

# KAKAAKO MAUKA AREA ACCESS, CIRCULATION, AND MOBILITY ASSESSMENT REPORT

PREPARED FOR:  
HAWAII COMMUNITY  
DEVELOPMENT AUTHORITY  
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## A. INTRODUCTION

The Kakaako Mauka Area (Area) is centrally located between downtown Honolulu and Waikiki on the Hawaiian island of Oahu. The Area is bounded by South King Street, Punchbowl Street, Ala Moana Boulevard, and Piikoi Street. The 450 acre Area currently is home to over 2,200 residents and a workforce of 18,500.

The Area was designated by Hawaii Legislature as a community development district in 1976. After designation the Hawaii Community Development Authority's (HCDA) was appointed as the oversight agency for the Area. The HCDA developed the first planning document, the Mauka Area Plan, in 1990. Since 1990 the Mauka Area Plan underwent several amendments before being unofficially compiled in 1999. The plan covers a variety of social, economic, and transportation conditions. Charlier Associates, Inc. was hired as a subconsultant to Plan Pacific to provide a detailed evaluation and update of the current transportation component of the Mauka Area Plan.

Transportation is one of the critical issues facing the future of the Area. In order to become a desirable destination, the Area will need a robust transportation system that meets a variety of travel needs. The most critical part of this strategy is planning for great streets. A street network is important to pedestrian circulation, bicycle travel, transit access, automobile trips, and land development. If the Area is going to become a vibrant place to live and work the transportation system has to provide options.

This report provides a detailed evaluation of the current transportation options in the Area. The following chapters provide a brief evaluation of the current Mauka Area Plan, findings of field work conducted in February 2004, and opportunities for future transportation options.



Figure 1: Bus transit is critical to Kakaako's multimodal transportation system.



Figure 2: Pedestrian places near Kakaako are important destinations.



Figure 3: Kakaako's peak hour traffic conditions impact all modes.



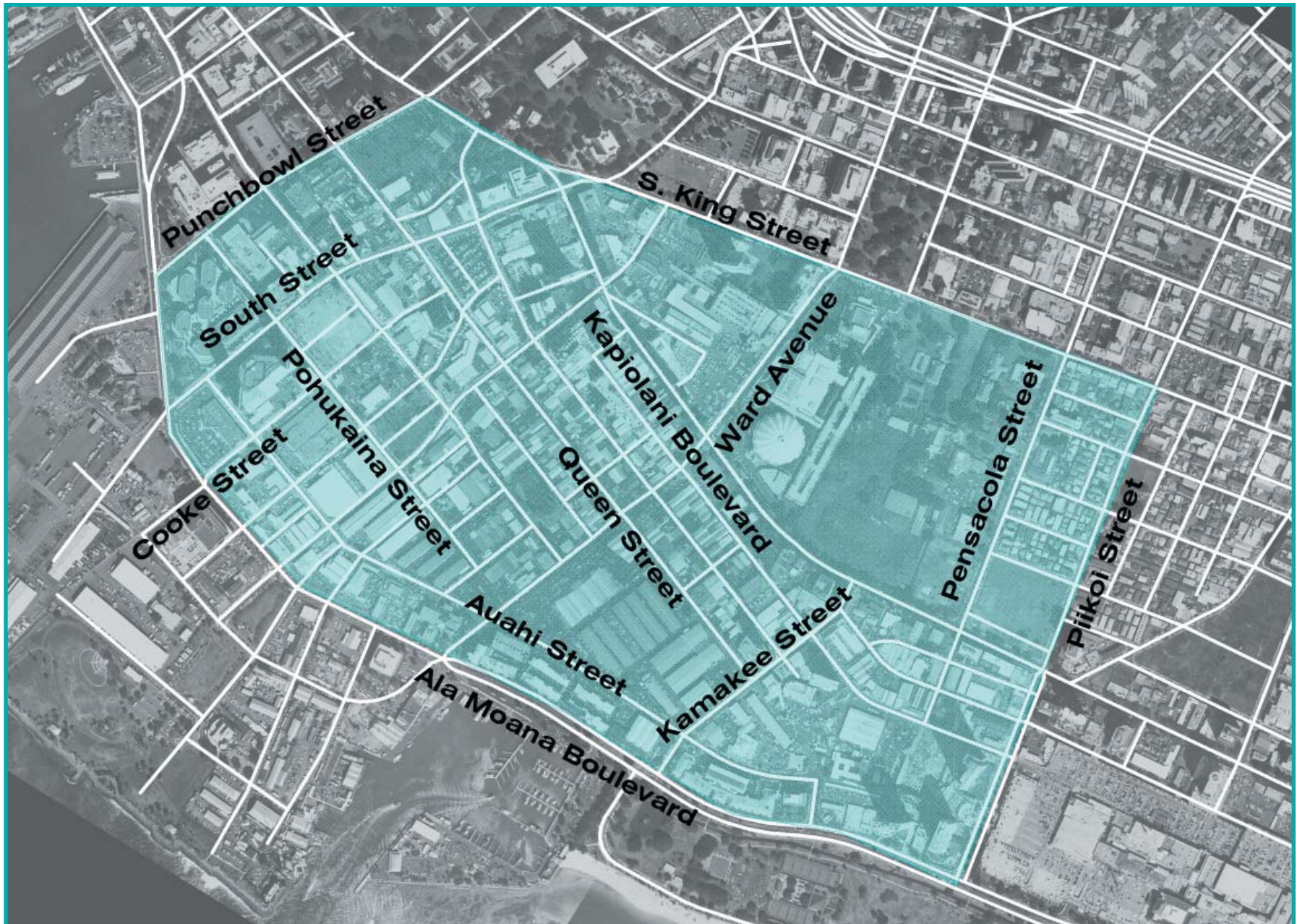


Figure 4: Kakaako Mauka Area





## B. EVALUATION OF 1999 MAUKA AREA PLAN

The current Kakaako Mauka Area Plan was adopted in August of 1999. The plan addresses a wide range of land use, transportation, open space, recreation, urban design, housing, utility, historic, cultural, social, and safety issues. The following summary evaluates the multimodal transportation elements of the current plan and defines issues associated with the current policies. The evaluation specifically analyzes the Transportation Plan found in Chapter II of the current Mauka Area Plan.

### 1) STREETS AND ROADWAYS

The streets and roadways plan classifies all existing thoroughfares into major and local categories. Currently, 90% of the streets and roads in the Area are publicly owned and ten percent are privately owned. The plan recommends the acquisition of the private facilities and dedicating them as public right of ways. Most of the roads, according to the plan, are in a state of disrepair and have not been upgraded in the 50 years. Due to the condition of most roadways the plan suggests constructing roadways with new cross section dimensions. The dimensions from the plan are shown in Figure 7. The plan also recommends removing many of the local streets to create large blocks or “superblocks”. The superblocks are proposed as a development strategy and are not intended to deal with circulation issues. Also recommended is converting two way traffic on Queen and Halekauwila to one-way couplets. In this proposal Queen would become a one way street heading Ewa and Halekauwila would become a one way street heading Diamond Head. The following bullets identify issues with the current plan.

- The acquisition of the private streets is critical to circulation and should be pursued in more detail in the plan update.
- Construction and reconstruction of streets presents the opportunity to develop multimodal access and create safer environments for all modes of transportation. More specific details on cross sections should be developed in the plan update.
- One way streets improve roadway capacity but sacrifice the pedestrian, bicycle, and transit environment. The plan update should address the needs of all modes of transportation in the Area.
- Many streets that “lack the capacity to carry the volume of traffic anticipated” should not increase motor vehicle capacity at the sake of the pedestrian, bicycle, and transit circulation.
- Closing local streets to create superblocks sacrifices the quality of the pedestrian environment and is counterproductive to traffic circulation. The plan update should address the need for a well defined street grid.



Figure 5: Kakaako's streets have several functions.



Figure 6: Long blocks with few intersections are present throughout Kakaako.

The typical cross section for major roads include 4-6 travel lanes, no on-street parking, and attached sidewalks.

The typical cross section for local roads include 2-3 travel lanes with attached sidewalks.

ROADWAY DIMENSIONS						
STREET	EXISTING			PROPOSED		
	CLASS	R.O.W.	CURB-TO-CURB	CLASS	R.O.W.	CURB-TO-CURB
Ala Moana	MAJOR	100	72	MAJOR	100	72
Cooke	MAJOR	50	38	MAJOR	50	38
	MAJOR	50	38	MAJOR	60	44
Halekauwila	LOCAL	50		MAJOR	60	44
Kamakee	LOCAL	40		MAJOR	60	44
	LOCAL	76	60	MAJOR	76	60
Kapiolani	MAJOR	100	64	MAJOR	100	64
King	MAJOR	80	64	MAJOR	80	64
	MAJOR	90	66	MAJOR	90	66
Pensacola	MAJOR	76	60	MAJOR	76	60
Piikoi	MAJOR	80	64	MAJOR	80	64
Punchbowl	MAJOR	70	54	MAJOR	70	54
Queen (Punchbowl to South)	MAJOR	56				
Queen (South to Kamakee)	MAJOR	56		MAJOR	60	44
Queen Extension				MAJOR	100	84
South (Kapiolani to Queen)	MAJOR	60		MAJOR	76	60
South (Queen to Ala Moana)	MAJOR	60	44	MAJOR	66	50
Waimanu	MAJOR	56	40	MAJOR	80	64
	LOCAL	40		LOCAL	50	34
Ward	MAJOR	80	64	MAJOR	80	64
Auahi	LOCAL	60		LOCAL	60	44
Cummins	LOCAL	40		LOCAL	50	36
Dreier	LOCAL	40		LOCAL	50	36
Ilaniwai	LOCAL	40		LOCAL	50	36
Kamaile	LOCAL	40		LOCAL	50	36
Kamani	LOCAL	40	36	LOCAL	50	36
Kawaiahao	LOCAL	40		LOCAL	50	36
Kona	LOCAL	40		LOCAL	50	36
Koula	MAJOR	50	36	LOCAL	50	36
Mission	LOCAL	40		LOCAL	40	
Pohukaina	LOCAL	50		LOCAL	60	44

Figure 7: Roadway Dimension Table

## 2) PARKING

The plan suggests parking is a significant problem in Area due to informal parking areas and insufficient supply. The plan discourages the use of on-street parking in favor of on-site enclosed parking spaces. Once adequate off-street parking is available, the plan suggests on-street parking will not be permitted. Public parking facilities are also programmed into the supply for future use. The plan also mentions the need for a shuttle service to connect parking facilities together. The following bullets identify issues with the current plan.

- Removing on-street parking adversely affects the short term parking needs of retail and office users. On-street parking provides a buffer to motor vehicles along sidewalks and encourages supportive pedestrian environments. Removing parking sacrifices pedestrian safety. The plan update should address strategies for on-street parking.
- Locating public parking garages in a few specific locations will only serve adjacent land uses and not serve the robust parking needs for this Area. The plan update should explore possibilities for several parking garages distributed throughout the Area with supportive pedestrian connections.
- The HCDA role in parking should be strategic. The plan update should develop a clear vision of HCDA's role in parking.

## 3) PEDESTRIAN, BICYCLE, & TRANSIT

The plan acknowledges the need for a pedestrian, bicycle and transit circulation system that is safe and attractive. To achieve that goal the plan recommends policies to minimize the use of automobiles by promoting walking, biking, and transit as viable means of transportation.

The proposed pedestrian environment is a system of pedestrianways between superblocks, 6' to 8' sidewalks along all improved public streets and pedestrian malls. The system, located 45' feet about the street level, is designed to link residential buildings and minimize interaction with motor vehicles. The HCDA is noted as financially responsible for the construction of the pedestrianway system. Open stairwells and/or ramps would be provided at the ends of the pedestrianways to provide transition to the street level. On the street level the plan calls for 10' wide crosswalks with curb ramps at all intersections that transition into the 6' - 8' wide sidewalks.



Figure 8: On street paid parking is presented in several locations.

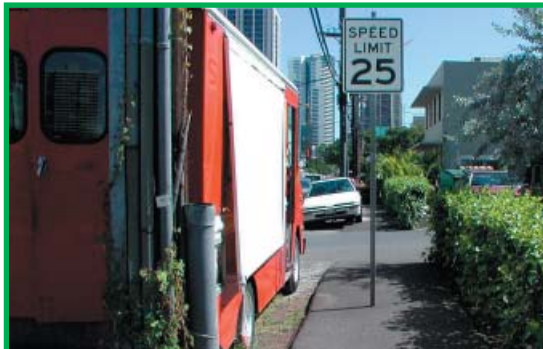


Figure 9: Barriers to pedestrian circulation exist in popular walking areas.



Figure 10: Adjacent parks are destinations for pedestrians and bicycles

The plan acknowledges that there are no bicycle facilities in the Area. The study also references the “Bicycle Usage Study” conducted by State DOT that suggested bicycle usage in the Area is very low. The plan outlines a bikeway system that incorporates streets, bicycle lanes, and bicycle paths. Local streets are not programmed with bike lanes and require bicyclists to share roadway with motor vehicles. Striped bicycle lanes or signed bicycle routes are proposed along major streets. Pathways are also proposed in parks and other exclusive bicycle/pedestrian areas. The plan suggests that bicycle racks, rental lockers, and bicycle storage areas be provided in public parking garages and other convenient locations. The plan also references the “Bike Plan Hawaii” Final Report for guidance on developing future bicycle facilities.

The public transportation portion of the plan encourages additional use of the existing bus transit routes. Specifically, the plan suggests TheBus will become a critical part of life in the Area as it serves Honolulu and Oahu. Suggested improvements include increasing level of service and relocating bus routes to better serve new developments. Shelters and benches are also recommended at all bus stops in the Area. A proposed shuttle system is also suggested as a way to offer frequent internal circulation in the Area.

The following bullets identify issues with the current plan.

- The pedestrian, bicycle, and transit recommendations are not integrated and do not support multimodal travel. The plan update should provide details on integrating all modes of travel.
- The proposed pedestrian environment is too general and needs further refinement and vision. The plan update should develop a hierarchy of pedestrian environments that supports walking.
- The pedestrianway system is impractical financially and physically. The plan update should address pedestrian activity on the street level.
- The bicycle plan does not develop a clear hierarchy of facilities or details on integrating bicycles into roadway improvement projects. The plan update should develop a bicycle network plan.
- The transit policies are broad and do not address opportunities to create development near existing high frequency transit corridors. The plan update should address transit oriented development in the Area.





## B. OVERVIEW OF CURRENT CONDITIONS

After issues with the current plan were identified a comprehensive study was conducted to evaluate the current conditions in the Area. This study involved two parts. First, a field survey of the Area was conducted on February 21-24, 2005. This study investigated all modes of travel and inventoried transportation issues and opportunities. Second, an analysis of existing land use and traffic data was conducted using Geographic Information Systems (GIS). GIS was used to evaluate current conditions and detail future scenarios (provided by Oahu Metropolitan Planning Organization). Details for each mode are provided below and summarized on the following pages.

- 1) Transit routes were observed and ridden along most streets with special emphasis placed on Kapiolani Boulevard and King Street. The study involved walking and waiting at major stops during peak and off-peak hours. Notes were collected on frequency of buses, passengers boarding and passengers alighting of each bus. Pictures were taken at several stops to inventory amenities, but a physical inventory of stops was not conducted during the field study.
- 2) The pedestrian environment was studied by walking all of the major and some of the local roads in the Area. Cross sections of right-of-ways were detailed and measured. Notes and photographs were also taken to inventory existing sidewalks, benches, and landscaping areas.
- 3) Existing bicycle facilities were inventoried and measured. In the field, the number of bicyclists in the Area was recorded by time of day and location.
- 4) Traffic patterns were observed during peak and off-peak times of the day. Specific problem areas were noted and detailed. Traffic data was obtained from OMPO and analyzed for current day and 2025 conditions.
- 5) An evaluation of land uses was conducted based on field research and geographic information systems (GIS) databases. GIS data sets were provided by the City and County of Honolulu based on aerial photography flown in 2002.
- 6) Multimodal issues and opportunities were studied and inventoried. By studying how the various modes interacted in the Area, it was possible to note where connections were adequate or lacking.



Figure 11: Access and circulation issues were observed and noted.



Figure 12: Site walks were conducted to evaluate walking environments.

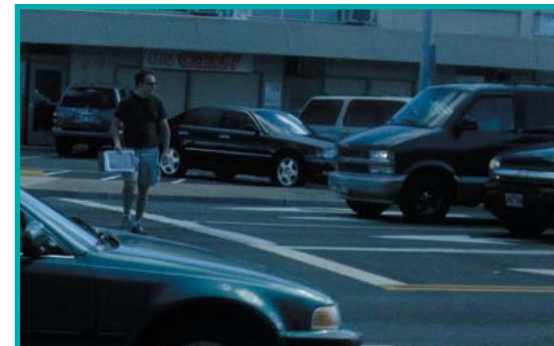


Figure 13: Roadway lane configuration and width was inventoried.





Figure 14: TheBus fleet is equipped with bicycle racks.

## 1) TRANSIT SERVICE

The Area has a wide range of public and private transit service. Public transit is provided by the TheBus and private service is offered by the Waikiki Trolley. Both systems provide transportation to a variety of destinations. The systems overlap service in some roadway corridors but serve two different markets. TheBus routes and schedules are designed for commuters and residents and the Waikiki Trolley routes provide circulation between major tourist destinations.

### THEBUS

TheBus is a public transit agency that operates buses and small vans. TheBus operates over 100 routes in the Honolulu area with connections throughout Oahu. Currently there are 55 routes serving the Kakaako Mauka Area (see Figures 19 and 22). The routes are separated into two types; town and country. Town routes provide connection between the Area and greater Honolulu. Country routes connect the Area and Honolulu to further destinations, such as Kailua/Kaneohe, the North Shore, and Makaha.

Almost all of the town routes that serve the Area operate all day (4:00 a.m. to 10:00 p.m.) year round. Conversely almost all of the country routes serving the Area offer service during peak travel periods (4:00 a.m. to 8:00 a.m. and 3:00 p.m. to 7:00 p.m.). All but eight of the town and country routes operate on peak frequencies between 8 and 30 minutes. TheBus also operates a high frequency bus route, TheTransit (Route E), that offers 10-15 minute service throughout the day. This service provides connections to major destinations within and just outside of the Area.

Town and Country transit service is available in most major street corridors in the Area. King Street is home to the majority of town routes and Kapiolani Boulevard hosts most of the country routes. Both streets provide Ewa-Diamond Head transit connections. Town routes also provide most of the Mauka-Makai connections on Ward Avenue and Pensacola Street.

TheBus stops typically have a sign indicating the stop, some travel information about the routes serving the stop, and a bench for sitting. Stops with a high number of routes have a trash receptacle, lighting, newspaper boxes, shelters and landscaping. Most stops are connected to the sidewalk system.



The vehicles operating TheBus service in the Area are ADA accessible and some models offer low floor entry. The fleet is mostly 40' long 45 passenger diesel Gillig buses. The entire fleet is equipped with the racks to hold two bikes and some vehicles have racks to hold three bikes.

One-way fares, with a transfer, are \$2.00 for adults, \$1.00 for youth, and \$1.00 for seniors with a discounted card. Monthly passes are available to adults for \$40.00 and youth for \$20.00. Annual passes are also available for \$440.00 and \$220.00 respectively. Visitors can purchase a 4-day unlimited pass for \$20.00. Persons with disabilities are also offered a pass for discounted rides.

#### THE WAIKIKI TROLLEY

The Waikiki Trolley is private service operated by E Noa Tours. The Waikiki Trolley operates four routes in the Honolulu area oriented to tourists. Two of the Waikiki Trolley routes, the red line and yellow line, serve destinations in the Kakaako Mauka Area. The red and yellow lines provide service throughout the Area, with connections between downtown, Aloha Tower Marketplace, Ward Entertainment Center, and Ala Moana Shopping Center.

The red line operates from 10:15 a.m. to 4:15 p.m. seven days a week and the yellow line operates from 10:00 a.m. to 5:30 p.m. seven days a week. The red line operates on 45 minute frequencies and the yellow line operates on 30 minute frequencies. The red line provides service on Punchbowl Street and Pohukaina Street. The yellow line provides service on Pohukaina Street and Ala Moana Boulevard.

The Trolley stops at major destinations and has signed stops along the route. The Trolley does not stop at TheBus stops and bicycles are not permitted on the vehicles. The service is operated with rubber tire trolleys with perimeter seating. Most of the vehicles are open air and high floor access. One day unlimited passes are \$25.00 for adults, \$12.00 for children, and \$18.00 for seniors. Four day passes are available for \$45.00, \$18.00, and \$27.00, respectively.

Detailed transit service maps are provided on page 14 and 15.



Figure 15: Stops along Kapiolani Boulevard offer several amenities.



Figure 16: Destinations near Ala Moana are accessible on the Waikiki Trolley.



Figure 17: The Waikiki Trolley exclusively uses rubber tire trolleys.



Figure 18: Kapiolani Boulevard is a popular destination for shoppers.

*CountryExpress!* (Route C) has the fewest stops and most direct routing between the Waianae Coast and downtown Honolulu.

2004 Routes	Origin	Destination	Frequency Level	All Day Service	Peak Hour Service
A	Waipahu	University of Hawaii	<10 min	✓	
C	Makaha	Ala Moana	16-30 min	✓	
3	Salt Lake	Kaimuki	<10 min	✓	
56	Kailua/Kaneohe	Downtown Honolulu	11-15min	✓	
65	Downtown	Kaneohe/Kahaluu	11-15min	✓	
85	Windward Side	Downtown Honolulu	11-15min		✓
88a	North Shore	Downtown Honolulu	11-15min		✓
93	Makaha	Downtown Honolulu	11-15min		✓
98	Wahiawa	Downtown Honolulu	11-15min		✓
201	Waipahu/Ewa Beach	Waikiki	11-15min		✓
9	Pearl Harbor	Palolo	16-30 min	✓	
19	Airport/Hickam	Waikiki	16-30 min	✓	
40	Makaha	Ala Moana	16-30 min	✓	
42	Ewa Beach	Waikiki	16-30 min	✓	
52	Wahiawa	Honolulu	16-30 min	✓	
53	Pacific Palisades	Honolulu	16-30 min	✓	
54	Pearl City	Honolulu	16-30 min	✓	
55	Kaneohe	Honolulu	16-30 min	✓	
57	Kailua	Honolulu	16-30 min	✓	
58	Waikiki/Ala Moana	Sea Life Park	16-30 min	✓	
62	Wahiawa	Honolulu	16-30 min	✓	
81	Waipahu	Downtown Honolulu	16-30 min		✓

Figure 19: TheBus Country Routes



Table 1 (continued): Country Routes (Route extends outside Honolulu)					
2004 Routes	Origin	Destination	Frequency Level	All Day Service	Peak Hour Service
83	Wahiawa	Downtown Honolulu	16-30 min		✓
84	Mililani	Downtown Honolulu	16-30 min		✓
84a	Mililani	Downtown Honolulu	16-30 min		✓
85a	Windward Side	Downtown Honolulu	16-30 min		✓
88	Kahekili	Downtown Honolulu	16-30 min		✓
89	Kailua/Waimanalo	Downtown Honolulu	16-30 min		✓
90	Pearl City	Downtown Honolulu	16-30 min		✓
91	Ewa Beach	Downtown Honolulu	16-30 min		✓
92	Makakilo	Downtown Honolulu	16-30 min		✓
96	Waipio Gentry	Downtown Honolulu	16-30 min		✓
97	Village Park	Downtown Honolulu	16-30 min		✓
101	Ewa Gentry	Downtown Honolulu	16-30 min		✓
102	Kapolei	Downtown Honolulu	16-30 min		✓
103	Waikele	Downtown Honolulu	16-30 min		✓
202	Waipahu	Waikiki	16-30 min		✓
11	Aiea Hights	Ala Moana	>30 min	✓	
20	Airport/Pearlridge	Waikiki	>30 min	✓	
87	Aloha Stadium	Downtown	>30 min		✓

Figure 19: TheBus Country Routes (cont.)



Figure 20: Shelters are provided at several location in major transit

During the morning commute most Country routes travel into Kakaako destinations. In the afternoon most County routes travel out of Kakaako.



Figure 21: Buses deliver pedestrians in and around the Ward Center.

Table 1 (continued): Town Routes (Routes service Honolulu area)					
2004 Routes	Origin	Destination	Frequency Level	All Day Service	Peak Hour Service
B	Kalihi	Waikiki	11-15min	✓	
E	Downtown Honolulu	Waikiki	11-15min	✓	
1	Kalihi	Hawaii Kai	<10 min	✓	
2	Kalihi	Waikiki	11-15min	✓	
13	Liliha	Cambell Ave	11-15min	✓	
15	Pacific Heights	Downtown Honolulu	16-30 min	✓	
4	Nuuanu	Waikiki	16-30 min	✓	
5	Ala Moana	Manoa	16-30 min	✓	
6	Pauoa	University	16-30 min	✓	
8	Waikiki	Ala Moana	16-30 min	✓	
17	Makiki	Ala Moana	16-30 min	✓	
80	Downtown Honolulu	Hawaii Kai	16-30 min		✓
80a	Downtown Honolulu	Hawaii Kai	16-30 min		✓
18	Ala Moana	University	>30 min	✓	
80b	Aina Haina	Downtown Honolulu	>30 min		✓

Figure 22: TheBus Town Routes

#### TRANSIT ISSUES AND OBSERVATIONS

The Area has a wide range of bus transit services. The town service provides an important connection between Hawaii Kai, the Area, downtown Honolulu, and Kalihi. Although town service operates in the Area, there are few routes that offer internal transit circulation. Most of the town routes circulate on the perimeter of the Area. Walk routes from local stops to popular destinations are outside of the typical walking distances and reside in a pedestrian intolerant environments.

The existing country service is frequent and serves important employee and student travel demands. The country service is well distributed in the Area and provides connection to employment centers and schools. Most of the country service is located within a 15 minute or ¼ mile walk from major shopping and recreation areas. This is important to connecting the Area to the rest of Oahu.





Transit service is most available on King Street, Kapiolani Boulevard, and at Ala Moana Shopping Center. The service is appropriate for the corridors as the adjacent land uses support shopping, working, and recreating. The service in this corridor is also appropriate given the Ewa-Diamond Head connections that most trips require.

In most of the major transit corridors pedestrian circulation is unsafe. This is important to transit because all transit patrons are also pedestrians. More details on pedestrian circulation are provided in the next section. Mauka-Makai transit connections are also missing from the transit network. Such connections will become increasingly important as the Area develops residential and commercial uses.

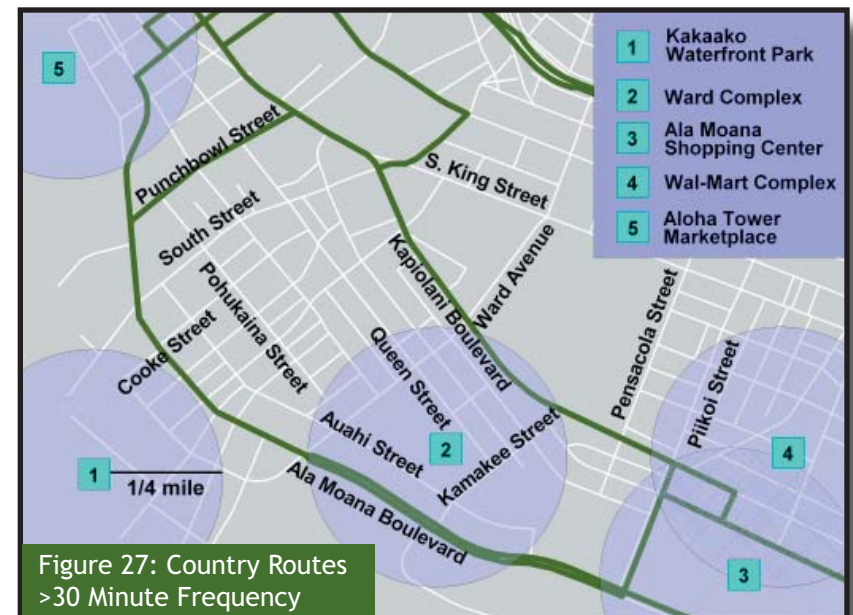
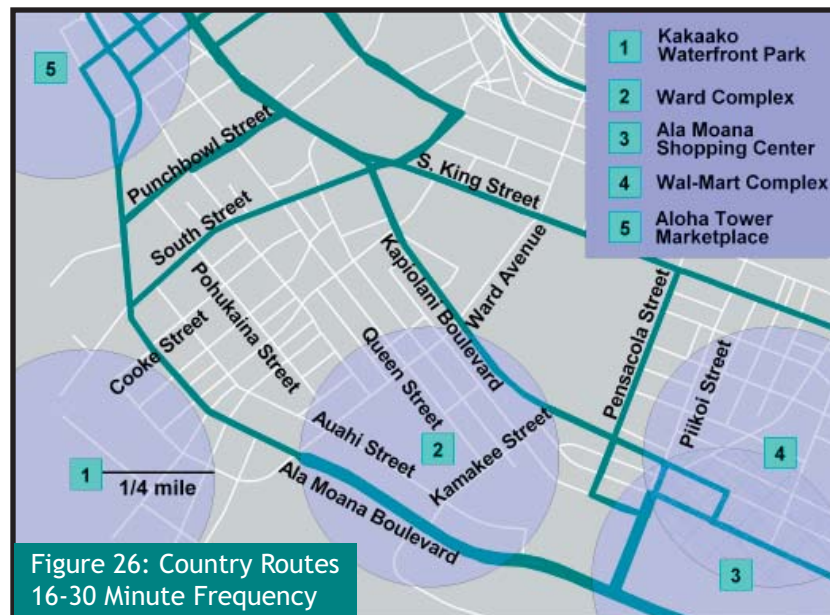
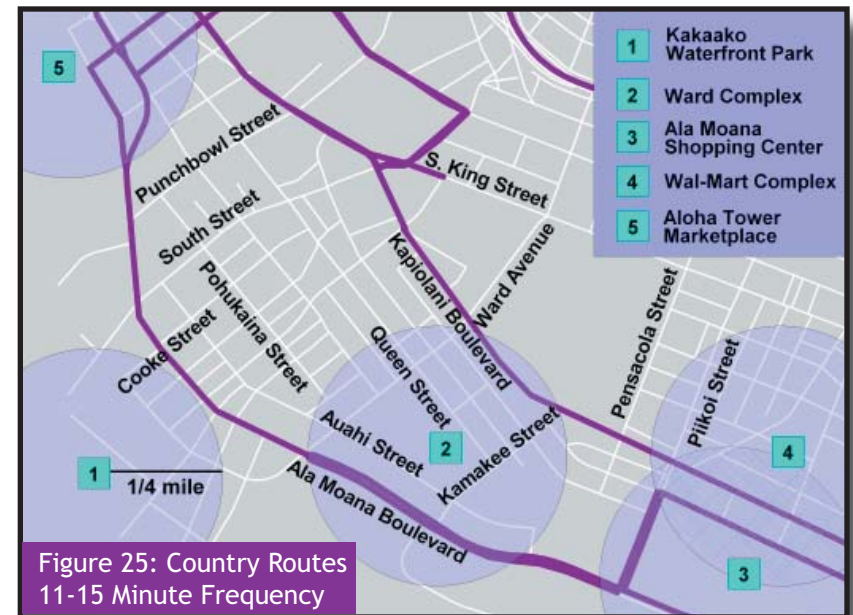
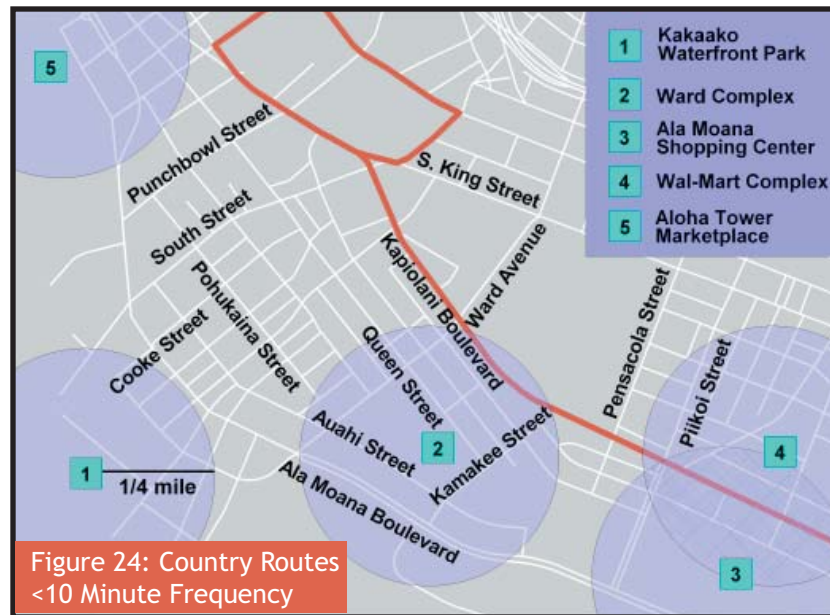
The important destinations in the Area (see pedestrian places in the next section) are not well connected by transit. The Waikiki Trolley is meeting some of the demand between the destinations, but the service is focused on tourists. Employees, senior citizens, teenagers, and local shoppers would benefit from a frequent town route that provided connections between the destinations.

#### TRANSIT OPPORTUNITIES

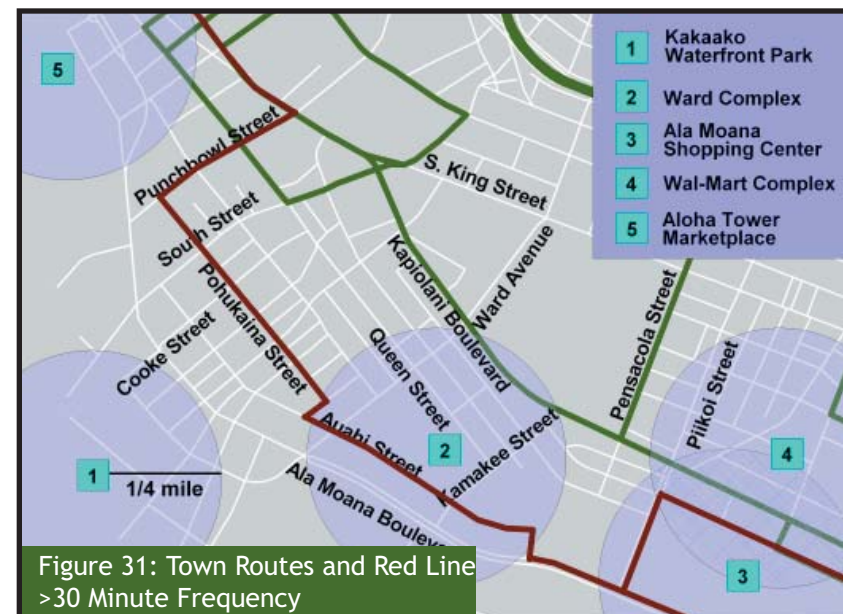
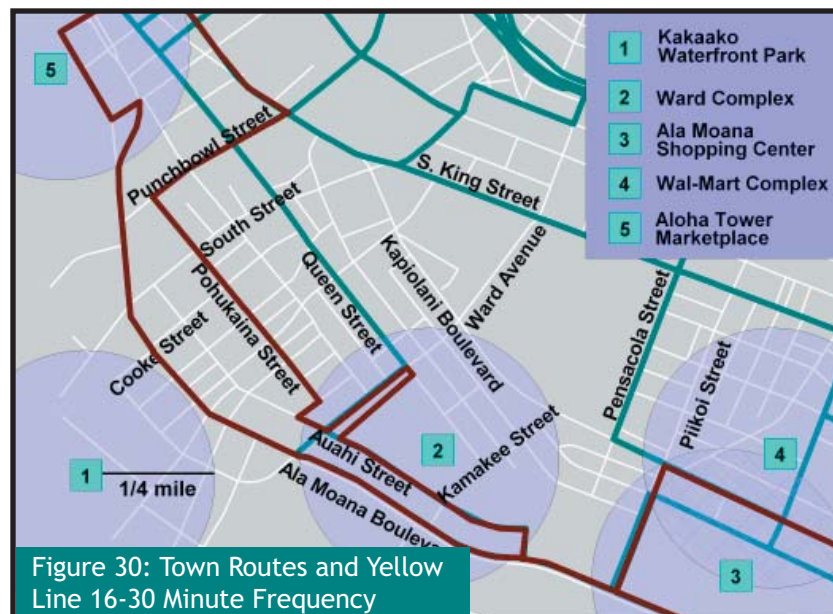
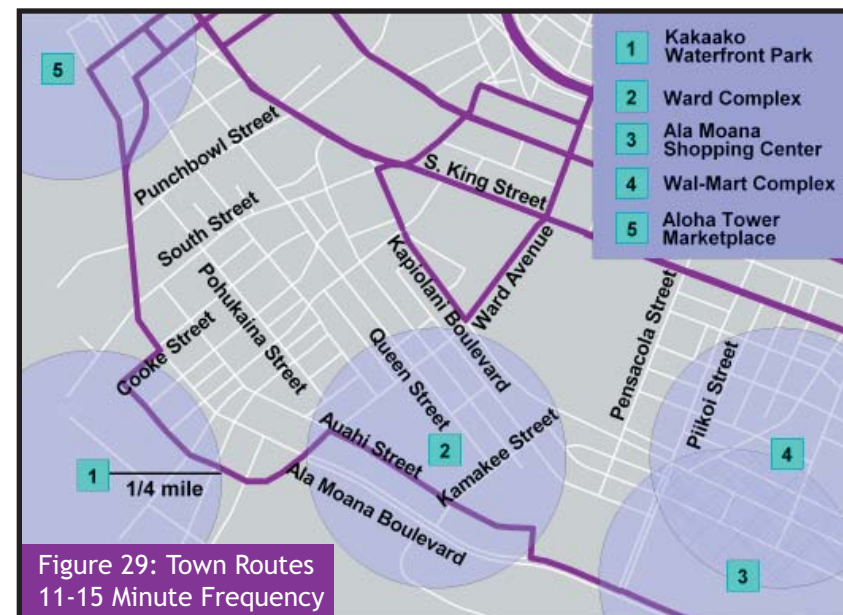
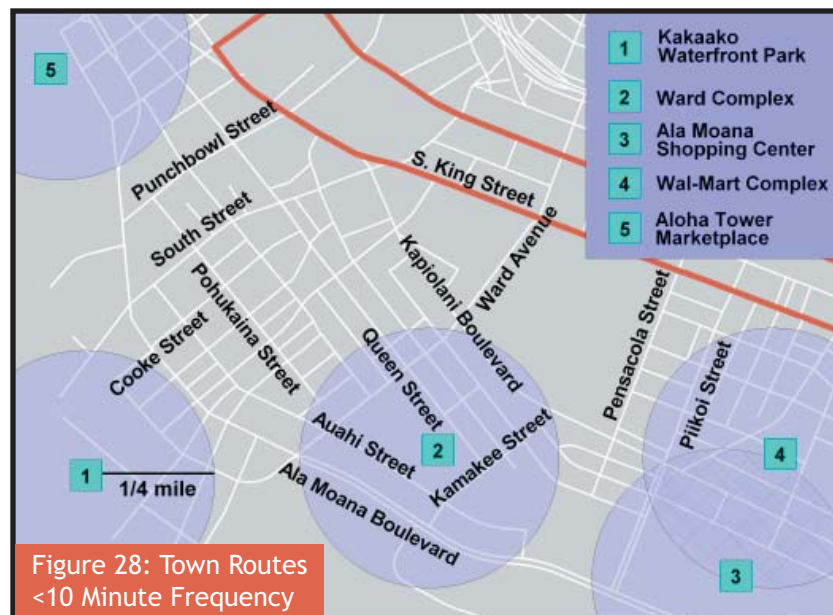
- Many destinations in the Kakaako Mauka Area are within a 15 minute walk or ¼ mile walk from an existing transit stop. Planning for transit oriented development could capitalize on exiting transit routes.
- A few of the proposed rail system alternatives currently being studied will have stations in the Area. Planning for transit oriented development opportunities could provide travel flexibility for residents and employees.
- The Area is adjacent to major transit facilities; Alapai Station and the King Street Busway. Supportive pedestrian connections to the facilities could provide convenient transit access to the rest of Oahu.
- Transit is currently being used by bicyclists to make connections to final destinations in the Area. Developing a bicycle network of lanes and paths could increase mobility for bicyclists who use transit.
- Kapiolani Boulevard and Ala Mona Boulevard have high levels of town and country transit service. The adjacent land uses could develop and redevelop with transit oriented development principles to maximize transportation options and create interesting places.



Figure 23: Connection between bikes and buses is popular in Kakaako.







## 2) PEDESTRIAN ENVIRONMENT

Everyone is a pedestrian at some point in their travel. People walk to and from buses, bicyclists typically park their bike and walk to their final destination and motorists walk from their parked car. Many opportunities for good pedestrian connections can be overlooked without planning. A hierarchy of pedestrian environments and examples of such environments in the Area are defined on the following pages.

### TYPES OF WALKING TRIPS

**Utilitarian Walking** - People walk for utilitarian purposes to get to destinations such as work, school or shopping. Almost all auto and transit trips involve utilitarian walking to reach the final trip destination.

**Rambling** - People ramble as a recreational activity. They walk the dog or push a baby carriage. They jog or speed walk for exercise. They go for a walk just for the sake of going for a walk.

**Strolling/Lingering** - In certain settings, people stroll and linger. They stand on the sidewalk and talk with others they meet. They sit on a bench and eat ice cream while watching people. They let children walk with them.

### TYPES OF WALKING ENVIRONMENTS

There are different types of pedestrian environments just as there are different reasons why people walk. Therefore, walking environments should be thought of as arrayed along a continuum of pedestrian friendliness with four classifications:

#### ◀ “Pedestrian Places”

These are districts of limited extent, with mixed-use land development, moderate to high densities, good transit service, great streets, and extensive pedestrian accommodation in the form of sidewalks, crosswalks, and other facilities. Here people will stroll and linger past store fronts and urban landscape features, walking for both utilitarian and recreational purposes.

The acid test for qualifying a place as a pedestrian destination is the actual ongoing presence of significant numbers of people. Pedestrian Places have people moving about between multiple activities -- typically at least three highly identifiable areas such as outdoor seating, a water feature, and pedestrian-oriented shopping.



Figure 32: Fort Street Mall is an example of a pedestrian place.



### ► “Pedestrian Supportive Environments”

These include well-designed residential and commercial neighborhoods, employment centers, parks and recreational areas. These are safe environments for walking, where sidewalks are continuous and buffered from streets, wide enough for passing and walking side by side, and where good street crossings have been provided. Land uses are either dense enough to both generate and attract utilitarian walking trips of reasonably short lengths (half mile or less), or are of the sort that will attract recreational walkers and joggers. Buildings, not parking lots, face streets.

A good test to know if an environment is Pedestrian Supportive is whether or not a parent would feel comfortable letting a child walk ahead of them with minimal supervision.

### ► “Pedestrian Tolerant Environments”

These are areas and corridors where walking is technically safe (there are continuous sidewalks and some kind of reasonably safe street crossings), but the land use patterns are such that little walking activity is likely to be generated. These include arterial street corridors, remote or rural streets and certain light industrial or warehousing areas.

Such places will only attract limited amounts of utilitarian walking, and will not appeal to recreational walkers or strollers. Tolerant environments provide pedestrian facilities, but include a very minimal level of accommodation.

### ► “Pedestrian Intolerant Environments”

This is a polite term for pedestrian hostile areas where walking is unsafe and unattractive. Examples include freeway corridors, certain industrial or extraction land uses, landfills, and major streets and roadways lacking continuous sidewalks.

A major characteristic of Intolerant environments is that they lack pedestrians, either due to a lack of pedestrian accommodations and/or dominance by automobile traffic and auto-oriented land uses.



Figure 33: Supportive environment along Kapiolani.



Figure 34: Tolerant environment along Piikoi.



Figure 35: Intolerant environment along Pensacola.





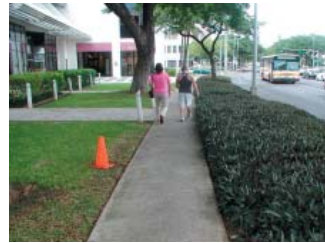

					
		<b>Pedestrian Intolerant</b>	<b>Pedestrian Tolerant</b>	<b>Pedestrian Supportive</b>	<b>Pedestrian Place</b>
<b>Pedestrian Environment</b>					
<b>Physical Characteristics</b>	<b>Sidewalk Presence</b>	<ul style="list-style-type: none"> <li>Local streets have no sidewalks</li> <li>Arterial streets have sidewalks on only one side of street</li> </ul>	<ul style="list-style-type: none"> <li>Local streets have sidewalks on only one side of street</li> <li>Arterial streets have sidewalks on both sides</li> </ul>	<ul style="list-style-type: none"> <li>All streets have sidewalks provided on both sides</li> </ul>	<ul style="list-style-type: none"> <li>All streets have sidewalks provided on both sides with supplemental traffic-calming measures</li> </ul>
	<b>Sidewalk Location and Width</b>	<ul style="list-style-type: none"> <li>Sidewalks lacking, or provided immediately back of curb</li> <li>Walkway width &lt;5'</li> </ul>	<ul style="list-style-type: none"> <li>Sidewalks provided immediately back of curb</li> <li>Walkway width 5' min.</li> </ul>	<ul style="list-style-type: none"> <li>Walkway separated from vehicular traffic by a 5' sidewalk planting strip</li> <li>Sidewalk 6'-8' wide to accommodate passing and pairs of pedestrians walking side by side</li> <li>Next to transit stops, sidewalks are 10' wide and extend to street at boarding spot</li> </ul>	<ul style="list-style-type: none"> <li>The pedestrian realm includes a sidewalk planting strip/pedestrian furnishings zone next to street, a walk/talk zone, and a shy zone next to buildings</li> <li>Through walkway space 8'-10' wide; overall sidewalk width 10'-30' to provide space for pedestrian amenities</li> </ul>
	<b>Sidewalk Planting Strip</b>	None	None	5' minimum, ideally with overstory street trees 20'-30' on center, with clear sight distance triangles at intersections and crossings	5'-10' with overstory street trees in parkway planting strips, or none if tree wells and supplemental planters are provided within wide sidewalks, with clear sight distance triangles
<b>Pedestrian Amenities</b>	<b>Transit Stops</b>	No furniture groupings provided	Benches provided at transit stops	Shelters, benches and trash receptacles provided at transit stops	Transit stops and amenities are integral in the design of pedestrian places
	<b>Pedestrian Furnishings</b>	None	No furnishings along streets not on transit routes	Pedestrian furniture groupings located intermittently along non-transit streets Pedestrian wayfinding provided	Pedestrian furniture groupings, sculptures, drinking fountains, decorative fountains, wayfinding, etc. are located throughout
	<b>Lighting</b>	None	High angle highway lamps, such as cobra heads	Commercial districts have both: <ul style="list-style-type: none"> <li>High angle lamps</li> <li>Additional low angle street lamps for improved lighting at ground level</li> </ul>	Pedestrian places have: <ul style="list-style-type: none"> <li>Overall street lighting</li> <li>Low placement of tungsten lamps</li> <li>Additional light emitted from stores that line the street</li> </ul>

Figure 36: Pedestrian Classification Table

### PEDESTRIAN ISSUES AND OBSERVATIONS

The Area's walking environment consists of several sidewalk types, crosswalks and informal pathways. All of the major streets and most local streets have sidewalks that support utilitarian walking. Most of the major streets have 4'-6' sidewalks on both sides of the street. Local streets with a curb and gutter have 3'-4' sidewalks on at least one side of the street. Local streets without curb and gutter do not have sidewalks. Crosswalks are present at major street intersections with pedestrian signals. Local streets only have crosswalks when they intersect with a major street. Local streets with no curb or gutter have informal pathways along the side of the pavement.

The walking environment is most hostile near major streets with high traffic volumes. All of the major streets act as a barrier to pedestrian activity. They offer limited crossing opportunities and some blocks require j-walking or walking in an opposing direction to reach destinations on the other side of the street. This is true of King Street, Kapiolani Boulevard, and Ala Moana Boulevard. Streets with high levels of transit service have tolerant pedestrian connections, but require crossing wide streets to access transit stops with service in a reverse direction.

The other elements that support walking, besides the presence of a physical sidewalk, are present in few locations. Most of the land uses along streets focus on automobile access and offer few connections to front doors from sidewalks. Likewise, buildings are setback from the street and most sidewalks are adjacent to parking lots. The presence of landscaping as a buffer along the roadway is sporadic.

The following pages provide a detailed analysis of the pedestrian environment in the Area using the walking environments previously described (Intolerant, Tolerant, Supportive, and Place). Each of the streets in the study area is mapped based on this system. Pedestrian places are also mapped with details.

### PEDESTRIAN OPPORTUNITIES

- Pedestrian supportive areas generally have underutilized right of way next to sidewalks. Enhancing the pedestrian realm could be the first step to a more supportive walking environment.
- Transit service along King Street, Kapiolani Boulevard, and Ala Moana is well used. Pedestrian connections from major transit stops could increase mobility for workers and residents in the Area.
- There is only one pedestrian place in the Area. Several pedestrian places reside within a 1/4 mile of the Area but they are isolated by wide streets with high volumes of traffic. The Area needs more pedestrian places that connect to destinations outside the area.
- All but one of the pedestrian places in the Area is focused on commercial activities. The Area needs additional places for civic activities and informal gathering.

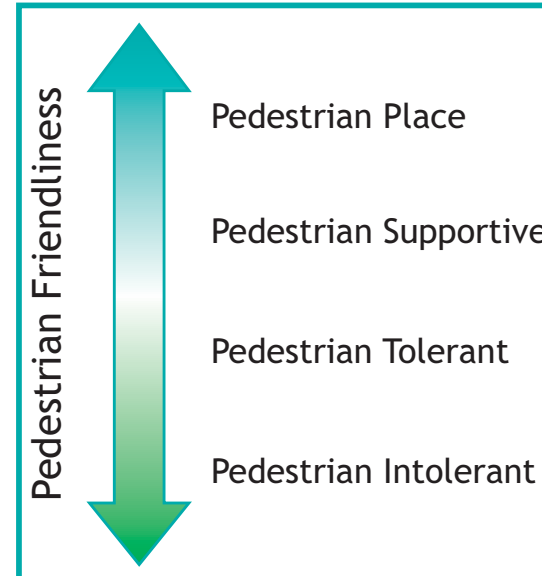


Figure 37: Scale of Pedestrian Friendliness



Figure 38: Crosswalk are present on all major street intersections.



# Intolerant Connections

Queen Street



Figure 39: Pedestrian Intolerant



**PEDESTRIAN INTOLERANT**

Pedestrian Intolerant areas are viewed as hostile areas where walking is unsafe and unattractive. In the adjacent picture an intolerant portion of Queen Street is shown in detail. There is no sidewalk, no physical separation from the roadway, parking separates the buildings from the walk zone, the urban design offers no protection from the rain or sun, and there is no lighting or furnishings. A positive feature of Queen Street is that traffic volumes and speeds are both low. Figure 40 is a map of the intolerant connections in the Area. The intolerant conditions in Cummins and Kona Street are shown in the adjacent pictures

Figure 40: Intolerant Connections

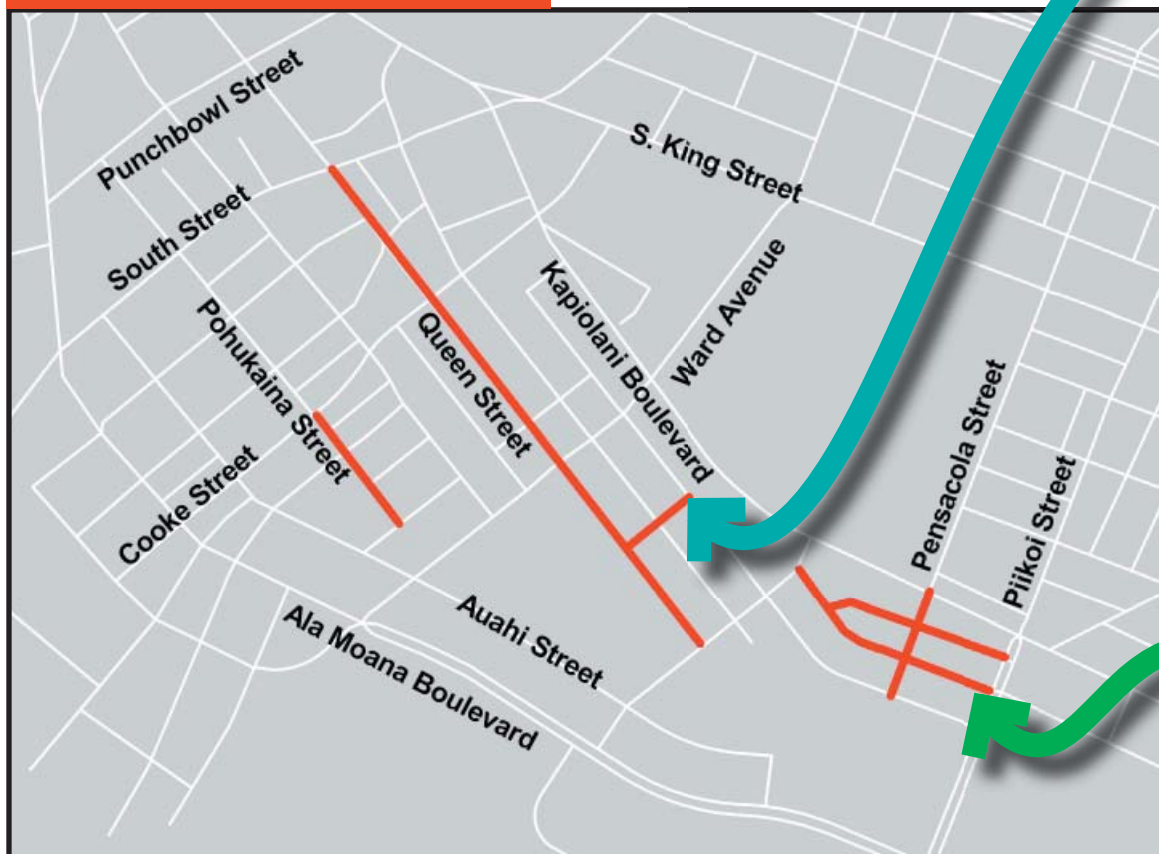


Figure 41: Cummins Street



Figure 42: Kona Street

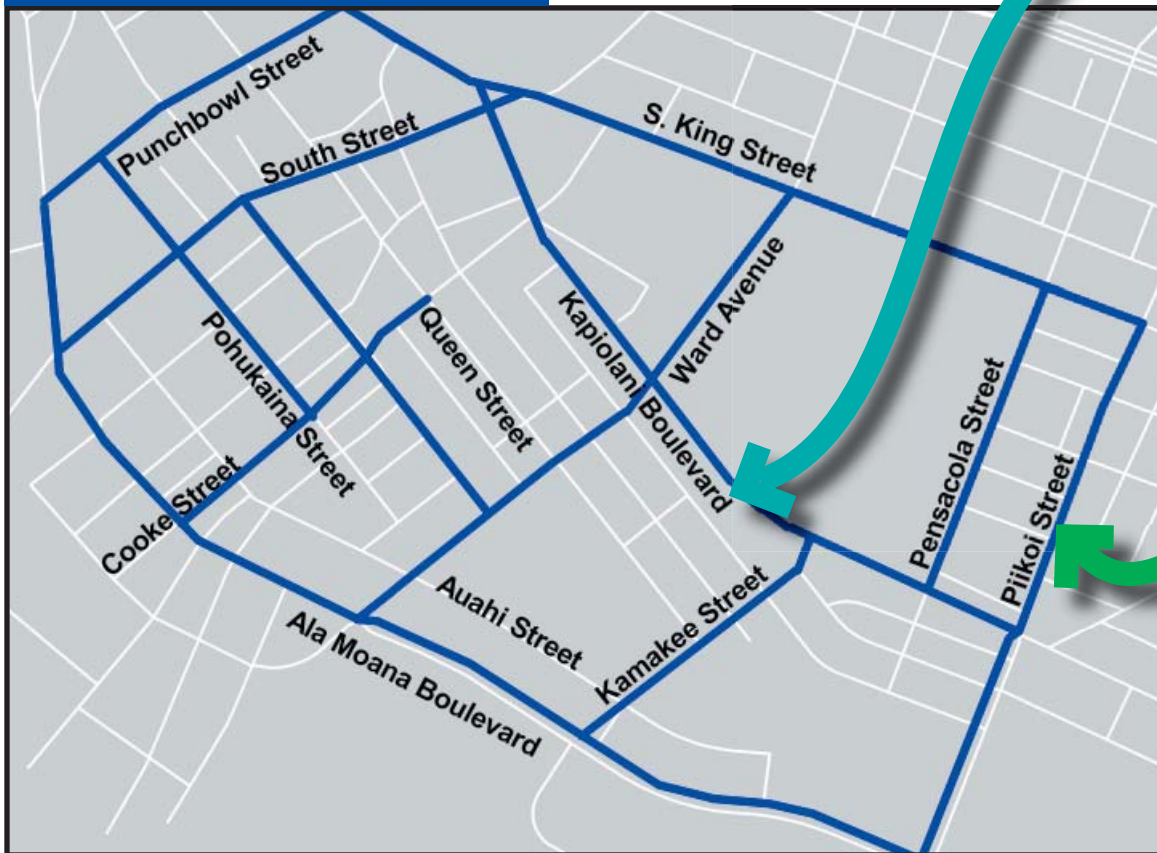




Figure 43: Pedestrian Tolerant

**PEDESTRIAN TOLERANT**

Pedestrian Tolerant areas are technically safe for walking. There are generally continuous sidewalks and some kind of reasonably safe street crossings, but the land use patterns generate few walking trips. In the adjacent picture a tolerant section of Ala Moana Boulevard is shown. The tolerant conditions are a sidewalk, a physical separation from the roadway (where the furnishings, such as streetlights and fire hydrants are kept), a minimum building setback, and lighting. Figure 44 is a map of the tolerant connections in the Area. Kapiolani Boulevard and Piikoi are shown in pictures to the right. Most of the streets in the Area are tolerant.

**Figure 44: Tolerant Connections****Figure 45: Kapiolani Boulevard****Figure 46: Piikoi Street**



# Supportive Connections

## Cooke Street



Figure 47: Pedestrian Supportive

**PEDESTRIAN SUPPORTIVE**

Pedestrian Supportive areas are safe walking environments where sidewalks are continuous and buffered from motor vehicle traffic. The adjacent picture shows a supportive section of Halekauwila Street. This section is classified as supportive because the parking buffers the pedestrians from traffic, walkable land uses are present on one side of the street, lighting is provided, a corner park is available for recreation or leisure, and the sidewalk is protected by trees and awnings. Figure 48 is a map of the supportive connections in the Area. The photo of Halekauwila Street provides an example of a Supportive connection in a commercial area, while Elm Street is in a residential area.

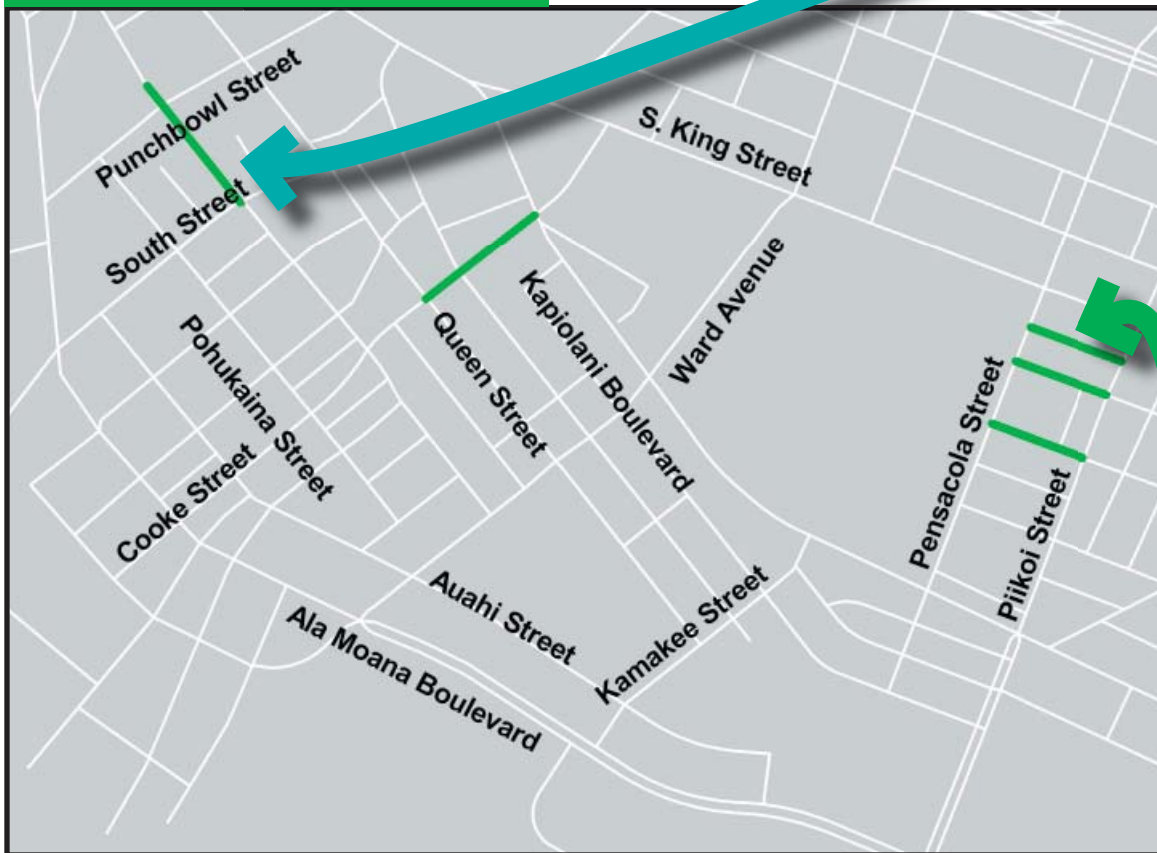
**Figure 48: Supportive Connections****Figure 49: Halekauwila Street****Figure 50: Elm Street**





Figure 51: Kakaako Waterfront Park Image





**KAKAAKO WATERFRONT PARK**

Kakaako Waterfront Park is an example of a recreational place. The main entrance to the park is located at the makai end of Cooke Street. The park runs along the water from Kewalo Basin to Keawe Street. In the park there are multiple pavilions with terraced roofs providing shade. Rest rooms, outdoor showers, benches, and drinking fountains line the main brick path along the water. Asphalt paths wind throughout the park and provide areas for biking, inline skating, walking, etc. A popular activity of many children is to slide down the hills on flattened cardboard boxes. There are also swimming areas and a popular surfing break accessible through the park.

Figure 52: Location of Kakaako Waterfront Park

**WHY IS IT A PLACE?**

- Commercial activity is not the primary focus of the land use, but retail uses are in walking distance.
- Pathways provide space for walk/talk zone, passing, pairs of pedestrians, and bikes.
- Planters and trees line the main promenade.
- Transit stops on Ilalo Street services the park
- Pavilions are provided with picnic tables, rest rooms, drinking fountains, and other amenities.
- Shower facilities are provided along promenade, along with drinking fountains, benches.
- Lighting is provided throughout the park, and along the promenade.
- Traffic and pedestrians interact at slow speeds.





Figure 53: Ward Complex Image



**WARD COMPLEX**

The Ward Complex is an example of a place that is focused around retail. There are few civic amenities in the complex and it is highlighted to show how urban design details can create elements of place. It is important to note that future pedestrian places should accommodate civic amenities and activities. The complex has several shops, restaurants, movie theaters, and a gaming center. The area is served by the Waikiki Trolley and TheBus operates around its perimeter. Bike racks are available, and there is free parking (both surface and garage). The size of this complex lends itself well to a “park once” environment as many of the shops, theaters, and restaurants are within ¼ mile of each other. Benches are provided in shaded areas along store fronts, and landscaping acts as a buffer from the traffic.

Figure 54: Location of Ward Complex

**WHY IS IT A PLACE?**

- Complementing retail uses provide opportunities for people to gather and linger
- Auahi Street and Kamakee Street have sidewalks on both sides
- Planting strips and planters are provided within sidewalks and in front of theater area
- TheBus and the Waikiki Trolley have stops in and around the complex
- Maps and directories are provided at the intersection of Kamakee and Auahi, and benches are located throughout the area
- Street lamps light the area, along with the light emitted from stores, restaurants, and the movie theater



Figure 55: Ala Moana Shopping Center





**ALA MOANA SHOPPING CENTER**

Ala Moana Shopping Center is a large retail establishment in a traditional shopping mall format. The focus of this place is on retail activity and there are few places for civic activity. This example is highlighted because several features found internally are key to creating pedestrian places. On site there is a major transfer center for public and private transit operations and bicycle racks are distributed throughout the site. Nearby hotels are sources for pedestrians and many visitors travel to Ala Moana by foot even though the surrounding pedestrian environment is intolerant.

Figure 56: Location of Ala Moana Shopping Center

**WHY IS IT A PLACE?**

- Although the primary land use is retail and there are few civic places, all forms of walking, internal amenities, and internal characteristics are similar to those found in true pedestrian places.
- TheBus and the Waikiki Trolley have stops at Ala Moana, as it is a major transfer point for most routes. Benches and shelters are provided
- Within the shopping center there are directories, drinking fountains, fish ponds, sitting areas, and many other furnishings
- The light emitted from stores, along with lamps provides adequate lighting throughout the shopping center



Figure 57: Bicycling in Kakaako serves many purposes.



Figure 58: Lack of facilities and traffic result in bicycling on sidewalks.



Figure 59: Kakaako's only bicycle facility is temporary.

### 3) BICYCLE FACILITIES

A typical bicycle system integrates several facility types to create long cross-town routes. The systems provide safe alternatives to riding in the flow of traffic on streets and promotes bicycling for transportation and recreation. Successful bicycle systems also connect to other modes of transportation such as personal automobiles and transit. Typical bicycle facilities used in a system are striped on-street bicycle lanes, signed bicycle routes on low volume streets, and off-street pathways (not sidewalks) with grade separation from motor vehicle traffic. Bicycle networks typically connect to major recreation areas, transit hubs, employment centers, schools, and civic buildings. Several bicycle facilities have been recommended for the Area in previous plans but a bicycle network has not been envisioned.

#### ISSUES AND OBSERVATIONS

Bicycles are important to the mobility of employees, students, and residents in the Area. During the field study, an alarming number of bicyclists were observed in the Area given the lack of safe bicycle facilities. The Area has one on-street bicycle facility and no off-street bicycle facilities. The on-street facility that exists is poorly signed and offers no continuous connection in the Area. The traffic volumes on all major streets in the Area are not safe for beginners and intermediate bicyclists. Only very experienced bicyclists are riding on road. Most bicyclists ride illegally on the sidewalk due to the traffic volumes and lack of facilities. Riding on sidewalks is most prevalent along one way streets.

The only street in the Area that has on-street bicycle facilities that meet criteria for safe bicycling is Queen Street. The Queen Street extension is signed as a bike route and currently has traffic volumes that support a bike route designation. The long term plan for the street will include two travel lanes in both directions with increased volumes. This situation will eliminate the bike route designation and also leave no width for a striped on-street bicycle lane. All other streets in the Area are open to bicyclists by state law but offer limited protection from motor vehicle traffic. As mentioned in the transit section, TheBus vehicles are equipped to carry 2-3 bicycles per vehicle. The Waikiki Trolley does not accommodate bicycles.

Most of the bicyclists in the Area fall into the beginning and intermediate bicycling category. This category represents bicyclists with basic equipment and skills. Most bicyclists in this category ride less than 2 miles to a destination and are not likely to ride with the flow of motor vehicle traffic on-street without a striped bicycle lane. Also prevalent in this Area are bicyclists riding for a utilitarian purpose; not recreation. Most bicyclists were riding with backpacks, grocery bags, and in one instance a surf board.





**BICYCLE OPPORTUNITIES**

- Bicycles are important to multimodal circulation in the Area. Providing a network of on-street and off-street bicycle facilities could increase bicycling as a mode of transportation.
- The climate and topography of the Area are ideal for long bicycle routes. Planning a network of bicycle facilities could provide access to other bicycle facilities Ewa and Diamond Head of the Area.
- Local streets in the Area have low traffic volumes. Developing a network of bicycle routes on low volume streets would provide safe connections from major corridors.

Figure 60: Bike Route In Area

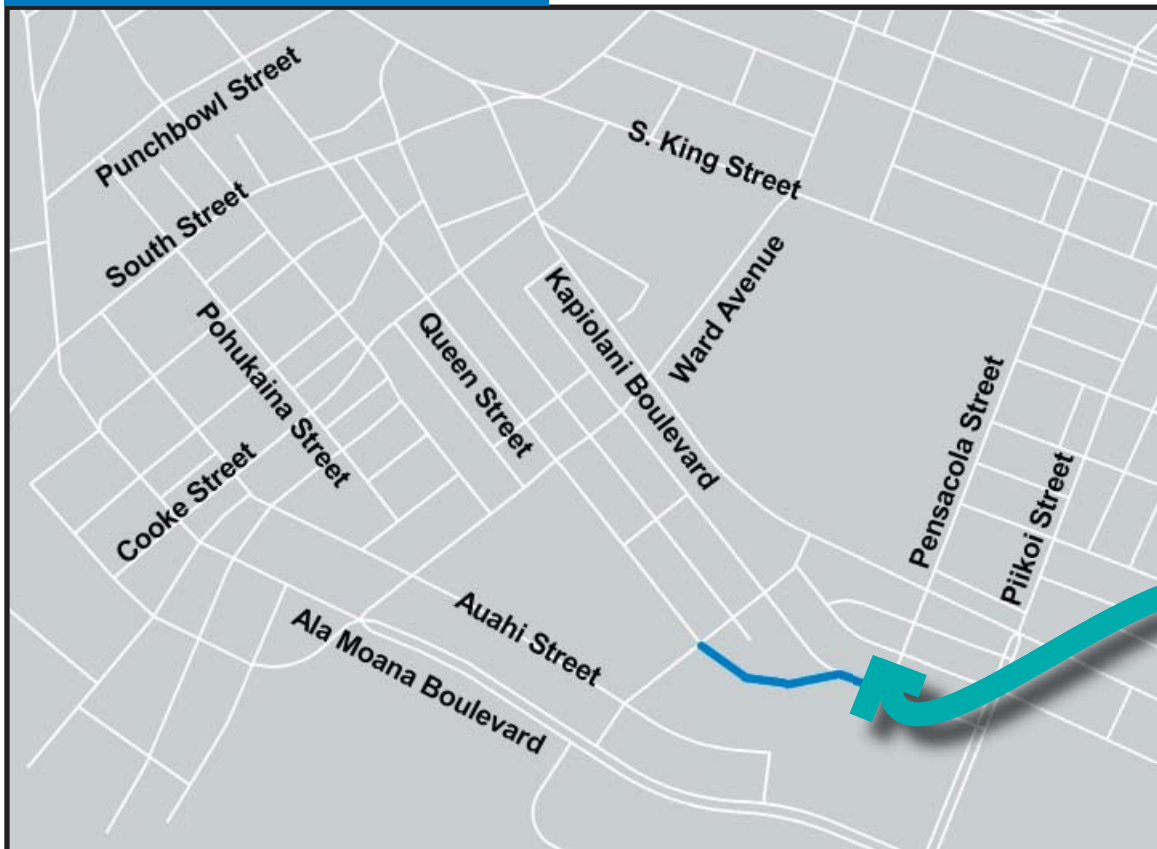


Figure 61: Bicycling on sidewalks is dangerous near intersections.



Figure 62: Kapiolani Boulevard is a well traveled bicycle corridor.



Figure 63: The future of Kakaako's only bike facility is unknown.

#### 4) TRAFFIC PATTERNS

A comprehensive traffic count database for major and local streets in the Area is not available from the State of Hawaii or City & County of Honolulu. Because count data is unavailable, Oahu Metropolitan Planning Organization (OMPO) travel model was used to estimate current traffic conditions and 2025 traffic volumes for 12 roadways in the Area. OMPO's travel model provides a calculated estimate of traffic and is calibrated using specific count locations. Afternoon peak hour traffic data was generated from the travel model and compared to each roadway's ability to handle peak traffic conditions. The areas shaded in red represent 2025 conditions where roadways will have significant delays during peak travel hours. It is important to note that the goals for creating a balanced multimodal system and attractive urban design need to be weighed against solutions that involve roadway expansion.

- The 2025 traffic analysis highlights the ability and inability of the roadway system to handle an extremely congested peak hour traffic volumes.
- The 12 locations shown on this page represent the roadway segments in the Kakaako Mauka Area that will exceed typically peak hour capacity based on peer surveys.
- The model assumes 18% alternative mode share (transit, bike, and walk).
- Year 2000 total traffic is 137,289 (15,531 peak) and year 2025 total traffic is 184,366 (20,652 peak). Peak traffic is 11% of daily traffic.
- Traffic will grow 34% from year 2000 to year 2025.

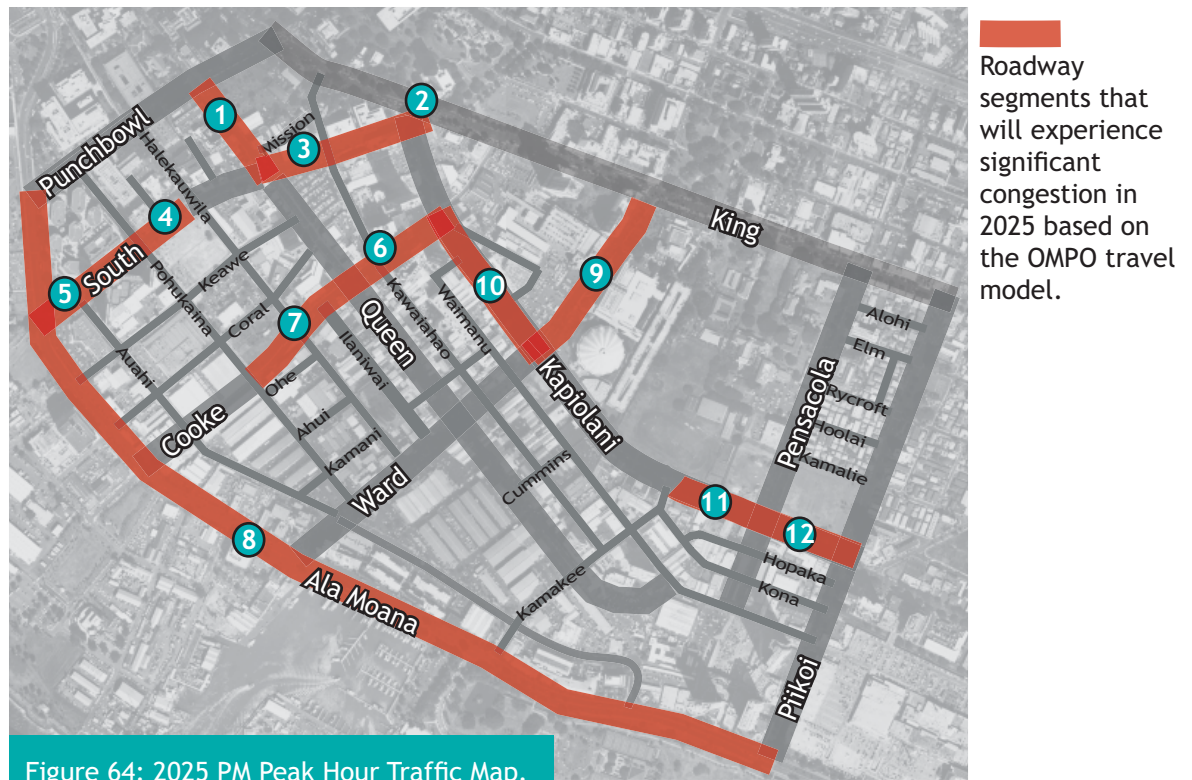


Figure 64: 2025 PM Peak Hour Traffic Map.



Figure 65: PM Peak Hour Traffic Analysis for 12 roadways in the Area.

Location	Peak roadway capacity*	2000 peak volumes	2025 peak volumes	2000 % peak capacity	2025 % peak capacity	2000-2005 growth
① Queen Street	2,964	2,000	3,300	67%	111%	65%
② South Street	1,872	2,200	2,900	118%	155%	32%
③ South Street	1,872	1,200	2,600	64%	139%	117%
④ South Street	1,872	600	1,900	32%	101%	217%
⑤ South Street	1,872	700	2,600	37%	139%	271%
⑥ Cooke Street	1,872	1,200	2,300	101%	194%	92%
⑦ Cooke Street	1,872	600	1,200	51%	101%	100%
⑧ Ala Moana Blvd.	4,294	5,671	5,400	132%	126%	-5%
⑨ Ward Ave	2,964	1,100	3,300	37%	111%	200%
⑩ Kapiolani Blvd	4,455	3,800	5,300	85%	119%	39%
⑪ Kapiolani Blvd	4,455	3,100	4,600	70%	103%	48%
⑫ Kapiolani Blvd	4,455	3,200	4,600	72%	103%	44%

Roadway segments that will experience significant congestion in 2025 based on the OMPO travel model.

\* Peak roadway capacities are based on peer conditions in similar national settings. During the described peak conditions traffic is operating with heavy congestion and delay is significant.

## 5) PUBLIC & PRIVATE RIGHT OF WAYS

The Mauka Area has a wide range of land uses with varying ownership patterns. The Area provides a mix of housing, retail, office, restaurant, service, and industrial uses. Most of the conflicting uses are separated and complementary uses are present in several locations. The Area has a few mixed use projects but the majority of the buildings are single use. The maps on the following page provide details on land allocation by ownership and use.

Public right of ways represent 19% of all land in the Area and host most of the Area's transportation facilities. This land is dedicated to sidewalks, utilities, roadways, and street medians. Pedestrians, bicyclists, personal vehicles, transit, and delivery trucks use these corridors to connect goods and services to land uses. The public right of ways in most locations are fully utilized and have limited opportunities for expansion without encroaching on private land. All of the public right of ways have paved surfaces for motor vehicles and at least a sidewalk for pedestrians on one side of the street. Utilities are located above and below ground in varying locations. State Road 92 (Ala Moana) is under the jurisdiction of Hawaii Department of Transportation (HDOT) and all other roadways are under the jurisdiction of the City and County of Honolulu.

A small percentage of private land is part of the roadway system (noted in the chart as Private Right of Way) and functions as public right of way. Most of the private land in this category provides internal connections for large blocks. The roadways provide connections for deliveries and personal motor vehicles.

Private land ownership characterizes 60% of the Area. The land in this category is used for a variety of commercial, residential and industrial purposes. The commercial land uses are well dispersed in the Area and almost all have access to major roadways. Residential land uses are scattered between a few high rise towers and one older neighborhood of single and multifamily homes. The single and multifamily homes reside on low volume streets that have access to major roadways. The high rise towers are located on major streets. Most of the industrial uses are found along Queen Street.

Public lands comprise 20% of the Area and house important destinations such as Neal Blaisdell Center, McKinley High School and Mother Waldron Park.

Kakaako Mauka Area	450 Acres	100%
Public Right of Way	85 Acres	19%
Private Right of Way	9 Acres	2%
Private Land	270 Acres	60%
Public Land	86 Acres	19%





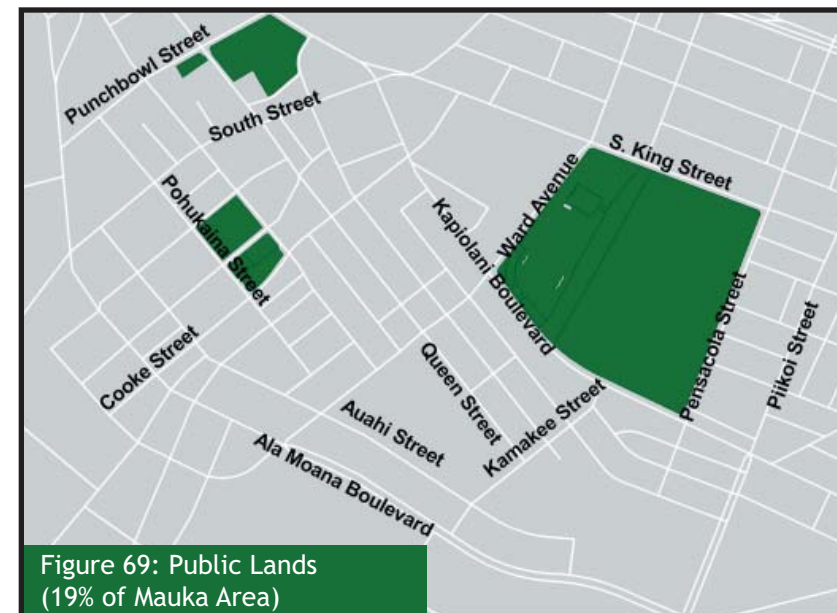
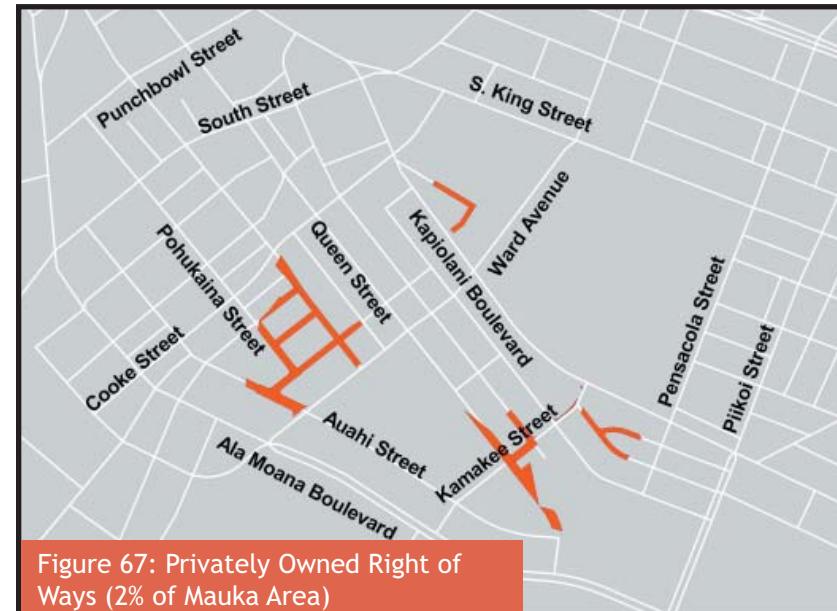




Figure 70: Pedestrians on King Street



Figure 71: Bus Stop on Pensacola Street



Figure 72: Bicyclist on Queen

## 6) MULTIMODAL ISSUES AND OPPORTUNITIES

The Area relies on several modes of transportation for vitality. The personal automobile, delivery truck, and bus are the lifeline to business and recreation in this Area. Just as important, but not yet fully realized, are the mobility needs of non-motorized users. Creating safe walking and biking environments is important to creating transportation options. Creating such options will become increasingly important as multimodal access will be necessary to connect local and regional destinations. The key to a multimodal transportation system is the presence of options. When a variety of high quality transportation options are available trips are more likely to be made using multiple transportation modes.

- Personal automobiles are the most common form of transportation in the Area. It is important to note that after a vehicle is parked a driver becomes a pedestrian. As the need to park additional vehicles occurs, pedestrian connections will become increasingly important. Providing high quality connections from on-street, off-street, surface and structured parking is critical to the success of the parking program.
- Connection between transit stops and destinations is tolerant for most pedestrians and persons with mobility devices. Transit is often thought of as an extension of the pedestrian. Because a person alighting a bus becomes a pedestrian to reach their final destination, it is critical that the walking environment near bus stops provide a safe connection to major destinations.
- Bicycles are important to multimodal connections as they offer a convenient way to access other modes of transportation. Bicycles are convenient because they are free to park, inexpensive to operate, and storable on motorized transportation. Just like the automobile, once a bike is parked a bicyclist becomes a pedestrian. Likewise, bicycle parking also needs direct pedestrian connections for bicyclists to reach final destinations.
- Multimodal connections in the Area are occurring today based on need, not choice. If the roadway, parking, transit, bicycle and pedestrian system become integrated in the future, connections will occur by choice and not need. The tipping point will be safe and obvious multimodal connections that are competitive with current modes of travel.



## 7) NEXT STEPS

This document provides an overview of existing conditions in the Area and previous planning efforts. This information will serve as the basis for recommendations in the Access, Circulation, and Mobility Network Plan. The recommendations will address the following issues.

- 2025 peak hour traffic in the Area will result in travel delays along 12 roadway sections.
  - Streets in the Area facilitate automobile travel but do not embrace multimodal access.
  - The Area has several large volume roadways that facilitate pass thru trips.
  - Superblocks are obstacles to creating an urban place with pedestrian activity and transit access.
  - The Area does not have memorable streets and lacks public places for pedestrians.
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