

Primary Corridor Transportation Project

**PRODUCT 7-12
HISTORIC/CULTURAL RESOURCES
IMPACTS TECHNICAL REPORT**

Prepared for:

**City and County of Honolulu
Department of Transportation Services**

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S.O EXECUTIVE SUMMARY

The City and County of Honolulu Department of Transportation Services (DTS), in cooperation with the U.S. Department of Transportation, Federal Transit Administration (FTA), is proposing transportation improvements in the primary transportation corridor of Oahu, Hawaii. This report describes the potential impacts from the Primary Corridor Transportation Project alternatives on historic properties. The alternatives under consideration include a No-Build Alternative, an Enhanced Bus/Transportation System Management (TSM) Alternative, a Bus Rapid Transit (BRT) Alternative, and a Light Rail Transit (LRT) Alternative.

The regulations of Section 106 of the National Historic Preservation Act were used to identify historic properties and determine potential impacts on these properties. The first step in the Section 106 process is to determine the project's Area of Potential Effects (APE). The APE for the LRT alignments was set at one lot deep from an LRT-affected roadway because improvements will be at-grade, and the only non-movable physical features would be poles and catenaries (a single wire), transit stations and power substations. For other transit improvements, such as exclusive and semi-exclusive bus lanes and trams on tires, the APE was limited to the affected roadway. The APE around new ramps, park-and-ride lots or transit centers where such facilities might rise above the grade was determined on a case-by-case basis.

A reasonable and good faith effort was conducted to identify historic properties in the APE. A historic property is any district, site, building, structure, or object that is on or eligible for the National Register of Historic Places. Research activities included reviewing the National and Hawaii Registers, as well as surveys and other reports on historic districts, buildings, structures and objects. In addition, a windshield survey was conducted to identify potential historic-period resources that were not previously identified in previous studies. Archaeological resources and traditional cultural properties (TCP) are types of historic properties that would be identified through consultation with the State Historic Preservation Division (SHPD) and the Office of Hawaiian Affairs.

The historic districts in the APE include the Pearl Harbor Naval Base National Historic Landmark, the Chinatown Historic District, the Hawaii Capitol Historic District, and the University of Hawaii Historic District. More than 50 historic buildings, structures, and other resources in the APE are in these districts and along other sections of the study area. The count is complicated because the resources in the Hawaii Capitol Historic District were nominated individually, or in groupings, as well as being considered part of the district. Also, there are numerous historic resources in the other districts. Input on archaeological resources was requested from the SHPD. To date no information was received from SHPD regarding archaeological resources. The OHA provided information on possible TCPs in association with the Sand Island Bypass¹, but did not provide information on TCPs in association with other elements of the alternatives.

There are three possible effect findings under the Section 106 process (new regulations were published on May 18, 1999): (1) no historic properties affected; (2) no adverse effect; and (3) adverse effect. Certain elements of the alternatives have the potential to cause an "adverse effect" on certain historic properties. An "adverse effect" means an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Some of these properties include the Chinatown Historic District, the Hawaii Capitol Historic District, the Founders'

¹ The Sand Island Bypass Road, including a tunnel from Sand Island to Kakaako, and conversion of Nimitz Highway to a parkway, could be included with the BRT and LRT Alternatives. However, historic/cultural impact analyses for these elements of the alternatives are not provided in this report.

Gate in the University of Hawaii Historic District, Farrington High School, Thomas Square and the Board of Agriculture and Forestry building.

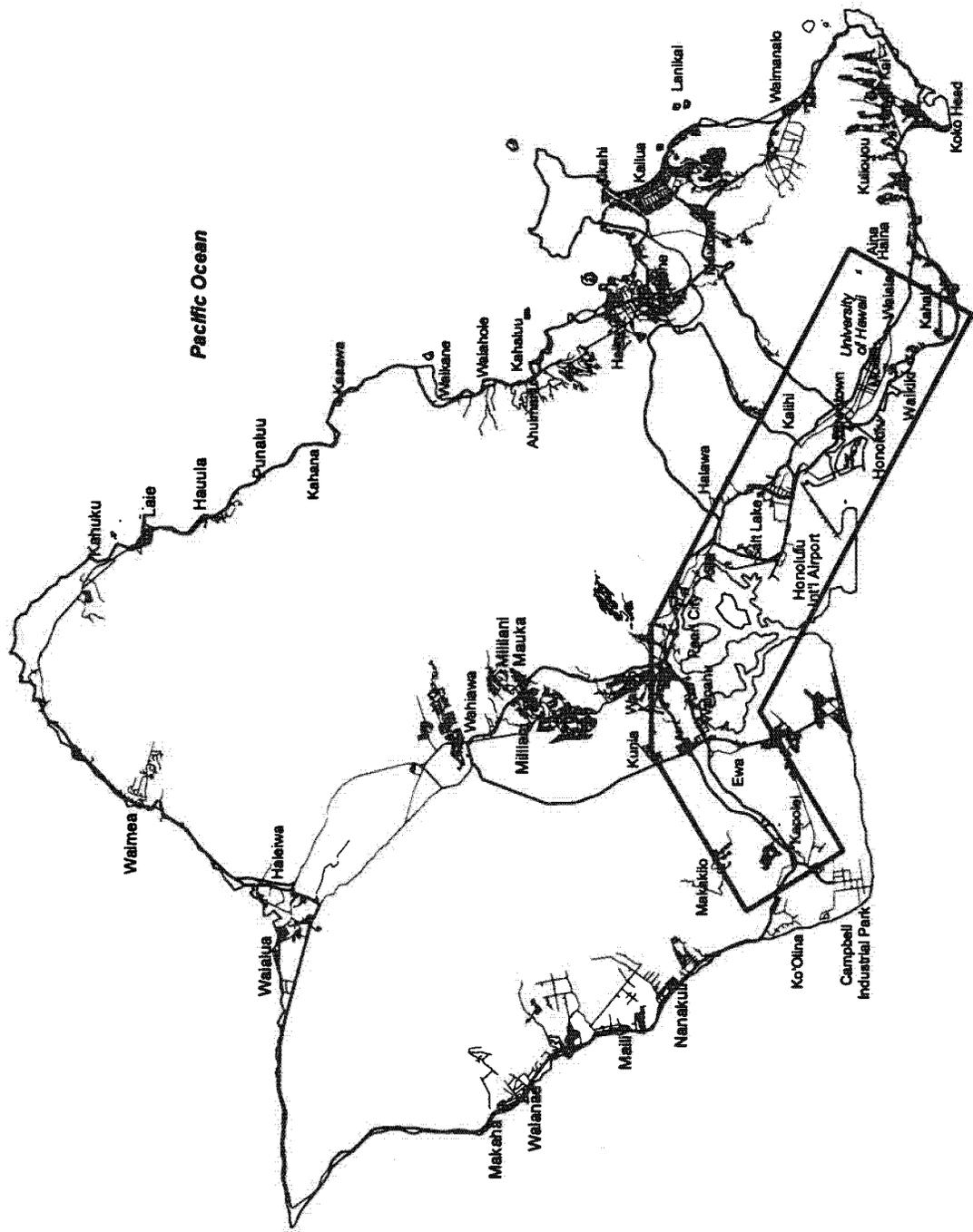
The purpose of the historic/cultural impact analyses of this report is to assist in project planning. Therefore, consultation with the SHPD and the SHPO will be held, and modifications or conditions to the undertaking will be discussed, with the goal of reaching findings of "no adverse effect" for all historic properties in the APE. Therefore, mitigation measures are suggested in this report to help achieve this goal. A center running system in areas that contain known historic resources located near the roadside may minimize adverse effects on these resources. If using the curbside system is absolutely necessary, placing as few pole assemblies near the resource as possible can minimize the effect to historic properties near the roadside. Also, opportunities should be explored to develop dual-use catenary and streetlight poles. Stations and other structures, such as the power substations, should not be located at or next to historic properties, if alternative locations are available. Stations within historic districts, such as the Chinatown and the Hawaii Capitol Historic Districts, should be designed to be compatible with the style of the nearby historic resources.

1.0 INTRODUCTION

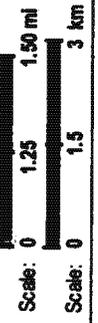
The City and County of Honolulu Department of Transportation Services (DTS), in cooperation with the U.S. Department of Transportation, Federal Transit Administration (FTA), is proposing transportation improvements in the primary transportation corridor of Oahu, Hawaii. This report describes the potential impacts from the Primary Corridor Transportation project alternatives on historic properties, which include historic districts, buildings, structures and objects, archaeological resources and traditional cultural properties that are on or eligible for the National Register of Historic Places (NRHP).

The primary transportation corridor extends from Kapolei in the Ewa District to the University of Hawaii at Manoa (see Figure 1.0-1). The east-west length of the corridor is approximately 43 kilometers (27 miles). The north-south width is at most 6.5 kilometers (4 miles) because much of the corridor is bounded by the Koolau Mountain Range to the north and the coastline to the south.

Section 2.0 provides a brief description of the proposed project and alternatives. Section 3.0 describes the methodology used to identify potentially affected historic properties in accordance with regulations for Section 106 of the National Historic Preservation Act. This section also provides the regulatory method to determine the "effect" of the project, or undertaking, on historic properties. Section 4.0 provides a listing of and information on the known historic properties in the project's Area of Potential Effects. The properties identified in this section are either on the NRHP or are eligible for listing. Section 5.0 details potential impacts of the project on the historic properties identified in Section 4.0 using the guidelines for Section 106. The analyses provided in this section are meant to assist in project planning. Section 6.0 provides recommendations to minimize adverse effects to known historic properties.



SOURCES:
 ESRI Alias GIS v4.0 1998; Information Delivery System (IDS),
 March 1998; City and County of Honolulu, October 1998.



Study Area

Figure 1.0-1

2.0 PROPOSED PROJECT

2.1 BACKGROUND

The Primary Corridor Transportation Project is one of the major elements of the Islandwide Mobility Concept Plan (IMCP) (March 1999). Several alternatives, as discussed in this section and developed during the community meetings, have been identified in the IMCP for study during the Major Investment Study/Draft Environmental Impact Statement (MIS/DEIS) process. This technical analysis is part of that study and process.

2.2 ALTERNATIVES

The alternatives under consideration for the Primary Corridor Transportation Project include a No-Build Alternative, and several build alternatives. The build alternatives include an Enhanced Bus/Transportation System Management (TSM) Alternative, a Bus Rapid Transit (BRT) Alternative, and a Light Rail Transit (LRT) Alternative. Brief descriptions of these alternatives follow. These descriptions are meant to be general, with the intent of illustrating the concepts and overall plans of the alternatives.

A Sand Island Bypass Road, including a tunnel from Sand Island to Kakaako, and conversion of a portion of the existing Nimitz Highway from Sand Island Access Road to downtown Honolulu to a parkway, could be included with the BRT and LRT Alternatives. However, this report does not include analyses for these elements. This report focuses on the transit elements and related improvements of the alternatives.

More detailed descriptions can be found in the Draft Detailed Definition of Alternatives Report (May 1999).

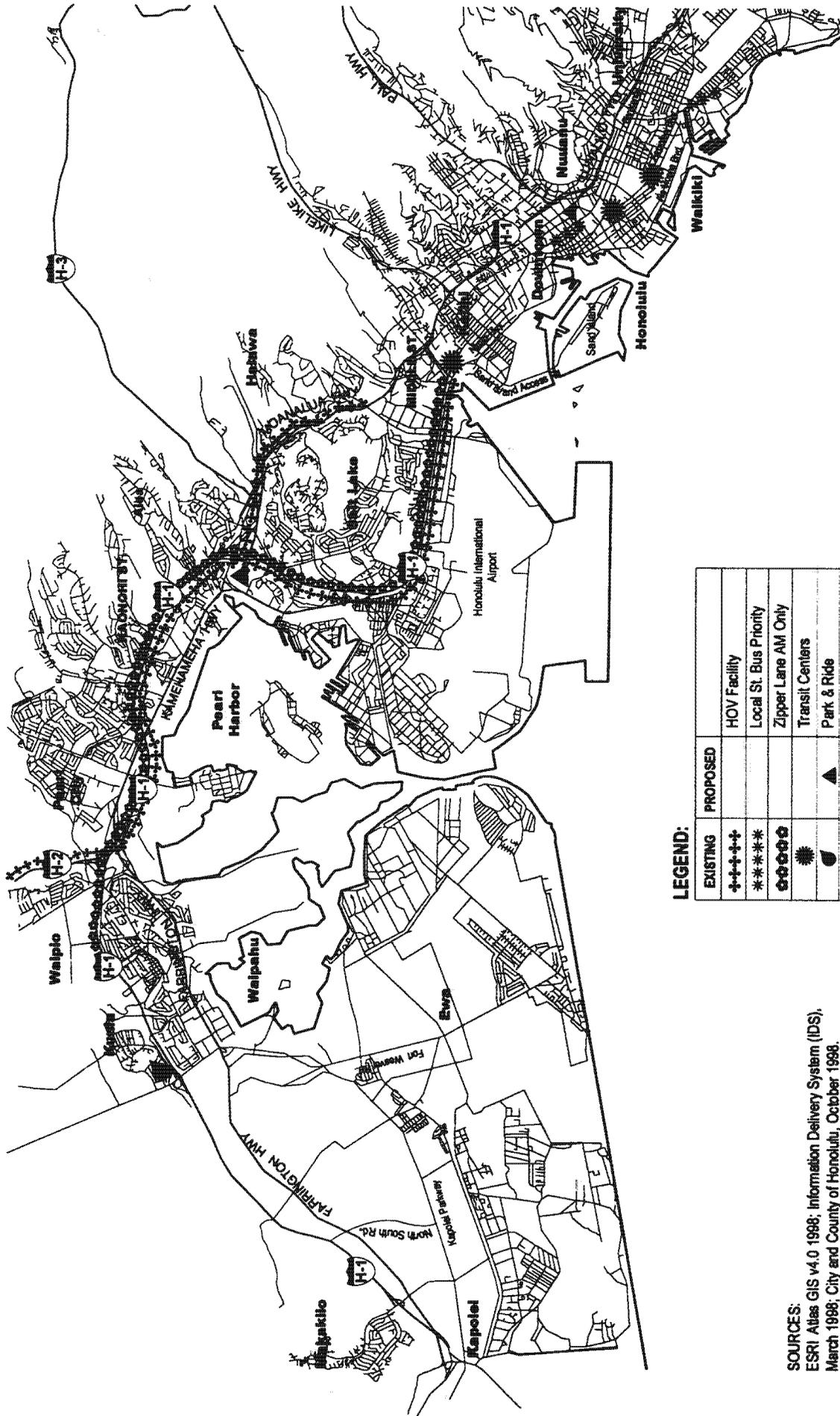
2.2.1 No-Build Alternative

The No-Build Alternative (see Figure 2.2-1) would include existing transit and highway facilities and committed transportation projects to the year 2020. Committed transportation projects are those programmed in the Oahu Transportation Improvement Program (TIP) Amendment No. 3, FY 1998 – FY 2000. Highway components in the No-Build Alternative will also be included in the build alternatives.

The No-Build Alternative's transit component would include a bus transit system structured generally the same as the current system, but with an increase in fleet size to accommodate growth so that service frequencies would be the same as today. Two new park-and-ride lots, Aloha Stadium and Block J peripheral parking, would be added to the infrastructure of the No-Build Alternative.

2.2.2 Enhanced Bus/Transportation System Management (TSM) Alternative

The Enhanced Bus/TSM Alternative (see Figure 2.2-2) would provide a re-structured bus system based on a hub-and-spoke route network along with new transit centers (see Table 2.2-1). It would include community bus circulators, conversion of the present morning peak hour only zipper lane to both a morning and afternoon peak hour zipper lane configuration and relatively low-cost capital improvements on selected roadway facilities to give priority to buses. Some of the relatively low-cost improvements could include bus priority at signalized intersections, bus bypass lanes, and semi-exclusive bus lanes on certain roadways such as Farrington Highway, Fort Weaver Road, Kamehameha Highway, Nimitz Highway, King Street, Beretania Street and the future North-South Road and Kapolei Parkway. Semi-exclusive bus lanes are curbside lanes that are reserved for buses and right-turning general-purpose vehicles. Exclusive bus ramps on the H-1 Freeway



LEGEND:

EXISTING	PROPOSED	
---+---+---+---		HOV Facility
..*.*.*		Local St. Bus Priority
o.o.o.o.o		Zipper Lane AM Only
☀		Transit Centers
☀	▲	Park & Ride

SOURCES:
 ESRI Atlas GIS v4.0 1998; Information Delivery System (IDS),
 March 1998; City and County of Honolulu, October 1998.

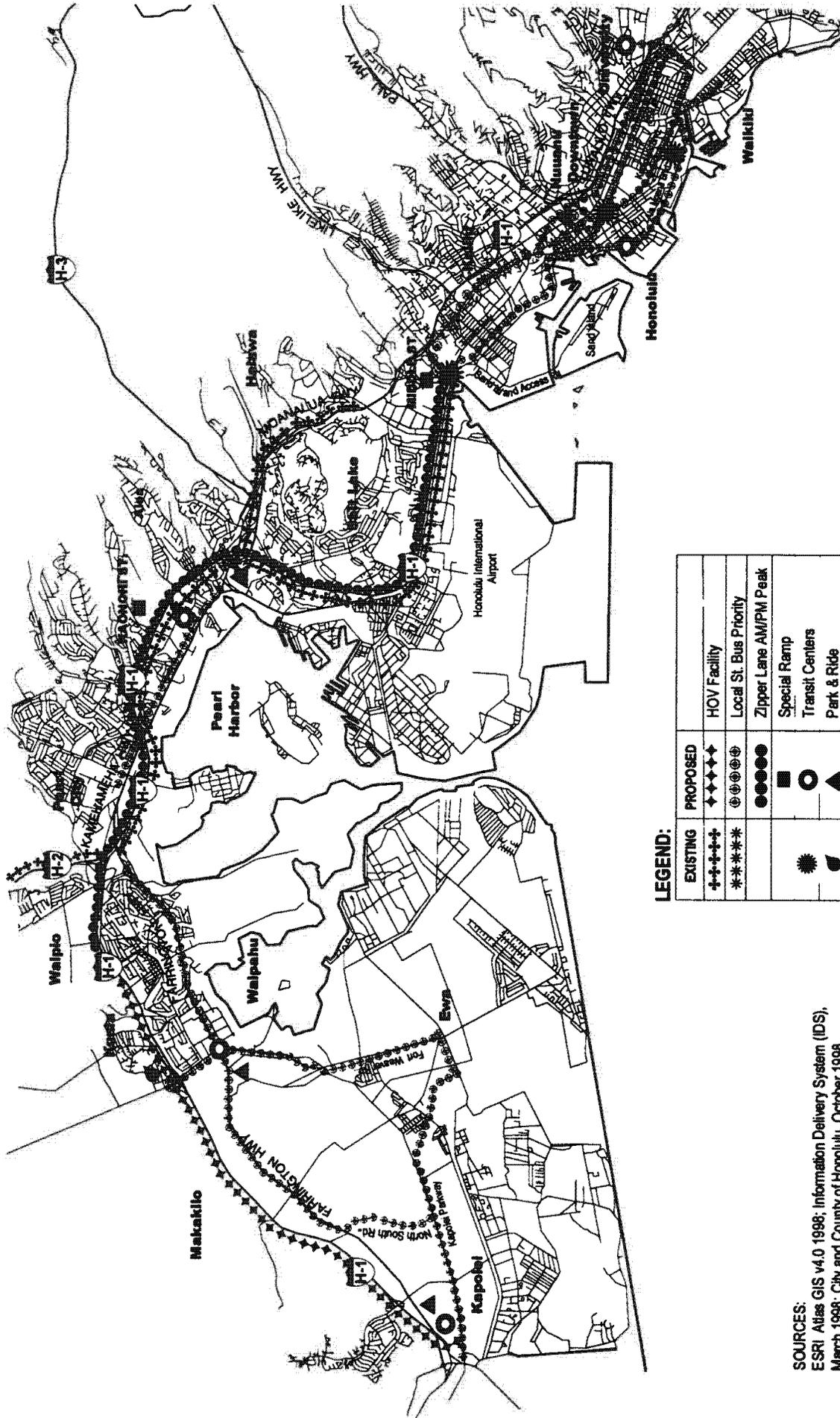


Scale: 0 1.25 1.50 mi

Scale: 0 1.5 3 km

No-Build Alternative

Figure 2.2-1



LEGEND:

EXISTING	PROPOSED	
◆◆◆◆◆◆	◆◆◆◆◆◆	HOV Facility
*****	⊕⊕⊕⊕⊕	Local St. Bus Priority
	●●●●●	Zipper Lane AM/PM Peak
	■	Special Ramp
	○	Transit Centers
	▲	Park & Ride
☀		
☂		

SOURCES:
 ESRI Atlas GIS v4.0 1998; Information Delivery System (IDS),
 March 1998; City and County of Honolulu, October 1998.



Figure 2.2-2

Enhanced Bus / TSM Alternative

**TABLE 2.2-1
POTENTIAL TRANSIT CENTERS, PARK-AND-RIDE LOTS, LRT STATIONS,
AND MAINTENANCE FACILITIES**

Location	Alternatives					
	No-Build	TSM	BRT	LRT		
				Option 1	Option 2	Option 3
Transit Centers and Park-and-Ride Lots						
Ala Moana Transit Center *	x	x	x	x	x	x
Alapai Transit Center *	x	x	x	x	x	x
Wahiawa Park-and-Ride *	x	x	x	x	x	x
Mililani Park-and-Ride *	x	x	x	x	x	x
Village Park Park-and-Ride *	x	x	x	x	x	x
Hawaii Kai Park-and-Ride *	x	x	x	x	x	x
Kapolei Transit Ctr/P&R		x	x	x	x	x
Waipahu/Ewa Trans Ctr/P&R		x	x	x	x	x
Pearlridge Transit Center		x	x	x	x	x
Aloha Stadium Park-and-Ride	x	x	x	x	x	x
Middle St Transit Center *	x	x	x	x	x	x
Block J Park-and-Ride	x	x	x	x	x	x
So. Street Transit Center		x	x	x	x	x
University Transit Center		x	x	x	x	x
LRT Stations						
Pearlridge				x	x	
Aloha Stadium				x	x	
Radford Dr/Kamehameha Hwy				x		
Nimitz/Rodgers				x		
Puuloa/Nimitz/Rodgers				x	x	
Middle Street				x	x	x
Kalihi/Waiakamilo/King Streets				x	x	x
Honolulu Community College				x	x	x
Aala Park				x	x	x
Maunakea/King Streets				x	x	x
Alakea/King Streets				x	x	x
Punchbowl/King Streets				x	x	x
Cooke Street/Kapiolani Boulevard				x	x	x
Ward Avenue/Kapiolani Boulevard				x	x	x
Ala Moana				x		x
Convention Center				x		x
Isenberg				x		x
University Avenue/King Street				x	x	x
University Avenue/Dole Street				x	x	x
Bougainville/Salt Lake Boulevard					x	
Ala Liliroi/Salt Lake Boulevard					x	
Keeaumoku/King Streets					x	
Pawaa/King Street					x	
Kaapaakea/King Street					x	
LRT Maintenance Facilities (only one would be needed)						
Fort Shafter Flats				x	x	x
Middle Street / Kamehameha Hwy.				x	x	x
Iwilei					x	

Source: Parsons Brinckerhoff Quade & Douglas, Inc. May 1999.

Note: * existing facility, modified as appropriate

would be constructed at the Kaonohi Street Overpass and at Keehi Interchange under this alternative, as well as all the other alternatives (see Table 2.2-2). General traffic would be prohibited from using these ramps.

Bus service would be expanded sufficiently to handle the increase in person-trips predicted between now and 2020. The number of buses that would be required under the TSM alternative is estimated to be 750 to 800, in comparison to the current fleet size of 525.

2.2.3 Bus Rapid Transit (BRT) Alternative

The Bus Rapid Transit (BRT) Alternative would be structured to provide a substantially higher level of transit service than the Enhanced Bus/TSM Alternative. The Bus Rapid Transit (BRT) Alternative (see Figure 2.2-3), similar to the TSM Alternative, would also consist of the hub-and-spoke transit system and priority treatments for transit. Transit centers for the BRT Alternative are shown on Table 2.2-1. One of the major differences between the BRT Alternative and the TSM alternative is the extensive use of H-1 Freeway bus ramps, which would be located at Kapolei, the future North-South Road, Kunia, Manager’s Drive, Waiawa Interchange, Aloha Stadium and Pearl Harbor (see Table 2.2-2). These bus ramps are in addition to bus ramps at Kaonohi Street and Middle Street, which are included in all the build alternatives. Another major difference is the extensive use of arterial BRT treatments that would include 24-hour exclusive bus lanes on some of the major highways in Honolulu. The third major difference is the inclusion of a trolley/tram, an electric powered / rubber-tired vehicle, running between Downtown Honolulu and Waikiki (Ala Moana Waterfront Loop).

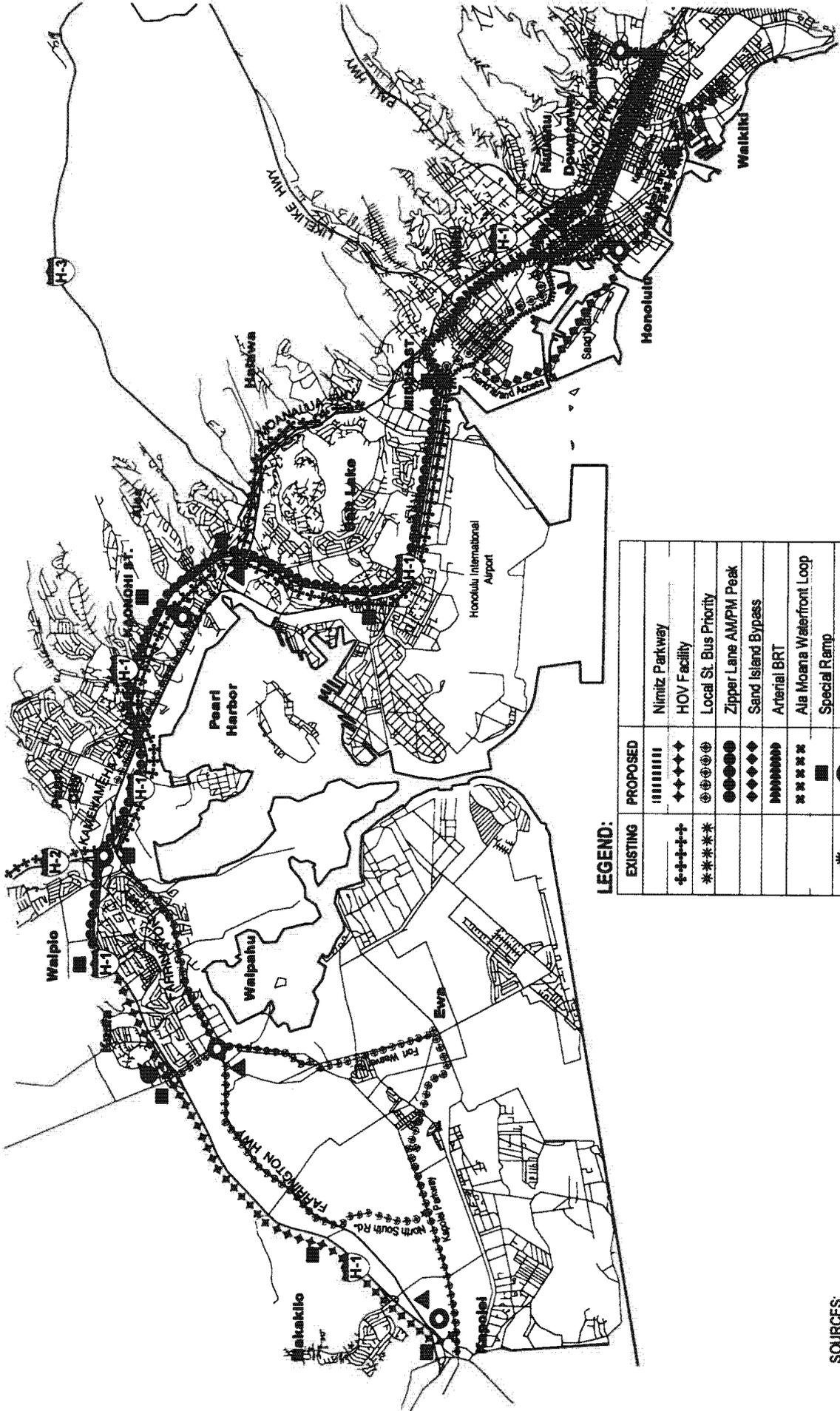
**TABLE 2.2-2
BUS RAMPS**

Location	Alternatives					
	No-Build	TSM	BRT	LRT		
				Option 1	Option 2	Option 3
Kaonohi Street		x	x	x	x	x
Middle Street		x	x	x	x	x
Kapolei			x			x
North-South Road			x			x
Kunia Road			x			x
Manager’s Drive			x			x
Waiawa Interchange			x			
Aloha Stadium			x			x
Pearl Harbor at Radford Drive			x			x

Source: Parsons Brinckerhoff Quade & Douglas, Inc., May 1999.

2.2.4 Light Rail Transit (LRT) Alternatives

Three LRT options are being considered. The first LRT option (LRT Option 1) would be a LRT line from Pearlridge to the University of Hawaii at Manoa (UH) via Kamehameha Highway, Middle Street, King Street, Kapiolani Boulevard, and University Avenue (see Figure 2.2-4). LRT Option 2 starts at Pearlridge and would use Salt Lake Boulevard, Puuloa Road, Kamehameha Highway, Dillingham Boulevard, Hotel Street, King Street and University Avenue (see Figure 2.2.5). LRT Option 3 would follow the LRT Option 1 alignment, but would only extend from Middle Street to UH (see Figure 2.2-6). All of the LRT options would include



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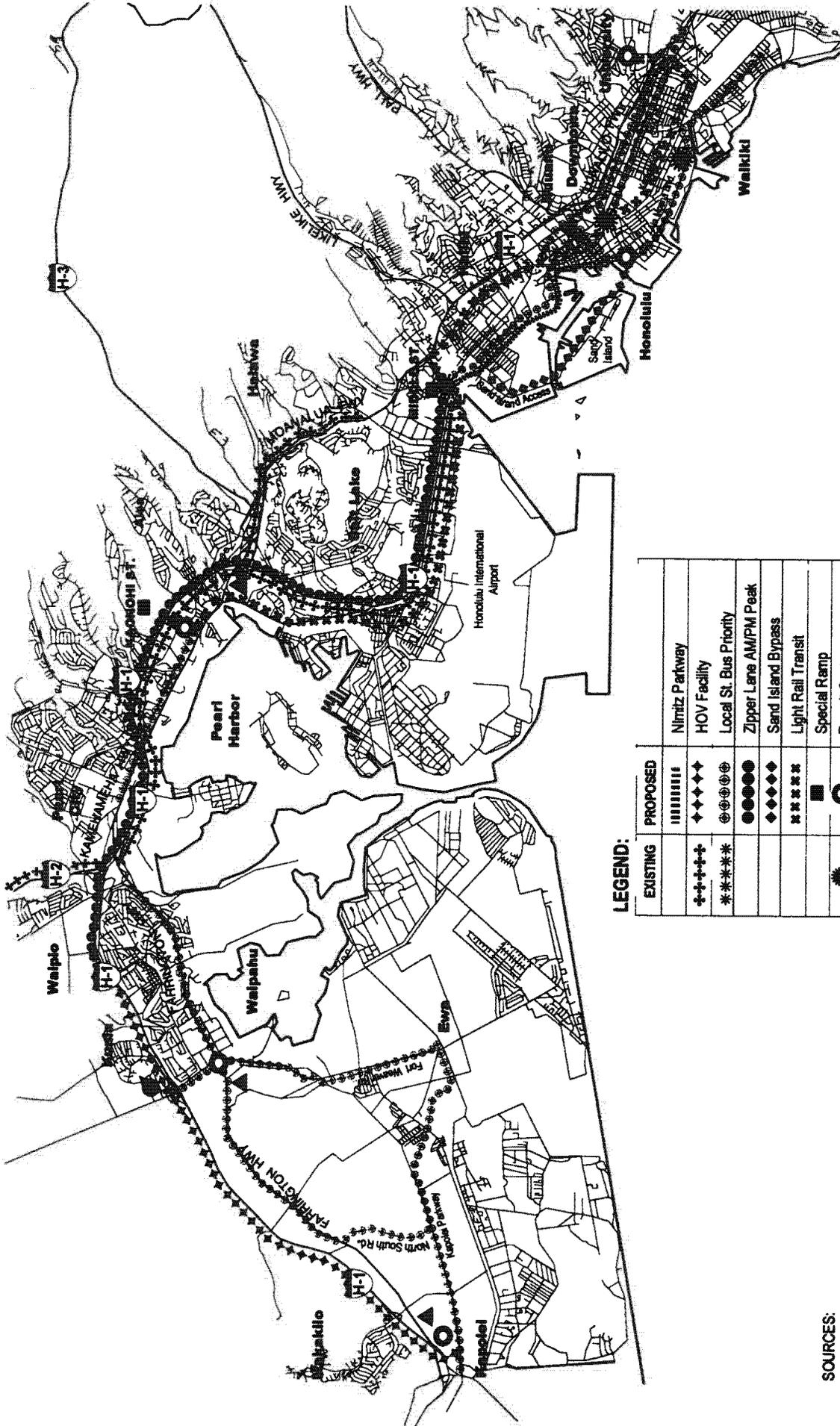
EXISTING	PROPOSED	
—		Nimitz Parkway
—+—+—+—	◆◆◆◆◆	HOV Facility
*****	⊕⊕⊕⊕⊕	Local St. Bus Priority
	●●●●●	Zipper Lane AM/PM Peak
	◆◆◆◆◆	Sand Island Bypass
		Arterial BRT
	*** **	Ala Moana Waterfront Loop
	■	Special Ramp
☀	○	Transit Centers
☀	▲	Park & Ride

SOURCES:
 ESRI Atlas GIS v4.0 1998; Information Delivery System (IDS),
 March 1998; City and County of Honolulu, October 1998.



Figure 2.2-3

Bus Rapid Transit (BRT) Alternative



LEGEND:

EXISTING	PROPOSED	
+		Nimitz Parkway
+	+	HOV Facility
*	+	Local St. Bus Priority
*	+	Zipper Lane AM/PM Peak
	+	Sand Island Bypass
	+	Light Rail Transit
	+	Special Ramp
	+	Transit Centers
	+	Park & Ride

SOURCES:
 ESRI Atlas GIS v4.0 1998; Information Delivery System (IDS),
 March 1998; City and County of Honolulu, October 1998.

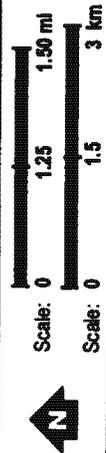
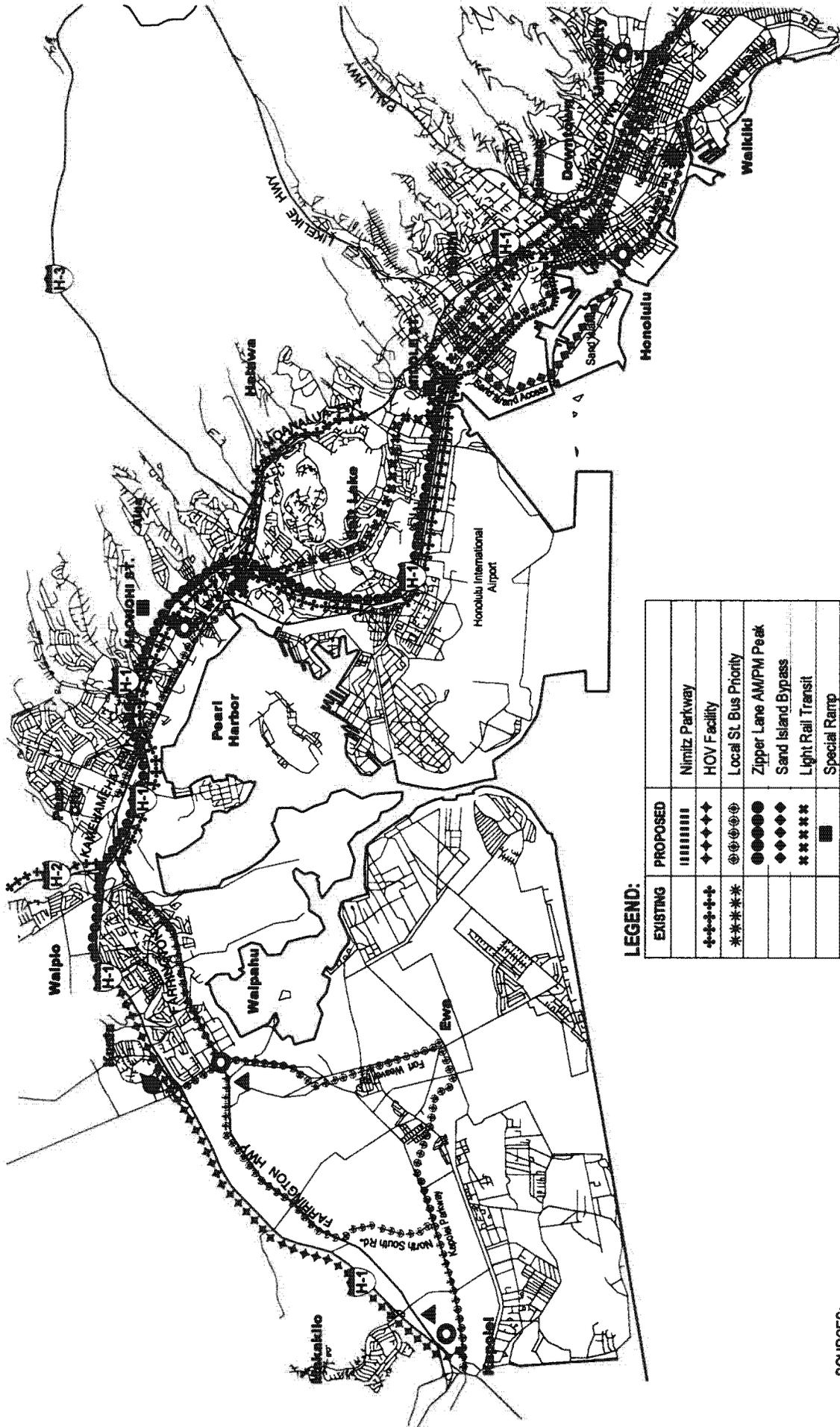


Figure 2.2-4

Light Rail Transit (LRT) Option 1



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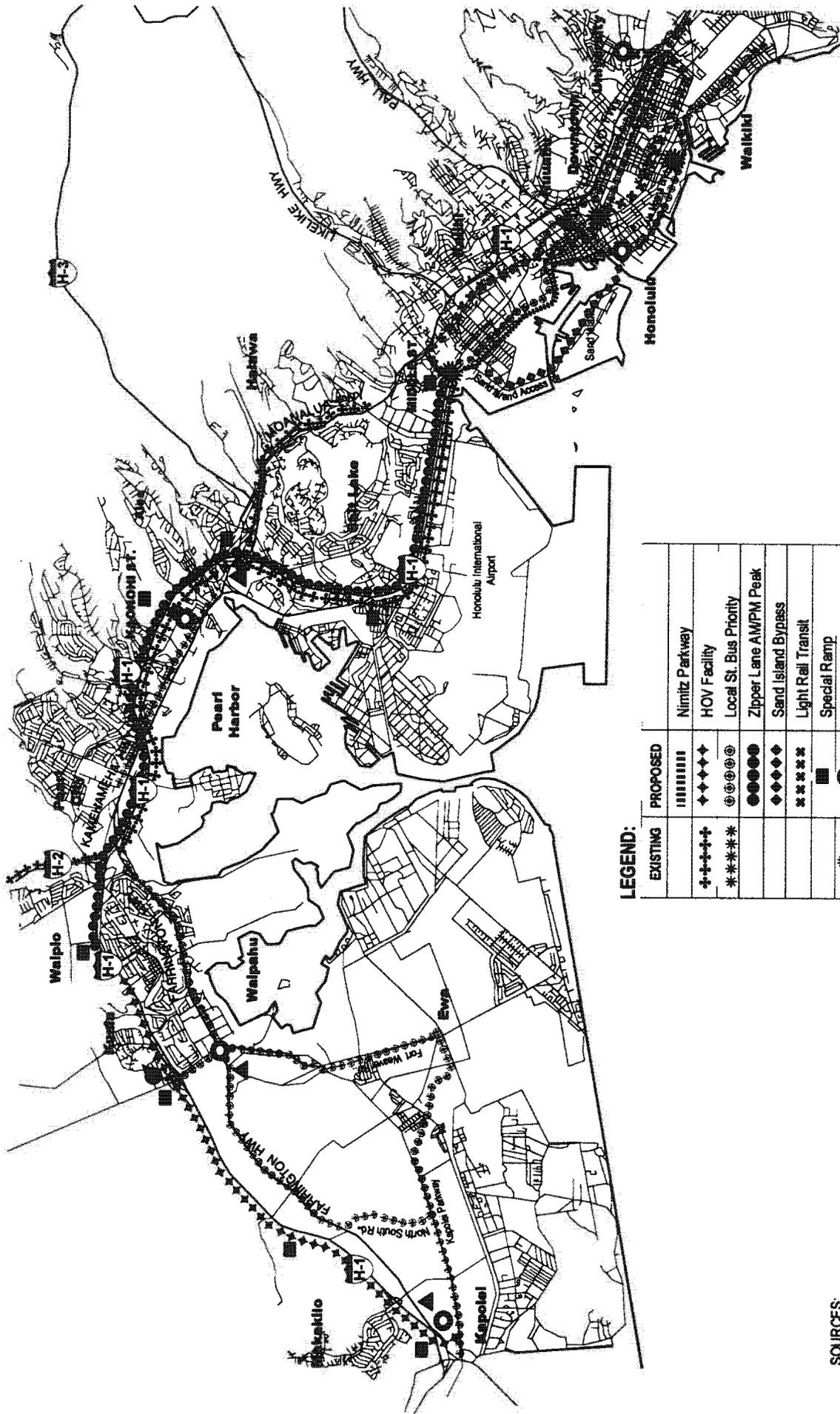
EXISTING	PROPOSED	
		Nimitz Parkway
◆◆◆◆◆	◆◆◆◆◆	HOV Facility
◆◆◆◆◆	◆◆◆◆◆	Local St. Bus Priority
◆◆◆◆◆	◆◆◆◆◆	Zipper Lane AM/PM Peak
◆◆◆◆◆	◆◆◆◆◆	Sand Island Bypass
◆◆◆◆◆	◆◆◆◆◆	Light Rail Transit
◆◆◆◆◆	◆◆◆◆◆	Special Ramp
◆◆◆◆◆	◆◆◆◆◆	Transit Centers
◆◆◆◆◆	◆◆◆◆◆	Park & Ride

SOURCES:
 ESRI Atlas GIS v4.0 1998; Information Delivery System (IDS),
 March 1998; City and County of Honolulu, October 1998.



Figure 2.2-5

Light Rail Transit (LRT) Option 2



LEGEND:

EXISTING	PROPOSED	
+++++		Nimitz Parkway
*****	◆◆◆◆◆	HOV Facility
	⊕⊕⊕⊕⊕	Local St. Bus Priority
	●●●●●	Zipper Lane AWP/PM Peak
	◆◆◆◆◆	Sand Island Bypass
	*****	Light Rail Transit
	■	Special Ramp
☀	○	Transit Centers
☀	▲	Park & Ride

SOURCES:
 ESRI Atlas GIS v4.0 1998; Information Delivery System (IDS),
 March 1998; City and County of Honolulu, October 1998.



Light Rail Transit (LRT) Option 3

Figure 2.2-6

redesigned freeway bus ramps at Kaonohi Street and Keehi Interchange (see Table 2.2-2), transit centers (see Table 2.2-1) and certain bus priority treatments of the other alternatives. LRT Option 3 includes all the freeway bus ramps of the BRT alternative, with the exception of the Waiawa Interchange.

The LRT alternative requires a maintenance facility for the LRT vehicles. Unlike a bus maintenance facility, an LRT maintenance facility must be located in proximity to the LRT alignment. Three alternative locations have been identified (see Table 2.2-1). The first alternative is at Fort Shafter Flats, the second is within a commercial-industrial area adjacent to Middle Street and Kamehameha Highway, and the third is in Iwilei near Honolulu Community College and Dole Center. The first two maintenance facility alternatives could be used for all three LRT options, but the third facility alternative could only be used for LRT Option 2.

2.3 TECHNOLOGY OPTIONS

Candidate technologies for consideration would have a line capacity of six thousand passengers per hour per direction while operating at-grade on arterial and Downtown streets (except possibly at selected grade separations). The technologies suitable for consideration for various alternatives can be described as follows.

2.3.1 Articulated Bus

Articulated buses are approximately 18.3 meters (60 feet) in length and are similar to standard buses in that they are typically powered with diesel engines and are capable of freeway speeds. However, articulated diesel buses are able to negotiate smaller radius horizontal curves because they can bend at the mid-point of the vehicle body. The articulation separates the bus into two sections - a forward section where the driver sits and a rear or trailer section. The two sections are joined at an articulation joint. No special roadway treatments are required for the operation of articulated buses, other than concrete-pavement at moderate to heavily used bus stops.

2.3.2 Light Rail Transit

A distinctive feature of LRT is that vehicles draw power from an overhead catenary wire. This is in contrast to heavy rail vehicles that usually are powered from a track-level third contact rail. This overhead power collection feature allows LRT systems to be integrated with other at-grade transportation modes and pedestrians. With overhead power collection and the availability of articulated LRT vehicles, LRT can operate in mixed traffic on tracks embedded in the street (like streetcars), on an at-grade right-of-way with street and pedestrian crossings, or on a fully segregated exclusive right-of-way. The most recent light rail systems in the U.S. use vehicles that are 28 to 29 meters (90 to 95 feet) long, up to 2.9 meters (10 feet) wide, and comprised of two body halves-connected by a swiveling articulation joint. The analyses provided in this report assumes this type of LRT.

2.3.3 Trams on Tires

A tram is a vehicle operated singly or coupled into a train. The tramway is at-grade, either in mixed traffic or in its own lane. It is a lower capacity mode than light rail transit and is usually found in medium size cities. A tram on tires is a rubber-tired vehicle that can track a guidance device as if it were on rails but can also operate autonomously without guidance when desired. This would be considered for the Ala Moana Waterfront Loop associated with the BRT Alternative. Like the articulated buses, trams do not require special roadway treatments (e.g., LRT rails and catenaries), other than concrete-pavement at stops.

2.3.4 Ansaldo Breda STREAM

Ansaldo Breda has developed a new transit system technology referred to as STREAM. The bus is available in three lengths, 12-meter (39-foot) single unit, 18-meter (59-foot) articulated, and 24-meter (79-foot) bi-articulated. It is electrically powered and runs on rubber tires. In normal operation, the vehicle receives the current from an electrical track that is embedded into the roadway. When the vehicle leaves the track, it shifts automatically to on-board batteries that are charged at all times during normal operation. The batteries are able to power the vehicle after it leaves the track, providing full autonomy for side routes, emergencies, and maintenance maneuvering. The analysis in this report does not assume the STREAM would be used.

3.0 METHODOLOGY

The methodologies to identify and assess impacts to historic properties are based on the requirements of Section 106 of the National Historic Preservation Act. This Act is designed to protect resources on, or eligible for, the National Register of Historic Places (NRHP) and establishes guidelines for identification of resources, analysis of effect, and agency and public consultation.

There are two basic steps in the Section 106 process: (1) identify historic properties (resources that are on or eligible for the NRHP); and (2) assess effects, and if necessary, mitigate adverse impacts. This process was changed slightly in the recently revised Section 106 regulations. The new regulations of 36 CFR 800 were published by the Advisory Council on Historic Preservation on May 18, 1999 in the Federal Register. The methodology or guidelines described in this section are based on the new regulations.

Section 3.1 below describes the activities performed to comply with Step 1, and Section 4.0 documents the results of these activities. Section 3.2 below describes the effect assessment method and guidelines of Section 106 process. This method was used in impact analyses provided Section 5.0, Potential Impacts.

3.1 IDENTIFICATION OF HISTORIC PROPERTIES

Under Section 106, a reasonable and good faith effort is required to identify historic properties. This section describes the effort conducted to identify districts, buildings and structures; archaeological resources; and traditional cultural properties (TCP) that are on or eligible for the NRHP.

A resource may be considered eligible for the NRHP if it has "integrity of location, design, setting, materials workmanship, feeling, and association," and meets any one of the following NRHP criteria:

- A associated with events that have made a significant contribution to the broad patterns of our history;
- B associated with the lives of persons significant in our past;
- C embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction; or
- D yielded, or may likely yield, information important in prehistory or history.

The Hawaii Register (HR) includes two additional criteria:

- Environmental impact, i.e., whether the preservation of the building, site, structure, district, or object significantly enhances the environmental quality of the State; and
- The social, cultural, educational, and recreational value of the building, site, structure, district, or object, when preserved, presented, or interpreted, contributes significantly to the understanding and enjoyment of the history and culture of Hawaii, the Pacific area, or the nation.

3.1.1 Historic-Period Resources

The following steps have been or will be conducted to identify historic-period resources, which include districts, buildings, structures, and objects dating from the post-western contact period. These steps were agreed to by the State Historic Preservation Division (SHPD) and are considered to be a reasonable and good faith effort (meeting on April 8, 1999). Steps 1 through 3 have been conducted as of the date of this report.

1. research of secondary data sources, such as previous reports, NRHP and HR, to identify known historic properties;
2. windshield survey to identify properties potentially older than 50 years;
3. date research to eliminate properties found to have been built after 1952;
4. consultation with SHPD to further screen windshield survey list to eliminate those properties that would clearly not meet the integrity and other criteria of the NRHP;
5. inventory survey the screened short list to assess eligibility for the NRHP; and
6. SHPD agreement on assessments.

In coordination with the SHPD (meeting held on April 8, 1999) the Area of Potential Effects (APE) for historic resources was agreed to be one lot deep from an LRT-affected roadway. This was determined because improvements will be at-grade, and the only non-movable physical features would be poles and catenaries (a single wire), and transit stations, which would consist of benches, shelters and kiosks. The non-movable physical characteristics of LRT, such as the LRT vehicles, are not large enough to affect resources beyond one lot deep. For BRT or bus enhancement elements, such as exclusive and semi-exclusive bus lanes, the APE was limited to the roadway because physical improvements would not involve anything beyond roadway work (telephone conversation on April 28, 1999). The APE around new ramps, park-and-ride lots or transit centers where such facilities might rise above-grade were agreed to be determined as needed (i.e., if a historic property is in close proximity).

A review of the Historic Site Inventory Report for the Honolulu Rapid Transit Development Project (August 19, 1989), and a records search of the NRHP and HR, were conducted to identify known historic resources in the Primary Transportation Corridor that could be affected by the project. This research identified resources that fall in one of the four following categories:

- 1) those on the NRHP,
- 2) those officially Determined Eligible (DE) for the NRHP by its Keeper,
- 3) those that have a concurrence on eligibility for the NRHP, and
- 4) those on the HR.

Properties in Category 3 include resources identified in previous transit or other studies, and were the subject of correspondence with the State Historic Preservation Officer (SHPO). When there is agreement among the proposing agency [e.g., Federal Transit Administration (FTA) and Department of Transportation Services (DTS)] and the SHPO, such resources are treated as eligible. The resources on the HR are likely to be considered eligible for the NRHP; but they have not yet had a determination or concurrence on their eligibility.

The 1989 Inventory Report identified potential historic properties along North King Street that eventually were not considered within an alternative corridor for Honolulu Rapid Transit Development Project. Therefore, the status of these properties was never determined at the time of that project. Since North King Street is now being considered as a corridor for LRT Options 1 and 3, some of the properties identified in 1989 along North King Street are now within the APE. SHPD provided preliminary agreement on the recommended NRHP eligible properties of the 1989 report (correspondence on April 30, 1999 and May 11, 1999). Therefore, these properties were added to the list of known historic properties in the APE since the DTS and the SHPO will consult on the NRHP eligibility of these resources.

The windshield survey involved an architectural historian driving along the alignments of all transit alternatives and listing buildings, structures, and objects that are not already known historic resources, but that appear to be close to or over 50 years old. In coordination with the SHPD, the initial windshield survey list is currently being screened in the following manner:

- 1) Eliminate buildings that would only be adjacent to bus priority improvements, such as exclusive and semi-exclusive bus lanes, because the APE for these types of improvements would be limited to the roadway (see above).
- 2) Tax records research on the age of the buildings remaining after the first screen. SHPD recommended a cut-off date of 1952 (correspondence on April 29, 1999).
- 3) Conduct an integrity assessment of buildings remaining after screens 1 and 2 (because many of the buildings have been altered substantially).

For those resources remaining on the list, an inventory survey would be conducted to determine whether they are eligible for the NRHP. The inventory survey will include all the information required in the SHPD Historic Resources Inventory Form, black-and-white photography of each resource, and recommendations on whether the affected resources are eligible for the HR and NRHP. This effort will be ongoing through the summer of 1999 in close coordination between DTS and the SHPD.

3.1.2 Archaeological Sites

SHPD agreed to provide a list of known archaeological sites in the study area. This would suffice for a reasonable and good faith effort at this time because the corridor is generally a built-up, urban environment and most improvements would be done on existing streets and highways. Further study could be conducted if required.

3.1.3 Traditional Cultural Properties

A traditional cultural property, or TCP, can be eligible for the NRHP. According to the National Register Bulletin 38, Guidelines for Evaluating and Documenting Traditional Cultural Properties (1994), a TCP is defined generally as a resource that is eligible for the NRHP because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community. To identify TCPs in the study area, the SHPD recommended consultation with the Office of Hawaiian Affairs (OHA). A meeting was held with OHA on May 21, 1999. Additional coordination with DTS and OHA will continue as the project progresses.

3.2 ASSESSMENT OF EFFECTS

In assessing the effects of a project on a historic property, there can only be one of the following three possible findings under the Section 106:

- no historic properties affected
- no adverse effect
- adverse effect

"No historic properties affected" means that either there are no historic properties present or there are historic properties present but the undertaking will have no effect upon them of any kind (that is, neither harmful nor beneficial). An "effect" means alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the NRHP.

"No adverse effect" means that there could be an effect, but the effect would not be harmful to those characteristics that qualify the property for inclusion in the NRHP. In other words, it would not diminish or adversely affect the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

An "adverse effect" means an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the NRHP. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative. Examples of adverse effects on historic properties include, but are not limited to:

- (i) Physical destruction of or damage to all or part of the property;
- (ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines;
- (iii) Removal of the property from its historic location;
- (iv) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- (v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;
- (vi) Neglect of a property which causes its deterioration . . . ; and
- (vii) Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

The purpose of the impact analyses of this report is to assist in project planning. The analyses are based on conceptual engineering produced to date. It is expected that modifications to the alternatives would occur based on the results, as well as information from other environmental studies and public input. As described in Section 5.0, Potential Impacts, the LRT Alternative has the potential to cause an "adverse effect" on certain historic properties. Consultation with the SHPD and the SHPO will be held, and modifications or conditions to the undertaking (project) will be discussed, with the goal of reaching findings of "no adverse effect" for all historic properties in the APE. Therefore, mitigation measures are suggested in Section 6.0 to help in accomplishing this goal.

4.0 EXISTING CONDITION

This section provides information on historic properties in the project area. Under the regulations of Section 106 of the NHPA, a historic property is any pre-historic or historic district, site, building, structure, or object that is on or eligible for the National Register of Historic Places. In this section historic properties are categorized by (1) historic-period resources, which include historic districts, buildings, structures and objects; (2) archaeological resources; and (3) traditional cultural properties (TCP).

4.1 HISTORIC-PERIOD RESOURCES

4.1.1 Historic Districts

The historic districts in the APE include Pearl Harbor Naval Base National Historic Landmark, Chinatown Historic District, Hawaii Capitol Historic District, and the University of Hawaii Historic District. Figures 4.1-1, 4.1-2 and 4.1-3 and 4.1-3A display the location of these districts as well as other historic properties in the APE. Brief descriptions of the districts are provided below.

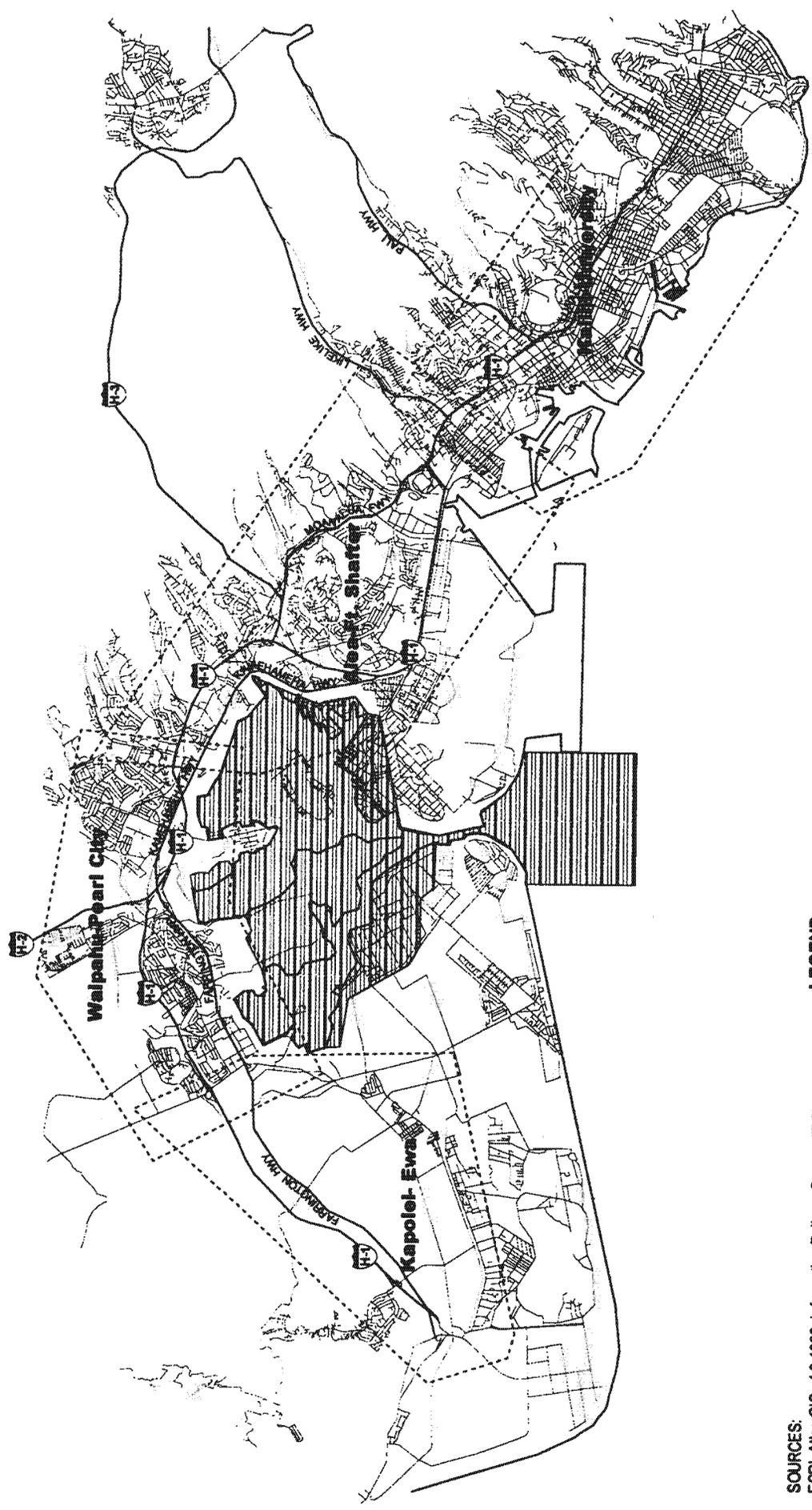
4.1.1.1 Pearl Harbor Naval Base National Historic Landmark

Pearl Harbor Naval Base was declared a National Historic Landmark (NHL) by the Secretary of the Interior in 1964. The boundaries of the NHL were established in 1974 and certified in 1978 (see Figure 4.1-1), and include all of the water areas of the harbor, Waipio Peninsula, Ford Island, and areas on the east and west of the harbor. In 1978 the Pearl Harbor Historic Preservation Plan was prepared, involving mostly an inventory of facilities (buildings and structures) with rankings to indicate their individual historic value. This 1978 report is in the process of being updated with a Cultural Resources Management Plan for the Pearl Harbor Naval Complex. The overall significance of the Naval Base is based on the rise of the United States as a naval power in the Pacific in the twentieth century. This long period of significance is often overlooked because the harbor's important roles in World War II, and its fame as the site of the December 7, 1941 attack by the Japanese, are better known.

There are hundreds of facilities at Pearl Harbor Naval Base that contribute to the significance of the overall NHL. There are also many types of other historic resources, such as archaeological sites and objects that contribute to the Pearl Harbor Naval Base NHL or that would be considered historic under National Register criteria. Within the Pearl Harbor Naval Complex there are four individually designated NHLs. Three of these are historic vessels: the World War II submarine U.S.S. Bowfin, and two ships sunk during the December 7, 1941 attack: the U.S.S. Arizona and U.S.S. Utah. These vessels are all within the waters of Pearl Harbor Naval Complex and thus in the overall NHL. The headquarters of Admiral Nimitz during World War II, Building 250, which sits on a rise above Kamehameha Highway, just outside the boundary of the Naval Base NHL, also is an individually designated NHL. The U.S.S. Missouri, the site of the Japanese surrender ending World War II, was brought to Pearl Harbor in 1998 as a visitor attraction. The vessel was listed individually on the NRHP while it was stationed in Washington State. Its significance, however, does not include any relationship with Pearl Harbor.

4.1.1.2 Chinatown Historic District

The Chinatown Historic District is located in downtown Honolulu and is bounded by Nuuanu Avenue, Nuuanu Canal, Beretania Street, and a portion of Honolulu Harbor from piers 12 to 15 (see Figure 4.1-3). The City and County of Honolulu also established a Chinatown Special Area District that includes essentially the same property but includes a portion of the Merchant Street Historic District (see Figure 4.1-3). Chinatown became



LEGEND:

 Pearl Harbor National Historic Landmark

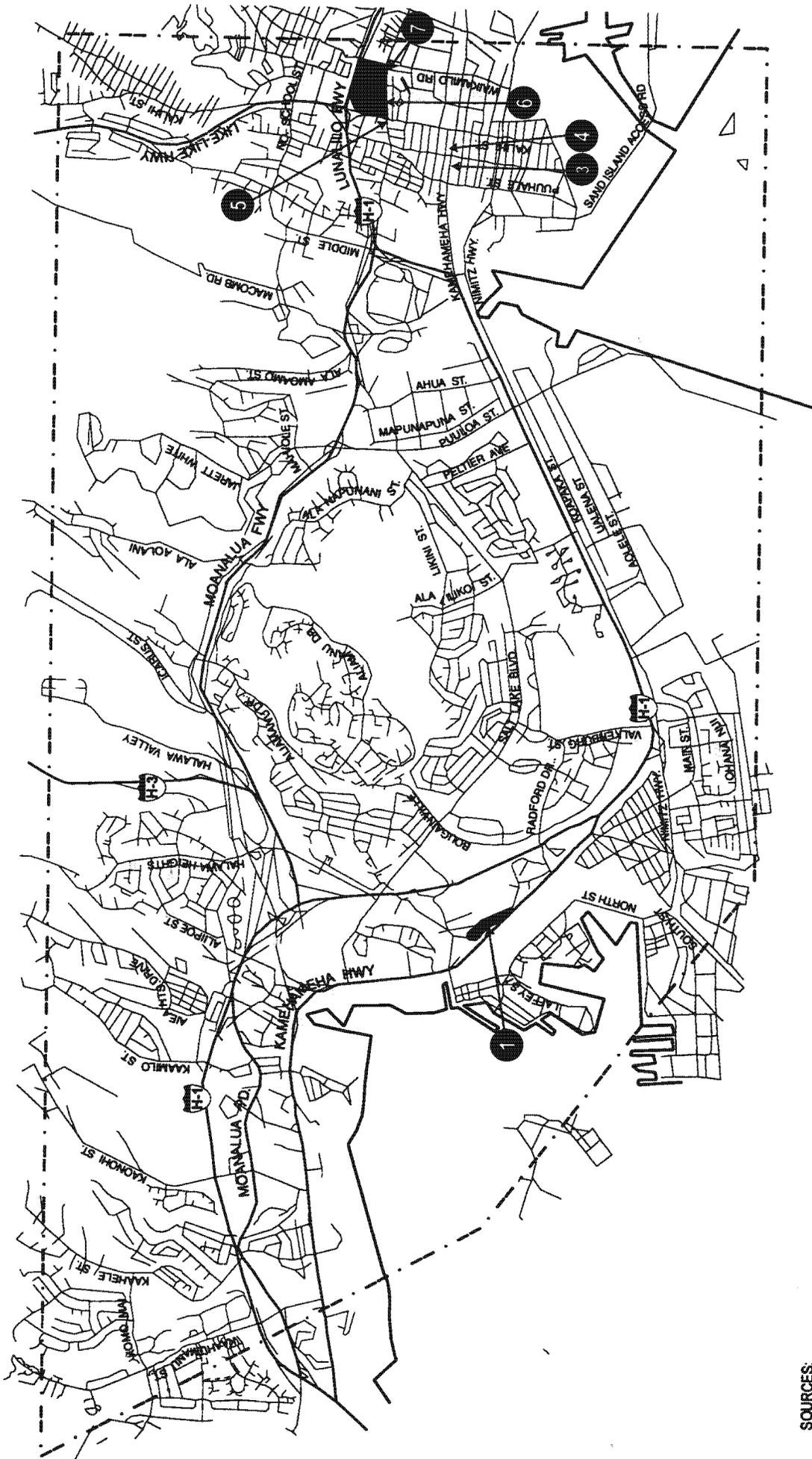
SOURCES:
 ESRI Atlas GIS v4.0 1998, Information Delivery System (IDS),
 March 1998; City and County of Honolulu, October 1998;
 National Historic Landmark, 1974.



Scale: 0 .25 .50 mi
 Scale: 0 .5 1 km

Pear Harbor Naval Base National Historic Landmark

Figure 4.1-1



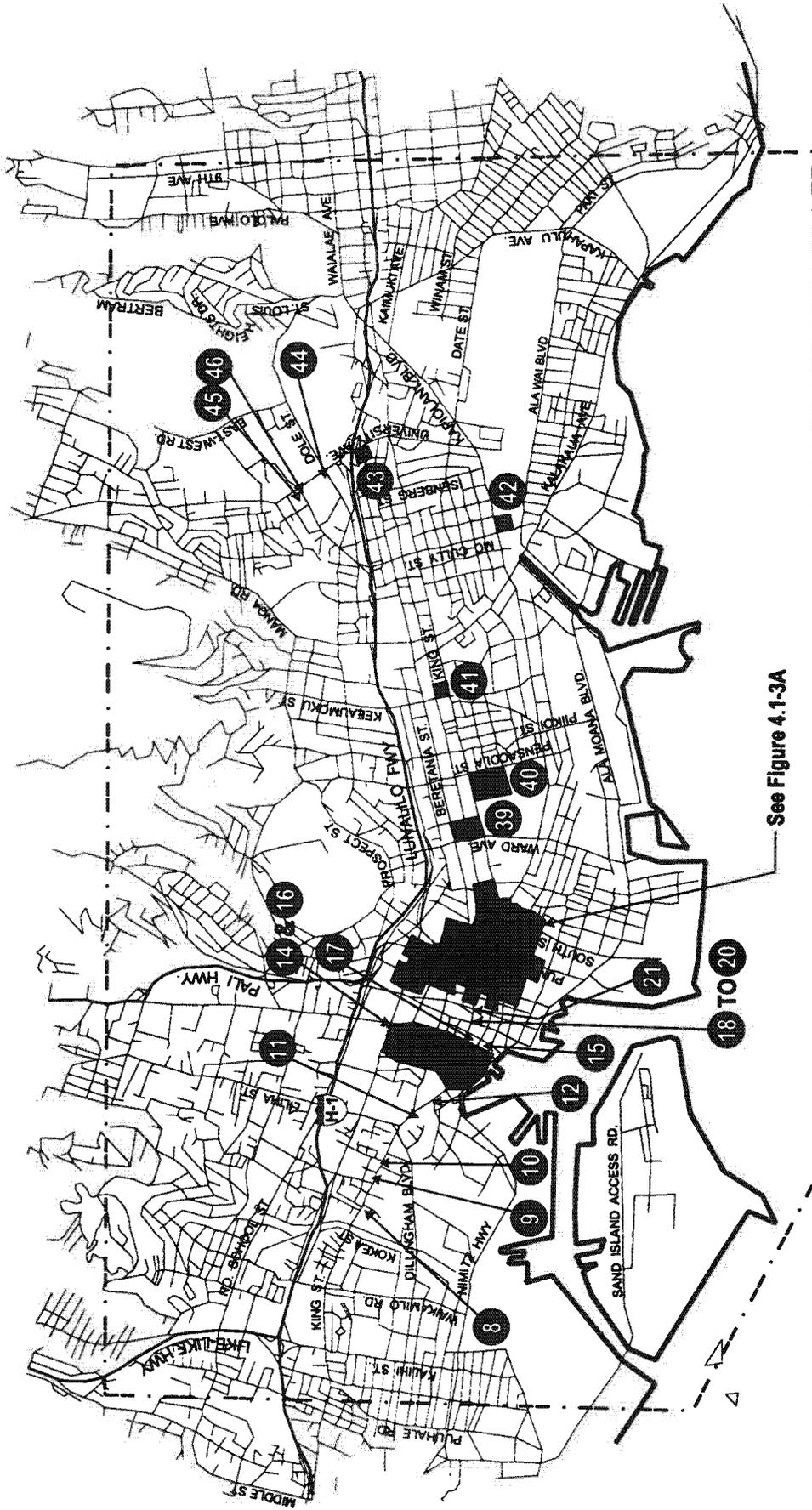
SOURCES:
 ESRI Atlas GIS v4.0 1998; Information Delivery System (IDS),
 March 1998; City and County of Honolulu, October 1998;
 Mason Architects Inc., May 1999.

* Numbers correspond to Historic-Period Resources listed on Table 4.1-1.



Historic-Period Resources in Area of Potential Effects, Aiea to Kalihi

Figure 4.1-2



See Figure 4.1-3A

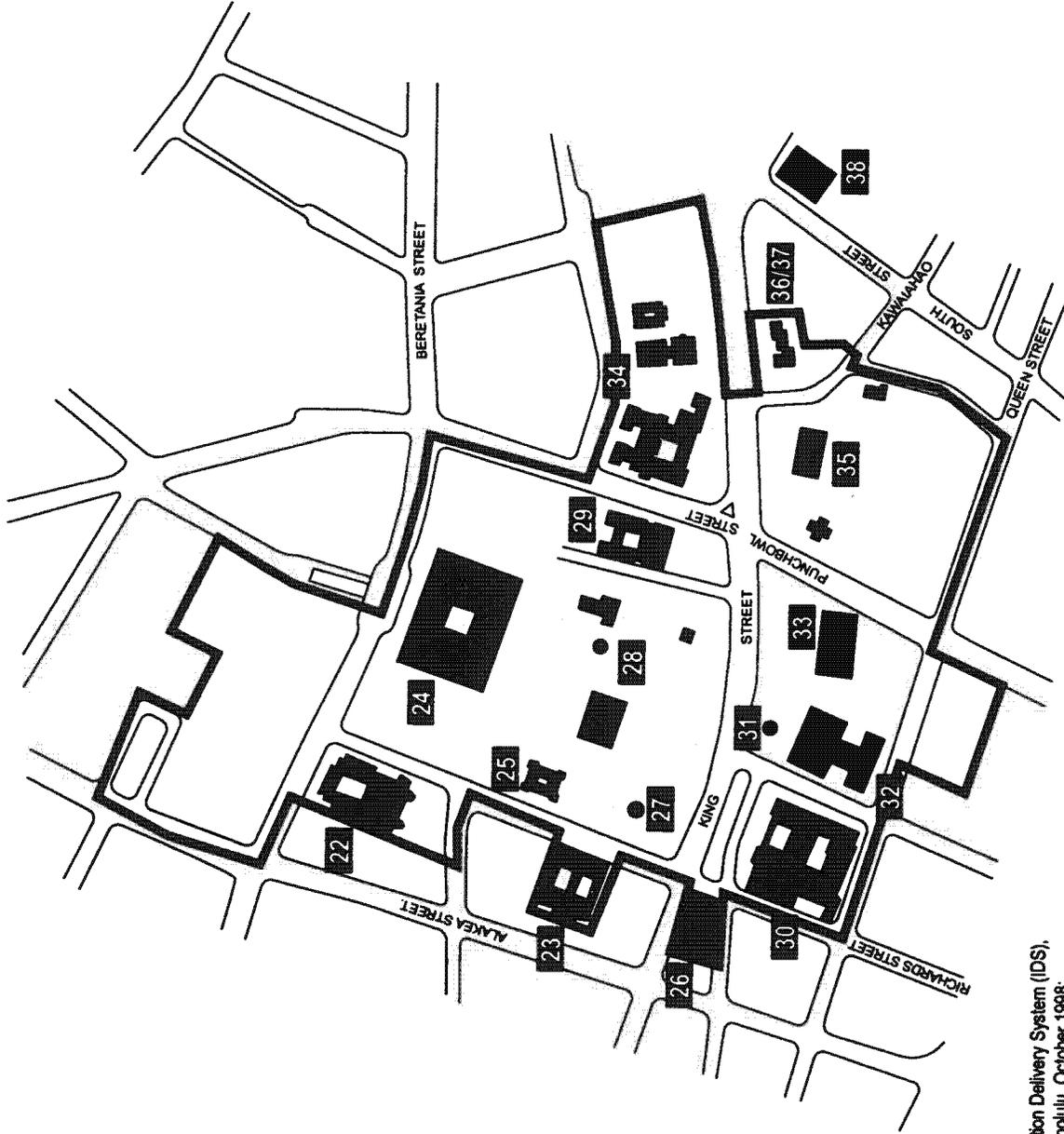
SOURCES:
 ESRI Atlas GIS v4.0 1998; Information Delivery System (IDS),
 March 1998; City and County of Honolulu, October 1998;
 Mason Architects Inc., May 1999.



* Numbers correspond to Historic-Period Resources listed on Table 4.1-1.

**Historic-Period Resources in Area of Potential Effects,
 Kailihi to University of Hawaii**

Figure 4.1-3



SOURCES:
 ESRI Atlas GIS v4.0 1998; Information Delivery System (IDS),
 March 1998; City and County of Honolulu, October 1998;
 Mason Architects Inc., May 1999.

* Numbers correspond to Historic-Period Resources listed on Table 4.1-1.



**Historic-Period Resources of the Hawaii Capitol Historic District
 in the Area of Potential Effects**

**Figure
 4.1-3A**

an urban center in the early 1800s, settled by the Hawaiians and other foreigners, as well as the Chinese. Honolulu Harbor had been an important trading center since early western contacts in the late 1700s, and development of this area was spurred when King Kamehameha moved his court from Waikiki to this area 1809. The Chinese were Hawaii's first large immigrant group and for over a century have dominated the businesses in this area. By 1884, while the number of Chinese engaged in plantation work declined, the Chinese population in Honolulu had reached 5,000, and was concentrated mainly in Chinatown. However, Chinatown was, and has always been an ethnically mixed community.

Chinatown's significance is based on its cultural, historical and architectural values. It is historically significant because it is the oldest part of downtown Honolulu with a great concentration of original buildings and uses. Chinatown is the earliest ethnic community in Honolulu and still is a distinctive cultural environment. The Chinatown buildings that are considered to be of architectural significance were constructed in the first few decades of the 20th century, after the Chinatown fire in 1900. These buildings are primarily simple, two- and three-story structures of common materials, but with interesting details and harmonious designs. Typically the buildings abut the front and side property lines, with awnings over the sidewalks. Together the buildings form a total environment that is greater than the sum of its parts.

4.1.1.3 Hawaii Capitol Historic District

The Hawaii Capitol Historic District includes most of the important civic buildings in the core of Honolulu (see Figure 4.1-3). Most are government-owned structures, but several are commercial or other institutional buildings. Twenty resources were specifically listed in the NRHP nomination for this district but this includes almost 30 resources, because several buildings or other resources are included under each of the following: Iolani Palace and Grounds, Kawaiahao Church and Grounds, Saint Andrew's Cathedral, and the Mission Houses. Several of the buildings had already been placed on the HR or NRHP individually, before the Hawaii Capitol Historic District was nominated. There is a wide range of architectural styles in the district with distinguished examples of Classical Revival, Romanesque, Spanish Mission, Italian Mediterranean, New England Colonial, French Baroque, and Georgian buildings.

The significance of this district resides in its architectural and visual character, including its large percentage of open space, as well as in its central role in the history of Oahu and all the Hawaiian Islands. Traditionally centralization of government for all of Hawaii has occurred in Honolulu. This has resulted in an unusual concentration of public and private architecture, spanning the years from 1820 (the Mission Frame House) through 1969 (the State Capitol Building). The government buildings have inspired neighboring uses, such as commercial firms, churches, YMCA and YWCA to erect buildings that complement the grandeur of the civic structures.

4.1.1.4 University of Hawaii Historic District

The University of Hawaii Historic District is a non-contiguous district that includes the historically significant structures on the Manoa campus (see Figure 4.1-3). The two main areas of the campus included in the historic district, around the original quadrangle and around a circular drive off Dole Street, are not near the proposed improvements. Wist Hall and Founders' Gate are isolated resources in the district. The two arches of the Founders' Gate are located at the mauka corners of the University Avenue and Dole Street intersection. This classical-style gate was erected in 1932, to commemorate the union of the University and the Normal School. Designed by Ralph A. Fishbourne, each half of the gate is a rounded archway with a lamp and a curved bench. The two halves were moved farther apart when University Avenue was widened.

Wist Hall is a two-story building of reinforced concrete with a stucco veneer. It was built in 1931 when the Territorial Normal School was joined with the University. This is the only design at the University by the noted local architect C.W. Dickey. This L-shaped building has a double-pitched hip roof of red tiles, with a cupola at

the intersection of the wings. The University Avenue side has a distinctive arched entry, with art deco decorations and a second-story balcony over it.

The significance of both the Founders' Gate and Wist Hall are related to the history of the incorporation of the Normal School into the School (later College) of Education at the University. Wist Hall is named for the first Dean of the School of Education, Benjamin Wist. Wist Hall is also significant for its architecture, which reflects the quest for a local style of architecture for the islands.

4.1.2 Buildings and Structures

Table 4.1-1 lists the known buildings, structures, and objects, as well as the districts, in the APE that are on or eligible for the NR. These resources are shown on Figures 4.1-2, 4.1-3 and 4.1-3A. As described in Section 3.1.1, most of these resources were identified from research of the NRHP and NR, the inventory files at the SHPD, and previous reports. Table 4.1-1 does not include resources from the windshield survey of the project area. One hundred and eighty resources within the APE were identified by the windshield survey. Date research of these resources narrowed this list to 117 resources with 1952 or earlier dates. This date-screened list is in Appendix A. As discussed in Section 3.1.1, further screening of this list will be performed, and an inventory survey completed for the resources on the final list.

4.2 ARCHAEOLOGICAL RESOURCES

As agreed in a meeting held on April 8, 1999, a letter, dated May 7, 1999, was sent to the SHPD requesting information on archaeological resources in the study area (see Appendix B). To date, no information has been received from SHPD. This will be part of the ongoing coordination effort during the summer of 1999. It is expected that archaeological resources in the APE would be subsurface.

4.3 TRADITIONAL CULTURAL PROPERTIES

As recommended by the SHPD, consultation was conducted with the Office of Hawaiian Affairs (OHA) to identify traditional cultural properties (TCP). In a meeting held on May 21, 1999, OHA identified potential TCPs associated with the Sand Island Bypass proposal, but none associated with any of the other improvements under the transit build alternatives.

Chinatown could be considered a TCP because it reflects Chinese cultural values and traditions in its architectural details, organization of space and activities (National Register Bulletin 38, 1994). As described in Section 4.1.1, Chinatown is a historic district listed on the NRHP.

**TABLE 4.1-1
KNOWN HISTORIC-PERIOD RESOURCES
IN THE AREA OF POTENTIAL EFFECTS**

Loc. No.	Historic Resource	Street	SIHP No.	Register Status ¹	Tax Map Key
1	Navy Makalapa Housing	Kamehameha Hwy.	None	TBD	9-9-2:4 (por.)
2	Pearl Harbor Naval Base National Historic Landmark (District)	Kamehameha Hwy.	80-13-9992	NHL	Various
3	Afuso House	Dillingham Blvd.	None	TBD	1-2-9:17
4	10 House Grouping	Dillingham Blvd.	None	TBD	1-2-2:113
5	Kalihi Fire Station	N. King St.	80-14-1346 (part of group)	HR & NRHP	1-3-5:22 (por.)
6	Farrington High School	N. King St.	None	TBD	1-6-21:5
7	BWS Kalihi Pumping Station	N. King St.	None	TBD	1-5-3:20
8	Palama Fire Station	N. King St.	80-14-1302 (part of group)	HR & NRHP	1-5-5:14
9	Kaumakapili Church	N. King St.	None	TBD	1-7-31:49
10	Palama Theater	N. King St.	None	TBD	1-5-6:33
11	Tong Fat Company, Ltd.	N. King St.	None	DE	1-5-7:3
12	OR&L Office & Document Storage Building and Station	N. King St.	80-14-1380	HR & DE	1-5-7:2
13	N. King St. Bridge over Nuuanu Stream	N. King St.	None	TBD	None
14	Chinatown Historic District	N. King St. and Hotel St.	80-14-9986	NRHP	All of plats 1-7-2,3,4, et al.
15	McCandless Building	S. King St.	80-14-9905	NRHP	2-1-2:13
16	Hotel Street Sidewalk Features [granite paving blocks and bluestone curbs]	Hotel St.	None	DE (1/11/80)	None
17	Hawaii Theatre	Hotel St.	80-14-1332	HR & NRHP	2-1-3:14
18	Hawaii Building	Hotel St.	None	DE (1/11/80)	2-1-3:12 (por.)
19	James Campbell Building	Hotel St.	None	DE (1/11/80)	2-1-2:1 (por.)
20	McCorriston Building	Hotel St.	None	DE (1/11/80)	2-1-10:20
21	Portland Building	Hotel St.	None	DE (1/11/80)	2-1-10:13
22	Armed Services YMCA (HCHD)	Hotel St.	80-14-1307	NRHP	2-1-17:1,2
23	Laniakea YWCA (HCHD)	Richards St.	80-14-1307	NRHP	2-1-17:9
24	Hawaii State Capitol and Grounds (HCHD)	Richards St.	80-14-1307	NRHP	2-1-24:all
25	'Iolani Barracks (HCHD)	Richards St.	80-14-9918	NRHP	2-1-25:2 (por.)
26	Hawaiian Electric Company (HCHD)	S. King St.	80-14-1307	NRHP	2-1-16:1
27	'Iolani Palace Bandstand (HCHD)	S. King St.	80-14-9912	NRHP	2-1-25:2 (por.)
28	'Iolani Palace and Grounds [includes fence and gates, Old Archives Building and Old Mausoleum] (HCHD)	S. King St.	80-14-9912	NRHP	2-1-25:2
29	Hawaii State Library (HCHD)	S. King St.	80-14-1307	NRHP	2-1-25:1
30	U.S. Post Office, Custom House, & Court House (HCHD)	S. King St.	80-14-9952	NRHP	2-1-25:4
31	The Kamehameha Statue (HCHD)	S. King St.	80-14-1307	NRHP	2-1-25:3 (por.)
32	Ali'iolani Hale (HCHD)	S. King St.	80-14-9908	NRHP	2-1-25:3 (por.)
33	Territorial Office Building (HCHD)	S. King St.	80-14-1307	NRHP	2-1-25:3 (por.)
34	Honolulu Hale and Grounds (HCHD)	S. King St.	80-14-1307	NRHP	2-1-33:7 (por.)

**TABLE 4.1-1 (CONTINUED)
KNOWN HISTORIC-PERIOD RESOURCES
IN THE AREA OF POTENTIAL EFFECTS**

Loc. No.	Historic Resource	Street	SIHP No.	Register Status ¹	Tax Map Key
35	Kawaiaha'o Church & Grounds [includes Lunalilo's Tomb & Adobe Schoolhouse] (HCHD)	S. King St.	80-14-9991	NHL	2-1-32:17
36	Mission Memorial Building and Annex (HCHD)	S. King St.	80-14-1307	NRHP	2-1-33:7 (por.)
37	Mission Houses (HCHD)	S. King St.	80-14-9991	NHL	2-1-32:2
38	Advertiser Building	Kapiolani Blvd.	None	DE (1/24/79)	2-1-47:4
39	Thomas Square	S. King St.	80-14-9900	NRHP	2-4-1:1
40	McKinley High School	S. King St.	80-14-9926	HR & NRHP	2-3-9:1 (por.)
41	Board of Agriculture & Forestry Building	S. King St.	80-14-9766	HR	2-4-5:18
42	Ala Wai Park Clubhouse	Kapiolani Blvd.	80-14-1388	HR (& DE?)	2-7-36:5
43	Church of the Crossroads	University Ave.	80-14-9749	HR & NRHP	2-8-6:17 (por.)
44	Founders' Gate (UHHD)	University Ave.	80-14-1352	HR	none
45	Wist Hall (UHHD)	University Ave.	80-14-1325	HR	2-8-15:1 (por.)
46	Atherton House	University Ave.	None	CE (11/8/91)	2-8-16:1 (por.)

Source: Spencer Mason Architects, Inc., August 1989 and Mason Architects, Inc., March 1999.

- Notes: ¹NRHP Listed on National Register of Historic Places.
 NHL Listed on National Register of Historic Places as a National Historic Landmark.
 HR Listed on Hawaii Register of Historic Places (very likely to be eligible for the National Register).
 DE Determined Eligible for the National Register by the Keeper of the NRHP.
 CE Considered Eligible for the National Register by concurrence of the SHPO and DTS (date of letter of concurrence given in parentheses).
 TBD To be determined at a later date. Inclusion to list based on results of the 1989 Inventory Survey Report for the Honolulu Rapid Transit Program Project and preliminary consultation with the SHPD.
 (HCHD): Part of Hawaii Capitol Historic District.
 (UHHD): Part of University of Hawaii Historic District.

5.0 POTENTIAL IMPACTS

5.1 CONSTRUCTION

Construction of any of the alternatives would cause traffic, noise, air quality and utility relocation impacts. However, none of these effects are anticipated to adversely affect the historic properties described in Section 4.0 because most work would occur in the roadway right-of-ways, except in areas where additional right-of-way would be acquired. No additional right-of-way would be acquired from a historic property. Also, it is unlikely that construction, especially in urban areas, would uncover unknown historic properties, such as burials or archaeological artifacts. According to OHA, it is unlikely that burials would be uncovered in areas mauka of Merchant Street or other similar shoreline roadways. Shoreline areas are known to contain burials because of their sandy soil. The transportation improvements (e.g., LRT alignments) occur on roadways mauka of Merchant Street and other similar shoreline roadways.

5.2 LONG-TERM

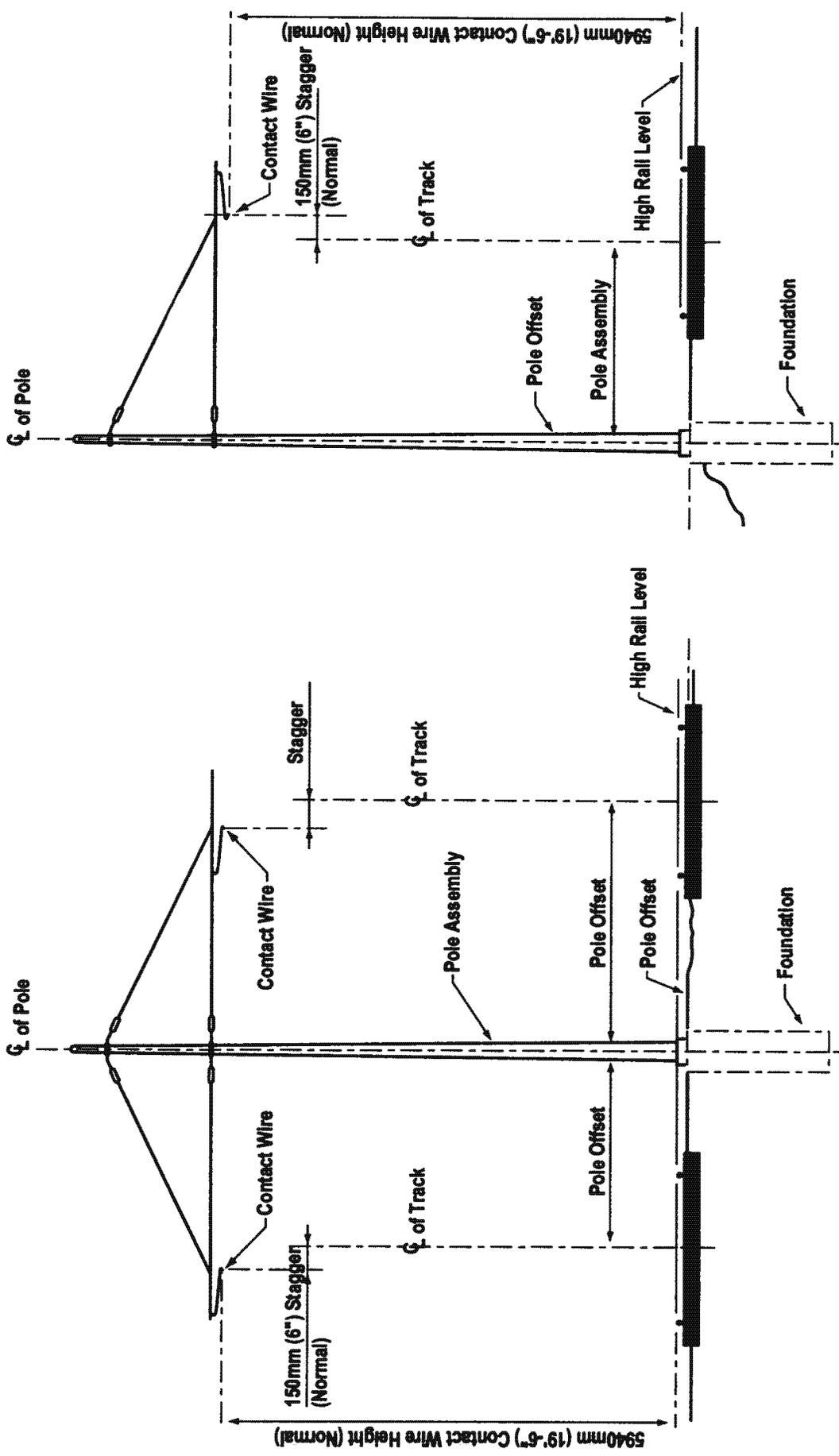
5.2.1 Historic-Period Resources

The proposed Primary Corridor Transportation Project involves several alternatives. For BRT or bus enhancement elements under the build alternatives (i.e., bus improvement elements of the TSM, BRT and LRT Alternatives), such as exclusive and semi-exclusive bus lanes and trams on tires, no historic properties would be affected because the APE for these types of transportation improvements was limited to the affected roadways. There are no known historic-period resources at or in close proximity to proposed new ramps, park-and-ride lots and transit centers.

For the LRT Alternative, the APE was defined as including the lots adjacent to the roadway right-of-ways. Therefore, the LRT Alternative has the potential to affect historic properties that are on lots next to the three optional routes. The known historic resources within the APE for any of the LRT options are listed in Table 4.1-1.

Comparing the likely impacts of the proposed LRT alignments to the examples of adverse effects in the Section 106 regulations, it is clear that most do not apply. The LRT Alternative would not result in the physical destruction of or damage to any historic building, nor would it alter or move any historic building or structure. The examples of adverse effects related to neglect, transfer, lease, or sale of historic properties would not apply to the project. The two examples of adverse effects that are most relevant to the proposed undertaking are (iv) and (v) (see Section 3.2). These effects relate to changes in the use and setting of a historic resource, or the introduction of visual elements that diminish its integrity.

The main change resulting from the LRT Alternative would be the introduction of overhead wires and their support poles. Schematic pole designs for center-running and curb-running alignments are shown in Figure 5.1-1. Also, the station designs would be different from existing bus stops, especially for the center-running alignment alternatives. Currently, the Draft Conceptual Design Drawings (May 1999) only show possible station locations. A typical station is generally 80 meters (270 feet) in length, and includes canopy shelters and benches, ticket machines and other amenities. These stations will be longer, and would include much more street furniture than existing bus stops. Many stations would also have a power substation located nearby. These are buildings approximately 3.6 meters (12 feet) tall, and measure 4.9 by 11.6 meters (16 by 38 feet), and would require an additional area for a grounding mat.



CENTER RUNNING
Not To Scale

CURB RUNNING
Not To Scale

SOURCE:
Parsons Brinckerhoff Quade & Douglas, Inc. May 1999.

Schematic Pole Designs

Figure 5.1-1

Assessing the effects of these changes on historic resources and districts is different from assessing their visual impacts. In some cases, changes may occur to the use of a historic property, especially where station locations may cause congestion at and/or obscuring of a historic resource. It is clear that there will be visual changes to the setting of historic properties. Assessing whether these changes would "diminish the integrity" of the properties' settings and feelings is more difficult. Overhead wires, whether for trolleys or electric power, were part of the original setting when most of the historic resources listed in Table 4.1-1 were constructed. The main exceptions are those built before 1888, when electric streetlights in the downtown area were first installed (Thrum 1888: 89). The properties with dates before this period of electrification are: 'Iolani Palace Bandstand (1883), 'Iolani Palace (1882) and Grounds (including the site of the 1825 Royal Mausoleum), the Kamehameha Statue (1883), Ali'iolani Hale (1874), Kawaiaha'o Church (1842) and Grounds (including the 1876 Lunalilo's Tomb and the high portion of the churchyard walls), and the Mission Houses (1821 for the Frame House, 1823 for the Printing Building, and 1831 for the Chamberlain House).

Overhead wires were part of the city setting from 1888 through the 1960s. The first overhead wires were part of the Government's (Kingdom's) electric light system, but this system was soon augmented, and then absorbed, by the Hawaiian Electric Company's system. Additional wires were added as telephone systems developed, and as the electric trolley system expanded after 1900 (Honolulu Advertiser, January 12, 1900). Hawaiian Electric started putting its power lines underground in the downtown area as early as 1925 (Honolulu Advertiser, May 9, 1925). When Hawaiian Electric announced in 1936 that undergrounding of wires had started on King Street, they noted that poles and some wires would remain to "support telephone company and city-county equipment" (Honolulu Advertiser, April 14, 1936). Trolley wires were not taken down until 1957, after an all-bus system was initiated (Honolulu Star Bulletin, July 10, 1957). In 1965 the city-owned overhead wires in the Capitol District were placed underground (Honolulu Advertiser, February 7, 1965). As part of an improvement district, the burying of power lines on South King Street between Alder Street and Punahou Street was done in 1967 (Honolulu Star Bulletin, July 1, 1967).

There is the long-term possibility that some historic resources near the transit stations would be subject to additional development pressures that could result in their demolition or remodeling in a manner inconsistent with the Secretary's Standards for the Treatment of Historic Properties. This possibility is less likely in areas with strict development controls, such as the Chinatown and the Hawaii Capitol Districts.

The location of the rail within the street, whether it is center running or curbside running, can influence the potential that the system could have an adverse effect on a historic resource. Some of the known historic resources are located very close to the street, with only a narrow sidewalk separating them from the street curb. A resource with this type of siting is more likely to be adversely affected by a curbside running system, especially if a station is located next to it, than a resource that has more space between it and the street.

Historic-period resources that have multiple streetside commercial entries may be adversely affected by stations located adjacent to them. Increased pedestrian congestion may cause difficulties in customer access and movement. This could affect the use, feeling and setting of the resource, and could ultimately affect the economic viability of the historic building.

Table 5.1-1 provides a summary of the potential impacts of the LRT Alternative on known historic-period resources. As noted above, the bus improvement elements of the build alternatives would not affect any known historic-period resource, and there are no known historic-period resources at or in close proximity to proposed new ramps, park-and-ride lots and transit centers. Discussions of the historic-period resources that could potentially be adversely affected by at least one of the alignment options of the LRT Alternative are provided below. As described in Section 3.2, the purpose of the impact analyses provided in this section is to assist in project planning. Consultation with the SHPD and the SHPO will be held, and modifications or conditions to the undertaking will be discussed, with the goal of reaching findings of no adverse effect for all historic properties in the APE. Section 6.0 provides mitigation measures that may help to accomplish this goal.

**TABLE 5.1-1
SUMMARY OF POTENTIAL EFFECTS TO KNOWN HISTORIC-PERIOD RESOURCES**

Historic Resource	Street	LRT Option 1	LRT Option 2	LRT Option 3
Navy Makalapa Housing	Kamehameha Hwy.	2	1	1
Pearl Harbor Naval Base National Historic Landmark	Kamehameha Hwy.	2	2	1
Afuso House	Dillingham Blvd.	1	2	1
10 House Grouping	Dillingham Blvd.	1	2	1
Kalihi Fire Station	N. King St.	2	1	2
Farrington High School	N. King St.	4, 5	1	4, 5
BWS Kalihi Pumping Station	N. King St.	2	1	2
Palama Fire Station	N. King St.	3	1	3
Kaumakapili Church	N. King St.	2	1	2
Palama Theater	N. King St.	3	1	3
Tong Fat Company, Ltd.	N. King St.	3	3	3
OR&L Office & Document Storage Building and Station	N. King St.	4	4	4
N. King St. Bridge over Nuuanu Stream	N. King St.	3	3	3
Chinatown Historic District	King St., Hotel St.	3, 4	3, 4	3, 4
McCandless Building	S. King St.	3	2	3
Hotel Street Sidewalk Features [granite paving blocks and bluestone curbs]	Hotel St.	1	3, 4	1
Hawaii Theatre	Hotel St.	1	2	1
Hawaii Building	Hotel St.	1	2	1
James Campbell Building	Hotel St.	1	3	1
McCorriston Building	Hotel St.	1	2	1
Portland Building	Hotel St.	1	3	1
Armed Services YMCA (HCHD)	Hotel St.	1	2	1
Laniakea YWCA (HCHD)	Richards St.	1	3	1
Hawaii State Capitol and Grounds (HCHD)	Richards St.	1	2	1
'Iolani Barracks (HCHD)	Richards St.	1	2	1
Hawaiian Electric Company (HCHD)	S. King St.	3, 4, 5	3, 4, 5	3, 4, 5
'Iolani Palace Bandstand (HCHD)	S. King St.	6	6	6
'Iolani Palace and Grounds [includes fence and gates, Old Archives Building and Old Mausoleum] (HCHD)	S. King St.	3, 6	3, 6	3, 6
Hawaii State Library (HCHD)	S. King St.	2	2	2
U.S. Post Office, Custom House, & Court House (HCHD)	S. King St.	5	5	5
The Kamehameha Statue (HCHD)	S. King St.	6	6	6
Ali'iolani Hale (HCHD)	S. King St.	6	6	6
Territorial Office Building (HCHD)	S. King St.	2	2	2
Honolulu Hale and Grounds (HCHD)	S. King St.	4	4	4
Kawaiaha'o Church & Grounds [includes Lunalilo's Tomb & Adobe Schoolhouse] (HCHD)	S. King St.	2	2	2

**TABLE 5.1-1 (CONTINUED)
SUMMARY OF POTENTIAL EFFECTS TO KNOWN HISTORIC-PERIOD RESOURCES**

Historic Resource	Street	LRT Option 1	LRT Option 2	LRT Option 3
Mission Memorial Building and Annex (HCHD)	S. King St.	2	2	2
Mission Houses (HCHD)	S. King St.	6	6	6
Advertiser Building	Kapiolani Blvd.	3	2	3
Thomas Square	S. King St.	1	3, 4, 5	1
McKinley High School	S. King St.	2	2	2
Board of Agriculture & Forestry Building and Lawn	S. King St.	1	4, 5	1
Ala Wai Park Clubhouse	Kapiolani Blvd.	2	1	2
Church of the Crossroads	University Avenue	2	2	2
Founders' Gate (UHHD)	University Avenue	4	4	4
Wist Hall (UHHD)	University Avenue	2	2	2
Atherton House	University Avenue	2	2	2

Source: State Historic Preservation Division files and Mason Architects, Inc., May 1999

Notes: (HCHD): part of Hawaii Capitol Historic District.

(UHHD): part of University of Hawaii Historic District.

Explanation of numbers in LRT Alternative Option columns:

1: Planned LRT alternative does not pass by (historic resource not in APE for this alternative).

2: Not likely to be adversely affected by planned LRT alternative.

3: Location of historic resource relative to street contributes to potential finding of adverse effect.

4: Planned location of station adjacent to historic resource contributes to potential finding of adverse effect.

5: Planned location of power substation contributes to potential finding of adverse effect.

6: Date of construction before 1888 (electric streetlights in downtown area first installed) may contribute to potential finding of adverse effect.

5.2.1.1 Historic Districts

Chinatown Historic District

Chinatown currently has no overhead wires. There are light poles and traffic signals in the district, with Hotel Street having period-style fixtures of green-painted metal, while King Street has modern aluminum lamps on wooden poles, and steel traffic signals. Many of the buildings along Hotel Street and North King Street are separated from the street by only the sidewalk, and have several commercial entries into the building from the street-front elevation. Many shop owners utilize the sidewalk area for additional product display areas, creating an outdoor street market atmosphere that contributes to the character of this district. LRT system pole assemblies and stations that are located in front of a building, besides visually obscuring the structures, may cause additional congestion that would prevent this market activity from occurring, changing the setting and feeling of this popular shopping area. The planned Ewa-direction station in Chinatown (LRT Option 1 and 3), which would be on the block between Maunakea and Kekaulike Streets, would affect a large number of entries to small street-level shops.

The Hotel Street sidewalk granite paving blocks, and the bluestone curbs are the only sidewalk elements in the district that have specifically been mapped and determined eligible, but numerous other streets have bluestone curbs, both within and outside the Chinatown District. These elements are considered contributing features of the Chinatown Historic District. The LRT Alternative could potentially adversely affect these curbs because they are in the road right-of-way.

The North King Street Bridge over Nuuanu Stream is considered part of the Chinatown Historic District. There are currently concrete poles at each corner of the bridge, with a single wire. The addition of poles and catenaries of the LRT Alternative (all options) has the potential to adversely affect this historic resource, by changing the design, materials, setting, feeling, and association of the bridge.

Hawaii Capitol Historic District

There are currently no overhead wires in the downtown Honolulu and the Hawaii Capitol Historic District. Most of the resources in the Capitol District are set back from the street with generous open space around them. However, there are three exceptions. The Laniakea YWCA, the Hawaiian Electric Company, and the 'Iolani Palace fence and gates are located very close to planned LRT alignments. The YWCA has only the sidewalk and a narrow landscaped area between the building and Richards Street, the alignment of LRT Option 2. The Hawaiian Electric building and the palace fence have only sidewalks between them and all the LRT options. These resources could be adversely affected by placing additional poles and wires in front of them, because they would change their setting and feeling. It is likely that any view of their streetside elevation(s) would include additional poles and wires, since these resources are longer than the 27-meter (90-foot) typical spacing of the poles (Ball, 1999).

An LRT station (Options 1 and 3) is also planned in front of the Hawaiian Electric Company building. The already narrow sidewalk may become more congested by people and any structures necessary for the station. This historic building may be adversely affected by the station structures. Another station is planned in front of City Hall (all options). There is more space here between the building and the sidewalk, but the placement of station structures could still change the setting of this important building.

A power substation may be located in the landscaped parking lot between King Street and the U.S. Post Office (Old Federal Building). This could be an intrusive new structure that changes the setting and feeling of both the Hawaiian Electric Company building and the U.S. Post Office (Old Federal Building).

Several resources within the Hawaii Capitol Historic District were built before 1888, when electric streetlights in the downtown area were first installed. These include the 'Iolani Palace Bandstand, 'Iolani Palace and Grounds, the Kamehameha Statue, Ali'iolani Hale, Kawaiaha'o Church and Grounds, and the Mission Houses (Frame House, Printing Building, and Chamberlain House). Overhead wires were part of the setting of downtown from 1888 until approximately 1965, when the last wires were placed underground. Since then these resources have been visually "wire-free." The re-introduction of wires may adversely affect these nineteenth-century historic resources, by altering their setting, feeling, and association.

University of Hawaii Historic District

At the University of Hawaii area, a station is planned on University Avenue at the mauka side of Dole Street. This station would be near the Founders' Gate, located at the mauka corners of University Avenue and Dole Street. A center track station would have less potential to adversely affect the Founders' Gate than a pair of curbside stations. In either case, a location close to the gate could potentially adversely affect it by altering its setting, feeling, and association.

5.1.2.2 Historic Resources Not in Districts

Farrington High School

Most of the buildings for this historic school are set back from North King Street (LRT Options 1 and 3) with parking or lawn in front, but, the main building is sited closer to the street. Wood utility poles with overhead wires, light poles, and streetlights are currently located along the street edge. Additional overhead wires from

the LRT system would not likely adversely affect the resource. However, the planned station and power substation could potentially have an adverse effect by altering the setting, feeling, and association of the resource.

Palama Fire Station

This historic fire station is located directly adjacent to North King Street, with only a narrow sidewalk between the building and the street. Wood utility poles are currently located at the sidewalk edge, at either side of the building. Additional poles (LRT Options 1 and 3) along this building frontage could add to the visual congestion, and could potentially have an adverse effect by altering the setting, feeling, and association of this resource.

Palama Theater

This historic theater is sited very close to King Street, with only a narrow sidewalk between the building and the street. There are currently wood utility poles located at the sidewalk edge with overhead wires and light fixtures. Additional poles (LRT Options 1 and 3) along this wide building frontage are likely to be needed, and could add to the visual congestion. The poles could potentially have an adverse effect by altering the setting, feeling, and association of this resource.

Tong Fat Company, Ltd.

This historic commercial building is sited directly along North King Street, with only a narrow sidewalk between the building and the road. Three wood utility poles are currently located at the sidewalk edge with overhead wires. Additional poles (all options) along this building frontage would add to the visual congestion. Approximately 7-10 businesses are accessed from the sidewalk at the King Street elevation. Additional congestion could create a hardship for these businesses by making access more difficult and the businesses less visible. The pole assemblies could potentially have an adverse effect by altering the setting or use of this resource. Currently the bus stop in front of this building contributes to pedestrian congestion at times. The plan to have an LRT station just one lot away from this building may improve the circulation situation.

OR&L Depot and Document Storage Building

One corner of the OR&L depot (terminal) building is very close to North King Street, with the north side of the building at an angle to this street. The document storage building, with an adjacent vault, is approximately 15 meters (50 feet) from the street. There are existing wood utility poles and wires along the street. The planned LRT station (all options) structure could change the setting of the OR&L complex. This may not be considered an adverse effect, since the LRT station and the old railroad station are similar uses.

McCandless Building

This historic building is located at the corner of King Street and Bethel Street, with only a narrow sidewalk between the building and both streets. There are currently no overhead wires or utility poles near this building, although there is a traffic signal. Erecting system pole assemblies (all options) along the King Street building frontage could potentially have an adverse effect by altering the setting, feeling, and association of this resource. Since the frontage on King Street is narrow, it is likely that pole placement could avoid this historic building.

James Campbell Building

This historic building is located at the corner of Hotel Street and Fort Street Mall, with only a narrow sidewalk separating it from the street. There are currently no overhead wires along Hotel Street, and only one metal

light pole is near this building, which has a long frontage on Hotel Street. Erecting system pole assemblies (LRT Option 2) along this building frontage could potentially have an adverse effect by altering the setting, feeling, and association of this resource.

Portland Building

This historic building is located directly adjacent to Hotel Street, at Union Mall, with only a narrow sidewalk between the building and the street. There are currently no overhead wires along Hotel Street, and no light poles or other utility poles near this small building. Erecting system pole assemblies (LRT Option 2) along this building frontage could potentially have an adverse effect by altering the setting, feeling, and association of this resource. Since the frontage on Hotel Street is narrow, it is likely that pole placement could avoid this historic building.

Advertiser Building

This historic building is located directly adjacent to Kapiolani Boulevard, with only a narrow landscaped area and sidewalk between the building and the boulevard. There are currently no overhead wires, but there are aluminum poles with lights and traffic signals along the boulevard frontage. Erecting system pole assemblies (LRT Options 1 and 3) along this wide building frontage could potentially have an adverse effect by altering the setting, feeling, and association of this resource.

Thomas Square

This historic park can currently be seen from South King Street with only a few metal light poles altering the historic setting and feeling. There are no overhead wires in this area. As part of LRT Option 2, a station and a power substation are planned at the South King Street side of the square. These structures and the system pole assemblies could potentially have an adverse effect by altering the setting, feeling, and association of this historic landscaped park resource.

Board of Agriculture and Forestry Building and Lawn

The nomination form for this historic resource includes the landscaped, park-like portion of the lot as well as the historic building. Four of the trees are on the City's exceptional trees list. There are no overhead wires adjacent to this lot, but there are modern light poles along the street frontages. As part of LRT Option 2, a station and a power substation are planned at this parcel. These structures and the system pole assemblies could potentially have an adverse effect by altering the setting, feeling, and association of this historic building and landscaped area.

5.2.2 Archaeological Resources

The long-term affects of the alternatives on archaeological resources in the project area cannot be determined until the list of resources is provided by the SHPD. Ongoing coordination with the SHPD will progress over the summer of 1999 on this matter. Since the archaeological resources in the APE are expected to subsurface, adverse effects are not anticipated.

5.2.3 Traditional Cultural Properties

The only known potential TCP in the project area is Chinatown. The effect assessment for the Chinatown Historic District is described in Section 5.2.1.1.

6.0 MITIGATION MEASURES

6.1 CONSTRUCTION

If a burial or archaeological resources are uncovered during construction, work would stop immediately, and the SHPD would immediately be notified. Construction would resume upon approval of the appropriate authorities.

6.2 LONG-TERM

6.2.1 Historic-Period Resources

A center running system in areas that contain known historic resources located near the roadside may minimize adverse effects on these resources. However, consultation with the SHPO is required to determine whether this would make a difference. If a curbside system is necessary, placing as few system pole assemblies near the resource as possible can minimize the effect. For historic resources that consist of a single building that has a relatively small street frontage, the catenary system should be planned so those poles are not sited in front of the building. For larger resources or districts, pole placement should be arranged such that as few poles as possible are located in front of the most significant resources, or significant portions of the resource. The possibility of combining streetlight poles and catenary poles should be considered to minimize the number of additional poles added in front of historic resources, especially in the historic districts. Ideally, the poles should be as unobtrusive, as thin, and as widely spaced as possible.

Stations should not be located next to historic resources, if a reasonable alternative location is available. Stations have the potential cause an adverse effect upon a historic resource. They could change the setting and feeling of the historic property by increasing the number of modern structures, partially or entirely blocking sight lines to the historic property, and by potentially increasing the amount of trash, graffiti and other pollution in the area.

The number and size of associated structures of an LRT station can vary substantially. While some form of shelter structures and system signage are inevitable, these features should be minimized when stations must be located next to historic resources. Shelters and other structures should be located away from historic resources, if possible. Stations within historic districts, such as Chinatown and the Capitol districts, should be designed to be compatible with the style of the nearby historic resources. Signs should be as small as possible, and sited so they do not detract from or obscure the significant features of the historic resources.

6.2.1.1 Historic Districts

Chinatown Historic District

The existing light poles along King Street are modern, wood or metal poles, while those at Hotel Street are historic-style metal poles. Along Hotel Street, the LRT system catenaries could perhaps be supported on the existing light poles. Additional pole assemblies on King Street and its bridge over Nuuanu Stream should also be avoided.

The LRT stations should avoid being placed in front of commercial buildings with only a small sidewalk area between the building and the street. If this is necessary due to the length of the station [80 meters (270 feet)] compared to the length of the blocks in Chinatown [often less than 80 meters (270 feet)], the extent of station

structures and the number of poles should be minimized to help reduce the amount of physical and visual congestion in front of the historic buildings. The design of the station structures in Chinatown should be sensitive to the architecture of the adjacent historic buildings.

It is possible that the construction of the LRT system, especially the stations in Chinatown could adversely affect the King and Hotel Street Sidewalk Features [granite paving blocks and bluestone curbs]. When constructing the LRT system tracks and stations, care must be taken to avoid damaging these historic elements. Provisions to protect, or to temporarily remove and replace, these elements should be discussed with the SHPO.

Having both tracks run parallel through the Chinatown portion of King Street, on the makai side, instead of having one lane of traffic between the two tracks, might also minimize impacts to the small shops. The makai side is better because there are several modern buildings on this side of King Street (between Kekaulike Street and Nuuanu Avenue) that are set farther back, where station structures could more easily be sited to minimize impacts on historic buildings.

Hawaii Capitol Historic District

The system pole assemblies should be spaced as far apart as possible in front of the Laniakea YWCA and the Hawaiian Electric Company building because they would be located very close to the LRT system. This will minimize the effect on the historic buildings from the street level. The number of additional poles running along the 'Iolani Palace fence should be minimized, perhaps by utilizing dual-use poles for streetlights and the LRT.

The LRT station proposed to be located in front of the Hawaiian Electric Company building and the power substation in front of the U.S. Post Office should be moved a block or two in the Ewa direction. These locations are outside the Capitol Historic District and have much more open space for siting LRT structures. The station in front of City Hall could be moved to a location in front of the City Office Building. If this is not possible, the station in front of City Hall could be shifted slightly to the Diamond Head direction, with minimal shelter structures to avoid changing the setting of the main entry portion of City Hall.

At the pre-1888 structures, poles, wires, and structures associated with the LRT system should be minimized to lessen the effect on the setting of these historic resources. The sight path between Ali'iolani Hale, the Kamehameha Statue, and 'Iolani Palace is particularly important, and this area of the system should be designed to preserve the open space and visual sight lines between them. The SHPO should be consulted about the designs for the pole assemblies and station-related structures in the Capitol district.

University of Hawaii Historic District

The station to be located at the University end could be located further away from the Founders' Gate, either makai of Dole Street or perhaps by having the tracks turn down Dole Street. If this is not possible, the pole assemblies and any necessary station structures should be designed to have a minimum effect on the setting of the Founders' Gate to avoid altering the setting, feeling, and association of this resource.

6.2.1.2 Historic Resources Not in Districts

Farrington High School

The station structures and pole assemblies for the station to be located at this historic high school should be sited away from the main school building, as indicated on the Draft Conceptual Design Drawings. The main building is located near the middle of the site and closer to North King Street than most of the other school

structures. This decorative building acts as the "sign" for the complex, and it is important to keep the area in front of it as unaltered as possible.

Palama Fire Station

The LRT pole assemblies should not be placed directly in front of this historic structure. The King Street frontage of the building is relatively narrow, and the poles can be sited on either side of the building to avoid affecting the setting of this historic resource.

Palama Theater

The frontage of this building on King Street is 33 meters (108 feet), which is slightly more than the 27-meter (90-foot) maximum spacing of the pole assemblies. If the spacing can be increased here, the LRT pole assemblies should not be placed directly in front of this historic structure. If not, the poles should be symmetrically sited, not near the central section, to minimize the effect on this historic resource.

Tong Fat Company, Ltd.

This building runs almost 60 meters (200 feet) along King Street. Therefore, some LRT pole assemblies will have to be sited along it. The pole siting should take into consideration the existing poles and the symmetrical design of the building when decisions on placement are made.

OR&L Depot and Document Storage Building

Perhaps the LRT station planned next to the OR&L complex could be relocated to the block between Iwilei Road and Awa Street. If it cannot be moved, the station design should be sensitive to the architecture of the OR&L complex and emphasize the connection between the transportation systems. The shelter structure(s) should be placed to minimize effects on the views to the OR&L buildings.

McCandless Building

The LRT pole assemblies should not be placed directly in front of this historic structure. The King Street frontage of this building is relatively narrow, so the poles can be sited on either side of the building.

James Campbell Building

The frontage of this building on Hotel Street is slightly more than 30 meters (100 feet), so it is likely that at least one pole assembly will be placed along this facade. The siting of the pole should avoid the entry area and the decorative corner of the building.

Portland Building

The LRT pole assemblies should not be placed directly in front of this historic structure. The Hotel Street frontage of this building is relatively narrow, so the poles can be sited on either side of the building.

Advertiser Building

The LRT system pole assemblies should not be placed directly in front of this historic structure. The frontage of the building along Kapiolani Boulevard may be greater than the 27-meter (90-foot) pole spacing. If possible, the poles should be sited on either side of the building, and in any case their siting should be as unobtrusive as possible.

Thomas Square

The LRT station could be relocated to a nearby block that is not in front of this historic property. If the station remains in front of Thomas Square, it should be designed with minimal and historically compatible structures and pole assemblies to reduce the impact upon the resource, and avoid altering the setting of this historic park. The power substation should be relocated, and not placed in Thomas Square.

Board of Agriculture and Forestry Building and Lawn

The LRT station could be relocated to a nearby block that is not in front of this historic property. If the station remains in front of this parcel, it should be designed with minimal and historically compatible structures and pole assemblies to reduce the impact upon the resource, and avoid altering the setting of this historic building and open space. The power substation should be relocated, and not placed in this parcel.

6.2.2 Agricultural Resources

Recommended mitigation measures are pending additional consultation with the SHPD over the summer of 1999.

6.2.3 Traditional Cultural Properties

Measures to minimize adverse effects to Chinatown, the only known TCP identified at this time, are provided in Section 6.2.1.1.

7.0 REFERENCES

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- Thrum, Thomas, Hawaiian Almanac and Annual for 1889. Honolulu: Press Publishing Co., 1888.
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- U.S. Department of the Navy, Pearl Harbor Historic Preservation Plan, 1978.
- United States, Code of Federal Regulations, as amended.

**APPENDIX A
WINDSHIELD SURVEY LIST OF BUILDINGS IN
AREA OF POTENTIAL AFFECTS
WITH DATES BEFORE 1953**

Building Name	Address	TMK	Date
Shigemi house	1883 N. King St.	1-2-1:41	1924
barber shop	1883 N. King St.	1-2-1:41	1948
James R. Winston building	1943 N. King St.	1-2-1:92	1948
Duarte house (w. of Kalihi St., mauka side)	1720 Dillingham Blvd.	1-2-2:108	1926
Higa duplex next to Afuso house	1933 Dillingham Blvd.	1-2-9:17	1941
Teixeira house	1927-A Dillingham Blvd.	1-2-9:18	1945
Fujita 3 houses, one w/ lava stone stairwall	2124 Dillingham Blvd.	1-2-12:15	1922
BOC Gases/Gaspro (building closest to stream)	2375 Kamehameha Hwy.	1-2-13:21	1936
Nakano house (next to Kalihi Union Church)	2190 N. King St.	1-3-2:6	1944
Edward M.L. Ching building	2110 N. King St.	1-3-3:26	1950
Choy house	1910 N. King St.	1-3-4:16	1929
Oahu Noodle Factory	1924 N. King St.	1-3-4:17	1946
Barboza house	1818 N. King St.	1-3-5:31	1915
café & auto shop	1818 N. King St.	1-3-5:31	1946
Jimmy's Produce & Filipino Store	1874 N. King St.	1-3-5:33	1929
Butcher Man & thrift shop	1716 N. King St.	1-3-5:44	1948
Hall Saimin and other businesses	927 N. King St.	1-5-4:19	1949
Shonk 1-story commercial building	1001 N. King St.	1-5-4:21	1946
fenced-in bldg. in OR& L complex	337 N. King St.	1-5-7:1	1940
row of 6 Quonset Huts	1015 Dillingham Blvd.	1-5-15:8	1943
Siu Hoy / Nakamori house	908 N. King St.	1-6-1:13	1910
Siu Hoy / Song house	914 N. King St.	1-6-1:101	1910
Siu Hoy / Miyamoto house	922 N. King St.	1-6-1:102	1910
Family Market	928 N. King St.	1-6-1:103	1948
Blue Art Deco building (at corner of Morris Lane)	1160 N. King St.	1-6-2:29	1931
Kwock Hin, Ltd. building (near Houghtailing St.)	1370 N. King St.	1-6-3:79	1952
Old Advertiser building / Arcade building	207 S. King St.	2-1-16:3	1935
Wolter building (corner of Alakea St.)	203 S. King St.	2-1-16:5	1950
Austin building / Old HECO building	223 S. King St.	2-1-16:6	1901
War Memorial	Punchbowl & S. King Sts.	2-1-25:3	1944
Columbia Inn	645 Kapiolani Blvd.	2-1-47:5	1939
Kapiolani Flamingo	871 Kapiolani Blvd.	2-1-49:64	1952
Kodak building	1065 Kapiolani Blvd.	2-3-3:75	1939
The Green Comb (makai/Ewa corner at Piikoi)	1297 Kapiolani Blvd.	2-3-7:98	1946
Nitta commercial building (w/ saimin restaurant)	Pensacola & S. King Sts.	2-3-11:12	1951

**WINDSHIELD SURVEY LIST OF BUILDINGS IN
AREA OF POTENTIAL AFFECTS
WITH DATES BEFORE 1953
(CONTINUED)**

Building Name	Address	TMK	Date
Fukumoto commercial building (w/ Hawaii Digital)	1113 S. King St.	2-3-11:13	1947
Ishikawa 1-story commercial building (w/ Bo Lai)	1117 S. King St.	2-3-11:14	1941
commercial building (w/ Fan Shop)	1125 S. King St.	2-3-11:15	1951
Chow 1-story commercial bldg. (w/ State Drapery)	1133 S. King St.	2-3-11:16	1947
Masui 1-story commercial building (w/ cigar store)	1145 S. King St.	2-3-11:17	1941
Saiki 1 ½ -story commercial bldg. (w/ Bike Shop)	1149 S. King St.	2-3-11:18	1941
Wong commercial bldg (w/ Washington Saimin)	1155 S. King St.	2-3-11:19	1941
Yamanaka 1-story building (w/ Hokama's Music)	1319 S. King St.	2-3-13:10	1941
Blue Cross Animal Hospital	1318 Kapiolani Blvd.	2-3-15:1	1939
Kenrock Buildings A, B, C	1400 Kapiolani Blvd.	2-3-16:4	1948
Sumida Building	1467 S. King St.	2-3-18:14	1939
Washington Middle School	Punahou & S. King Sts.	2-3-26:1	1940
Kimura Florist, in a house (Nakamura)	1809 S. King St.	2-3-28:13	1938
Dr. Nakamura, Dentist, office in a house	1811 S. King St.	2-3-28:13	1938
apartment building (B. Fern)	1882-86 Kapiolani Blvd.	2-3-33:41	1948
apartment building (K. Takai)	1870 Kapiolani Blvd.	2-3-33:43	1945
apartment building (D. S. K. Kim)	1862 Kapiolani Blvd.	2-3-33:44	1946
Nakano apartment building, concrete	1852 Kapiolani Blvd.	2-3-33:45	1948
Rainbow Court, apartment building, concrete (mauka/DH corner) (Nakano)	Hauoli St. & Kapiolani Blvd.	2-3-33:46	1949
apartment building (Y. Sato)	1861 Kapiolani Blvd.	2-3-34:20	1946
Baker / Kiyabu house	1855 Kapiolani Blvd.	2-3-34:21	1945
Maloney commercial building	1507 Kapiolani Blvd.	2-3-40:14	1946
Hawaii Land Co. commercial building (sandstone)	1661 Kapiolani Blvd.	2-3-41:4	1949
U-plan wood apartment building	1050 S. King St.	2-4-2:4	1926
First Chinese Church of Christ	1054 S. King St.	2-4-2:4	1929
Medical Arts Building	1010 S. King St.	2-4-2:6	1949
1-story building between mid-rises	1030 S. King St.	2-4-2:31	1951
Minatoya Building	Pensacola & S. King Sts.	2-4-3:6	1952
Dr. A. Tsuda office, in a house	1290 S. King St.	2-4-4:12	1949
Clydes' Cleaners	1234 S. King St.	2-4-4:25	1950
Wisteria Restaurant	1206 S. King St.	2-4-4:28	1952
Heu commercial building	1558 S. King St.	2-4-6:10	1948
King Kalakaua Building	Kalakaua Ave & S. King St.	2-4-6:12	1948
James M. Chrones building	2005 S. King St.	2-7-1:9	1948
8 apartment buildings	2251 Kapiolani Blvd.	2-7-4:7	1946
Wong / Sato house	2203 Kapiolani Blvd.	2-7-4:8	1941
Lim house	606 Isenberg St.	2-7-5:64	1948
Other house on Lim parcel	606 Isenberg St.	2-7-5:64	1952
J.C. Tom building	2239 S. King St.	2-7-8:17	1939

**WINDSHIELD SURVEY LIST OF BUILDINGS IN
AREA OF POTENTIAL AFFECTS
WITH DATES BEFORE 1953
(CONTINUED)**

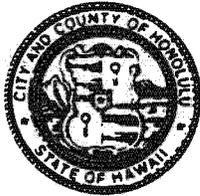
Building Name	Address	TMK	Date
Oi commercial bldg. (w/ Moiliili Blind Fish Tank)	2469 S. King St.	2-7-9:33	1940
Perry Building	2509 S. King St.	2-7-1:20	1930
Hirai house	752 University Ave.	2-7-11:25	1945
Matsuda house	748 University Ave.	2-7-11:27	1948
Uehara house	732 University Ave.	2-7-11:29	1944
Hirota house	718 University Ave.	2-7-11:32	1943
Iraha house	708 University Ave.	2-7-11:34	1949
Fukumoto apartments, concrete w/ glass block	2424 Kapiolani Blvd.	2-7-14:2	1949
Kwock house	607 Hausten St.	2-7-14:3	1942
Moiliili Fire Station	2425 Date St.	2-7-14:6	1948
Mun house	648 University Ave.	2-7-14:26	1945
Yamato house	642 University Ave.	2-7-14:27	1943
Sakata / Yamanaka house	634 University Ave.	2-7-14:28	1946
Infiesto house	630 University Ave.	2-7-14:29	1943
Miyogi house	610 University Ave.	2-7-14:33	1946
Ing duplex	707 University Ave.	2-7-15:11	1948
Ching house	713 University Ave.	2-7-15:24	1943
Takenaka house	717 University Ave.	2-7-15:25	1943
Ako house	723 University Ave.	2-7-15:26	1944
Strohl house	733 University Ave.	2-7-15:28	1944
house next to Moiliili Hongwanji	902C-E University Ave.	2-7-16:24	1930
Miss Hawaii Building	1740 S. King St.	2-8-1:3	1948
Dental Office in house	1702 S. King St.	2-8-1:6	1928
Business in house	1704 S. King St.	2-8-1:6	1928
KNDI Radio, in a house	1734 S. King St.	2-8-1:61	1933
Chang house	1926 S. King St.	2-8-2:5	1947
Tenrikyo Honolulu Church	1902 S. King St.	2-8-2:7	1938
Nobuta house (facing an alley)	Hauoli & S. King Sts.	2-8-2:56	1938
Rosa house on Artesian Ln. (Michi's Salon)	Artesian Lane & S. King St.	2-8-2:67	1938
St. Mary's Episcopal Church	2062 S. King St.	2-8-3:3	1917
Ishizuchi Shrine	2020 S. King St.	2-8-3:6	1938
Choy commercial building (w/ Hula Supply Center)	2346 S. King St.	2-8-4:1	1947
Okawa house	2338 S. King St.	2-8-4:2	1930
Higuchi commercial building (w/ Taste of Saigon)	2234 S. King St.	2-8-4:3	1947
Pearl Ridge watercross farm	Kamehameha Hwy.	9-8-16:47	1928
Ho building (w/ NAPA Auto Parts)	98-390 Kamehameha Hwy.	9-8-18:21	1951
Forty Niner (restaurant)	98-110 Honomanu St.	9-8-18:42	1947

Source: Mason Architects, Inc., May 1999.

**APPENDIX B
AGENCY CORRESPONDENCE**

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

PACIFIC PARK PLAZA • 711 KAPIOLANI BOULEVARD, SUITE 1200 • HONOLULU, HAWAII 96813
PHONE (808) 523-4529 • FAX (808) 523-4730



CHERYL D. SOON
DIRECTOR

JOSEPH M. MAGALDI, JR.
DEPUTY DIRECTOR

May 7, 1999

TPD99-00292

Dr. Don Hibbard, Administrator
State Historic Preservation Division
Department of Land and Natural Resources
State of Hawaii
601 Kamokila Boulevard, Room 555
Kapolei, Hawaii 96707

Attention: Ms. Sara Collins

Dear Dr. Hibbard:

Subject: Primary Corridor Transportation Project

This letter is to follow up on the April 8, 1999 meeting with your staff regarding compliance with Section 106 of the National Historic Preservation Act and Chapter 6E of the Hawaii Revised Statutes.

At that meeting, the approach to identify historic properties (i.e., sites on or eligible for the National Register) that could potentially be affected by the subject project was proposed. Your staff agreed with the approach presented to identify historic buildings, and recommended consultation with the Office of Hawaiian Affairs to identify traditional cultural properties in the project area. I have enclosed for your review and comment draft minutes of the meeting.

With regard to archaeological sites, your staff agreed to provide a list of known archaeological sites in the project area (see enclosed project area map) that are on or eligible for the National Register as well as other pertinent information, such as GIS mapping and files. This information is now formally requested. We would appreciate receiving this information as soon as possible so we can determine whether the proposed project would affect these sites.

Dr. Don Hibbard
Page 2
May 7, 1999

If you have any questions, please feel free to contact Faith Miyamoto of the Transportation Planning Division, at 527-6976.

Sincerely,

Cheryl D. Soon

CHERYL D. SOON
Director

Enclosures