cultural places. The figures below identify the areas around both stations which are likely to see the greatest amount of change along with the areas that are most likely to be preserved. The alternatives that will be developed as a result of the planning process will focus primarily on the areas of change while attempting to blend seamlessly with single-family neighborhoods and other areas of preservation.



Typically, single-family neighborhoods and areas with small parcels sizes are least effected by change.

Comparing the two station areas, the Farrington / Leoku has greater opportunity for **wholesale changes** due to its uses and property ownership patterns. Change within the Farrington / Mokuola station area has the potential to occur in a more **incremental fashion**.



The Farrington / Leoku station area has greater potential for change



Change within the Farrington / Mokuola station area has the potential to occur in a more incremental fashion

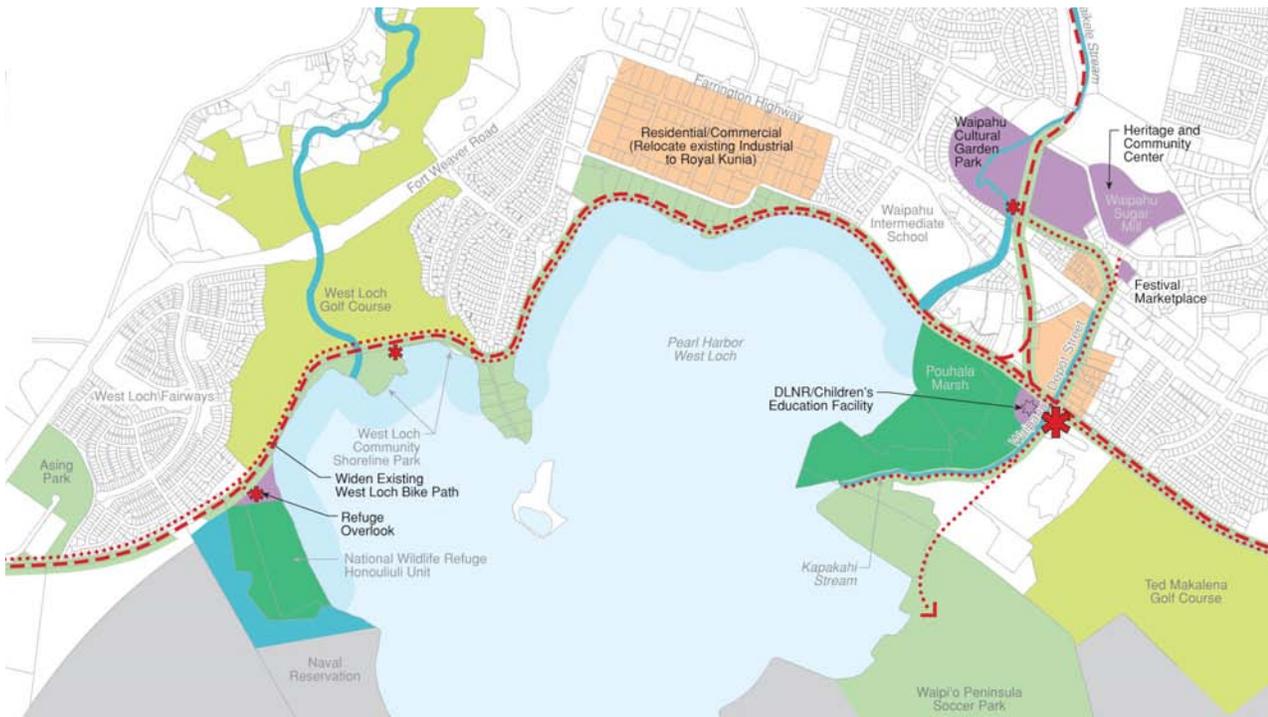


The Pearl Harbor Bike Path, as seen here in Pearl City can become an important community resource.

### 3.7 WATER AND OPEN SPACE

Waipahu has several important parks and open spaces such as Waipahu District Park, Hans L ‘Orange Park and Ted Makalena Golf Course that provide residents and visitors both passive and active recreational opportunities. Other areas such as Pouhala Marsh and the Pearl Harbor Historic trail have the potential to be important amenities for residents. Currently **the most under utilized resource in Waipahu is the Pearl Harbor shoreline.** Buildings in both station areas turn their backs to the waterfront and there are very few access points for pedestrians to reach the shore.

The Shoreline Park and Preservation Area proposed in the Pearl Harbor Trail Master Plan along the entire shoreline in Pearl Harbor’s West Loch and Middle Loch is intended to restore the shoreline in Waipahu to public use, provide active and passive recreation facilities, and help create the Pearl Harbor Historic Trail, a pedestrian path, bikeway, and restored historic train system running from Rainbow Marina near Aloha Stadium to the Waianae Coast. A key feature of the Pearl Harbor Trail Master Plan is its identification of the makai section of the Farrington / Mokuola Station areas as a residential / commercial place while relocating the industrial uses to Royal Kunia.



The Pearl Harbor Trail Master Plan seeks to connect and emphasize the important open spaces along Pearl Harbor

## 4. EXISTING TRANSPORTATION

### 4.1 EXISTING TRANSPORTATION CONDITIONS

This section documents the existing transportation conditions in the vicinity of two proposed fixed guideway stations located in the Waipahu neighborhood area. Both stations are along Farrington Highway. The Farrington / Mokuola Station is an aerial structure on Farrington Highway just west of the intersection with Mokuola Street. The Farrington / Leoku Station is an aerial structure just west of the Farrington Highway intersection with Leoku Street.

This inventory of existing transportation conditions primarily addresses the transportation infrastructure and services within one quarter mile of these stations, only major transportation features outside of this radius are referenced.

The description of the transportation infrastructure and services for the Waipahu Neighborhood TOD Plan is provided for the roadway network; sidewalks and crosswalks; bike lanes and signs; and, bus routes and facilities. This section does not include a review of all transportation deficiencies, needs or existing plans for these modes.



Farrington Highway will include an aerial transit structure in the median

MAJOR ARTERIAL
MINOR ARTERIAL
LOCAL ROADS
PEARL HARBOR HISTORIC TRAIL - EXISTING BIKE PATH
PEARL HARBOR HISTORIC TRAIL - PROPOSED BIKE PATH
EXISTING BIKE LANE / ROUTE
PROPOSED BIKE LANE / ROUTE



Transportation infrastructure in the Farrington / Leoku station area



Transportation infrastructure in the Farrington / Mokuola station Area

---

## 4.2 THE ROADWAY NETWORK

The Interstate H-1 Freeway is located immediately north of Waipahu predominately serving east-west travelers. Farrington Highway is a principal arterial generally paralleling H-1 thereby also serving east-west traffic. Kamehameha Highway and Kunia Road are both north-south principal arterial roadways located within the east and west fringes of Waipahu.

Waipahu Street is a minor arterial street traversing in an east-west direction between the H-1 Freeway and Farrington Highway. Paiwa Street and Waipahu Depot Road between Farrington Highway and Waipahu Street are north-south major collector streets.

Mokuola and Leoku Streets traverse in a north-south direction. These are the intersecting streets along Farrington Highway where fixed guideway stations are proposed. They are both local roads.

Most local roads are configured with typical subdivision patterns with **limited connectivity** to adjacent land uses. **This basic framework functions poorly** because densities and levels of activity are gradually intensifying both within and outside of the study area overloading the limited number of arterial streets.

The roadway system throughout Waipahu provides service to all areas of the community at approximately the same level of service except for Farrington Highway which becomes severely overloaded when traffic seeks an alternative to H-1. **The severe traffic congestion on Farrington Highway has a detrimental impact on the speed and reliability of fixed route bus operations** since there are no exclusive bus lanes, traffic queue jump lanes or transit signal priority treatments.

Manager's Drive Bridge and the Mokuola Street extension to Manager's Drive provide a new north-south collector roadway. Bus route service has still not been introduced along this roadway to connect substantial new residential development with the proposed Farrington/Mokuola Station.

Previous studies have shown the need for **widening 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 Waipahu 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 on the two-lane roadway restricts traffic flow, while the sharp turns required on Waipahu Street pose safety concerns for buses. Widening may be less conducive to fostering a **pedestrian-oriented atmosphere for Waipahu Street**. The proposed Farrington/Mokuola Station will be reliant upon efficient feeder bus operations requiring consideration to enhanced traffic and street upgrades in selected locations.

### 4.3 SIDEWALKS AND CROSSWALKS

An inventory was conducted along all roads within one quarter mile of the Farrington/Mokuola and the Farrington/Leoku station locations. This inventory found that **over ninety percent of the roads within one quarter mile of the Farrington/Leoku station have sidewalks on both sides of the street** with an average width of between four to six feet. An asphalt path exists along portions of the Kunia Road ramps and access road both mauka and makai of Farrington Highway. Crosswalks exist on all four legs of the Farrington Highway and Leoku intersection. Crosswalks also exist along the paths followed by residents living mauka of Farrington, but none exist Makai of Farrington. Pedestrian access is possible to the West Loch residential area, but this is obstructed by a locked gate.

Sidewalks are provided along **less than a third of the streets within one quarter mile of the Farrington/Mokuola Station**. None of the local streets makai of Farrington Highway have either sidewalks or crosswalks. Crosswalks do exist along Farrington Highway with crosswalks located at Waipahu Depot Road and Mokuola Street. Crosswalks also exist at intersections involving Hikimoe and Waipahu Streets.

Many of the existing sidewalks in both station areas are **partially or completely obstructed** by planters, utility poles and other objects that hinder safe pedestrian movement.



*Many sidewalks in both station areas are completely obstructed, hindering safe pedestrian movement.*



*Several areas along Farrington Highway are signed as bike routes but do not have adequate bike facilities.*

### 4.4 BIKE LANES AND SIGNS

A new bike lane exists along Mokuola starting mauka of Nalii Street and extending to Manager's Drive Bridge. Although a standard bicycle path exists along major portions of Lumiaina, a gap exists. This alignment offers **excellent potential for bicycle access** from a major residential population corridor connecting to the Farrington/Mokuola Station.

The interior of Waipahu Town presently **does not have any other 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



Several crosswalks such as this one near Mokuola Street are incomplete.

completed, but a gap exists in this facility. There are sporadic bike routes delineated by a few signs primarily along Farrington Highway. These suggest safety concerns given the heavy traffic volumes, speeds and turning movements where the “bike route” signs exist.

There is a need for identifying and developing pedestrian ways and bikeways to **connect the existing residential areas with the proposed stations**. Bike paths need to be identified and separated bikeways developed to increase usage and safety along major streets and corridors. The shoreline bike path needs to be integrated with other mauka areas of Waipahu and the station locations.

#### 4.4 BUS ROUTES AND FACILITIES

Waipahu has a **high level of bus service well utilized by local residents**. Bus service is provided through a contract between the Department of Transportation Services (DTS) and Oahu Transit Services (OTS). Both fixed route (TheBus) and para-transit (TheHandi-Van) services are operated by OTS. DTS is responsible for overseeing the OTS contract and conducting all planning functions.



The bus transit center on Hikimoe Street serves Waipahu residents as well as regional riders.

Eleven fixed routes offer CityExpress, local, commuter express and community circulator services. Route A is the CityExpress with its terminus at Leoku and Farrington. This is a limited-stop, frequent interval operation providing connections to downtown Honolulu and the University of Hawaii at Manoa seven days a week.

Local services serving Waipahu include routes 40, 40A, 42, 43 and 44 (formerly the route 431, redesigned and extended to serve more areas in Ewa).

Waipahu is served by a set of community circulator routes – 432, 433 and 434. These operate within Waipahu and connect directly to the Waipahu Transit Center located along Hikimoe Street. Altogether, there were 2,234 weekday boardings at this location recorded in 2004 when the TRD was conducted. The bus stops near the proposed Farrington/Leoku Station accounted for 1,775 weekday boardings in 2004.

## 5. EXISTING INFRASTRUCTURE

---

### 5.1 WATER INFRASTRUCTURE

- The Board of Water Supply provides service to the project area.
- The existing land uses and zoning around the Leoku Station require pipe sizes suitable for fire flows up to 4,000 gpm. The Farrington Highway corridor contains pipe sizes that are capable of accommodating this flow requirement. Therefore, it is anticipated that the main backbone water infrastructure related to storage and transmission are generally **adequate**.
- However, in the Leoku Station area, once out of the Farrington Highway corridor, the local distribution lines are primary 6-inch and 8-inch and **increasing distribution line sizes and/or parallel mains** should be anticipated.
- The existing land uses and zoning around the Mokuola Station require pipe sizes suitable for fire flows up to 2,000 gpm. Local distribution lines are typically 12-inch or smaller with the majority of lines being 6-inch and 8-inch. Upgrading distribution lines to a **minimum of 8-inch and/or 12-inch** should be anticipated.
- The source of water for the Board of Water Supply System is the Pearl Harbor Aquifer. Withdrawal of water from the aquifer is regulated by the State Water Commission. Alternatives solely replacing existing uses will not create an additional demand on the source component of the water system.
- Design Alternatives with increased density **will require additional source water**. The impact of the BWS' ability to provide the water is not a Waipahu TOD issue, but rather a regional issue. To properly address the issue, the cumulative source requirement of all TODs (above current demand) within the BWS service region should be projected.
- Additional source development may come from activation and expansion of the BWS Desalination Plant located near Kapolei Business Park and redirection of flows within the transmission network to balance source needs across the regional area.

### 5.2 SEWER INFRASTRUCTURE

- The City and County of Honolulu Department of Environmental Services provides sewer service to the area.
- The sewer system components serving the Waipahu station areas are local gravity collection components, regional wastewater pumping stations (with force mains) and the Honouliuli Wastewater Treatment Plant. The Sewer and Drainage Infrastructure Plan generally shows the gravity collection components, the primary sewage pump stations serving the Waipahu station areas and the major force main(s) from the Waipahu Pumping Station delivering all sewage to the Honouliuli Wastewater Treatment Plant.
- The Farrington / Leoku station area is located in an area dominated by commercial and light industrial activity. These uses produce lower sewage flows. Increased density (and corresponding increased sewage flows) **will require improvements** to the local collection system and wastewater pumping stations (both Kunia and Waipahu WWPS). The magnitude of improvements will be related to the magnitude of increased density in and around the Leoku Station.
- The Farrington / Mokuola station is located in an area comprised of residential and business activity. There is also a sizable amount of open space land within the ½ mile radius. As with the Leoku Station, increased density will generate larger sewage flows, but the backbone gravity collection system in and around the Mokuola Station area **can generally accommodate** additional flows.
- There are regional considerations that must be addressed with respect to the Waipahu Sewage Pumping Station. This sewage pumping station acts as a hub for all sewage flows entering the Honouliuli Wastewater Treatment Plant from as far away as Halawa Valley and Mililani/Waipio. Ultimate assessment of this station must be based on the affect by all TODs in the Facility Plan boundary area.
- There are regional considerations that must be addressed with respect to the treatment plant capacity at the Honouliuli Plant. Ultimate assessment of the ability to treat increased wastewater flows resulting from TODs must



Several drainage areas in Waipahu are channelized.

be based on all TODs in the Facility Plan boundary area.

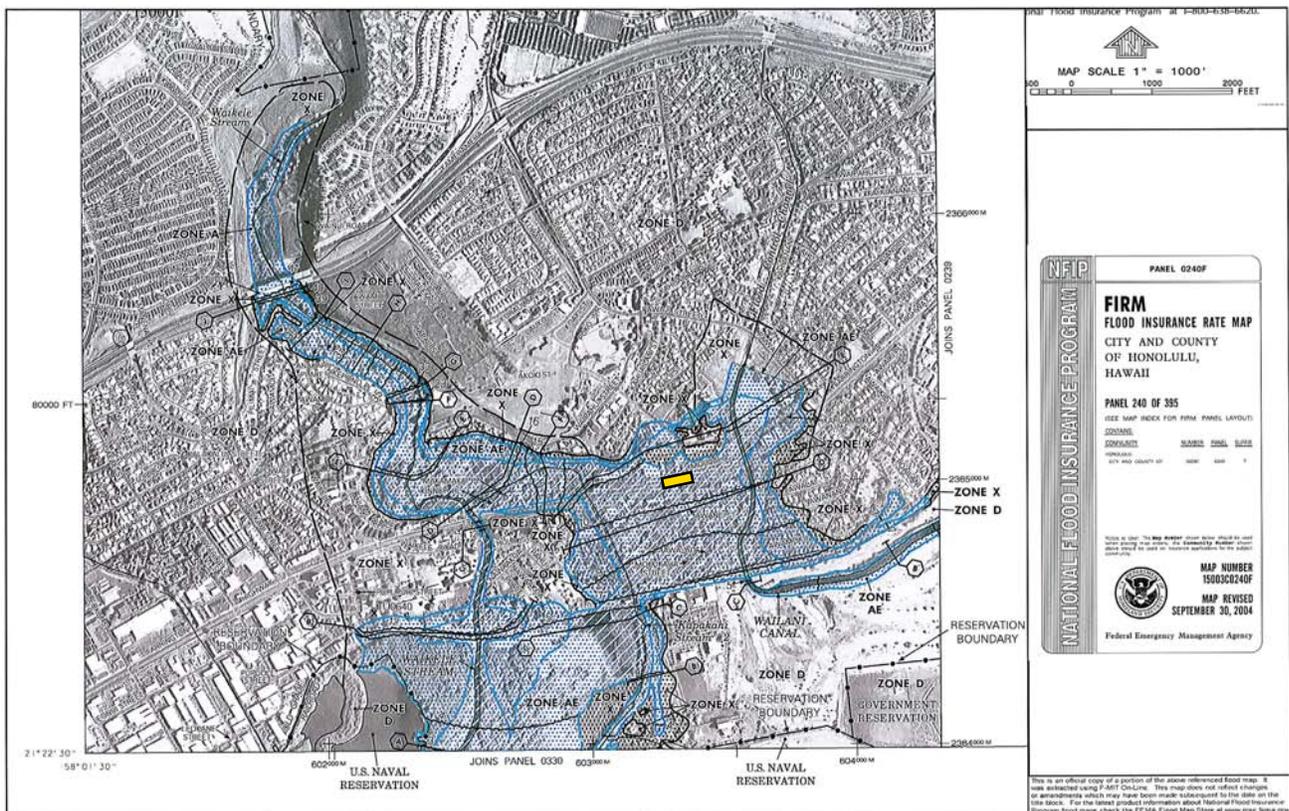
- The current ultimate capacity of the Honouliuli Wastewater Treatment Plant is reported as 51 MGD based on the service boundary of the 2001 Facility Plan and based on a future design population of 424,000 (residents) and 133,176 (employment).

### 5.3 DRAINAGE INFRASTRUCTURE

- The Farrington / Leoku Station is located in a “developed” land use area. All lands have essentially been touched by urban development. There are **no significant issues of increased runoff** aggravating downstream conditions. However, there may be some localized existing drainage problems that will need to be addressed during the TOD redevelopment process.
- The Leoku Station and surrounding areas are identified as being in Zone D of the Flood Insurance Rate Map (FIRM) system. Zone D is defined as areas in which flood hazards are **undetermined, but possible**. There are no FIRM requirements for development in Zone D. All development in a Zone D area would be subject to compliance with the Rules Relating to Storm Drainage Standards of the City and County of Honolulu.
- The Farrington / Mokuola Station has **significant drainage issues**. The site is in zone AE(Floodway) of the Flood Insurance Rate Map (FIRM) system. The floodway must remain free of (new) encroachments since it actively conveys flood waters from the confluence of Waikele Stream, Kapakahi Stream and the Wailani Flood Control Channel. The combined carrying capacity of the three drainage ways (with Waikele Stream being the primary contributor) is inadequate for a 100-year storm event (1% annual occurrence) and water spills out of the defined channels and into the area defined as floodway.
- Building in the defined floodway can only be accomplished by means of a obtaining a **Flood Hazard Variance**. The variance requires technical support which includes the preparation of a “No-Rise Certification”. The certification mandates that proposed improvements will not increase the flooding elevation.

- Using the premise that growth would be anticipated in and around the transit station, there are only three practical options with respect to drainage solutions for the Mokuola Station. These are:

1. Evaluate the Waikele Stream levy system and provide Corps of Engineers “**certification**” of the **levy**. This will require detailed analysis and construction to allow modification of the FIRM in the area. The end result would be a sizeable reduction in the AE (Floodway) zone.
2. **Limit the magnitude** of new development to ensure that “encroachments into the FIRM floodway are limited to that which occurs under existing conditions”.
3. **Relocate** the Farrington / Mokuola Station.



The Farrington / Mokuola Station is in an AE Floodway and has significant drainage issues.

## 6. EXISTING ECONOMICS

---

### 6.1 EXISTING ECONOMIC AND MARKET CONDITIONS

- a. Population (2005) 33,643
- b. Median Household Income (2005) \$57,600
- c. Employed (2000) 13,346
- d. Homes (2000) 8,235
  - Owner-occupied 50.0%
  - Rented 44.2%
  - Vacant 5.8%
- e. Resale Home Prices (9/06 to 8/07) Low Median High
  - Single Family (SF) Homes \$425,000 \$619,000 \$860,000
  - Multi-family (MF) Homes \$118,500 \$183,000 \$230,000
  - **Waipahu's median SF home price is competitive with median prices in nearby communities, but the median MF home price is significantly lower:**

SF Price	MF Price
- 'Ewa	\$514,450 \$302,000
- Mililani	\$654,500 \$311,500
- Pearl City/Aiea	\$639,500 \$299,000
  - Waipahu's low MF home prices reflect the fact that most of them are small and fairly old (2 bedrooms and 1 bath of 580 to 710 sq. ft., and built in the 1960s).
- f. Retail and Industrial Rents (per sq. ft. per month)
  - Retail Rents (Waipahu to Aiea, 2006) \$3.00 to \$3.59
  - Industrial Rent (O'ahu average, 2007) \$1.19

### 6.2 ADVANTAGES FOR DEVELOPMENT IN WAIPAHU

- a. Central Location and Access to Other Communities
  - Waipahu is centrally located within the urbanized portion of O'ahu (i.e., East Honolulu to 'Ewa and Central O'ahu).
  - Waipahu enjoys close proximity to Honolulu International Airport.
  - Also, Waipahu businesses and residents have good access to Honolulu, 'Ewa, Central O'ahu and Windward O'ahu via H-1, H-2, H-3, Farrington Hwy, Kamehameha Hwy, Fort Weaver Rd, and Kunia Rd.
  - The transit system will **improve access to communities** between the City of Kapolei and downtown Honolulu.
  - Waipahu is an excellent location for:
    - Workers who commute to jobs in Waipahu, 'Ewa, Honolulu, and other urban areas in Central O'ahu.
    - Light-industry serving island-wide markets (e.g., construction, manufacturing, and warehousing companies at Milltown Business Center and the industrial areas below Farrington Hwy).
    - Retail and service companies serving Waipahu and surrounding communities (e.g., vehicle sales and servicing).

---

b. Low Value of Existing Buildings

- Most of the buildings along Farrington Hwy are **good candidates for replacement**, since most occupy only a fraction of their lots, are onestory, and are nearly 20 years old or older.

c. Other Advantages for Development Near the Farrington/Leoku Station

- Bus service to the station will draw commuters from Royal Kunia, Village Park, West Loch Estates, ‘Ewa Villages, ‘Ewa Gentry, Ocean Pointe, ‘Ewa Beach, and Iroquois Point. These **commuters will also become potential customers** for businesses near the station.
- Just three land owners own most of the land near the station and fronting Farrington Hwy. This will simplify redevelopment efforts.
- The proposed station is near Saint Francis Medical Center – West.

d. Other Advantages for Development Near the Farrington/Mokuola Station

- Bus service to the station will draw commuters from Waikele and Waipi’o Gentry. These commuters will also become potential customers for businesses near the station.
- About 40% of the land near the station and fronting Farrington Hwy is owned by a few land owners. This will simplify redevelopment efforts.

### 6.3 OUTLOOK FOR DEVELOPMENT

a. Potential Development Near the Transit Stations

- On larger and consolidated parcels along Farrington Hwy and Hikamoe Rd, **mixed-use multi-story buildings with commercial uses on the ground floor and MF homes or offices on the upper floors.**
- On smaller, unconsolidated parcels along Farrington Hwy and Hikamoe Rd, mostly smaller buildings for **commercial uses.**
- **Multi-floor residential buildings** just beyond existing commercial areas and mostly makai of Farrington Hwy.

b. Potential Uses Near the Transit Stations

- Ground-level Commercial Uses
  - Retail and convenience stores selling goods that can be hand-carried (i.e., purchases that do not require a car or truck to transport).
  - Fast-food and family restaurants.
  - Service providers (banks, real estate offices, beauty salons, etc.).
  - Rents of about \$3.50 per sq. ft.
- New MF Homes
  - A mix of housing for singles, couples, and families with children. (costs will change over time)
  - 1-bedroom, 1-bath units, about 500 sq. ft., about \$250,000.
  - 2-bedroom, 1-bath units, about 700 sq. ft., about \$300,000.
  - 2-bedroom, 2-bath units, about 900 sq. ft., about \$350,000.
  - 3-bedroom, 2-bath units, about 1,100 sq. ft., about \$400,000.
- New Offices
  - Complexes for professionals: attorneys, accountants, etc.
  - Some medical complexes (physicians, dentists, diagnostic centers).
- Industrial Activities below Farrington Hwy
  - Change in the mix of businesses to those that attract more consumers (e.g., home-improvement companies with showrooms).



*Transit-oriented development should create more jobs near transit stations, including retail, office, and industrial jobs.*



*Transit-oriented development could create increased choices of multi-family homes.*

c. Pace of Development, Waipahu

- The **pace of development is likely to accelerate** once the transit system extends to a sufficient number of other communities to attract significant ridership.

## 6.4 ECONOMIC BENEFITS AND IMPACTS

a. Employment

- **More jobs** near transit stations, including retail, office, and industrial jobs.
- **Better access** to jobs in communities along the transit line.

b. Housing

- **Increased choices** of MF homes beyond just 2-bedroom, 1-bath units.
- Higher housing prices and rents near the transit stations. This reflects **higher demand** in response to the locational advantages.
- The same development patterns that support transit use also support affordable housing, **added housing density enables lower cost housing on higher cost land.**
- Development diversity means a “whole neighborhood,” where residents can get to services, civic facilities, and jobs **even if they can’t afford a car.**
- A mix of building and housing types that are attractive, accessible, and compatible, where **safety,** parking, noise, and accessibility have been taken into account.

c. Commercial and Industrial Activities

- **Increased choices** of goods and services available in Waipahu.
- Increased sales in response to **more consumers in the immediate area.**
- Higher rents in response to higher sales, and **increased demand** for commercial and industrial space.