

COPY



EXECUTIVE CHAMBERS
HONOLULU

RECORDED

'94 DEC -1 AB 107

OFFICE OF
QUALITY CONTROL

198
→ JG
for Bulletin

JOHN WAIHEE
GOVERNOR

November 28, 1994

TO: Michael N. Scarfone, Director
Hawaii Community Development Authority

SUBJECT: Final Supplemental EIS - Revised Kakaako Makai Area Plan

I am pleased to accept the Final Supplement Environmental Impact Statement for the Revised Kakaako Makai Area Plan, Honolulu, Oahu as satisfactory fulfillment of the requirements of Chapter 343, Hawaii Revised Statutes.

This environmental impact statement will be a useful tool in the process of deciding if the action described therein should be allowed to proceed. My acceptance of the statement is an affirmation of the adequacy of that statement under the applicable laws but does not constitute an endorsement of the proposed action.

When the decision is made regarding the proposed action itself, I expect the appropriate legislative bodies and governmental agencies to consider if the societal benefits justify the economic, social and environmental impacts which will likely occur. These impacts are adequately described in the statement which, together with the comments made by reviewers, provides useful analysis of the proposed action.

JOHN WAIHEE

c: Office of Environmental Quality Control

1994 - Oahu - FEIS -
KAKAOKO

NOV - 8 1994

FILE COPY ORIGINAL

**Kakaako Community Development District
Makai Area Plan**

**Final Supplemental
Environmental Impact Statement**

Prepared For:

The Hawaii Community Development Authority

Prepared By:

Wilson Okamoto & Associates, Inc.

October 1994



KAKAOKO
Where Honolulu Meets the Sea

REVISED KAKAAKO MAKAI AREA PLAN

**Final Supplemental
Environmental Impact Statement**

Honolulu, Oahu

Proposing Agency:

**State of Hawaii
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813**

Accepting Authority:

Governor, State of Hawaii

Prepared by:

**Wilson Okamoto and Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826**


October 1994

REVISED KAKAAKO MAKAI AREA PLAN
FINAL SUPPLEMENTAL
ENVIRONMENTAL IMPACT STATEMENT

This environmental document is prepared
pursuant to Chapter 343, Hawaii Revised Statutes

Prepared for: Hawaii Community Development Authority
State of Hawaii

Responsible
Official:



Michael N. Scarfone, Director
Hawaii Community Development Authority
State of Hawaii

10/26/94
Date

Accepting
Authority: Governor, State of Hawaii

Prepared by: Wilson Okamoto and Associates, Inc.

October 1994

TABLE OF CONTENTS

	<u>Page</u>
SUMMARY OF THE PROPOSED ACTION	i
CHAPTER 1 INTRODUCTION	1 - 1
1.1 Purpose and Need for EIS	1 - 1
1.2 Background	1 - 1
1.3 Existing Makai Area Plan	1 - 3
1.4 Overview of Proposed Plan Revisions	1 - 13
CHAPTER 2 DESCRIPTION OF THE PROPOSED ACTION	2 - 1
2.1 Introduction	2 - 1
2.2 Development Concept	2 - 1
2.3 Land Use Plan	2 - 3
2.4 Open Space and Recreation Plan	2 - 5
2.5 Urban Design Plan	2 - 7
2.5.1 Building Densities and Heights	2 - 8
2.5.2 At-Grade Open Space	2 - 8
2.6 Transportation Plan	2 - 12
2.7 Infrastructure Plan	2 - 17
2.8 Historic Resources Plan	2 - 23
2.9 Social and Safety Plan	2 - 23
2.10 Relocation Plan	2 - 23
2.11 Financing Program	2 - 24
2.12 Phasing Plan	2 - 24
CHAPTER 3 EXISTING ENVIRONMENT, ANTICIPATED IMPACTS AND MITIGATION MEASURES	3 - 1
3.1 Overview	3 - 1
3.2 Physical Environment	3 - 1
3.2.1 Climate	3 - 1
3.2.2 Geology, Topography and Soils	3 - 2
3.2.3 Hydrology and Drainage	3 - 5
3.2.4 Flood, Earthquake and Tsunami Hazards	3 - 6
3.2.5 Biota	3 - 6
3.2.6 Air Quality	3 - 8
3.2.7 Noise Quality	3 - 13
3.2.8 Water Quality	3 - 16

TABLE OF CONTENTS (cont.)

	<u>Page</u>
3.3 Socio-Economic Environment	3 - 18
3.3.1 Land Uses and Encumbrances	3 - 18
3.3.1.1 Kewalo Basin	3 - 18
3.3.1.2 Kakaako Peninsula	3 - 22
3.3.1.3 HECO Parcel	3 - 23
3.3.1.4 Mauka Expansion Area	3 - 23
3.3.2 Population Characteristics	3 - 24
3.3.3 Housing Characteristics	3 - 26
3.3.4 Economic Characteristics	3 - 27
3.3.5 Displacement	3 - 28
3.3.6 Open Space, Recreational and Visual Resources	3 - 30
3.3.7 Historic and Archaeological Resources	3 - 32
3.4 Infrastructure Systems and Services	3 - 33
3.4.1 Transportation System	3 - 33
3.4.1.1 Existing Roadway System	3 - 33
3.4.1.2 Existing Bus and Bikeway Systems	3 - 34
3.4.1.3 Methodology for Analyzing Traffic Conditions	3 - 35
3.4.1.4 Existing Traffic Conditions	3 - 35
3.4.1.5 Future Traffic Conditions Without Project (Current Plan)	3 - 36
3.4.1.6 Future Traffic Conditions With Project	3 - 38
3.4.1.7 Future Traffic Conditions With Project and With Mitigation	3 - 42
3.4.2 Water System	3 - 47
3.4.3 Wastewater System	3 - 48
3.4.4 Drainage System	3 - 49
3.4.5 Solid Waste Collection and Disposal System	3 - 50
3.4.6 Power and Communication Systems	3 - 50
3.4.7 Police and Fire Services	3 - 51
3.4.8 Medical Services	3 - 51
3.4.9 Schools	3 - 52
CHAPTER 4 RELATIONSHIP TO LAND USE PLANS AND POLICIES	4 - 1
4.1 Overview	4 - 1
4.2 Federal Policies and Controls	4 - 1

TABLE OF CONTENTS (cont.)

	<u>Page</u>
4.3 State Plans, Policies, and Controls	4 - 2
4.3.1 Hawaii State Plan	4 - 2
4.3.1.1 Population (HRS §226-5)	4 - 2
4.3.1.2 Economy (HRS §226-6, -8, and -10)	4 - 3
4.3.1.3 Physical Environment (HRS §226-11, -12, and -13)	4 - 4
4.3.1.4 Facilities Systems (HRS §226-14, -16, and -17)	4 - 5
4.3.1.5 Socio-cultural Advancement (HRS §226-19, -21, -23, -25 and -26)	4 - 7
4.3.1.6 Statewide Planning (HRS §226-52)	4 - 9
4.3.1.7 Economic Priority (HRS §226-103)	4 - 10
4.3.2 State Environmental Policy (HRS §344)	4 - 10
4.3.3 State Functional Plans	4 - 11
4.3.3.1 State Energy Functional Plan	4 - 11
4.3.3.2 State Transportation Functional Plan	4 - 12
4.3.3.3 State Historic Preservation Functional Plan	4 - 13
4.3.3.4 State Recreational Functional Plan	4 - 13
4.3.3.5 State Education Functional Plan	4 - 14
4.3.3.6 State Housing Functional Plan	4 - 14
4.3.4 State Land Use Districts	4 - 15
4.3.5 Coastal Zone Management	4 - 16
4.3.6 Special Management Area and Shoreline Setback Variance	4 - 18
4.3.7 Honolulu Waterfront Master Plan	4 - 18
4.3.8 Kakaako Community Development District Plan	4 - 20
4.3.8.1 Revisions to the Makai Area Boundary	4 - 20
4.3.8.2 Revisions to the Makai Area Plan	4 - 21
4.3.8.3 Revisions to the Makai Area Rules	4 - 22
4.4 County Plans, Policies, and Controls	4 - 22
4.4.1 City and County of Honolulu Development Plan	4 - 23
4.4.2 Zoning	4 - 23
4.5 Necessary Permits and Approvals	4 - 23
CHAPTER 5 ALTERNATIVES TO THE PROPOSED ACTION	5 - 1
5.1 No Action Alternative: Existing Makai Area Plan	5 - 1
5.2 Alternative Locations	5 - 2
5.3 Alternative Urban Design Schemes	5 - 2
CHAPTER 6 RELATIONSHIP BETWEEN SHORT-TERM USES & LONG-TERM PRODUCTIVITY	6 - 1

Revised Kakaako Makai Area Plan
Final Supplemental EIS

TABLE OF CONTENTS (cont.)

	<u>Page</u>
CHAPTER 7 IRREVERSIBLE/IRRETRIEVABLE COMMITMENT OF RESOURCES BY THE PROPOSED ACTION	7 - 1
CHAPTER 8 PROBABLE ADVERSE ENVIRONMENTAL IMPACTS WHICH ARE UNAVOIDABLE	8 - 1
CHAPTER 9 SUMMARY OF UNRESOLVED ISSUES	9 - 1
CHAPTER 10 EARLY CONSULTATION OF PARTIES DURING THE PREPARATION OF THE EISPN	10 - 1
CHAPTER 11 PARTIES CONSULTED DURING THE PREPARATION OF THE DRAFT SUPPLEMENTAL EIS	11 - 1
CHAPTER 12 PARTIES CONSULTED DURING THE PREPARATION OF THE FINAL SUPPLEMENTAL EIS	12 - 1
CHAPTER 13 LIST OF PREPARERS	13 - 1
CHAPTER 14 REFERENCES	14 - 1
APPENDIX A Honolulu Waterfront Master Plan, Technical Report Series, Air Quality Impact Report, J.W. Morrow, February 1989.	
APPENDIX B Honolulu Waterfront Master Plan, Technical Report Series, Acoustic Study, Darby & Associates, February 1989.	
APPENDIX C Kakaako Makai Area Plan, Transportation Study, Wilbur Smith & Associates, October 1994.	

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1 - 1 Vicinity Map	1 - 2
1 - 2 Makai Area Boundary	1 - 4
1 - 3 Existing Roadway System	1 - 5
1 - 4 Existing Land Use Zones	1 - 7
1 - 5 Existing Development Concept Plan	1 - 8
1 - 6 Existing Open Space and Recreation Plan	1 - 10
1 - 7 Existing Maximum Permissible FAR and Building Heights	1 - 11
1 - 8 Existing Building Envelope Requirements	1 - 12
2 - 1 Proposed Development Concept Plan	2 - 2
2 - 2 Proposed Land Use Zones	2 - 4
2 - 3 Proposed Open Space and Recreation Plan	2 - 6
2 - 4 Proposed Maximum Permissible FAR and Building Heights	2 - 9
2 - 5a Typical and Cooke/Coral Streets Corridor Section Guidelines	2 - 10
2 - 5b Ward Avenue Extension and Ala Moana Boulevard Corridor Section Guidelines	2 - 11
2 - 6 Proposed Roadway System	2 - 13
2 - 7 Proposed Public Transportation Plan	2 - 14
2 - 8 Proposed Pedestrian and Bikeway Plan	2 - 15
2 - 9 Proposed Water System	2 - 19
2 - 10 Proposed Wastewater System	2 - 20
2 - 11 Proposed Drainage System	2 - 21
2 - 12 Proposed Electrical and Communication Systems	2 - 22
2 - 13 Proposed Project Phasing Plan	2 - 26
3 - 1 Substrata Conditions	3 - 3
3 - 2 Coral Subsurface Conditions	3 - 4
3 - 3 Flood Hazard Map	3 - 7
3 - 4 Construction Equipment Noise Range	3 - 15
3 - 5 Aircraft Noise Contours	3 - 17
3 - 6 Existing Land Uses	3 - 19
3 - 7 Land Ownership	3 - 21
3 - 8 Year 2010 With No Project PM Peak Hour Traffic	3 - 39
3 - 9 Year 2015 With Project Intersection Lane Configuration and Level of Service	3 - 40
3 - 10 Year 2015 With Project and Mitigation Actions and Level of Service	3 - 45
4 - 1 Special Management Area Boundary and Hawaii Capital Special District	4 - 19
4 - 2 City & County of Honolulu Development Plan Land Use Map	4 - 24

LIST OF TABLES

<u>Table</u>		<u>Page</u>
1 - 1	Makai Area Land Use Zones (Existing)	1 - 6
1 - 2	Comparison of Existing and Revised Makai Area Plans	1 - 15
2 - 1	Makai Area Land Use Zones (Proposed Revision)	2 - 3
2 - 2	Makai Area Roadway Dimensions	2 - 16
2 - 3	Estimated Makai Area Infrastructure Costs	2 - 18
2 - 4	Development Project Phasing	2 - 25
3 - 1	Summary of State of Hawaii and Federal Ambient Air Quality Standards	3 - 9
3 - 2	Summary of Aerometric Data Collected by the Department of Health, 1988 - 1992	3 - 11
3 - 3	Land Area Summary	3 - 20
3 - 4	Land Ownership Summary	3 - 20
3 - 5	Population Characteristics	3 - 25
3 - 6	24-Hour Traffic Counts of Roadways in the Makai Area	3 - 36
3 - 7	Level of Service at Study Intersections for Existing Conditions, Future Without Project, Future With Project, and With Project and Mitigation Measures During Afternoon Peak Period	3 - 37
3 - 8	Adequacy of Roadway System With Project Full Buildout During Afternoon Peak Hour	3 - 41

Revised Kakaako Makai Area Plan

PROJECT SUMMARY

Revised Kakaako Makai Area Plan
SUMMARY OF PROPOSED ACTION

SUMMARY OF THE PROPOSED ACTION

Proposing Agency: Hawaii Community Development Authority
State of Hawaii
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813
Contact: Eric Masutomi, Director of Planning

SEIS Preparer: Wilson Okamoto and Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
Contact: Rodney Funakoshi, Project Manager

Accepting Authority: Governor, State of Hawaii

Tax Map Keys: 2-1-15, 2-1-58, 2-1-59, 2-1-60 (all parcels)
2-1-14: 6
2-1-53: 5, 2-1-54:1, 21, 33
2-1-55: 1, 2, 3, 6, 18, 21, 26, 32 to 35, 38
2-1-56: 3, 4

Land Area: Approximately 241 acres

Location: Kakaako (Makai Area)
Honolulu, Hawaii

Landowners: State of Hawaii
U.S. Government
Bishop Estate
Kakaako Investment Company

Existing Uses: Maritime industrial cargo and warehousing, light industrial, public facility, commercial offices, Kakaako Waterfront Park, marina berths, maritime support operations, marine research, and restaurant operation.

Proposed Action: Revisions to the Kakaako Makai Area Plan, including roadway system changes, allowance of residential development in mixed use zones, deletion of inland waterways, development of a central plaza and promenade, and various urban design changes.

Revised Kakaako Makai Area Plan
SUMMARY OF PROPOSED ACTION

The Hawaii Community Development Authority (HCDA) proposes to revise the Kakaako Makai Area Plan (Makai Area Plan) to include commercial and residential mixed-uses, waterfront commercial and service uses, additional park and recreational uses, and roadway system improvements. The Makai Area boundary currently encompasses about 221 acres bounded by Kewalo Basin to the east, Ala Moana Boulevard to the north, Piers 1 and 2 to the west and Mamala Bay to the south. Also included in the Makai Area is the Hawaiian Electric Company (HECO) parcel on Nimitz Highway near Downtown Honolulu. HCDA also proposes to expand the Makai Area boundary by including about 20 acres currently in the Kakaako Mauka Area, bounded by Ala Moana Boulevard, Keawe, Pohukaina and Koula Streets. The inclusion of these mauka blocks will help to integrate the Mauka and Makai Areas. Upon revision of the boundary, the revised Makai Area will encompass a total of approximately 241 acres.

Major elements of proposed provisions to the Makai Area Plan include:

- Inclusion of housing as an allowable use, which would potentially result in approximately 2,000 to 3,000 affordable and market-priced residential units;
- A maximum floor area of approximately 10.5 million square feet of commercial, office, residential and waterfront industrial uses;
- Central Plaza with shops, restaurants, and public gardens;
- Mauka-Makai Promenade and continuous open space system to extend the waterfront park mauka and enhance the linkage between the Mauka and Makai lands across Ala Moana Boulevard;
- A more finely grained urban pattern of blocks and roads including two major street couplets and meandering park road to facilitate circulation and provide safer access;
- A smaller amphitheater seating up to 2,000 persons;
- Three performing arts theaters, accommodating 250, 500 and 2,000 persons;
- Active parks for recreational games and team sports; and
- A 36,000-square foot children's museum.

Over 80 percent of lands in the Makai Area are owned by the State of Hawaii with most of the remaining private lands owned by Bishop Estate. Implementation of the Makai Area is planned

Revised Kakaako Makai Area Plan
SUMMARY OF PROPOSED ACTION

in three phases over a 20-year period from 1995 to 2015. Phasing will occur in a general Diamond Head-to-Ewa direction in conjunction with the planned redevelopment of the Kewalo waterfront and the expiration of existing leases in the central Makai Area.

In accordance with Chapter 343, Hawaii Revised Statutes, the HCDA has determined that a Supplemental Environmental Impact Statement (EIS) should be prepared for proposed changes to the development strategy in the Makai Area Plan. Following the initial EIS for the overall Kakaako Community Development District in 1983, supplemental EIS's were prepared for the Makai Area Plan in 1985 and most recently in 1990 following the adoption of the Honolulu Waterfront Master Plan.

The EIS Administrative Rules (Title 11, Chapter 200, Subchapter 10) provide that a Supplemental EIS should be prepared when a major change in the proposed action occurs such that new or different environmental impacts are anticipated. The focus of this Supplemental EIS is on the proposed revisions to the Makai Area Plan. The portions of the Makai Area Plan which remain unchanged, including the waterfront pier areas, beachfront park, and Kewalo Basin improvements, are not assessed in this Supplemental EIS. Concurrent with the preparation of this Supplemental EIS, the HCDA is in the process of amending the current Makai Area Plan and Makai Area Rules to reflect the revised development strategy.

SIGNIFICANT BENEFICIAL AND ADVERSE IMPACTS AND PROPOSED MITIGATION MEASURES

Hydrology and Drainage: During the short-term construction period, storm runoff may carry increased amounts of sediment into the storm drain system due to erosion from exposed soils, which could subsequently impact the water quality of nearshore waters in the area. Adherence to the regulatory requirements including applicable permits and Best Management Practices (BMP) Plans will mitigate discharge of sediment runoff and pollutants resulting from construction activities.

Air Quality: Short-term, construction-related air quality impacts include excavation activities, transportation of excavated material, and emission of hydrocarbons or exhaust fumes from construction equipment and employee vehicles. All construction equipment must meet the

Revised Kakaako Makai Area Plan
SUMMARY OF PROPOSED ACTION

requirements of State emission control laws in order to mitigate the effects of construction on air quality.

Long-term impacts on air quality will generally be traffic-related as traffic emissions may cause elevated carbon monoxide levels along the Nimitz Highway/Ala Moana Boulevard corridor. These impacts, however, are anticipated with or without the project. Implementation of the one-way roadway couplet with Ala Moana Boulevard and the Ward Avenue Extension will mitigate air quality impacts by reducing the potential for accumulation of carbon monoxide in the vicinity of these intersections.

Noise Quality: Construction activity will involve construction equipment and activity which may create short-term increases in noise levels. A permit will be obtained from the Department of Health to operate vehicles, construction equipment, and power tools which emit noise levels in excess of the allowable limits.

Noise impacts are expected to slightly increase over the long-term as a result of one-way streets which result in higher vehicular operating speeds. In addition, noise impacts from aircraft operations will impact residential development in the Makai Area, although noise levels are expected to gradually decrease as older, noisier aircraft are replaced by the introduction of quieter aircraft. Mitigation measures such as air-conditioning of residential units should be provided. Commercial and recreational uses should not be adversely affected.

Water Quality: Temporary water quality impacts may be expected during the short-term construction period as a result of soil disturbance and dewatering activities. Adherence to conditions imposed by the applicable water quality permits will mitigate possible impacts to the water quality.

Land Uses and Ownership: Implementation of the Makai Area Plan will upgrade a predominantly underutilized commercial-industrial area into a higher density environment, and will introduce a new residential population. The proposed land use changes and road and infrastructure improvements will result in displacement of current users and activities. Relocation sites for major users such as the City and County of Honolulu's Corporation Yard and the Food Distribution Center have been identified.

Revised Kakaako Makai Area Plan
SUMMARY OF PROPOSED ACTION

Population: With no residences currently allowed in the Makai Area (exclusive of the mauka expansion area), the proposed plan could increase the area's resident population from zero to approximately 4,600 to 6,900 persons. The character of the neighborhood will change from a predominantly light-industrial area to a higher density residential-commercial area with extensive landscaped open space and maritime uses. The addition of a residential population will require that recreational needs be addressed and public services provided, notably with respect to police, fire, health and educational services, and that greater attention be paid to security concerns.

Housing Characteristic: The existing Makai Area does not presently contain any residential units. The proposed addition of housing as an allowable use is anticipated to generate between 2,000 and 3,000 residential units in the Makai Area which will help to ease the overall housing shortfall on Oahu by increasing the supply of affordable rental and for-sale units. A minimum of 20 percent of the residential units on private lands are required to be set aside for families earning less than 140% of the median income. On the State-owned public lands it is currently envisioned that the residential units will include a mix of rental and for-sale units encompassing a range of affordability.

Economic Characteristics: Short-term economic impacts will arise from the displacement of businesses required to relocate as the area undergoes redevelopment, although short-term construction jobs will be generated over the entire planning period as public and private developments proceed. Long-term employment would be provided by the commercial, retail, restaurant, office and maritime industrial activities. An overall growth in the economic activity of the area is envisioned to provide increased revenue to State-financed redevelopment activities in Kakaako. The State will derive lease rent revenues from the commercial developments as well as increased general excise and income tax revenues. The City and County of Honolulu will benefit from the higher property tax base created by redevelopment of the Makai Area.

Displacement: Businesses facing displacement may encounter hardships in relocation. Relocation services and payments will be implemented using State relocation guidelines. Implementation of the Makai Area will be phased to minimize disruption, and landowners and lessees will be kept apprised of pending developments and the relocation assistance offered by the State.

Open Space, Recreational and Visual Resources: The Makai Area Plan will positively impact open space, recreational and visual resources in the long-term as it proposes: a) a stronger

Revised Kakaako Makai Area Plan
SUMMARY OF PROPOSED ACTION

linkage of waterfront park to the city; b) a continuous open space system within the Makai Area, to extend the park's value to nearby blocks; and c) an expanded variety of park environments within the Makai Area. Enhanced mauka-makai view corridors will be created with the implementation of the promenade, central plaza, and open spaces of the Makai Area Plan.

Roadway and Utility Systems: Major changes to the roadway system are planned. The most significant change is that Ala Moana Boulevard and an extension of Ward Avenue through the Makai Area would become a one-way couplet. Ala Moana Boulevard would become a one-way road Ewa bound, while the Ward Avenue Extension would be one-way Diamond Head bound. This would facilitate the regional flow of traffic and improve circulation through the Makai Area. A Cooke Street-Koula Street couplet and a meandering park road are also proposed.

Implementation of the Makai Area Plan will involve substantial improvements to the existing water, wastewater and drainage systems in the area. Power and communication systems will also require extensive upgrades. Planned improvements of all utility systems will be coordinated with the appropriate agencies to assure that each system can be adequately designed to accommodate necessary capacities for users in the Makai Area.

Educational Facilities: The project will impact the public education facilities by increasing the student population of nearby schools. Efforts to accommodate the educational facilities requirements of the project are being coordinated with the Department of Education.

ALTERNATIVES CONSIDERED

A number of alternatives were developed and analyzed for the Makai Area. Upon consideration of each alternative and an evaluation of the alternative development schemes the plan currently under review was determined to be the most feasible in terms of meeting the project objectives and addressing the concerns of the community.

UNRESOLVED ISSUES

As summarized in Chapter 9, issues which currently remain unresolved include: Refinement of the project's plan and design; Procurement of various required permits; Finalization of the roadway system; Finalization of the utilities systems via the Utilities Master Plan; and Resolution of educational facilities requirements.

Revised Kakaako Makai Area Plan
SUMMARY OF PROPOSED ACTION

COMPATIBILITY WITH LAND USE PLANS AND POLICIES

The Makai Area Plan is consistent with the various land use plans, policies and regulatory controls. In many instances, the Makai Area Plan supersedes and furthers the goals of the State and County's functional and development plans, including but not limited to the Hawaii State Plan, and appropriate Functional Plans, and the City and County of Honolulu's General Plan, Development Plan, and Land Use Ordinance.

REQUIRED PERMITS AND APPROVALS

A number of major approvals must be obtained prior to development of the Makai Area. The following is a summary list of major permits and approvals that are required prior to project construction:

- Department of the Army Permit (Section 10 and 404) for construction of structures or work in navigable waters
- FAA Airspace Review (Federal Aviation Regulations Part 77) for construction which may affect navigable airspace
- Conservation District Use Application, Board of Land and Natural Resources
- Special Management Area and Shoreline Setback Variance, Office of State Planning
- National Pollutant Discharge Elimination System Permit, Department of Health
- Section 401 Water Quality Certification, Department of Health
- Grading and Dewatering Permits, City Department of Public Works

In addition, necessary approvals for project design, development agreements, and project funding will be established.

Revised Kakaako Makai Area Plan

Chapter 1

INTRODUCTION

1. INTRODUCTION

1.1 Purpose and Need for EIS

The Hawaii Community Development Authority (HCDA) proposes to revise its Makai Area Plan which was originally established in 1983 and updated in 1990. The Makai Area Plan sets forth the development objectives and rationale for the orderly redevelopment of the Kakaako Community Development District's Makai Area as described in Section 1.2 below.

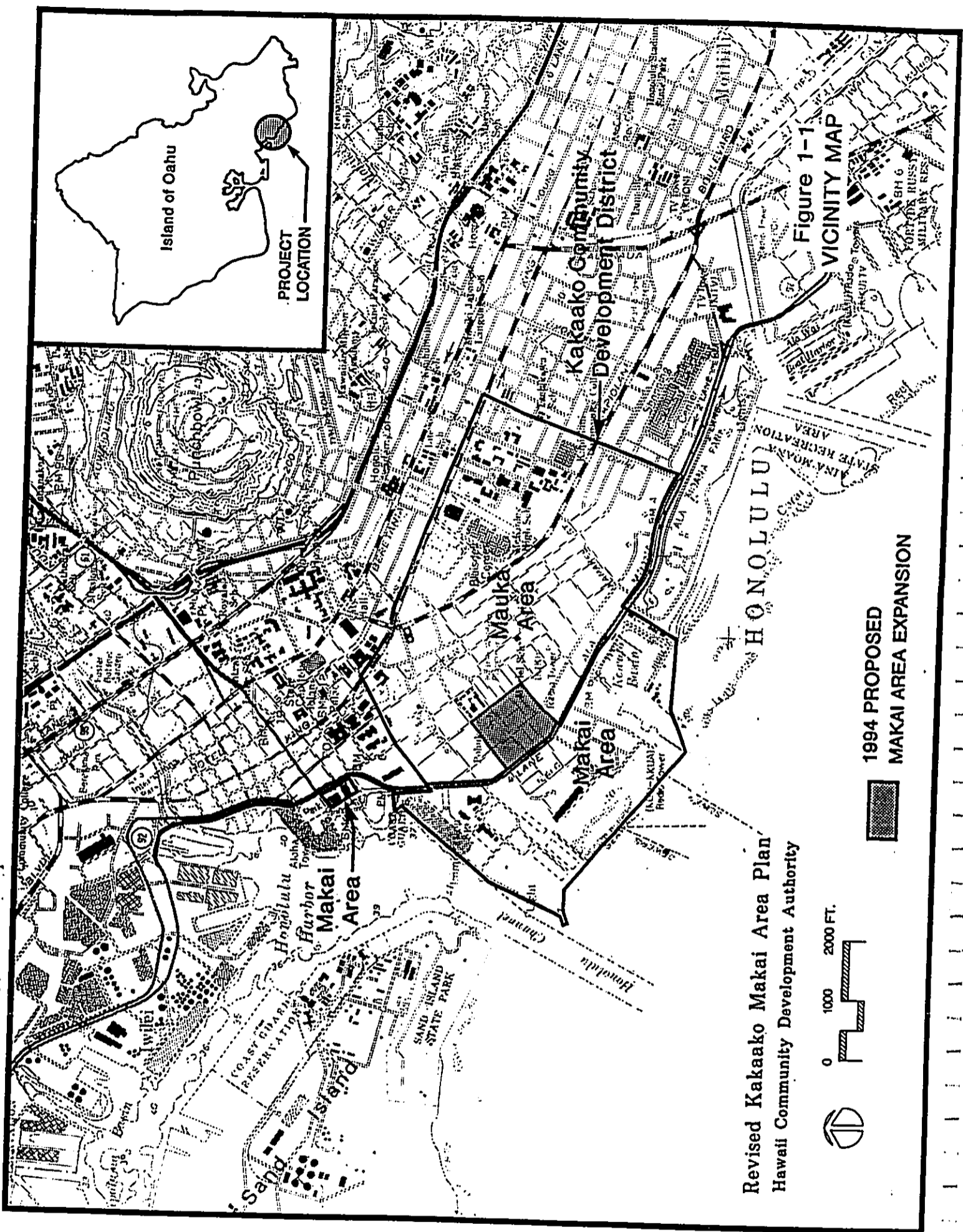
In accordance with Chapter 343, Hawaii Revised Statutes, the HCDA has determined that a Supplemental Environmental Impact Statement (EIS) should be prepared for proposed changes to the development strategy in the Makai Area Plan. The original EIS for the overall Kakaako Community Development District was prepared in 1983. A separate Makai Area Plan was adopted by the HCDA in 1983. Supplemental EIS's were prepared for the Makai Area Plan in 1985 and most recently in 1990 following the adoption of the Office of State Planning's Honolulu Waterfront Master Plan.

The purpose of this Draft Supplemental EIS is to describe the proposed changes to the Makai Area Plan and disclose the anticipated environmental, economic and social impacts of the plan's revised components. This Supplemental EIS was prepared in compliance with the EIS law of Chapter 343, Hawaii Revised Statutes and the accompanying Administrative Rules of the Department of Health. The EIS Rules (Title 11, Chapter 200, Subchapter 10) provide for the preparation of a Supplemental EIS when a major change in the proposed action occurs such that new or different environmental impacts are anticipated.

The focus of the Supplemental EIS is on the proposed revisions to the Makai Area Plan. The portions of the Makai Area Plan which remain unchanged, including the waterfront pier areas, beachfront park, and Kewalo Basin improvements, are not required to be assessed in this Supplemental EIS. Concurrent with the preparation of this Supplemental EIS, the HCDA is initiating the process of amending the current Makai Area Plan and Makai Area Rules to reflect the revised development strategy.

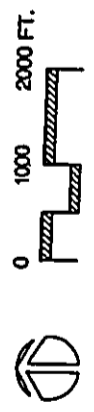
1.2 Background

The Kakaako Community Development District, originally established by the Hawaii Legislature in 1976, has been divided into a Mauka Area and a Makai Area (see Figure 1-1). The Mauka



Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority

Figure 1-1
 VICINITY MAP



1994 PROPOSED
 MAKAI AREA EXPANSION

of Ala Moana Boulevard between Kewalo Basin and Pier 4 (see Figures 1-2 and 1-3). In 1987, the State Legislature expanded the Makai Area boundaries to include approximately 210 acres of fast land and an additional 38 acres of submerged land, encompassing Kewalo Basin, the entire Kakaako Peninsula, and the waterfront areas between Fort Armstrong and the Aloha Tower (Piers 4 through 8).

A 1990 amendment to the Makai Area boundary deleted fast and submerged lands between Pier 4 and Pier 8. However, the property situated makai of Nimitz Highway (occupied by Hawaiian Electric Company) remains part of the boundary.

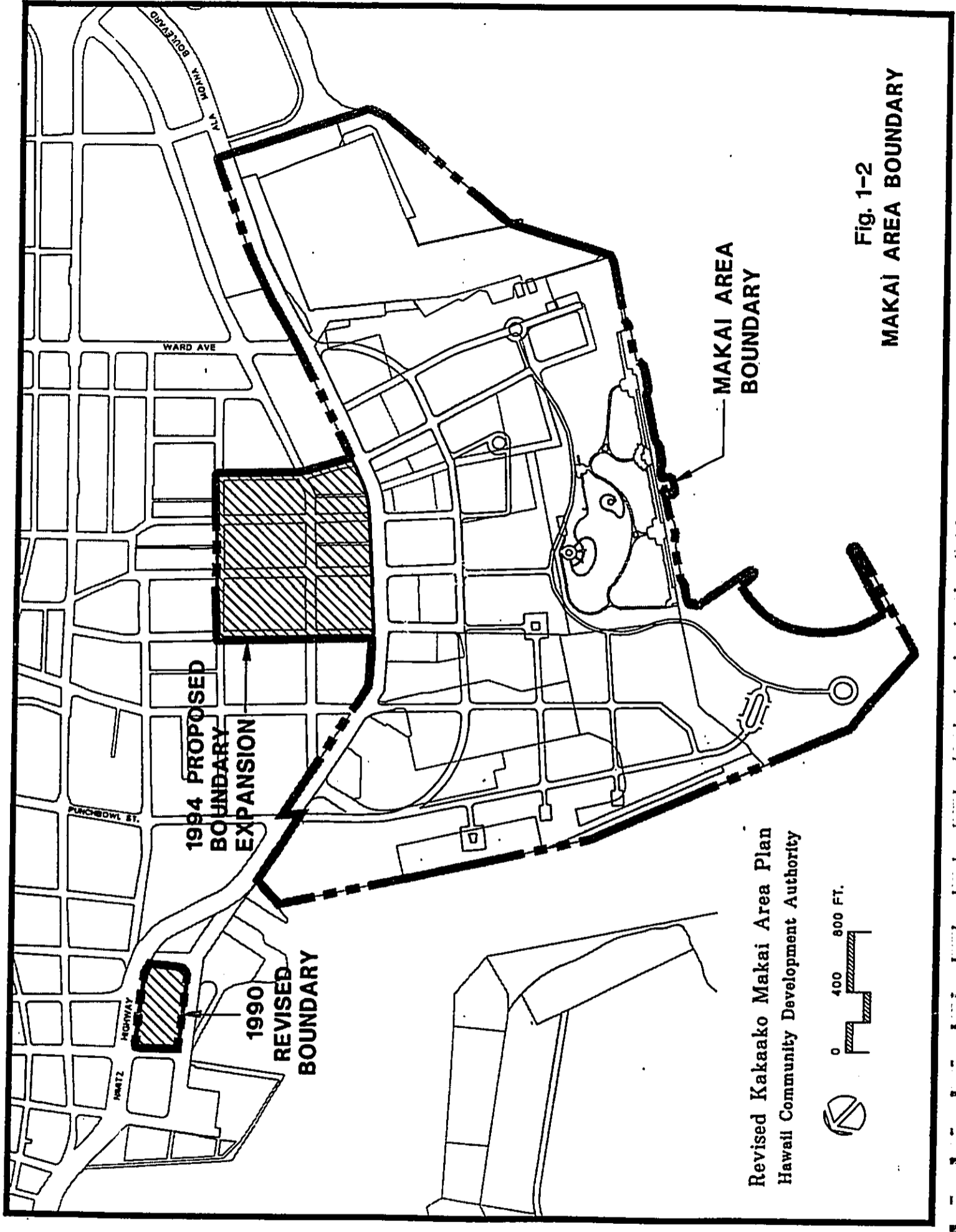
A proposed 1994 amendment to the Makai Area Boundary includes the addition of several blocks totaling approximately 20 acres from the Mauka Area, bounded by Ala Moana Boulevard, Keawe, Pohukaina and Koula Streets. The inclusion of the lands mauka of Ala Moana Boulevard is intended to facilitate and promote the Mauka Area-Makai Area linkage via consistent urban design, open space and land use features that are not present in the current Mauka Area Plan and Rules.

Mauka and Makai Area Plans have been developed to project the vision and direction necessary to achieve Kakaako's potential to become a new mixed-use community in Honolulu's central urban core. The plans are the basis for regulating development and improvements for the public and private sectors.

1.3 Existing Makai Area Plan

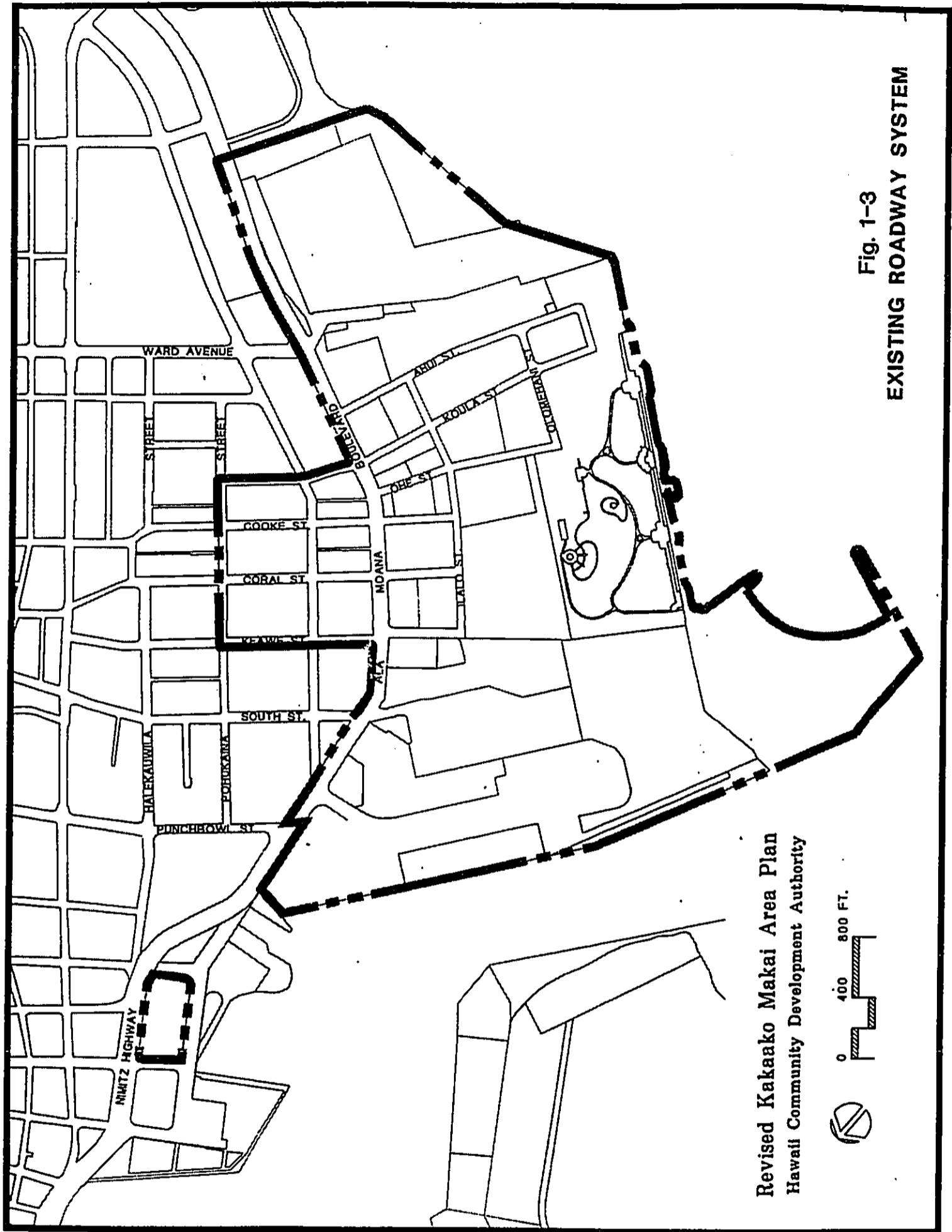
To better understand the context for the proposed revisions, a brief summary of the existing Makai Area Plan is presented herewith. The present Makai Area Plan advocates:

- mixed uses including commercial, recreational and maritime uses,
- urban design policies to preserve view planes and corridors,
- preservation of historic sites,
- reliance on public transportation and pedestrian circulation,
- concept of a people-oriented gathering place, and
- supportive development of public facilities and infrastructure.



Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority

Fig. 1-2
 MAKAI AREA BOUNDARY



Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority

Fig. 1-3
 EXISTING ROADWAY SYSTEM

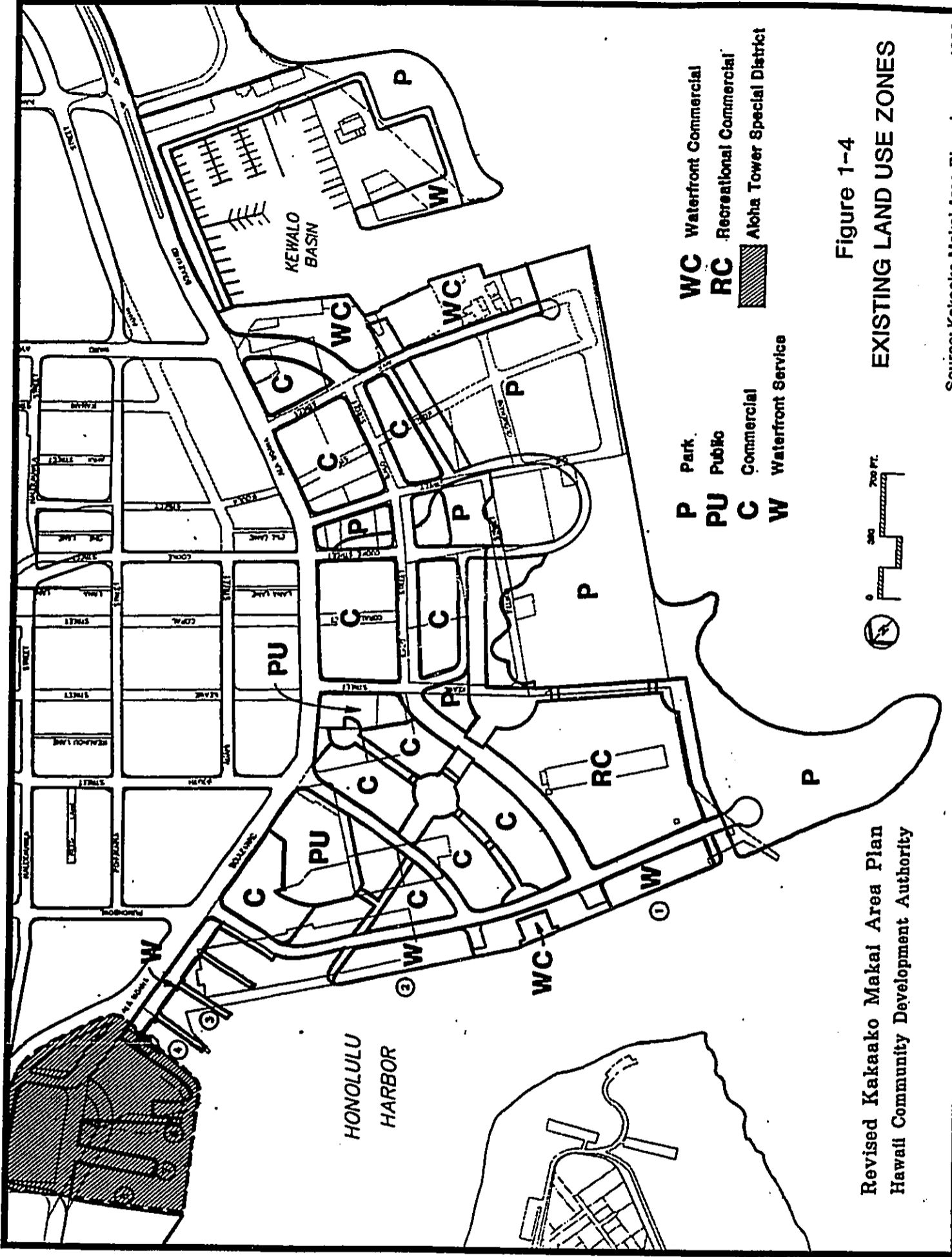
Chapter 1
INTRODUCTION

The Makai Area Plan has the following components: land use, transportation, open space, urban design, infrastructure, historic resources, social and safety, relocation, financial program, and phasing. The accompanying Makai Area Rules help implement the Plan by regulating the use, zoning, and development of all Makai Area lands.

Existing Land Use Plan. The existing land use plan is based on the concept of encouraging a people-oriented gathering place in a park-like setting. It allocates approximately 70 acres of new park lands and 7.5 million square feet of potential commercial office and retail shopping uses within the 221-acre Makai Area. Land use zones for the existing plan is summarized in Table 1-1, and shown in Figure 1-4.

Table 1-1 MAKAI AREA LAND USE ZONES (Existing)		
Zone	Designation	Acres
C	Commercial	39.0
WC	Waterfront Commercial	12.0
RC	Recreation Commercial	16.0
W	Waterfront Service	8.0
P	Park	70.0
PU	Public	7.0
	Circulation	48.0
	HECO Parcel	3.5
	Inland Waterways	17.5
	Total	221.0

The development concept for the existing plan is depicted in Figure 1-5. Significant elements of the existing plan include expansion of Ala Moana Park into Kewalo Basin, Kewalo Basin expansion, Kewalo commercial redevelopment, Kakaako Waterfront Park expansion including land reclamation for a beach park, passenger cruise ship terminals at Piers 1 and 2, and expanded



Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority

Figure 1-4
 EXISTING LAND USE ZONES

Source: Kakaako Makai Area Plan, January 1980

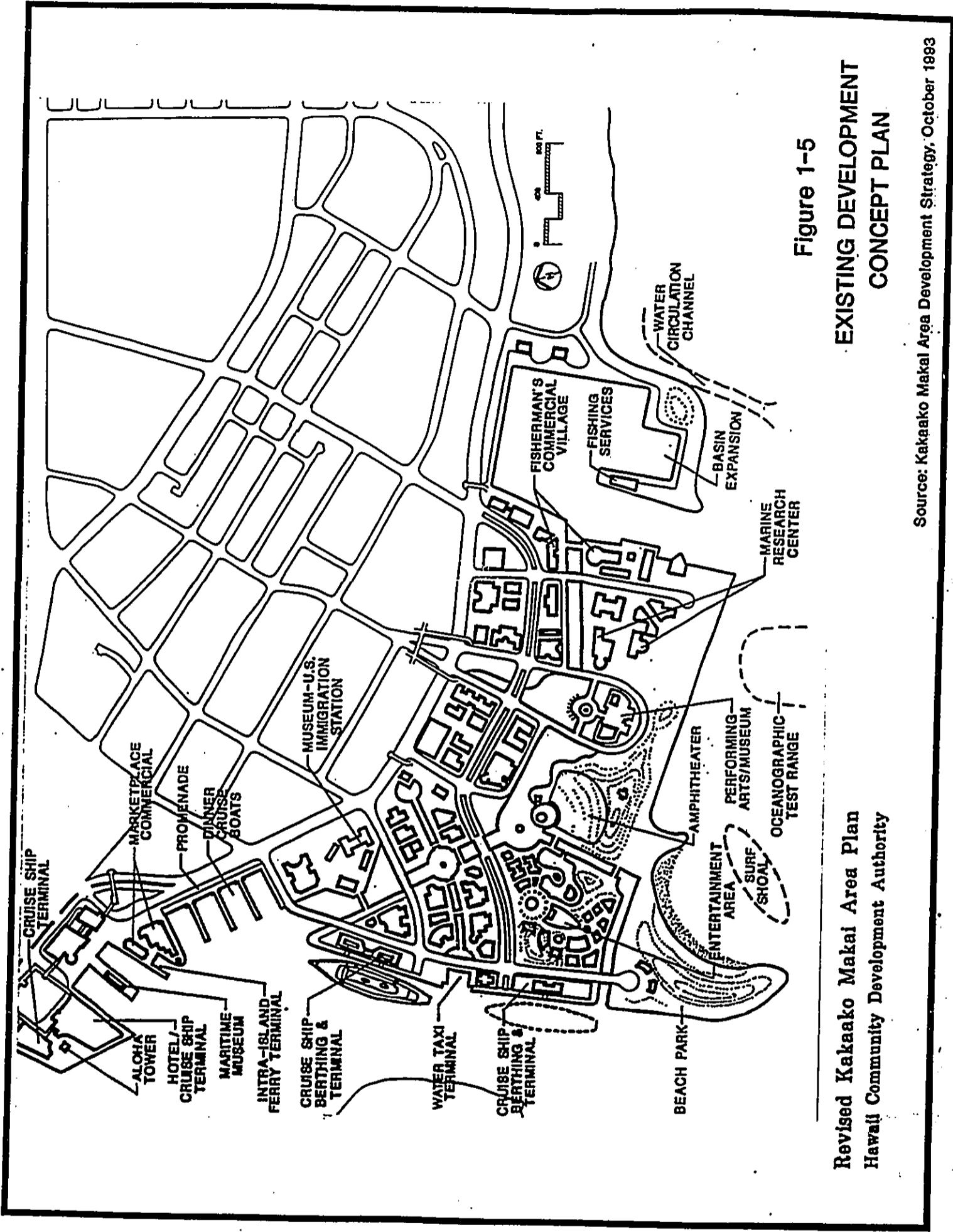


Figure 1-5
 EXISTING DEVELOPMENT
 CONCEPT PLAN

Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority

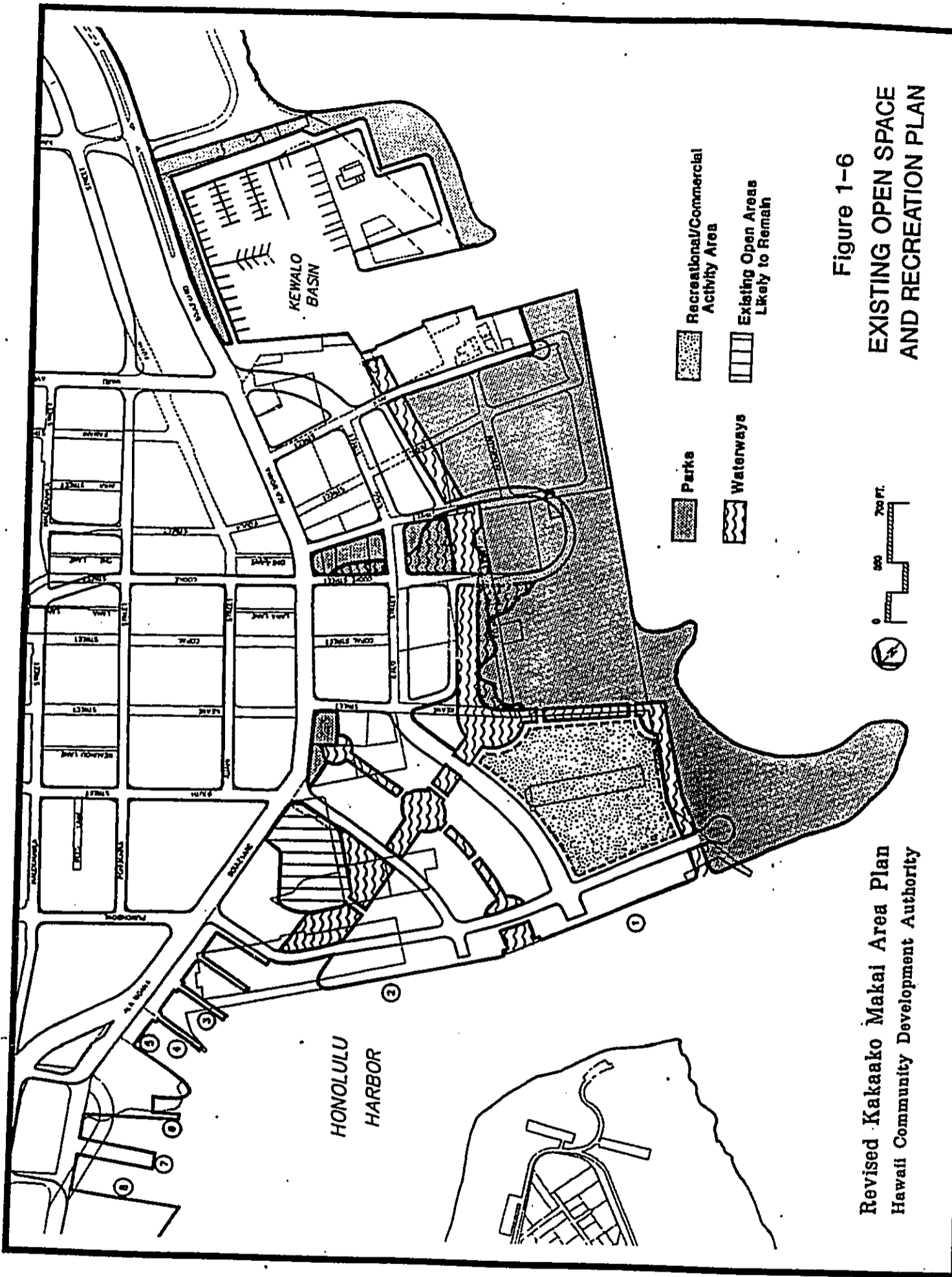
Source: Kakaako Makai Area Development Strategy, October 1993

water frontage at Pier 4. The inland waterway system was deleted in a 1993 amendment to the Plan.

Existing Transportation Plan. The existing Transportation Plan includes some major alterations to the roadway system. Punchbowl Street and South Street would extend into the Makai Area as a one-way couplet. Ward Avenue would be extended into the Makai Area along Ilalo Street to Keawe Street where it would turn westerly to intersect with the Punchbowl Street Extension. Cooke and Ohe Streets would be a one-way couplet and serve as the primary park and peninsula entrance. Coral and Koula Streets would be closed.

Existing Open Space Plan. The open space and recreational plan envisions waterfront parks linked by a series of linear parkways, or "lei of green" (see Figure 1-6). The 30-acre waterfront park and the Kewalo Basin Park have been developed. Building heights would descend towards the waterfront, transitioning from tall buildings mauka of Ala Moana Boulevard (up to 400 feet) to lower, 200-foot limit structures in the Makai Area, down to 45 feet along the waterfront. Streetwalls would be limited to 45 feet, with tower setbacks to 75 feet. Maximum floor area ratios (ratio of building floor area to land area) range from 1.5 to 3.5 depending on land area (see Figures 1-7 and 1-8).

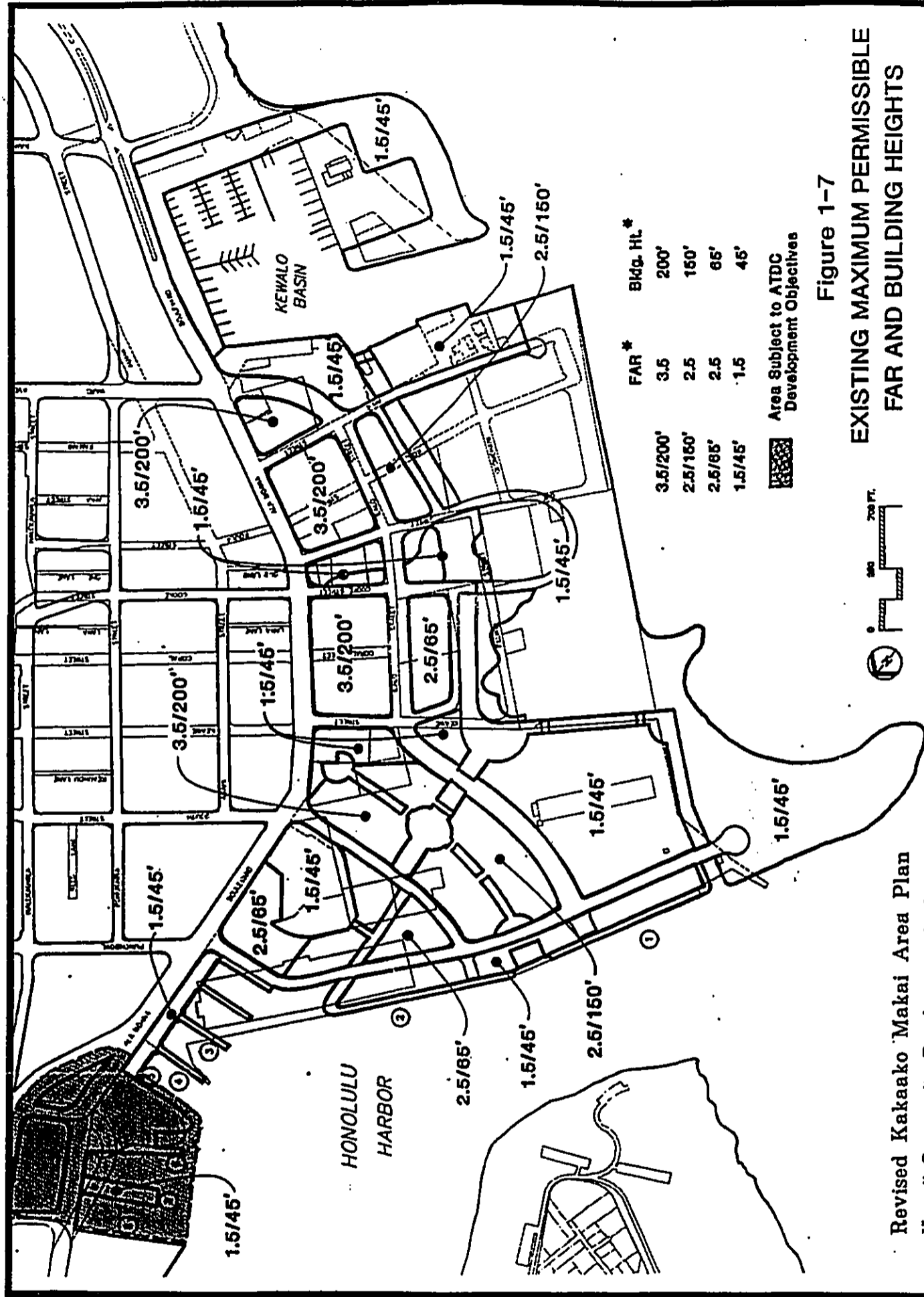
Existing Phasing Plan. The existing phasing plan provides two phases. Development in Phase I (1990-2000) would include projects such as the Kakaako Waterfront Park (initial phase completed in 1993), seawall renovation, promenade, Ala Moana Park Expansion into Kewalo Basin, Kewalo Basin Ewa-Edge redevelopment, and commercial development east of Keawe Street. Phase II (2000-2010) includes additional inland waterways, offshore landfilling off of Fort Armstrong, and new berthing terminals at Piers 1 and 2 and commercial development west of Keawe Street to Punchbowl Street.



Revised Kakaako Makai Area Plan
Hawaii Community Development Authority

Figure 1-6
EXISTING OPEN SPACE
AND RECREATION PLAN

Source: Kakaako Makai Area Plan, January 1980



FAR *	Bldg. Ht. *
3.5/200'	200'
2.5/150'	150'
2.5/65'	65'
1.5/45'	45'

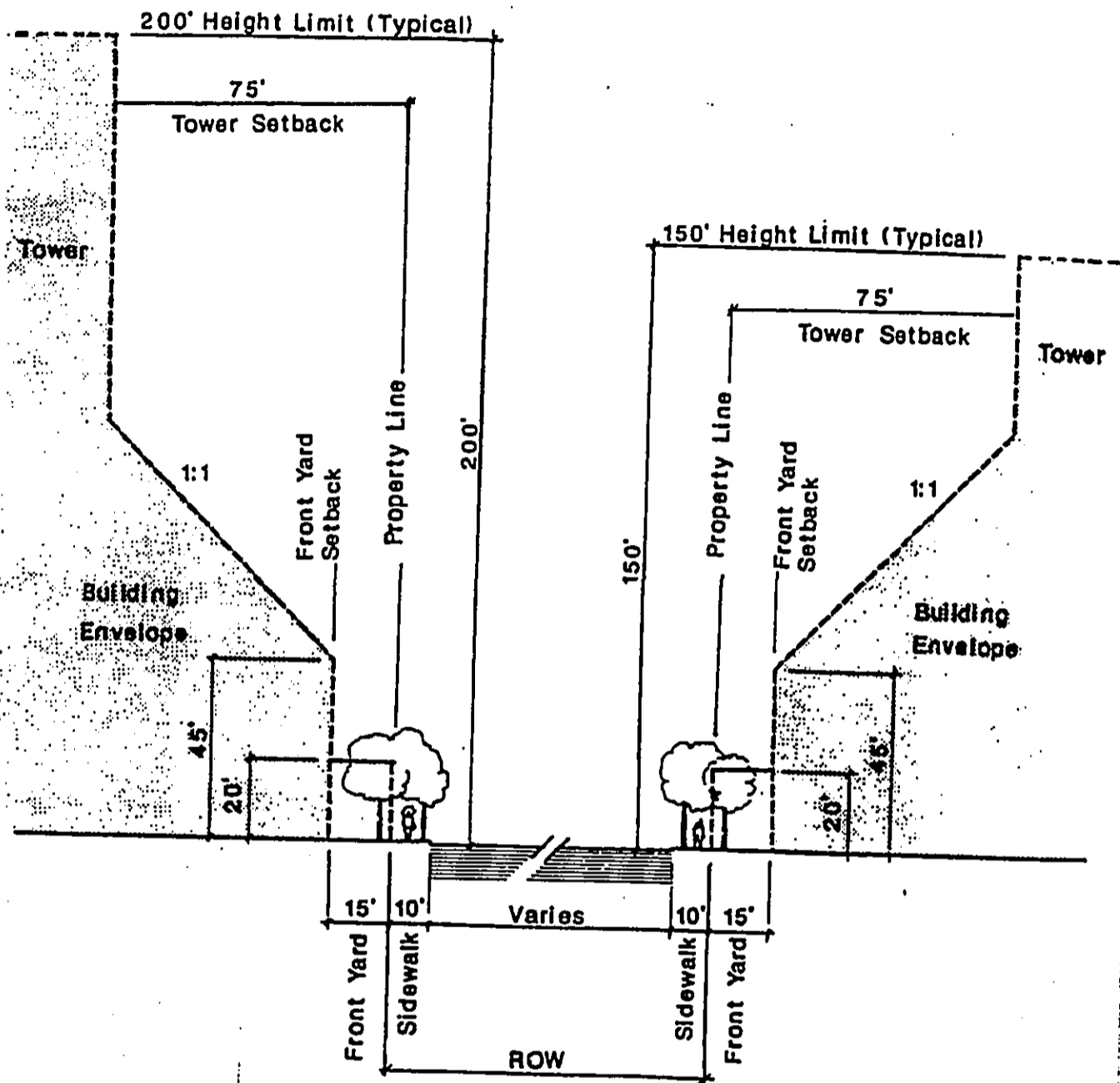
 Area Subject to ATDC Development Objectives

EXISTING MAXIMUM PERMISSIBLE FAR AND BUILDING HEIGHTS

Figure 1-7

Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority

* Maximum Permissible Floor Area Ratio and Building Heights (Based upon parcel size)
 Source: Kakaako Makai Area Plan, January 1990



Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority

Fig. 1-8
 EXISTING BUILDING
 ENVELOPE REQUIREMENTS

1.4 Overview of Proposed Plan Revisions

In 1992, the HCDA embarked on a comprehensive revision of its development strategy for the Makai Area in response to changes in the State's economy and a reassessment of land uses, urban design and transportation systems in the area. Overall, there was the desire to create a stronger mauka-makai link, a more lively urban environment, and improve vehicular and pedestrian flow through the area. Some of the major plan components such as the system of inland waterways, and large amphitheater were reevaluated and deleted from the plan. The existing plan focused on future commercial uses in the Makai Area, but more flexibility was needed for marketability and revenue generation for the State lands. This revised development strategy is the basis for proposed revisions to the Makai Area Plan.

The Makai Area offers the advantages of a dramatic location, proximity to downtown and a substantial amount of land under State control. The overall vision of the present Makai Area Plan is to create an active "people" place and integrate the city with this portion of the waterfront by an expansive waterfront park, maritime uses along the harbor, restaurants and entertainment along Kewalo Basin, a cultural arts complex, and intensive mixed use development of the peninsula interior.

While this vision remains, some key elements of the development strategy are proposed to be revised. Relative to land use, the Makai Area Plan currently provides for the development of 7.5 million square feet of commercial space to help fund the area amenities. This assumption reflected the high levels of investment in and demand for commercial space which prevailed in the late 1980s. To provide the State with more flexibility in responding to changing market conditions, a mixed land use concept is now proposed. In particular, the allowance of mixed uses will enable residential uses to also be accommodated in the Makai Area. With the demand for affordable housing continuing to be strong, the residential component proposed in the revised Plan will help address this need within the Central Honolulu area. A residential community will also promote a more diverse and active urban environment consistent with the revised design concepts proposed.

The transportation network has been reevaluated, with major changes proposed to the street system to facilitate access through the area. Two major roadway couplets (pair of one-way streets) are proposed. Ala Moana Boulevard is proposed to be made one-way Ewa bound from Ward Avenue to Punchbowl Street, while an extension of Ward Avenue through the makai

Chapter 1
INTRODUCTION

peninsula would be one-way Diamond Head bound. Cooke Street and Koula Street would also be made into a couplet to better serve the central promenade area of the Plan. To implement a revised urban design strategy, the planned large superblocks will be replaced with smaller blocks which are more conducive to incremental development and which will improve the relationship of the Mauka and Makai Areas. The earlier planned inland waterway system was deemed to be economically infeasible and has been deleted from the Makai Area Plan.

The open space and recreation plan is reoriented to lend a stronger focus to a central promenade extending up from the waterfront park to better connect the Mauka and Makai Areas. Several blocks above Ala Moana Boulevard along Cooke Street are added to the Makai Area boundaries to continue and reinforce the central promenade theme up through the Mauka Area.

Additional urban design changes include the use of continuous streetwalls along the major boulevards, more variable heights than previously allowed (but with the same densities and maximum floor areas) ranging from 45 to 300 feet in areas makai of Ala Moana Boulevard, and up to 400 feet in areas mauka of Ala Moana Boulevard (presently allowed). These revisions are intended to improve the definition of public spaces and enhance pedestrian-scale activities. In addition, the recommended location and design of open spaces will encourage continuity of public realm between parks, walks and courtyards.

A comparison of the existing and proposed revisions to the Makai Area Plan is summarized in Table 1-2.

Table 1-2 COMPARISON OF EXISTING AND REVISED MAKAI AREA PLANS		
	EXISTING PLAN	REVISED PLAN
Boundary	Makai of Ala Moana Blvd. from Piers 1 & 2 to Kewalo Basin	Addition of several blocks mauka of Ala Moana Blvd. along Cooke St.
Land Use	W Waterfront Service	Same
	P Park	Same
	PU Public	Same
	RC Recreation Commercial	Omitted
	C Commercial	MUZ Mixed Use Zone
	WC Waterfront Commercial	Same
Transportation System	Ward Avenue Extension	Ward Avenue Extension Eventual Couplet: Ward Ext. - one way Diamond Head Ala Moana - one way Ewa
	Cooke-Ohe Couplet	Cooke-Koula Couplet
	Large Superblocks	Small blocks
Parks	Kakaako Waterfront Park	Same
	Inland Promenade	Mauka Promenade/Park Expansions
	Amphitheater	Reduced Size
	Cultural Arts Complex	Closer to Kewalo Basin
	Inland Waterway	Replaced by Park Expansion
Shoreline Uses	Beach Park	Same
	Kewalo Commercial	Same
	Kewalo Basin Expansion	Maintain Existing Shoreline
	Piers 1 & 2 Maritime	Maintain Existing Shoreline
Urban Design	People-oriented mixed use	Same
	Mauka-Makai Linkages	Mauka-Makai Promenade
	View Corridors/Pedestrian Routes	Same
Heights	45 to 200 ft.	45 to 300 ft.
Floor Area	7.53 million S.F. maximum	Same, plus approx. 3 million S.F. in the Mauka Expansion Area
Densities	1.5 to 3.5 FAR	1.5 to 3.5 FAR
Open Space	20 % - Developer Discretion	20 % - Location Prescribed
Setbacks	15 ft. front yard	Build to line w/continuous streetwall
	75 ft. tower setback	15-75 ft. tower setback

Revised Kakaako Makai Area Plan

Chapter 2

**DESCRIPTION OF
THE PROPOSED ACTION**

2. DESCRIPTION OF THE PROPOSED ACTION

2.1 Introduction

The proposed revisions to the Makai Area Plan retain the overall development concept of an active people gathering place. The major changes proposed relate mainly to the reallocation of land uses, revised roadway system, and urban design concepts. The major components deleted from the existing plan include the inland waterways, large amphitheater, and marine research center. The revised plan proposes a variety of open space and park areas, a smaller grid pattern, improved definition of public spaces, and integrated auto and pedestrian areas to refine the original urban design concept. This section elaborates on the changes proposed in Makai Area Plan.

2.2 Development Concept

The overall development concept for the Makai Area is to create an active people-oriented place with a series of new parks, public open spaces and other civic amenities and cultural facilities (see Figure 2-1). The allowance for residential development has been added to promote a mixed-use setting integrating housing and commercial development within a pedestrian and open environment.

No changes are planned to the waterfront and shoreline uses. Highlights of the revised inland development concept include the following:

- **Central Plaza** with shops and restaurants, and public gardens, intended to add more variety of activities;
- **Mauka-Makai Promenade** and continuous open space system to extend the waterfront park mauka and enhance the linkage between the Mauka and Makai lands;
- **A more finely grained urban pattern** of blocks and roads including two major street couplets and meandering park road to facilitate circulation and provide safer access to park areas;
- **A smaller amphitheater** (seating up to 2,000 persons) to reduce costs thereby targeting local performance groups;
- **Active parks** for recreational games and team sports to respond to community-wide needs;
- **A 36,000-square foot Children's museum;** and
- **Three performing arts theaters** including a small theater with 250 seats, a mid-sized theater with 500 seats, and a large lyric center with up to 2,000 seats.

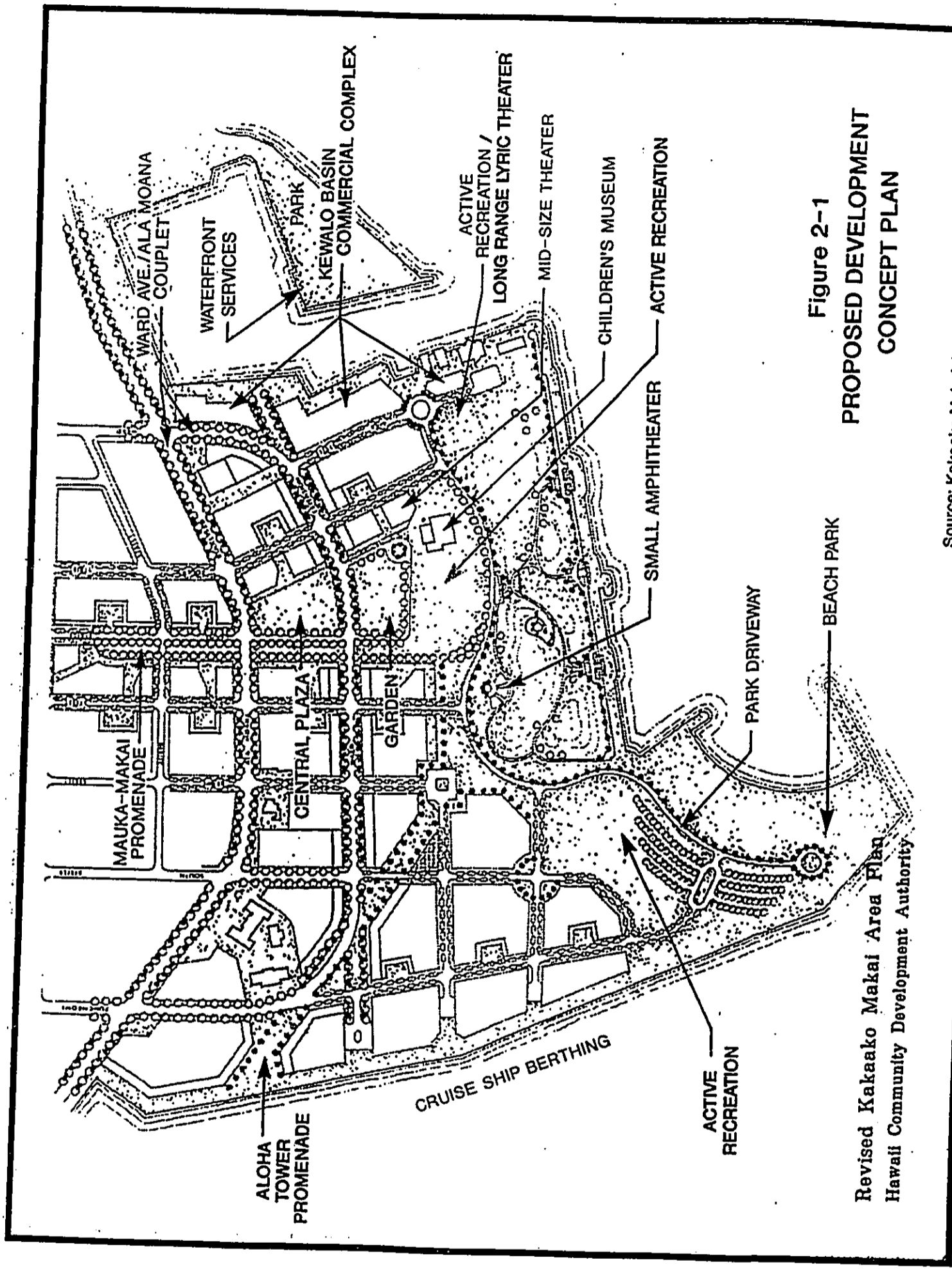


Figure 2-1
**PROPOSED DEVELOPMENT
 CONCEPT PLAN**

Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority

Source: Kakaako Makai Area Development Strategy, October 1983



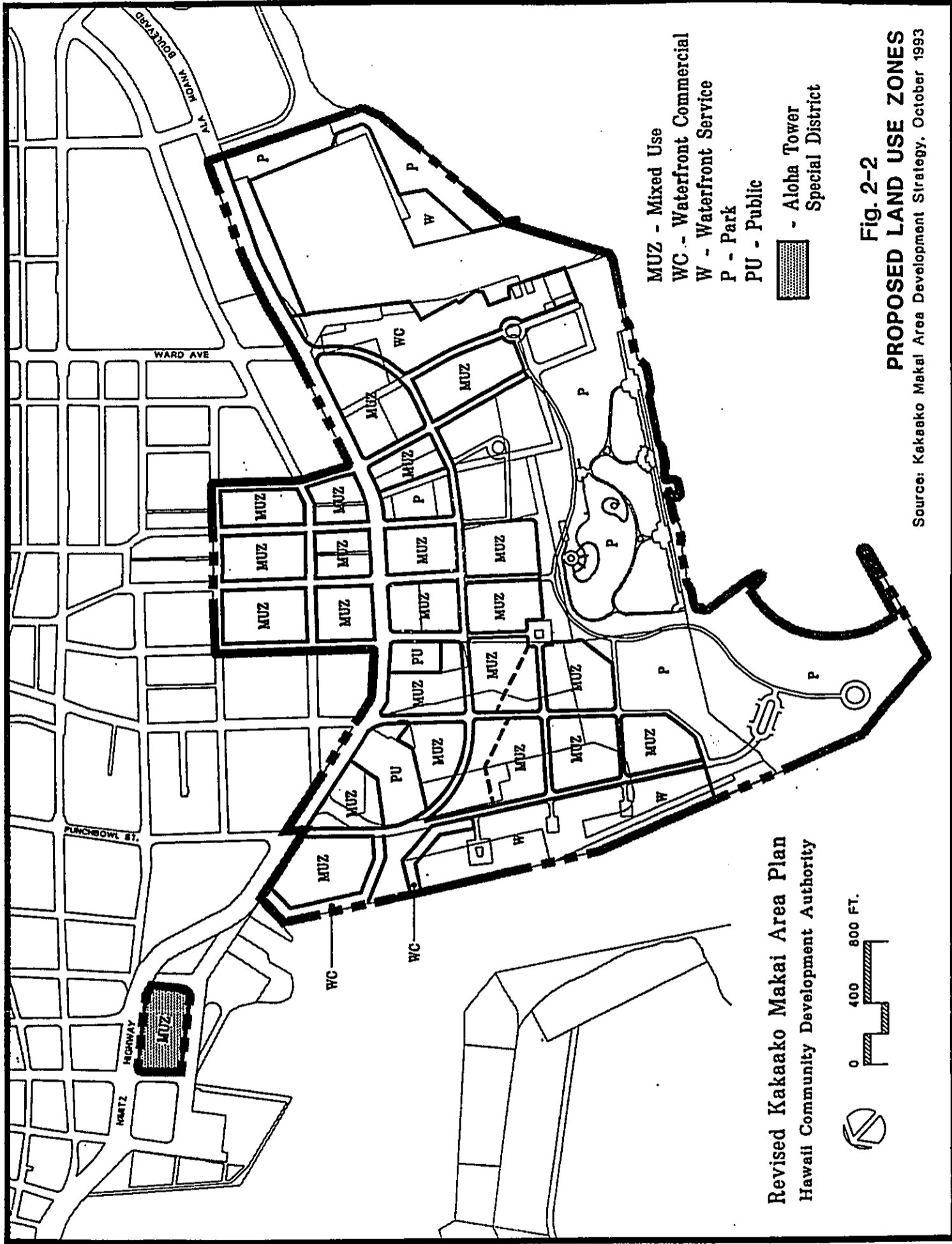
2.3 Land Use Plan

The revised land use plan does not change the overall concept of a people-oriented gathering place, but provides more park space and a greater variety of uses. In particular, Commercial (C) designations are replaced with Mixed Use Zones (MUZ) to allow for residential developments in addition to commercial office and retail uses. The allowance of housing is proposed in response to the continuing strong demand for housing in Honolulu. The residential component of the Makai Area would optimize the use of the area particularly during "off" periods on weekends and evenings, and promote a sense of activity and security. Moreover, a residential community in the Makai Area will stimulate its economic base and help to secure long-term viability.

As summarized in Table 2-1, and illustrated in Figure 2-2, land use designations also include Waterfront Commercial (WC) along Kewalo Basin and portions of Honolulu Harbor; Waterfront Service (W) comprised of harbor facilities ultimately planned for cruise ships; Public (PU) comprised of public use sites and Park (P), which includes sites for the proposed cultural facilities. Detailed feasibility studies indicate the earlier planned waterway areas were costly and lacking in recreational value, and are to be replaced with park land. A previous Recreation Commercial (RC) designation intended for an amusement park is replaced with Park and Mixed Use Zones. The land use zones for the Makai Plan would include:

Table 2-1 MAKAI AREA LAND USE ZONES (Proposed Revision)		
Zone	Designation	Acres
MUZ	Mixed Use	92*
WC	Waterfront Commercial	12
W	Waterfront Service	8
P	Park	89
PU	Public	7
	Circulation	33
	Total	241

* Includes 20 acres currently in the Kakaako Mauka Plan, proposed for inclusion in the revised Kakaako Makai Plan



- MUZ - Mixed Use
- WC - Waterfront Commercial
- W - Waterfront Service
- P - Park
- PU - Public
- Aloha Tower Special District

Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority

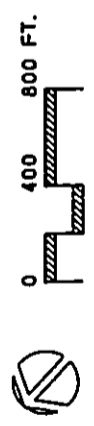


Fig. 2-2
PROPOSED LAND USE ZONES
 Source: Kakaako Makai Area Development Strategy, October 1993

Residential Uses. Excluded from the current Makai Plan, residential uses are proposed to be allowed in the revised Plan in response to the continuing demand for housing and to provide needed flexibility for makai developments. The parks, cultural facilities, and other amenities planned provide an ideal environment to introduce new urban housing which would be beneficial in providing an on-site population to promote activity, support local businesses and services, and increase security.

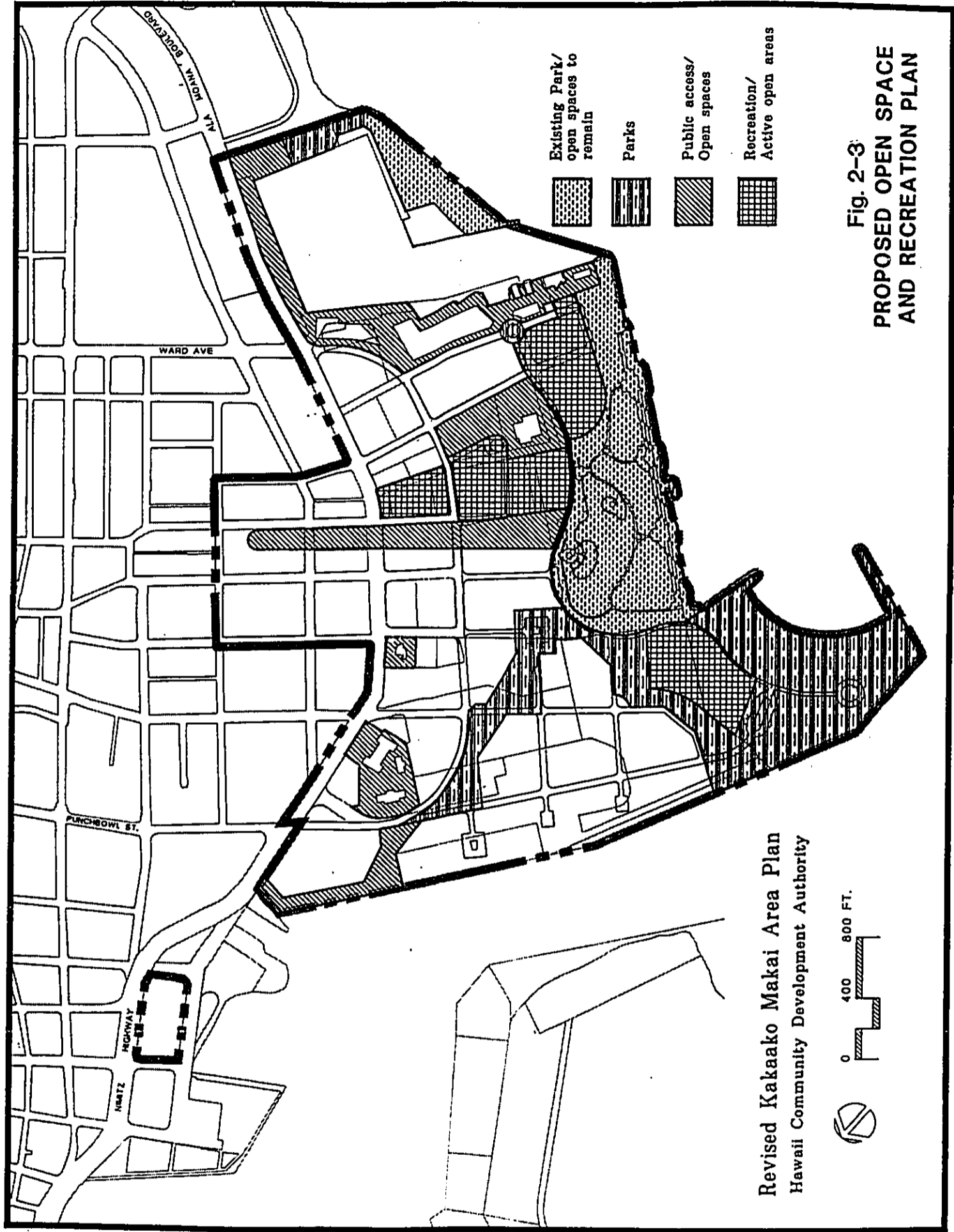
Based on planned densities, it is estimated that up to 1,500 residential units could be developed on the State-owned lands and up to 1,500 units on privately owned lands (primarily Bishop Estate), for a total of 3,000 residential units. For residential development on private lands, 20 percent of the units would be required to be priced in the "affordable" range, generally defined as housing targeted for families with incomes of between 80 and 140 percent of median family income. On the State-owned public lands, it is currently envisioned that a range of housing types and prices would be provided, but with a higher percentage of units within the affordable range.

The Mixed Use Zone designation will provide flexibility for developers to integrate medium and high density housing units with commercial spaces. An estimated maximum of 40 percent of the buildable area could be developed in residential use, with the balance in commercial use. On State-owned lands in particular, a moderate amount of affordably-priced housing can be supported as long as most of the other uses generate sufficient revenue for the State.

2.4 Open Space and Recreation Plan

The revised open space and recreation plan expands and enlivens the Kakaako Waterfront Park (see Figure 2-3). The ground plane is envisioned as a continuous system of broad, shady walks, arcades, passages, and courtyards linked to the Kakaako Waterfront Park. The open spaces will extend the waterfront park's amenity value to those development parcels which do not front directly on it and will impart a distinctive tropical urban character.

A Mauka-Makai Promenade is proposed to extend from the Kakaako Waterfront Park across Ala Moana Boulevard to Mother Waldron Park and would create an important visual and physical link from the Mauka Area to the Makai Area, and promote the reintegration of city and waterfront. A view corridor will be created for towers on adjacent development parcels, providing vistas of the promenade, the waterfront park and the ocean beyond.



Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority



Fig. 2-3:
 PROPOSED OPEN SPACE
 AND RECREATION PLAN



The increased park area allows for a variety of open space and recreation environments. Plans will be further defined through detailed design development and may include diverse uses for public enjoyment. Current plans indicate a central urban plaza similar in spirit to downtown's Tamarind Park that would feature a plaza and public garden with water features, restaurants, informal eateries, shops, benches and paths for strolling, and an expansive multi-purpose public green to accommodate large gatherings, festivals, and organized sports.

Park expansions would include active parks for organized games and team sports. The planned amount of park land in the Makai Area has been increased from 70 to 89 acres primarily by adding the 17 acres formerly planned as inland waterways. Further, in order to enhance and realize a consistent connection between individual developments and link a continuous realm of public spaces, promenades and parks, the locations and configurations of open spaces, setbacks, arcades, and courtyards will be recommended and encouraged.

Within the park, cultural, educational and other facilities for public enjoyment will be developed. Current plans include the development of a children's museum, theaters and restaurants. Other uses may be proposed to be located within the park, and accepted if they meet a public need and can be categorized as cultural, educational, appropriate to overall public enjoyment of the park or ancillary to those areas.

2.5 Urban Design Plan

The revised urban design plan provides for an intensive, mixed-use development set within an open, informal public realm affording a variety of cultural and recreational experiences. A more finely grained urban pattern with smaller blocks will make the area more conducive to incremental development as well as pedestrian movement. Several blocks in the Mauka Area (mauka of Ala Moana Boulevard) are to be included in the Makai Area to create a close-knit urban fabric and a strong linkage between Mauka and Makai Areas. Ala Moana Boulevard, currently a formidable barrier, will be linked on either side by a pedestrian zone. The Ward Avenue Extension is envisioned as the major shopping and strolling street. To improve the definition of public spaces formed by major streets, taller and more consistent streetwalls are proposed. Building heights are increased to a maximum of 300 feet makai of Ala Moana Boulevard, with maximum floor area ratios of 1.5 to 3.5. Mauka of Ala Moana Boulevard, existing maximum building heights of 400 feet will be maintained. The maximum floor area for

Chapter 2
DESCRIPTION OF THE PROPOSED ACTION

the Makai Area seaward of Ala Moana Boulevard would remain the same at 7.53 million square feet, plus three million square feet mauka of Ala Moana Boulevard.

2.5.1 Building Densities and Heights

The overall total density for the Makai Area remains unchanged from the existing plan. However, some adjustments are proposed in the floor area ratios, or FAR (the ratio of building square footage to land area), and heights to accommodate the reconfigured development blocks. As shown in Figure 2-4, sites with the highest FAR of 3.5 will be located along Ala Moana Boulevard. Approaching the waterfront park, FAR will step down from 3.5 to 2.5, and to 1.5 along the water's edge.

Height limits will step down toward the waterfront and the central view corridor of the promenade will afford views toward the waterfront parks. This change also results in a more dynamic and distinctive skyline. The 400-foot height limit for the Mauka Expansion Area will remain. Adjacent to the Capitol District, building heights will be held to 65 feet, consistent with the building controls in that area. Urban design guidelines will assist in specifying tower locations. (See Figures 2-5a and 2-5b).

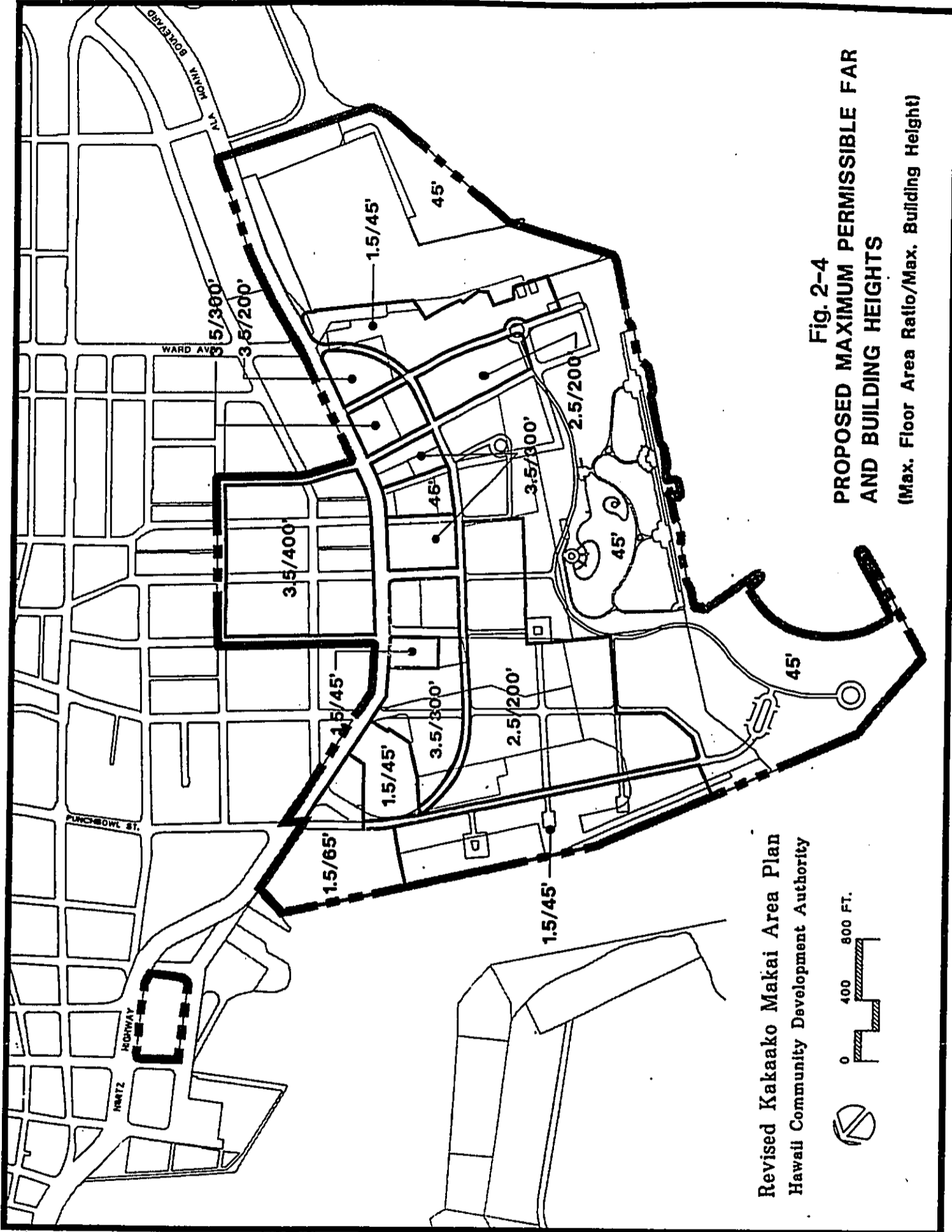
2.5.2 At-Grade Open Space

Proposed modifications regarding open space include recommended configurations and locations. This allows the open spaces to be linked and grouped to form a continuous public realm of parks, promenades, walks, arcades and courtyards.

Public open spaces, such as the Mauka-Makai Promenade and the Waterfront Promenade, must be fully accessible to the public. Semi-private open spaces would include courtyards open to the street, and located away from major arteries. These will add amenity to the side streets, while serving as entry lobbies and on-site open space for specific developments.

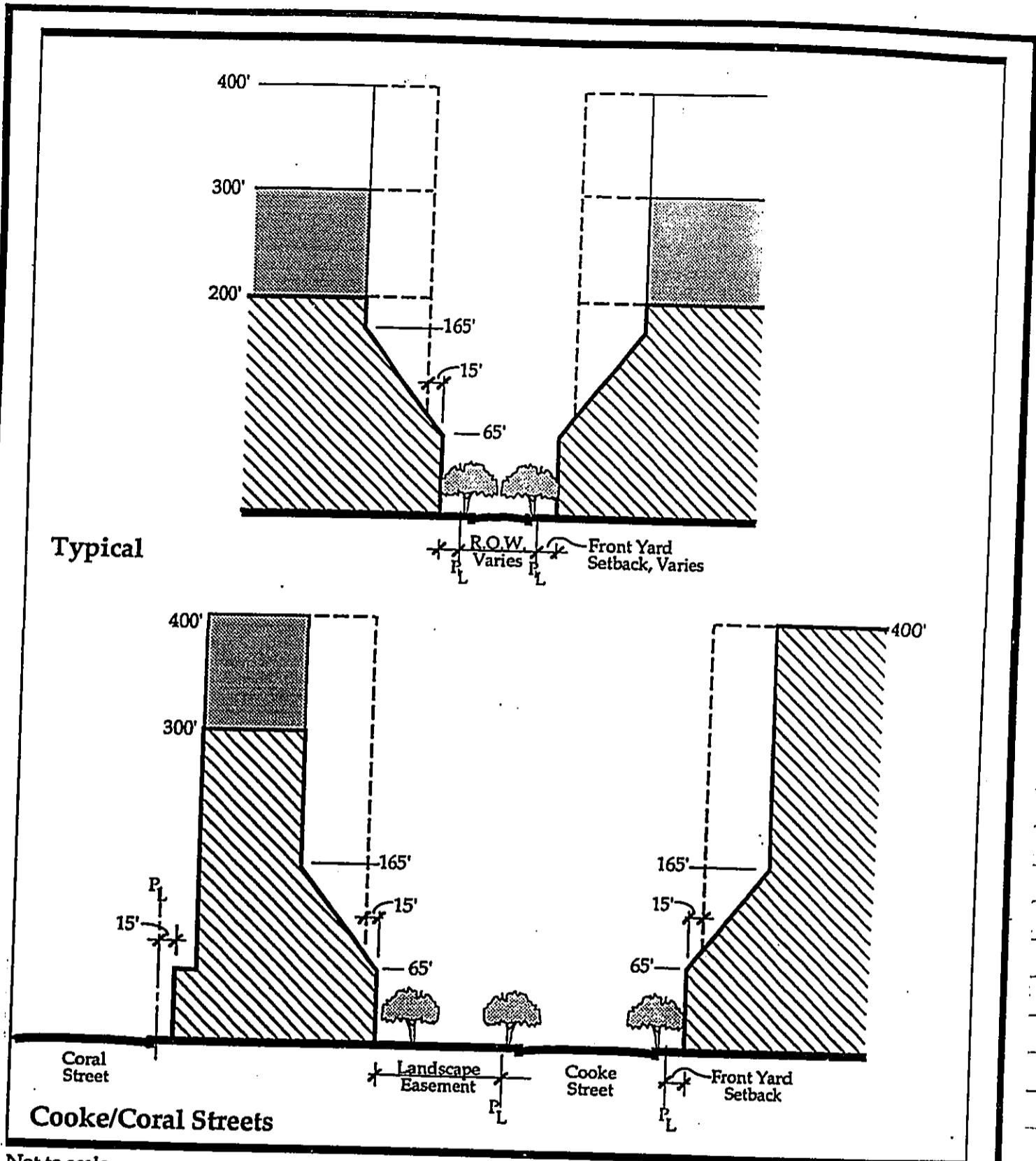
Arcades would be encouraged both along major facades and as passageways through the centers of buildings. These passageways link to courtyards, extending the open space amenity and providing shady, sheltered pedestrian routes.

In order to improve the edge definition of public spaces formed by major streets, more consistent streetwalls are necessary. Along Ward Avenue Extension, the Mauka-Makai Promenade, and



Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority

Fig. 2-4
**PROPOSED MAXIMUM PERMISSIBLE FAR
 AND BUILDING HEIGHTS**
 (Max. Floor Area Ratio/Max. Building Height)



Typical

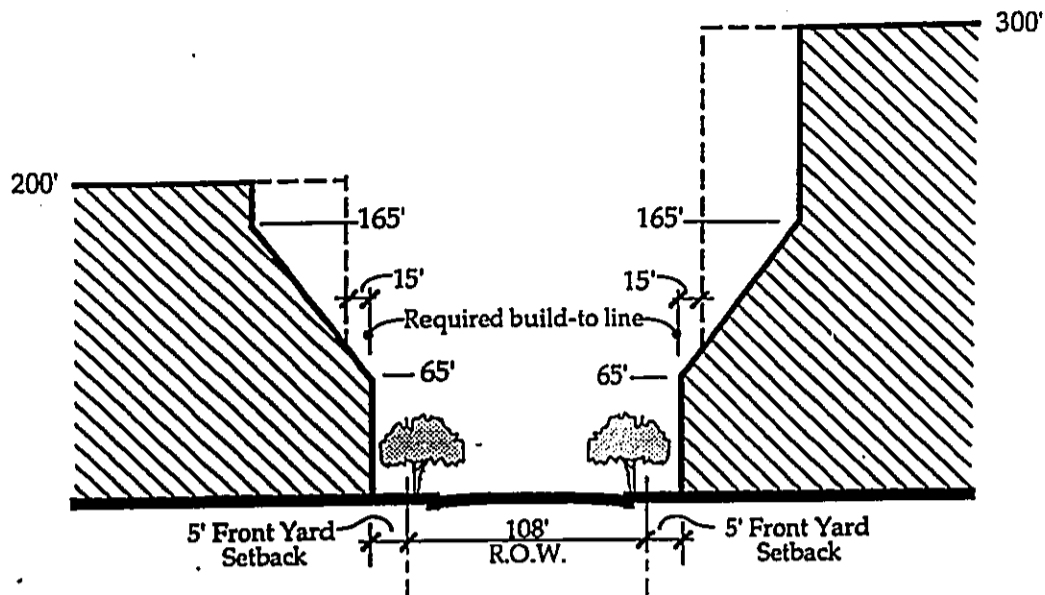
Cooke/Coral Streets

Not to scale

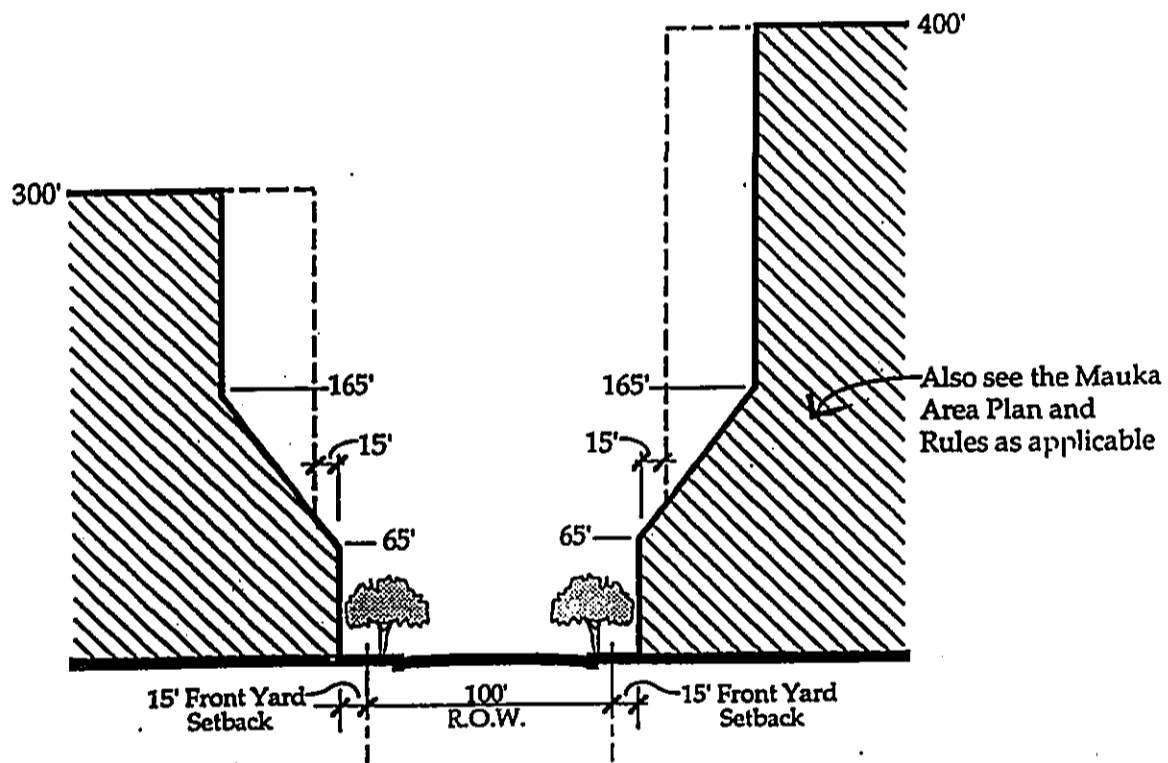
Legend Permitted where tower footprint is 16,000 square feet or less

Revised Kakaako Makai Area Plan
Hawaii Community Development Authority

Fig. 2-5a
TYPICAL AND COOKE/CORAL STREETS
CORRIDOR SECTION GUIDELINES



Ward Avenue Extension



Ala Moana Boulevard

Not to scale

Legend  Permitted where tower footprint is 16,000 square feet or less

Revised Kakaako Makai Area Plan
Hawaii Community Development Authority

Fig. 2-5b
WARD AVENUE EXTENSION
AND ALA MOANA BOULEVARD
CORRIDOR SECTION GUIDELINES

Chapter 2
DESCRIPTION OF THE PROPOSED ACTION

most of the park edge, streetwalls will be continuous and 65 feet in height. Along other streets, more flexibility in building configuration is appropriate to reflect their less active, less formal character.

The 65-foot boulevard streetwall and secondary street envelope can comfortably accommodate towers much closer to the street than the 75-foot setback currently prescribed, allowing for more design flexibility. It is preferable to locate towers at the corners of blocks to punctuate intersections. Tower setbacks have therefore been reduced to 15 feet from the streetwall on boulevards for towers with footprints of 16,000 s.f. or less and a 75-foot stepped setback is required for larger footprints.

A continuous pattern of street trees is important to make all streets comfortable and hospitable to pedestrians. Adequate seating will also be required to be provided in both public and semi-private open spaces.

2.6 Transportation Plan

The revised Transportation Plan proposes some major changes to the roadway system currently planned, as shown in Figure 2-6. The most significant change is that Ala Moana Boulevard and the Ward Avenue Extension would be designed as a one-way couplet. Ala Moana Boulevard would be made one-way Ewa bound; the Ward Avenue Extension would be one-way Diamond Head bound. This would have the effect of facilitating the regional flow of traffic through an area which is currently regarded as a bottleneck along Ala Moana Boulevard because of the many cross streets and left turn lanes. It would also lessen the required number of through lanes on each thoroughfare which improves pedestrian crossings.

Figures 2-7 and 2-8 illustrate the proposed public transportation, and pedestrian and bikeway circulation systems, respectively, while Table 2-2 summarizes dimensions for rights-of-way, traffic, bike, and parking lanes, and sidewalks.

The extension of Ward Avenue along Ilalo Street is envisioned as a premier strolling and shopping street. Broad sidewalks, shady canopy trees, continuous retail frontages and clusters of waterfront restaurants and shops at both ends of the Ward Avenue Extension will create a pleasant pedestrian-oriented environment.

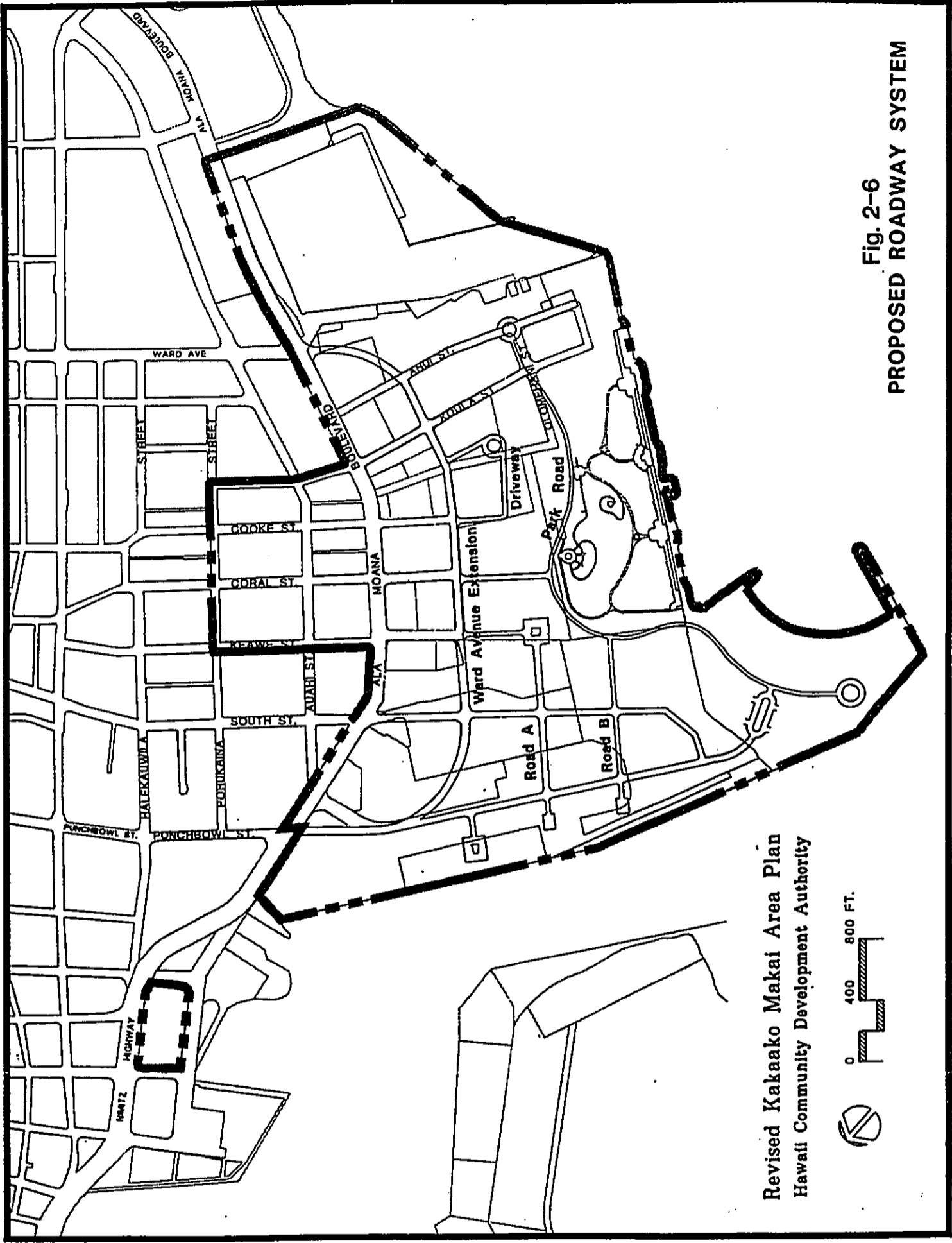
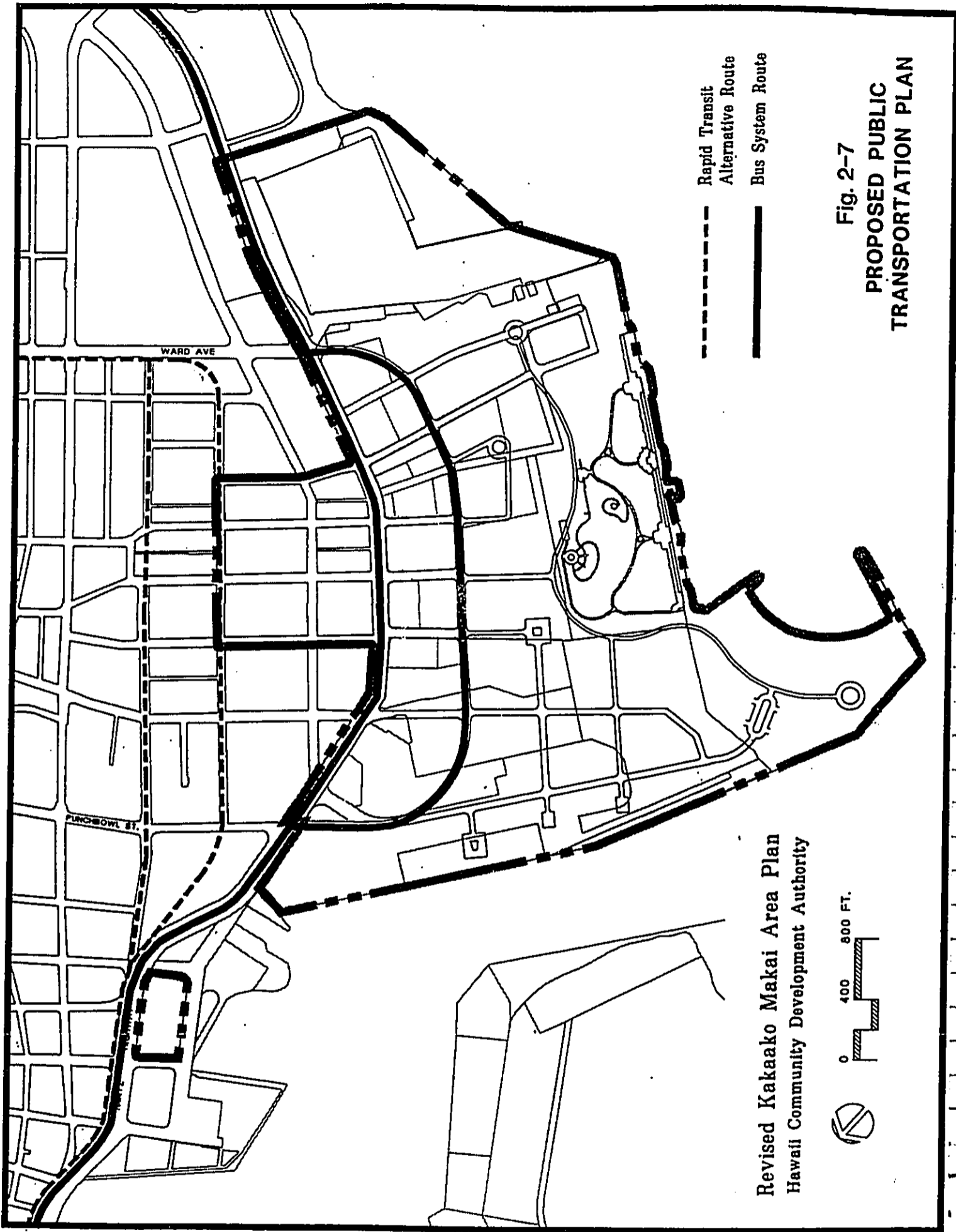
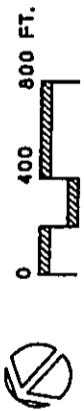


Fig. 2-6
PROPOSED ROADWAY SYSTEM



Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority



--- Rapid Transit
 Alternative Route
 — Bus System Route

Fig. 2-7
 PROPOSED PUBLIC
 TRANSPORTATION PLAN

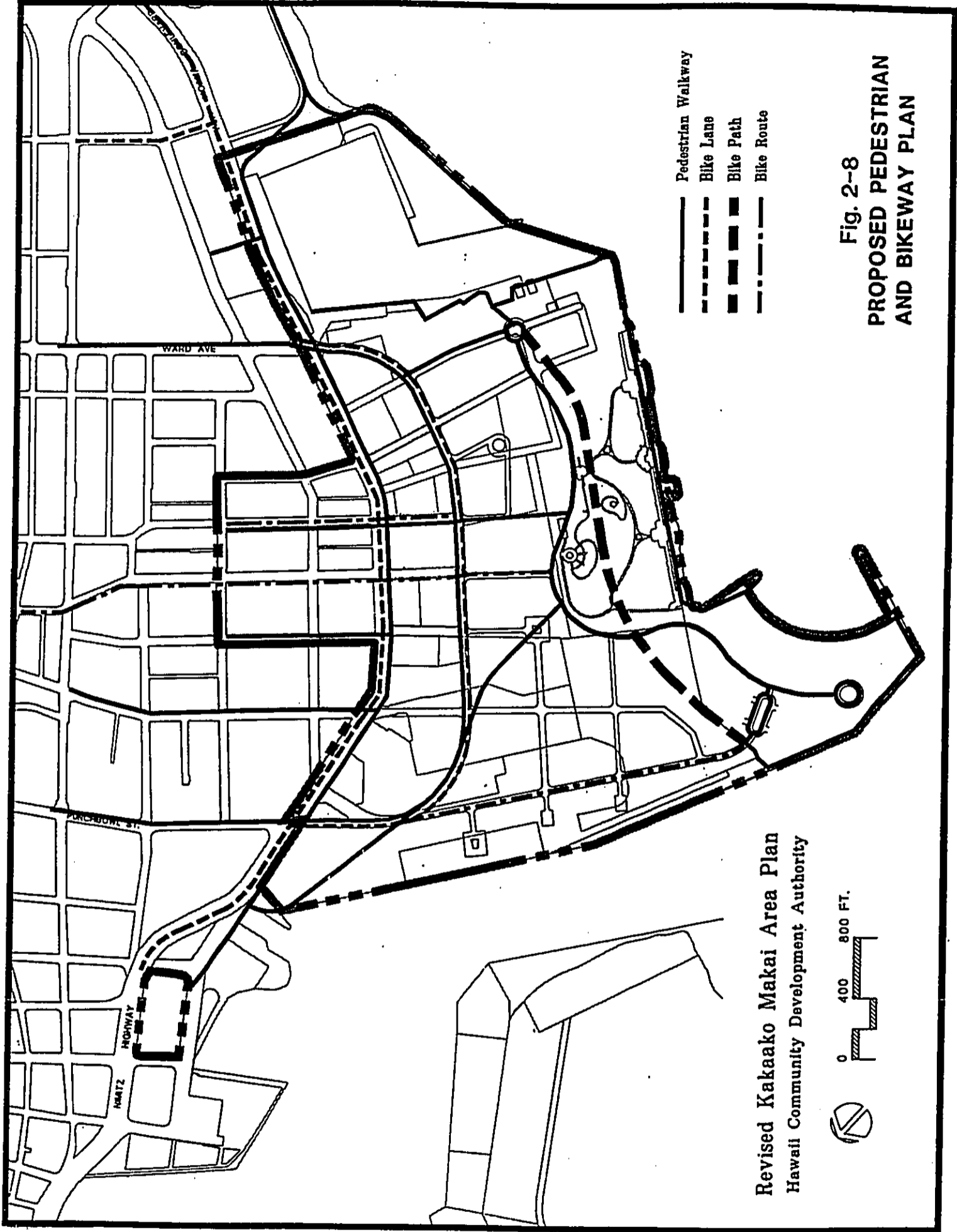


Fig. 2-8
 PROPOSED PEDESTRIAN
 AND BIKEWAY PLAN

Chapter 2
DESCRIPTION OF THE PROPOSED ACTION

Table 2-2 MAKAI AREA ROADWAY DIMENSIONS (Width in Feet)							
Street	Direct Traff.	Traffic Lanes	Bike Lane	Parking Lanes	Curb-Curb	Side-walk	Min. R-O-W
Ala Moana Blvd.	1-Way West	3-12'	1-5'	2-10'	61'	39"	100'
Ward Ave. Extension	1-Way East	3-12'	1-5'	2-10'	61'	47"	108'
Ilalo St.	Closed						
Road "A"	2-Way	2-12'		2-8'	40'	22'	62'
Road "B"	2-Way	2-12'		2-8'	40'	22'	62'
Road "C"	Driveway						
Park Road	2-Way	2-12'	Path	1-24'	46'	30'	76'
Punchbowl St. Extension	2-Way	2-12'	Route	2-10'	48'	22'	71'
South St. Ext. Ward-Ala Moana	1-Way North	2-12'		2-8'	40'	22'	62'
South St. Ext. Punchbowl-Ward	2-Way	2-12'		2-8'	40'	22'	62'
Keawe St.	2-Way	2-12'		2-8'	40'	22'	62'
Coral St.	2-Way	2-14'	Route	2-8'	44'	22'	66'
Cooke St.	1-Way South	2-14'	Route	2-8'	44'	22'	66'
Ohe St.	Closed						
Koula St., Ward-Pohukaina	2-Way North	2-12'		2-8'	40'	22'	62'
Koula St., Makai-Ward Ext	2-Way	2-12'		2-8'	40'	22'	62'
Ahui St.	2-Way	2-12'		2-8'	40'	22'	62'
* Includes planting strip for street trees.							

Rather than the Cooke-Ohe Street couplet, a Cooke-Koula Street couplet is proposed as preferable due to greater separation distance between the two streets along Ala Moana Boulevard.

A meandering park road is also proposed along the mauka edge of the Kakaako Waterfront Park to facilitate safer access to park areas and encourage a more park-like character for the area. Instead of the previously planned central parking garage, which would have posed both cost and security problems, curb-side parking will be provided along the park road, similar to Kalakaua Avenue along Kapiolani Park.

2.7 Infrastructure Plan

The infrastructure improvements by HCDA will be the catalyst of the development efforts of the public and private sectors, and will facilitate the development of recreational, commercial, cultural, and residential uses in the Makai Area.

Infrastructure systems in the Makai Area (exclusive of the lands mauka of Ala Moana Boulevard) are inadequate to support any sizeable development. The infrastructure systems necessary for implementation of the Makai Area Plan include roadways, water, drainage, wastewater, electrical, and communication systems, in addition to street lighting and traffic signalization. Electrical and communication systems would be operated and maintained by privately-run utility companies, while all other infrastructure systems would be publicly maintained.

Roadway systems would be designed for dedication to the appropriate State of Hawaii or City and County of Honolulu agency. The Ala Moana Boulevard-Ward Avenue Extension would be under the jurisdiction of the State Department of Transportation. All other roadways, perhaps with the exception of the meandering park road, would be dedicated to the City and County of Honolulu.

The revised infrastructure systems proposed for the Makai Area will be sized to meet the demands of proposed land use activities, assuming that all parcels will be developed to their optimum potential. Further, utilities will be designed in accordance with appropriate standards and engineering standards of the City and County of Honolulu. Infrastructure plans presented in this section shall be subject to revisions based on subsequent detailed engineering analyses.

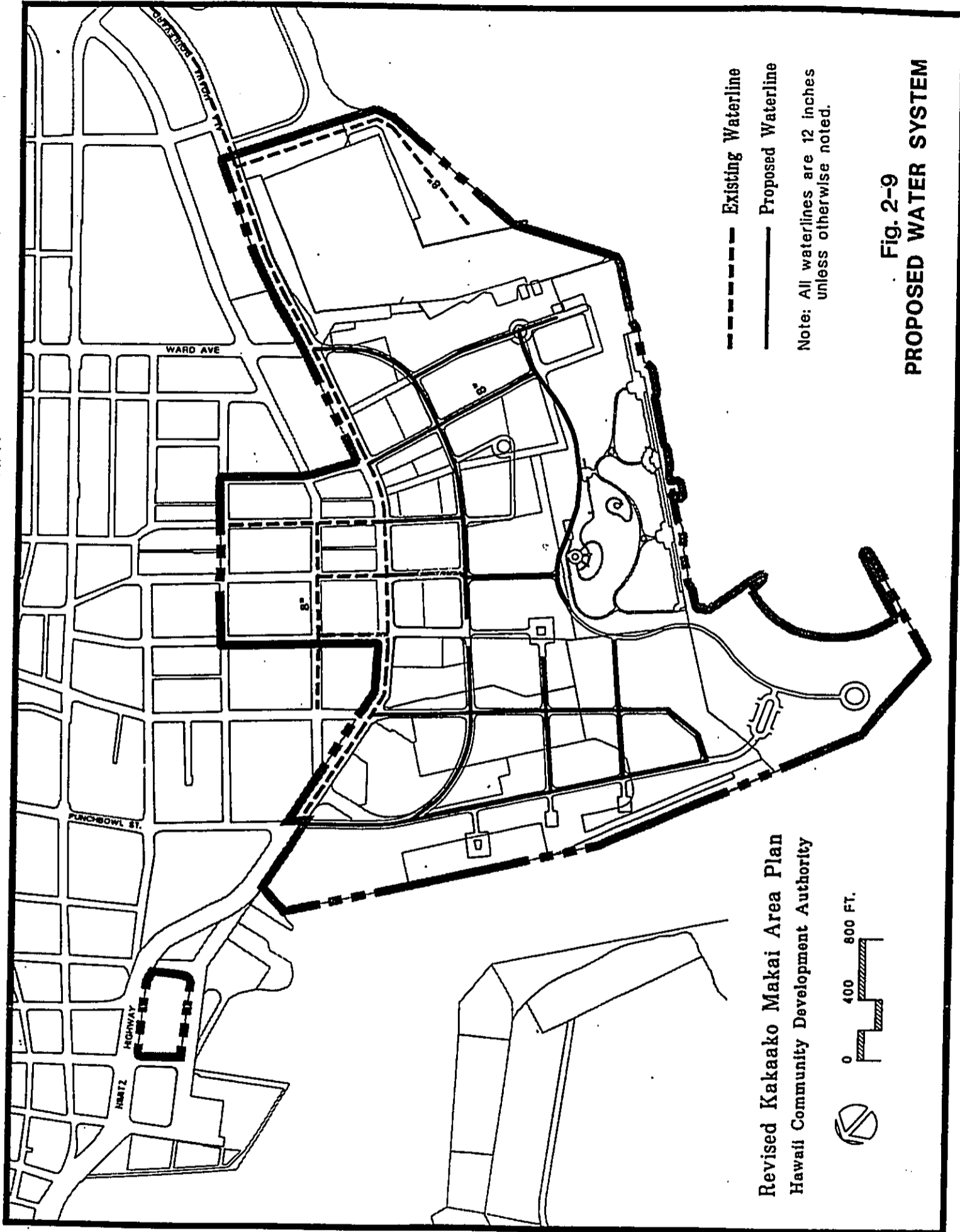
Chapter 2
DESCRIPTION OF THE PROPOSED ACTION

The detailed underground infrastructure schematics are delineated on Figures 2-9 to 2-12. As summarized in Table 2-3, the total construction cost for the utility systems is estimated to be approximately \$85 million (in 1994 dollars).

All respective individual service and sourcing charges will be borne by the customer and/or developer. New installation and underground conversion costs will be shared with the utility companies and adjoining Makai Area properties in accordance with Improvement District Rules.

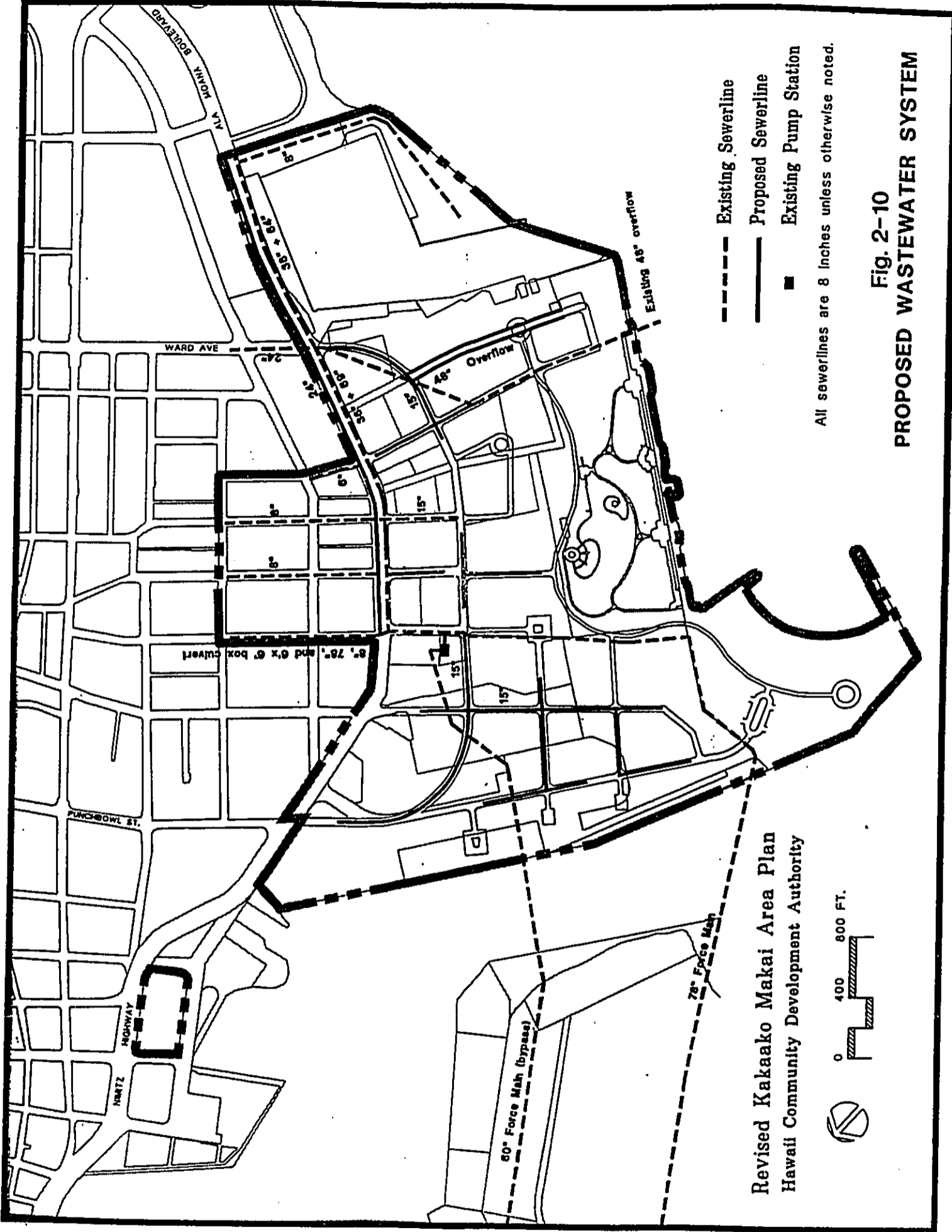
The development of a gas line system would depend largely on the potential load, customer demand, and installation costs. Gasco Inc. is responsible for the funding and replacement of undersized or deteriorated lines as necessary. With some improvement provisions, the present gas distribution system has been determined by Gasco Inc. to adequately accommodate future demand. Gasco Inc. will determine whether to construct service mains or provide containerized gas to customers.

Table 2-3 ESTIMATED MAKAI AREA INFRASTRUCTURE COSTS* (in 1994 Dollars)	
System	Total
Roadways	\$ 19,300,000
Water	\$ 5,300,000
Wastewater	\$ 3,800,000
Sewer Relocation	\$ 6,500,000
Drainage	\$ 13,000,000
Power/Communication	\$ 21,500,000
Street Lighting & Traffic Signals	\$ 4,500,000
Subtotal	\$ 73,900,000
Contingencies	\$ 11,200,000
Total	\$ 85,100,000
* Excludes infrastructure improvement costs for the Mauka Expansion Area, completed in September 1993 as part of Improvement District 3.	
Source: Calvin Kim & Associates, Inc., July 1994.	



Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority

Fig. 2-9
PROPOSED WATER SYSTEM



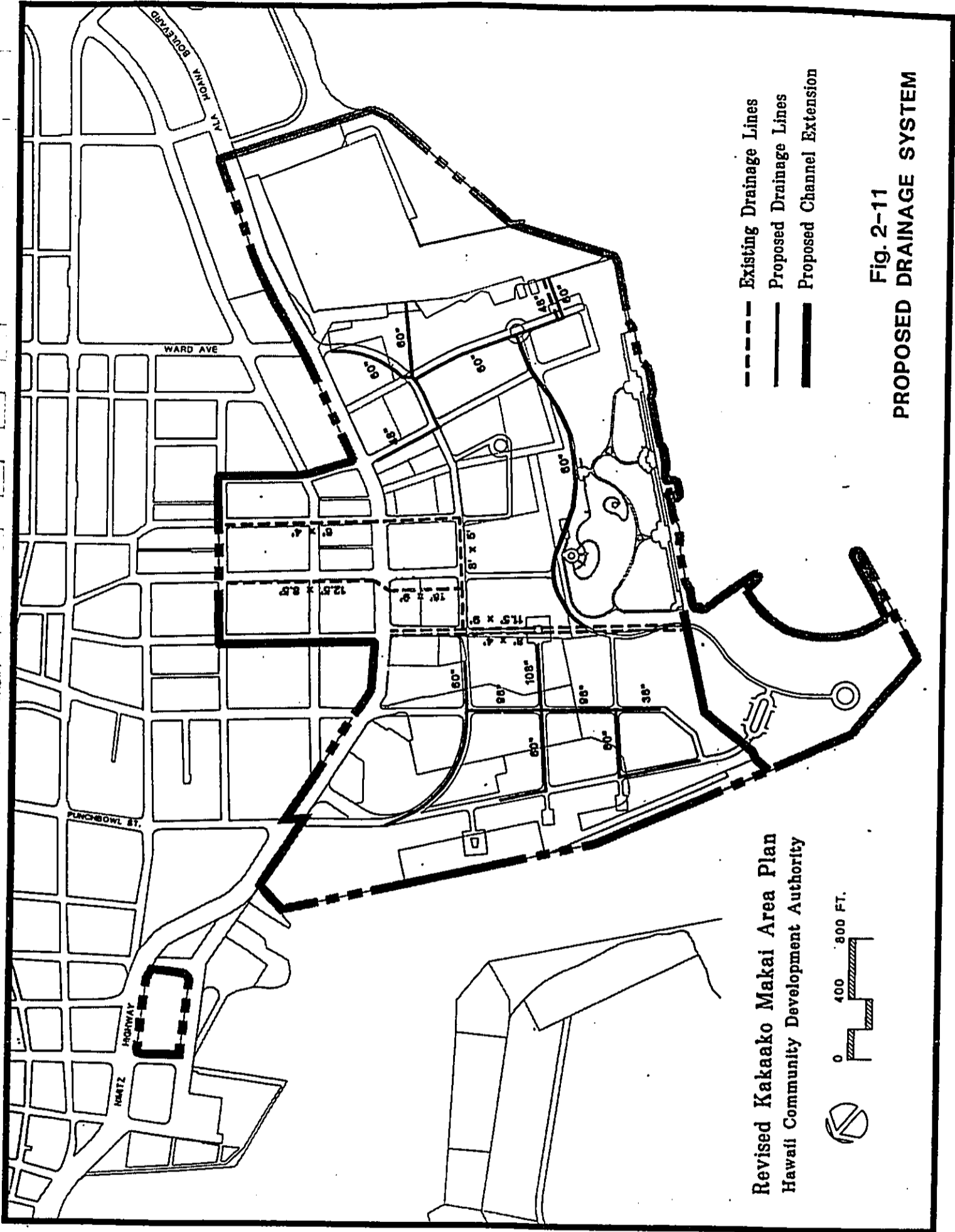
Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority

- Existing Sewerline
- Proposed Sewerline
- Existing Pump Station

All sewerlines are 8 inches unless otherwise noted.



Fig. 2-10
PROPOSED WASTEWATER SYSTEM

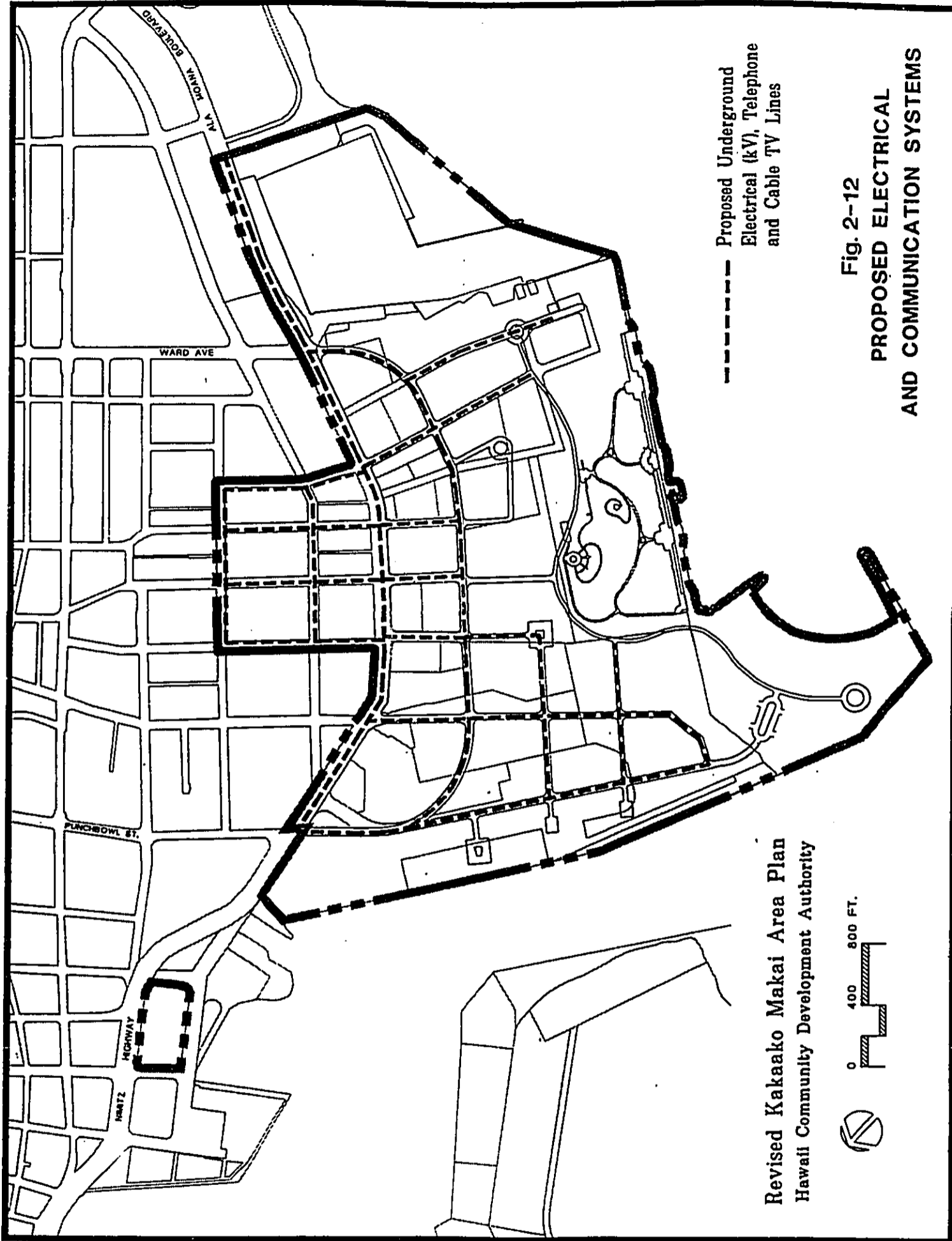


Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority



- Existing Drainage Lines
- Proposed Drainage Lines
- Proposed Channel Extension

Fig. 2-11
 PROPOSED DRAINAGE SYSTEM



2.8 Historic Resources Plan

The preservation of historic resources is integrated in the Kakaako Community Development District's development guidelines. No changes to the historic resources plan is proposed. Significant historic resources in the project area include the U.S. Immigration Station, the Department of Health building, and the Ala Moana Wastewater Pump Station.

2.9 Social and Safety Plan

The Kakaako Makai Social and Public Safety Plan strives to achieve a safe and secure new people-oriented community. A major objective of Makai Area development is to provide a vibrant community with major recreation and open space areas, as well as adjacent commercial areas that are active after traditional business hours and on holidays and weekends. With increased after-hours activity, there is reduced potential for crime and vandalism. Housing ensures there will be a population in the area 24 hours a day. Security is increased by a sense of ownership of the neighborhood by residents. Lighted ball fields and events at the amphitheater will attract people in the early evening who may stay in the area for dinner afterwards. Courtyards and passageways would be open to the public during working and evening hours, but would be gated and locked at night to protect the property and the public.

2.10 Relocation Plan

Redevelopment of the Makai Area will result in some displacement of businesses which may be forced to move or relocate on a temporary or permanent basis. The relocation plan provides for the phasing of development to minimize disruptions to business operations and the provision of relocation services and assistance such as counseling, referral and financial assistance as established by Chapter 111, HRS.

Major relocation actions proposed within the Makai Area include the relocation of the Food Distribution Center and warehousing facilities to a proposed warehouse distribution area within the State-acquired Kapalama Military Reservation. The City and County of Honolulu will be relocating its baseyard facilities from within the Makai Area to a site on Sand Island. The development of the Kapalama Military Reservation as a major container terminal could provide a future relocation site for maritime uses presently located within the Fort Armstrong area.

Chapter 2
DESCRIPTION OF THE PROPOSED ACTION

2.11 Financing Program

Over the next twenty-year period, the Makai Area Plan envisions a total public investment of approximately \$200 million to fund major roadway, infrastructure, open space and recreational developments. Improvement Districts or similar programs will be established for areas where infrastructure and public improvements benefit private landowners or lessees, who would then be assessed for their portion of the improvement costs.

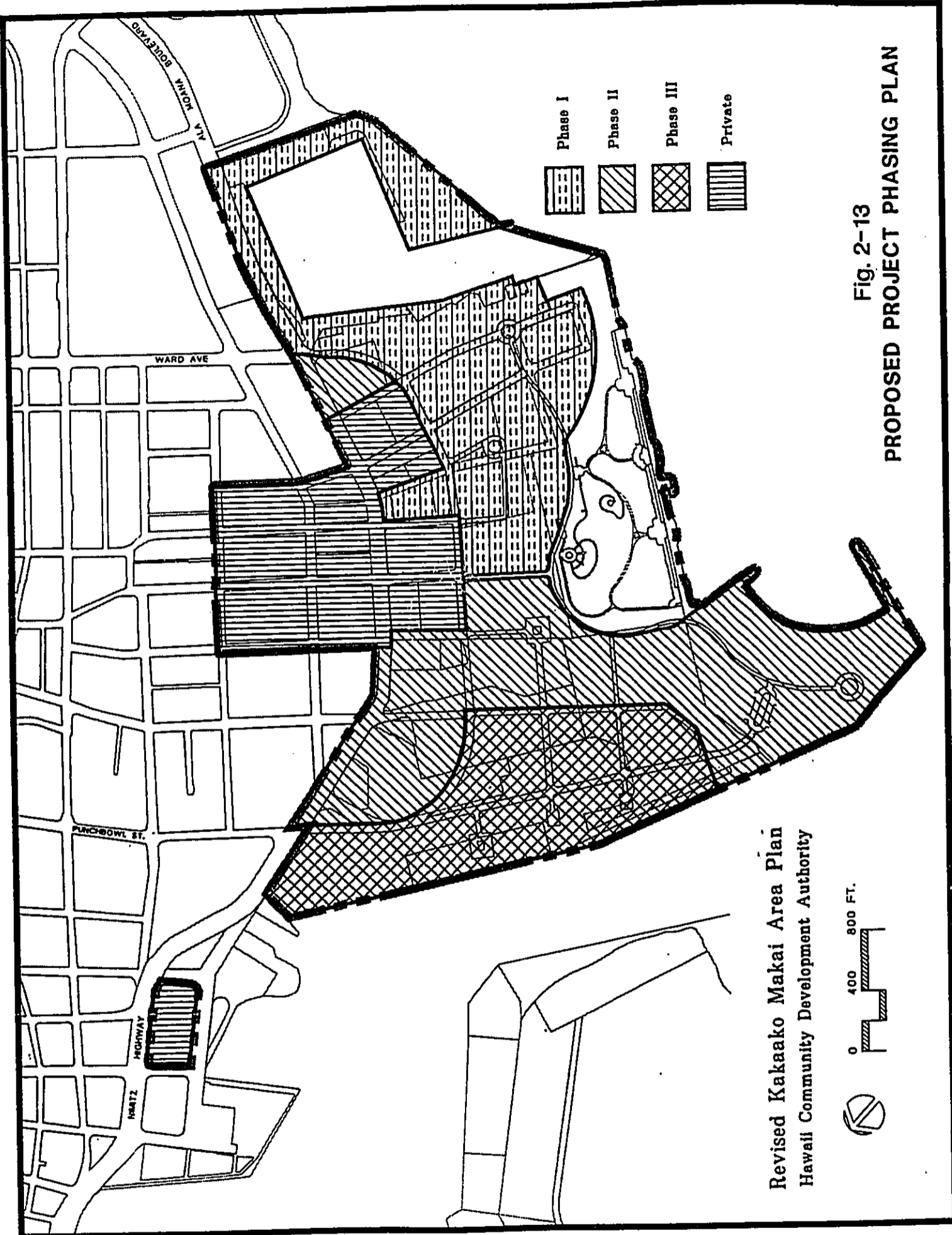
Funding for infrastructure improvements and park and landscaped open space expansions are also expected to be derived by income generated from leasing the public lands to private interests for commercial and residential developments. The rents generated from public lands leased to private development interests represent a primary sources of public revenue which could be used to finance public improvements within the planning area on an operating basis or to retire bond debt payments.

2.12 Phasing Plan

Because of the immediate improvement of infrastructure associated with the Ward Avenue Extension, on-going relocation, and expiration/acquisition of leases in the Kewalo Basin and Kakaako Peninsula, the initial redevelopment of the Makai Area will occur in a general Diamond Head-to-Ewa direction. Phase I, including approximately 100 acres, generally extends from the Ewa end of Kewalo Basin to Keawe Street. Public projects proposed for the first phase include: park and promenade expansion towards Ala Moana Boulevard, partial development of the Ward Avenue Extension, development of the park road, roadway and utility improvements at Koula, Ahui, Coral and Keawe Streets. Private and non-profit projects in the first phase include: the children's museum, a mid-sized theater, and a retail, restaurant and entertainment complex at Kewalo Basin. Additional projects may be developed that are in keeping with the Makai Area Plan and SEIS.

The revised phasing plan proposes three phases and extends the project horizon to 2015, as follows in Table 2-4 and Figure 2-13.

Table 2-4 DEVELOPMENT PROJECT PHASING	
Phase	Project
Phase I (1995-2000)	Ward Ave. Extension (to Keawe St.) Kewalo Basin Park Improvements Kakaako Waterfront Park Expansion Central Plaza Children's Museum, Theater Kewalo Basin Commercial Development Infrastructure and Roadway Improvements Cooke St. - Koula St. Couplet (makai of Ala Moana Boulevard) Mixed Use Developments
Phase II (2000-2005)	Beach Park Expansion off Fort Armstrong Mixed Use Developments Punchbowl St. Extension
Phase III (2005-2015)	Ala Moana Blvd. - Ward Ave. Couplet Pier 1 and 2 Maritime Improvements (DOT, Harbors Division) Park Expansions Mixed Use Developments



Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority

Fig. 2-13
 PROPOSED PROJECT PHASING PLAN

Revised Kakaako Makai Area Plan

Chapter 3

*EXISTING ENVIRONMENT,
IMPACTS, & MITIGATION MEASURES*

3. EXISTING ENVIRONMENT, ANTICIPATED IMPACTS AND MITIGATION MEASURES

3.1 OVERVIEW

The proposed revisions to the Makai Area Plan include an expanded boundary which adds approximately 20 acres from the Mauka Area, bounded by Ala Moana Boulevard, Keawe, Pohukaina, and Koula Streets. Major components of the plan, such as the system of inland waterways, and large amphitheater, were deleted in the proposed plan. The pedestrian-oriented open space system, creation of a one-way couplet with Ala Moana Boulevard and the Ward Avenue Extension, revised urban design concepts, and the allowance of housing are the major components to the revised plan (see Chapter 2).

This chapter assesses existing conditions, potential impacts and mitigation measures for physical environment, socio-economic environment, and infrastructure systems as they apply to the revisions proposed by the current Makai Area Plan. Aspects of the Makai Area Plan which remain unchanged from the previous Supplemental EIS accepted in 1990, including the waterfront pier areas, beachfront park, and Kewalo Basin improvements, are not assessed herein. Construction-related environmental consequences and mitigation measures which were addressed in the previous Supplemental EIS are still largely applicable.

3.2 PHYSICAL ENVIRONMENT

3.2.1 Climate

The climate of the Makai Area, similar to that of other coastal areas in Honolulu, is characterized by abundant sunshine, persistent trade winds, relatively constant temperatures, and moderate humidities. The mean temperature in Honolulu ranges from 73 degrees Fahrenheit (°F) in the winter to 81°F in the summer. The mean annual rainfall is approximately 23 inches with most of the rainfall occurring between the months of November and April. Relative humidity ranges between 56 and 72 percent. Cooling tradewinds from the northeast prevail throughout most of the year, while occasional "Kona" winds from the south bring warm, humid air.

Cooler microclimatic conditions have resulted with the replacement of large paved areas with the waterfront parks. These cooling conditions are anticipated to continue with the addition of landscaped park and buffer areas planned throughout the Makai Area.

Chapter 3**EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES**

3.2.2 Geology, Topography and Soils

The Kakaako Peninsula lies on the Honolulu coastal plain, an emerged fossil reef formed approximately 120,000 years ago (MacDonald and Abbott, 1970). The Makai Area is underlain by a coral layer between 5 and 20 feet below mean sea level (MSL). Soft lagoonal deposits made up of sand, silt, and clay are found above the ancient reef, mainly in a buried stream channel which extends below Ala Moana Boulevard between Keawe and Ohe Streets to the ocean. Soft alluvial soils within the channel area extend to depths of 50 to 65 feet below sea level. These deposits are covered by 5 to 10 feet of dredged coral fill.

The substrata conditions of the project area, as shown in Figure 3-1, are rated "average" for development purposes in all areas except in the general area of the buried stream channel where the substrata condition is "poor". Areas described as "average" would probably support structures of up to 22 feet without special foundations. These would be relatively light structures using continuous lightly loaded individual spread foundations with spans of less than 20 feet. "poor" areas can only support lightly loaded single-story structures not sensitive to vertical movements, unless special foundations are developed to support larger structures (*Kakaako Community Development District Plan Supplemental EIS, 1985*).

The terrain of the Makai Area is generally at an elevation of 14 feet above MSL and flat (less than 5 percent slope), except for a large mound previously located makai of Olomehani and Kelikoi Streets. The debris mound was formed between 1927 and 1977 when the area was an incinerator landfill. Originally rising 15 to 55 feet above sea level, the 1,700 foot long by 400 foot wide mound was resculptured in conjunction with Phase I of the Kakaako Waterfront Park, and has become one of its most prominent features. At its highest point, the resculptured mound is currently about 53 feet above MSL.

Impacts and Mitigation Measures

Kakaako's soils and geology would affect costs of constructing new building foundations. Foundations built in areas with substrata defined as "poor" will require more extensive support systems. A large portion of the area designated "poor" has been planned for park use, with proposed structures of lighter weight construction such as pavilions, benches, and picnic tables. The highest development costs will be incurred within areas of buried stream channels shown in Figure 3-2 (*Kakaako Community Development District Plan Supplemental EIS, 1985*).

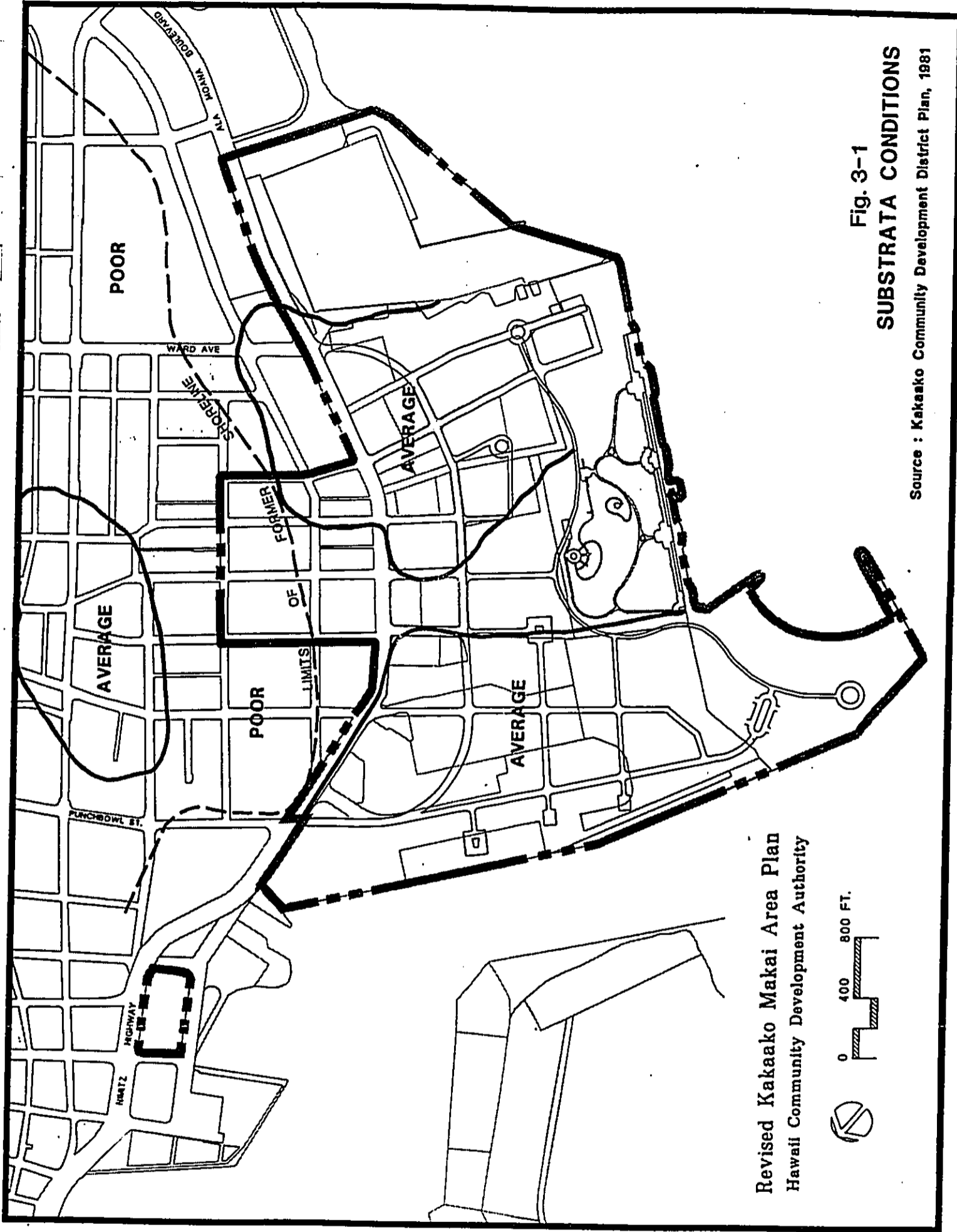
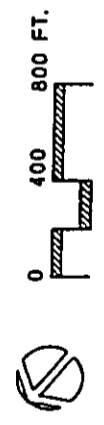


Fig. 3-1
SUBSTRATA CONDITIONS
 Source : Kakaako Community Development District Plan, 1981

Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority



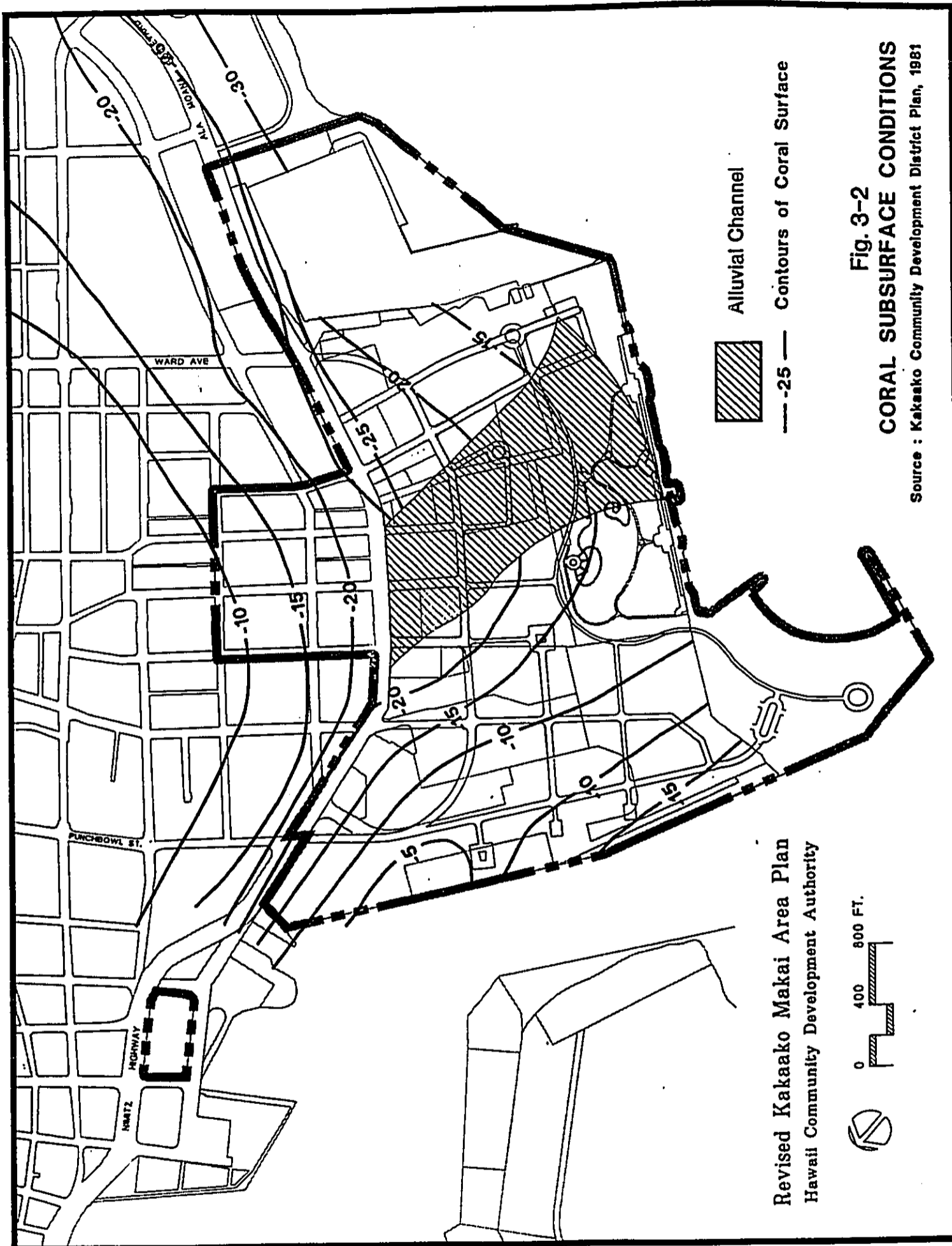


Fig. 3-2
CORAL SUBSURFACE CONDITIONS
 Source : Kakaako Community Development District Plan, 1981

3.2.3 Hydrology and Drainage

The nearest surface stream in the vicinity of the Makai Area is the Nuuanu Stream, located about 0.3 mile northeast of Aloha Tower. Southern Oahu's coastal plain, which includes the Kakaako Peninsula, is underlain by sedimentary deposits that form a caprock which retards the seaward movement of fresh groundwater from the basal aquifer. The caprock extends along the coastline about 800 to 900 feet below sea level. According to the Underground Injection Control (UIC) maps prepared by the DOH, there are a number of wells located in the Makai Area, none of which are being used as a source for potable ground water.

Urbanization of the Makai Area and upland areas have increased runoff to the nearshore coastal waters. Although roadway and drainage improvements have been undertaken, much of Kakaako is still subject to localized flooding because of its flat topography and inadequate drainage facilities. The runoff from the Makai Area flows into the ocean via the Keawe Street open channel, Kewalo Basin and Honolulu Harbor. The Keawe Street open channel is lined and is approximately 30 feet wide, 15 feet deep and 650 feet long, and is located between the intersection of Kelikoi and Keawe Streets and the ocean.

Impacts and Mitigation Measures

Substantial drainage improvements will be required for the proposed developments, and will be undertaken in conjunction with improvements for proposed roadway and other infrastructure systems. During the short-term construction period, storm runoff may carry increased amounts of sediment into the storm drain system due to erosion from exposed soils. This runoff could potentially impact the water quality of nearshore waters in the area. Adherence to the requirements of the City and County of Honolulu Grading Ordinance should adequately mitigate this impact. Pursuant to Section 11-5-34.08(b) Administrative Rules of the DOH, a National Pollutant Discharge Elimination System (NPDES) Permit for construction stormwater discharges will be required for areas greater than five acres where soil disturbance (such as clearing, grading and stockpiling) is anticipated. A Best Management Practices (BMP) Plan would be implemented in conjunction with the NPDES to mitigate discharge of sediment runoff and pollutants resulting from construction activities, thus significantly reducing the potential for impacts to the nearshore areas. The inland waterway system previously proposed by the Makai Area Plan has been eliminated, which precludes the need for substantial dredge and fill activities, as well as the significant water quality impacts and construction and maintenance costs associated with such activities.

Chapter 3
EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

3.2.4 Flood, Earthquake and Tsunami Hazards

As indicated by the Federal Flood Insurance Rate Maps, the greater portion of the Makai Area encompassing Aloha Tower to the Ewa edge of Kewalo Basin is designated Zone X, "Other Areas" determined to be outside of the 500-year flood plain (See Figure 3-3). Small areas from Piers 1 and 2 to Keawe Street, and the general circumference of Kewalo Basin, are in Zone A, a special flood hazard area which may be inundated by the 100-year flood, with no base flood elevations determined. A small part of the Makai Area involving the mauka portion of Kewalo Basin is Zone AE, a special flood hazard area inundated by the 100-year flood with a base flood elevation of 4 feet above MSL.

Most of the shoreline within the project area, having been altered by dredge and fill operations, is characterized by shore protection structures. In some instances, the shoreline structures were too low or have deteriorated over the years due to lack of maintenance, leaving shoreline reaches exposed to erosion. Repair of the rock revetments along the shorefront of the Kakaako Waterfront and Kewalo Basin Parks is completed and protects against shoreline erosion damage and runoff into the ocean.

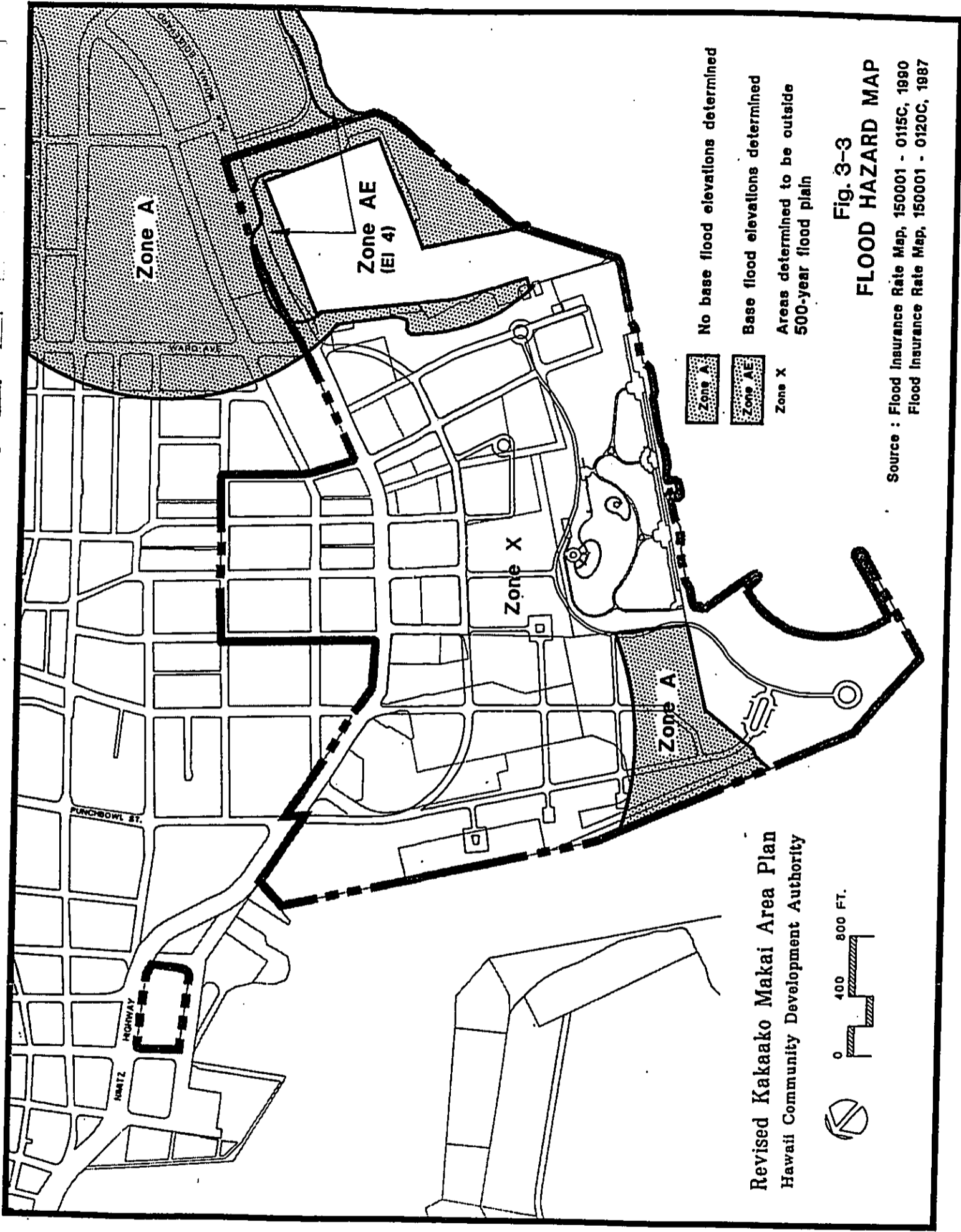
Generally the risk of earthquake hazard to Oahu is minimal, however all structures within the project site will be designed to meet seismic requirements as described in the Honolulu Building Code. According the Civil Defense Tsunami Inundation Map for Oahu, the shoreline areas from Kewalo Basin to the southwest corner of the Kakaako Peninsula are within the inundation zone.

Impacts and Mitigation Measures

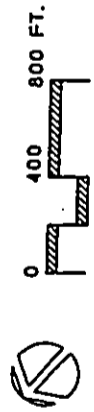
Development will be in accordance with the regulatory shoreline setback requirements and flood hazard requirements specified in Article 7 of the City and County of Honolulu, Land Use Ordinance. Planned uses and activities along the shoreline areas have considered the associated flood hazard potential and are predominantly in park and open space uses.

3.2.5 Biota

Generally, the project site and surrounding area are highly altered urban environments providing little habitat for any terrestrial flora and fauna. Plant species in the Makai Area are largely drought resistant or salt tolerant introduced species commonly found in a shoreline environment. Introduced weedy grasses and plants are common throughout the site, with occasional native species found on Kewalo Peninsula. Much of the vegetation in the Makai Area was planted as



Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority






-  Zone A
No base flood elevations determined
-  Zone AE
Base flood elevations determined
-  Zone X
Areas determined to be outside
500-year flood plain

Fig. 3-3
FLOOD HAZARD MAP
 Source : Flood Insurance Rate Map, 150001 - 0115C, 1990
 Flood Insurance Rate Map, 150001 - 0120C, 1987

Chapter 3

EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

part of the landscaping for the Kakaako Waterfront Park and Kewalo Basin Park, and includes the following: Iceplant (*Carpobrotus edulis*); Molokai Osmanthus (*Wikstroemia uva-ursi*); Beach Ilima (*Sida fallax*); Asystasia (*Asystasia gangetica*); Ohai (*Sesbania tomentosa*); Dwarf Pittosporum (*Pittosporum tobira*); Beach Naupaka (*Scaevola taccada*); Spider Lily (*Crinum asiaticum*); Red Hibiscus (*Hibiscus kokio*); Carissa (*Carissa grandiflora*); Seagrape (*Coccoloba uvifera*); Monkeypod (*Samanea saman*); Autograph Tree (*Clusia rosea*); Hala (*Pandanus tectorius*); Hau (*Hibiscus tiliaceus*); False Kamani (*Terminalia catappa*); True Kamani (*Calophyllum inophyllum*); Chinese Banyan (*Ficus retusa*); Coconut (*Cocos nucifera*) and Beach Heliotrope (*Heliotrope curassavicum*). (Communication, Miyabara Associates, June 1994).

Species of cats and mice common to inner city environments are present at the site. Avifauna species which inhabit the project site include mynahs, finches, and doves. No threatened or endangered flora or fauna species are known to exist at the site.

Impacts and Mitigation Measures

No significant adverse impacts to the existing biota are anticipated as a result of the project. The proposed Makai Area Plan provides for a variety of park environments generously planted with native and non-native plants. Landscaping of the additional park, promenade, arcade and courtyard areas will introduce new plant species to the area, and subsequently are likely to attract birdlife common to urban areas. No natural systems are expected to be impacted by the planned landscape improvements.

3.2.6 Air Quality

An air quality impact study, prepared in conjunction with the Honolulu Waterfront Master Plan in 1989, describes the waterfront area as having a variety of stationary and mobile sources of air pollution. Hawaiian Electric Company's (HECO) downtown power plant is the primary stationary source, while vehicular traffic represents the principal mobile contributor. Emissions from the power plant are in compliance with State and Federal air pollution control regulations and are within ambient air quality standards. Vehicular traffic, however, has contributed to carbon monoxide levels which have occasionally exceeded State standards.

State of Hawaii and Federal ambient air quality standards (AAQS) are presented in Table 3-1. State standards are generally more stringent than the Federal standards, although like their Federal counterparts, these standards may be exceeded once per year. The State DOH maintains a

Chapter 3

EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

network of air monitoring stations around the State to gather data on regulated pollutants including total suspended particulates (TSP), particulate matter - 10 microns (PM-10), sulfur dioxide (SO₂), carbon monoxide (CO), ozone (O₃), and lead (Pb).

Table 3 - 1 SUMMARY OF STATE OF HAWAII AND FEDERAL AMBIENT AIR QUALITY STANDARDS			
POLLUTANT	STANDARDS		
	Hawaii State Standard	Federal Primary Standard ^a (Health)	Federal Secondary Standard ^b (Welfare)
Carbon Monoxide (CO) 1 Hour 8 Hour	10 mg/m ³ 5 mg/m ³	40 mg/m ³ 10 mg/m ³	40 mg/m ³ 10 mg/m ³
Nitrogen Dioxide (NO ₂) 1 Hour 24 Hour Annual (Arithmetic)	--- --- 70 ug/m ³	--- --- 100 ug/m ³	--- --- 100 ug/m ³
Particulate Matter (TSP) 24 Hour Annual (Arithmetic)	150 ug/m ³ 60 ug/m ³	--- ---	--- ---
PM-10 ^c 24 Hour Annual (Arithmetic)	150 ug/m ³ 50 ug/m ³	150 ug/m ³ 50 ug/m ³	150 ug/m ³ 50 ug/m ³
Ozone (O ₃) 1 Hour	100 ug/m ³	235 ug/m ³	235 ug/m ³
Sulfur Dioxide (SO ₂) 3 Hour 24 Hour Annual (Arithmetic)	1300 ug/m ³ 365 ug/m ³ 80 ug/m ³	--- 365 ug/m ³ 80 ug/m ³	1300 ug/m ³ --- ---
Lead (Pb) 3 mos. (Arithmetic)	1.5 ug/m ³	1.5 ug/m ³	1.5 ug/m ³
<ul style="list-style-type: none"> ^a Designated to prevent against adverse effects on public health. ^b Designated to prevent against adverse effects on public welfare, including effects on comfort, visibility, vegetation, animals, aesthetic values, and soiling and deterioration of materials. ^c Particulate Matter which is 10 microns or less in diameter. 			
Source: Department of Health Clean Air Branch, Hawaii Air Quality Data, Jan. 1988 - Dec. 1990			

Chapter 3
EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

The most extensive air monitoring for TSP, SO₂, CO, and Pb has been conducted by the DOH at its own building in downtown Honolulu about one-half mile northeast of the waterfront area. Air quality data for O₃ is collected only at the Sand Island station located at the Anuenue Fisheries, approximately 2-1/2 miles from the project site, while data for PM₁₀ are collected at the Liliha station located nearest to the project site at the Kauluwela Elementary School on Aala Street about 1-1/2 miles from the project site. (Nitrogen dioxide is no longer monitored by the DOH. Concentrations of this pollutant were measured from 1971 through 1976 at Barbers Point, and annual mean values were found to vary from 11 to 29 micrograms per cubic meter (ug/m³), safely within the State and Federal AAQS). A summary of air quality data collected from these monitoring stations are provided in Table 3-2 for the years 1986-1992.

Measurements for TSP and SO₂ are made on a 24-hour basis to correspond with the averaging period specified in State and Federal standards. Samples are collected once every six days in accordance with U.S. EPA guidelines. CO and O₃, however, are measured on a continuous basis due to their short-term (1-hour) standards. Lead concentrations, reported as quarterly averages, are determined from the TSP samples which are sent to an EPA laboratory for analysis.

Monitoring results indicate general compliance with State and Federal ambient air quality standards. Only carbon monoxide and ozone occasionally exceed their respective State standards. Very low levels of lead content have been maintained in large part due to the Federal program for gradual phaseout of leaded gasoline. Particulate lead accumulated over the years in roadside soils and plants, however, will remain indefinitely in the area and provide inhalation exposure whenever dust is re-entrained in the air as a result of winds or other disturbance.

Impacts and Mitigation Measures

The air quality impacts are anticipated to be largely similar to, or in some instances less intense than, those cited in the Air Quality Impact Report which was prepared in conjunction with the Honolulu Waterfront Master Plan.

During the short-term, construction related air quality impacts include the excavation activities, the transportation of excavated material, the emission of hydrocarbons or exhaust fumes from construction equipment and employee vehicles. Under normal tradewind conditions, dust and fumes will be dispersed away from the project site toward the ocean. However, it is during Kona winds that the ambient air movement will decrease, thus lowering the air quality. All

Table 3 - 2
SUMMARY OF AEROMETRIC DATA COLLECTED
BY THE DEPARTMENT OF HEALTH
1988 - 1992

CONTAMINANT	1988	1989	1990	1991	1992
Particulate Matter* (TSP) - (ug/m³)					
Period of sampling (mos.)	12	12	12	12	10
Number of samples	59	59	53	not avail.	not avail.
Range of Values	15-45	16-48	13-47	21-38	22-34
Number of days State AAQS ^b exceeded	0	0	0	0	0
PM-10 microns or less in diam.^c (PM₁₀) - (ug/m³)					
Period of sampling (mos.)	12	12	12	12	11
Number of samples	53	55	54	not avail.	not avail.
Range of Values	9-25	10-33	8-36	13-23	9-19
Number of days State AAQS ^b exceeded	0	0	0	0	0
SULFUR DIOXIDE* (SO₂) - (ug/m³)					
Period of sampling (mos.)	12	12	12	12	11
Number of samples	50	52	60	not avail.	not avail.
Range of Values	<5-5	<5-8	<5-<5	<5-<5	0-<2
Number of days State AAQS ^b exceeded	0	0	0	0	0
CARBON MONOXIDE* (CO) - (mg/m³)					
Period of sampling (mos.)	12	12	12	12	11
Number of samples	328	323	362	not avail.	not avail.
Range of Values	0.2-10.3	0.3-9.7	0.1-7.1	1.0-2.9	1.0-2.6
Number of days State AAQS ^b exceeded	1	0	0	0	0
OZONE^d (O₃) - (ug/m³)					
Period of sampling (mos.)	12	12	12	12	12
Number of samples	362	342	340	not avail.	not avail.
Range of Values	0-92	0-94	4-116	28-66	32-69
Number of days State AAQS ^b exceeded	0	0	2	0	0
LEAD* (Pb) - (ug/m³)					
Period of sampling (mos.)	12	12	12	12	10
Number of samples	59	52	52	not avail.	not avail.
Range of Values	0-0.1	0-1	0-0	0-0.3	0-0
Number of days State AAQS ^b exceeded	0	0	0	0	0

* TSP collected at DOH Building.
^b Air Quality Standard. PM = 150 ug/m³; SO₂ = 365 ug/m³; CO = 10 mg/m³; O₃ = 100 ug/m³; Pb = 1.5 ug/m³; PM₁₀ = 150 ug/m³
^c PM-10 collected at Liliha.
^d O₃ collected at Sand Island.
 Source: Hawaii Air Quality Data, January 1988 - December 1990, DOH, Clean Air Branch.

Chapter 3

EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

construction equipment must meet the requirements of State emission control laws in order to mitigate the effects of construction on air quality. According to the Air Quality Impact Report, impacts on air quality associated with the operational phase of the plan will generally be traffic-related. Traffic emissions will likely contribute to elevated carbon monoxide levels along the Nimitz Highway/Ala Moana Boulevard corridor, with or without the project.

During morning and afternoon peak hours at the intersections of Punchbowl Street and Ala Moana Boulevard, and Ward Avenue and Ala Moana Boulevard, exceedances in both 1-hour and 8-hour State AAQS can be expected, particularly in close proximity to the intersections (5-15 meters). At the intersection of Punchbowl Street and Ala Moana Boulevard, the 1-hour and 8-hour CO levels would range from 9.6 to 21.0 mg/m³, and 5.7 to 12.6 mg/m³, respectively, for the "Without Project" scenario. Estimated CO levels for the "With Project" scenario are not available. At the Ala Moana Boulevard-Ward Avenue intersection the 1-hour and 8-hour CO concentrations are anticipated to range from 5.9 to 11.9 mg/m³, and 3.6 and 7.1 mg/m³, respectively, for the "Without Project" scenario. The 1-hour and 8-hour CO concentrations for the "With Project" scenario range from 7.2 to 10.4 mg/m³, and 4.3 to 6.2 mg/m³, respectively. This is most likely to occur during the winter months when the prevailing tradewinds break down into more frequent light and variable wind conditions. Improvements to the proposed roadway system, such as the one-way couplets involving Cooke and Koula Streets, and Ala Moana Boulevard and the Ward Street Extension, will mitigate air quality impacts by facilitating the regional flow of traffic through the area and thus reducing the potential for accumulation of carbon monoxide in the vicinity of these intersections.

Despite projected increases in traffic, however, the project vicinity is anticipated to experience a reduction in ambient impact due to the effect of the Federal motor vehicle control program. In this program, the projected rate of reduction in emissions per vehicle over the period of project implementation was greater than the projected rate of increase in traffic for the Ala Moana/Nimitz corridor over the same period; thus, a net decrease in cumulative emissions and ambient impact results.

It is also anticipated that the Makai Area development will have a beneficial effect on air quality with regard to existing stationary sources which are likely to relocate. However, intensified use of the project area will result in increases in electrical demand and solid waste generation both

of which may result in off-site impacts in the vicinity of affected power plants such as Kahe/Waiiau, as well as municipal solid waste facilities.

The Federal approach to control of vehicular emissions, upon which the State has relied for control, is to mandate maximum allowable emissions on newly manufactured vehicles. However, this approach works up to a point after which new, more stringent emission standards must be imposed if effective control is to be maintained. At the State and local levels, mitigative measures include a variety of transportation system management measures such as carpooling, bikeways, signalization improvements, one-way street systems as well as the promotion of mass transit alternatives.

Honolulu's heavily used bus system reduces regional emissions by providing an alternative to cars. Buses in themselves, however, are not the long-term solution because in large numbers they too become significant contributors to local pollutant levels.

3.2.7 Noise Quality

An Acoustic Study prepared for the Honolulu Waterfront Master Plan and the 1990 Supplemental EIS for the Makai Area is included in Appendix B. The three main sources of noise in the Makai Area are traffic, industrial equipment, and aircraft. Existing 24-hour average noise level for traffic within the Makai Area is approximately 60 L_{dn} ¹ at 50 feet distance from the centerline of streets makai of Ala Moana Boulevard. Noise levels estimated for industrial equipment were measured in decibels (db) rather than L_{dn} , to indicate sound over a short period of time (i.e., one hour). The industrial equipment noise levels averaged 72 to 80 decibels.

The U.S. Department of Housing and Urban Development (HUD) has established a land use compatibility matrix that sets 80 L_{dn} as the noise level that should not be exceeded in commercial/light industrial areas to protect public health and welfare. For recreational areas a level of 70 L_{dn} or less is acceptable. For the purposes of determining noise acceptability for funding assistance from Federal agencies such as HUD and the Federal Housing Administration (FHA), an exterior noise level of 65 L_{dn} or less is preferred in urban residential areas.

¹ Day-Night Sound level which is a commonly accepted noise descriptor for the determination of land use compatibility. It is a 24-hour average sound level in which nighttime noise levels occurring between 10:00 p.m. and 7:00 a.m. are adjusted by increasing before calculation of the 24-hour average.

Chapter 3
EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

Impacts and Mitigation Measures

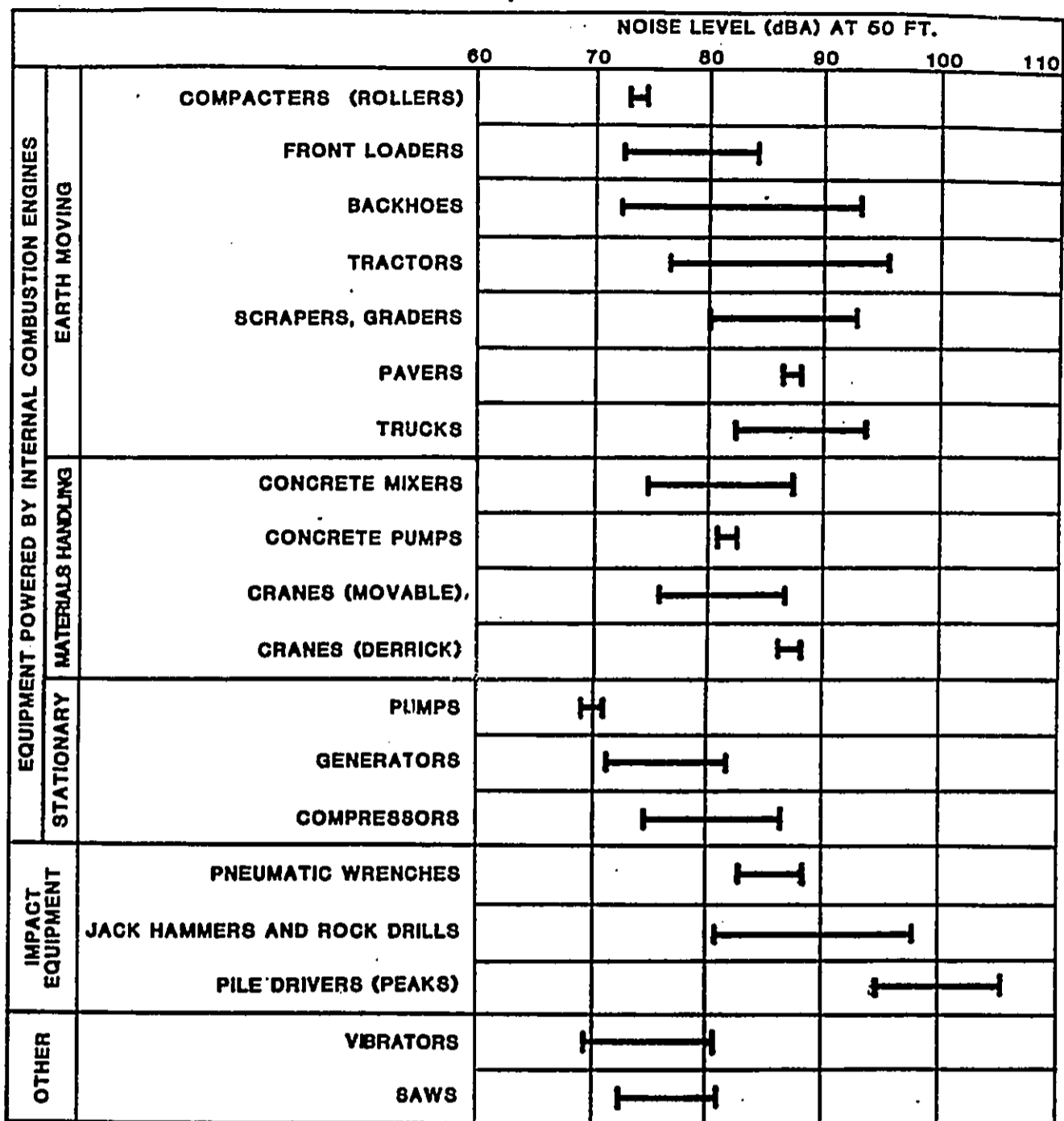
Implementation of the plan will involve construction equipment and activity which may potentially create significant increases short-term noise levels. Pile drivers and rock drills as well as earthmoving equipment such as bulldozers and diesel powered trucks are anticipated to be the loudest equipment used during construction (See Figure 3-4). As noise levels generated by construction activities are anticipated to exceed allowable limits, a permit must be obtained by the DOH. DOH may grant permits to operate vehicles, construction equipment, and power tools which emit noise levels in excess of the allowable limits.

In addition, construction equipment and on-site vehicles or devices requiring an exhaust of gas or air must be equipped with mufflers. The use of vibratory hammers which produce less noise and vibration should be encouraged. Electric pumps for dewatering activities will operate at a quieter level than diesel or gasoline driven pumps. Pumps also control the water level in excavated trenches, thus reducing the potential for transmission of sound through the water. Enforcement of DOH noise regulations, through citations of defective equipment and limitation of excessively noisy operations, will further mitigate noise impacts from construction activities.

In the operational phase of the project, noise impacts will slightly increase due to plans for more one-way streets which result in higher vehicular operating speeds. Commercial and recreational uses should not be adversely affected, but residential units along major roadways will need to provide mitigation such as air-conditioning of the units.

Existing aircraft noise levels are between 60 and 65 L_{dn} for most of the Makai Area (*Honolulu International Airport Environmental Impact Statement, April 1991*). This noise level is generally incompatible with residential developments based on State DOT standards. After reviewing all available noise compatibility standards, the State DOT has concluded that an aircraft noise limit of 60 L_{dn} should be used in Hawaii as a planning level for noise-sensitive land uses which normally involve naturally ventilated structures. Applicable uses are homes and public use structures such as schools, libraries, churches, clinics and meeting rooms (*Hawaii Statewide Airport System Plan, 1990*).

Noise levels are expected to gradually decrease as older, noisier aircraft are replaced by the introduction of quieter Stage 3 aircraft into the aircraft fleet, as well as improved and more efficient operations and management procedures. The airlines are required to use Stage 3



Note: Based on Limited Available Data Samples

Figure 3-4
CONSTRUCTION EQUIPMENT
NOISE RANGE

Chapter 3
EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

aircraft, presently the quietest aircraft group, by the year 2000. Figure 3-5 illustrates the expected aircraft noise contours for the project area in 1992 and 2007. The effect of quieter Stage 3 aircraft is offset by increases in airport operations as indicated by the slight shift in noise contours. Mitigating measures for noise impacts on residential developments could include provisions for the enclosure and air conditioning of residential units.

3.2.8 Water Quality

Nearshore coastal waters from Ala Moana Beach to the easterly entrance channel of Honolulu Harbor are designated "Class A" State waters by the DOH, while Honolulu Harbor and Kewalo Basin are designated "Class A" embayments. According to DOH, class A waters are to be protected for recreational uses, aesthetic enjoyment and propagation of marine life.

Honolulu Harbor is a receiving basin for a number of pollution sources, which accounts for its generally poor quality. Nuuanu Stream contributes sediment deposits, industrial wastes and urban runoff. Other pollution sources are oil refinery activities, numerous storm drains, thermal pollution, effluent from a marine research center, and ship activity within the harbor.

Impacts and Mitigation Measures

To protect coastal water quality, a NPDES Permit for construction stormwater discharges will be pursued as required for areas greater than five acres where soil disturbance is anticipated, pursuant to Section 11-5-34.08(b) HAR. In addition, dewatering activities may be required to accommodate building foundations, as well as installation of underground utility systems. Trenches for new utility lines and drainage boxes may fall below the groundwater table to about minus 10 feet in some locations of the Makai Area. So that construction can proceed in a dry trench, the excavated trench will be dewatered. Water that is conveyed from the trench must be treated prior to discharge into any drainage system or surface waters. Construction dewatering permits will be required by the City and County of Honolulu Department of Public Works and the State DOH pursuant to City Ordinance and Section 11-5-34.08(b) HAR, respectively. Best Management Practices (BMP) Plans, which include appropriate structural or non-structural mitigative methods such as containment berms and detention ponds, will be prepared to control discharge of stormwater runoff and effluent resulting from construction and dewatering activities.

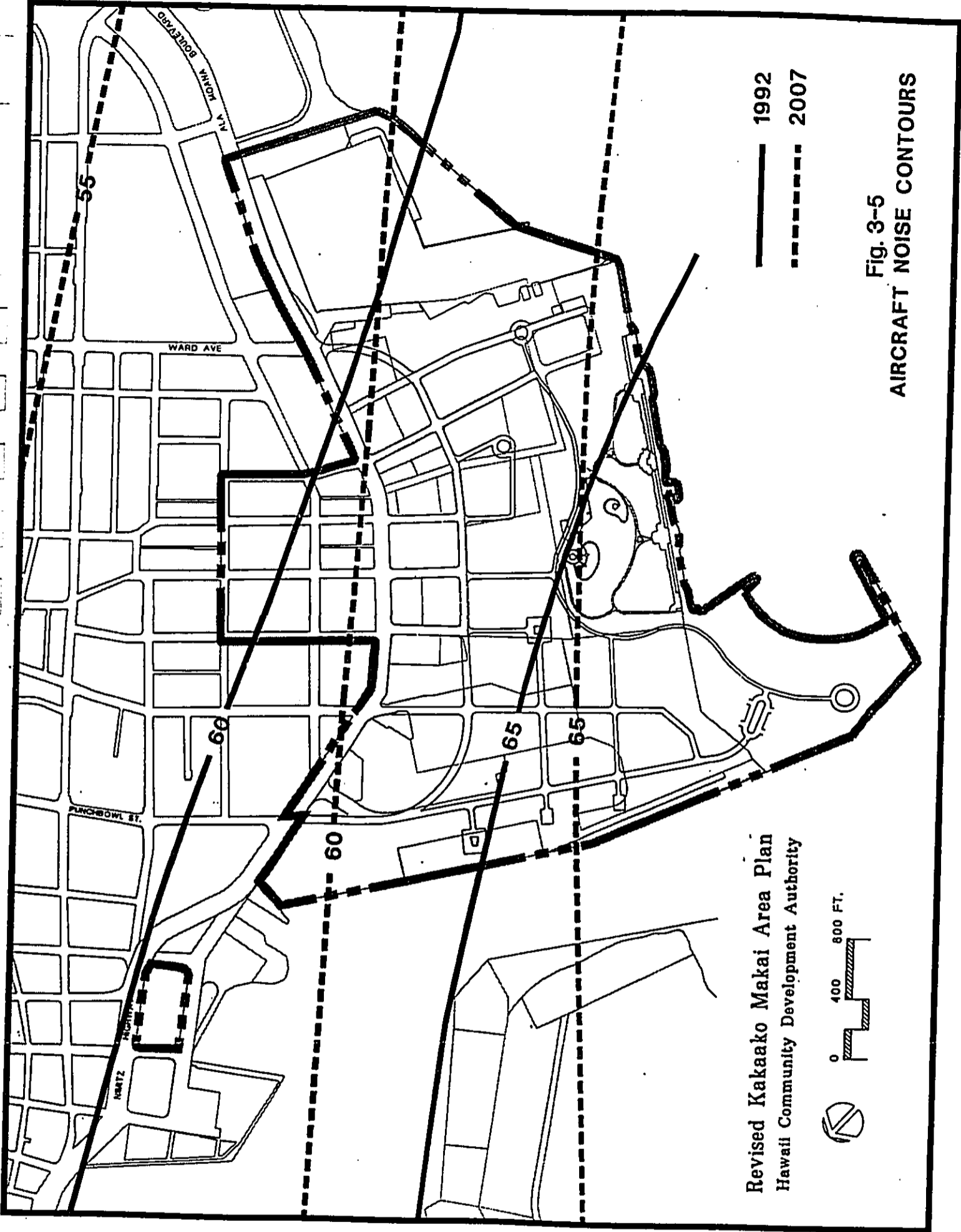


Fig. 3-5
AIRCRAFT NOISE CONTOURS

Chapter 3
EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

3.3 SOCIO-ECONOMIC ENVIRONMENT

At present, the general mix of land uses in the Makai Area consists of maritime industrial cargo and warehousing operations at Fort Armstrong, light industrial, public facility, and commercial office activities in the central portion of the peninsula, and the new Kakaako Waterfront Park (See Figure 3-6).

The Kewalo Basin area provides the primary berthing location for Oahu's commercial fishing fleet, cruise/excursion boats and charter fishing fleet. Landside activity surrounding the harbor include maritime support operations, marine research and commercial restaurant operations.

The Kakaako Peninsula area, which lies between Kewalo Basin and Downtown Honolulu, includes maritime industrial uses at Fort Armstrong, Foreign Trade Zone warehouse and offices, commercial and office uses such as the Bank of America Building and automobile dealerships.

3.3.1 Land Uses and Encumbrances

The total land area of the Makai Area encompasses approximately 241 acres (excluding submerged lands), as shown by sub-areas in Table 3-3.

Of the 241 total acres, approximately 201 acres are owned by the State of Hawaii, 5 acres are owned by the Federal government in the Fort Armstrong area, and the balance of 35 acres are privately owned. Table 3-4 and Figure 3-7 illustrate the land ownership pattern.

As the major landowner in the Makai Area, the State of Hawaii allows various land uses through executive order, general lease, or revocable permit. Executive orders are issued by the Governor and allow government agencies to utilize State-owned land for a specified public purpose. General leases are issued by the Department of Land and Natural Resources (DLNR) and HCDA and allow tenants to occupy State-owned land for a specified purpose and term, not to exceed 65 years. Revocable permits, also issued by DLNR and HCDA, allow tenants to occupy State-owned land for a specified purpose on a month-to-month basis. The following is a description of the land uses and encumbrances by sub-areas.

3.3.1.1 Kewalo Basin

Identified by TMKs 2-1-58 and 2-1-60:13, the Kewalo Basin sub-area is bounded by Ala Moana Park to the east and Ahui Street to the west. A significant physical feature of the basin is the

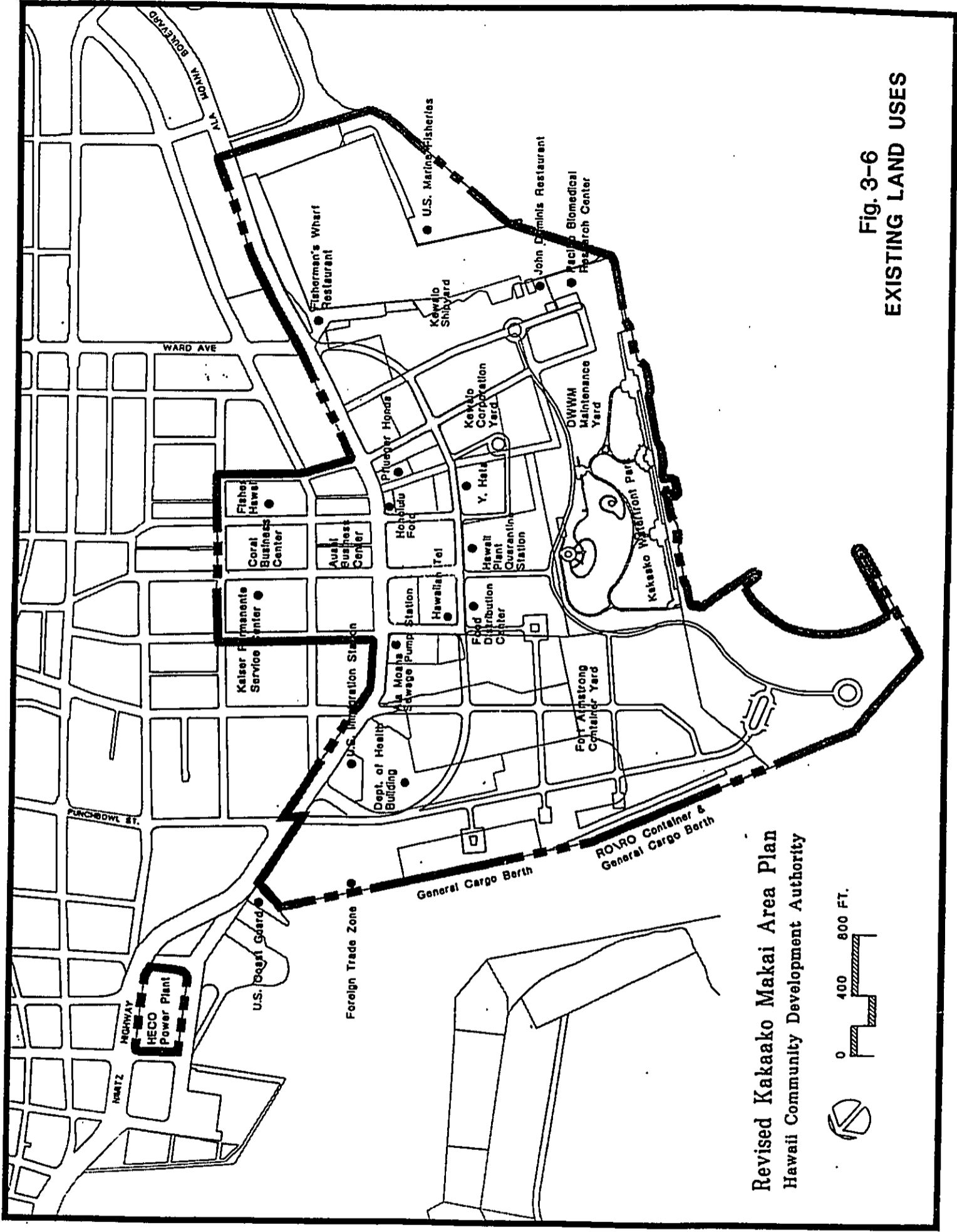
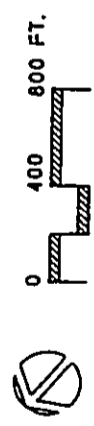


Fig. 3-6
EXISTING LAND USES

Revised Kakaako Makai Area Plan
Hawaii Community Development Authority



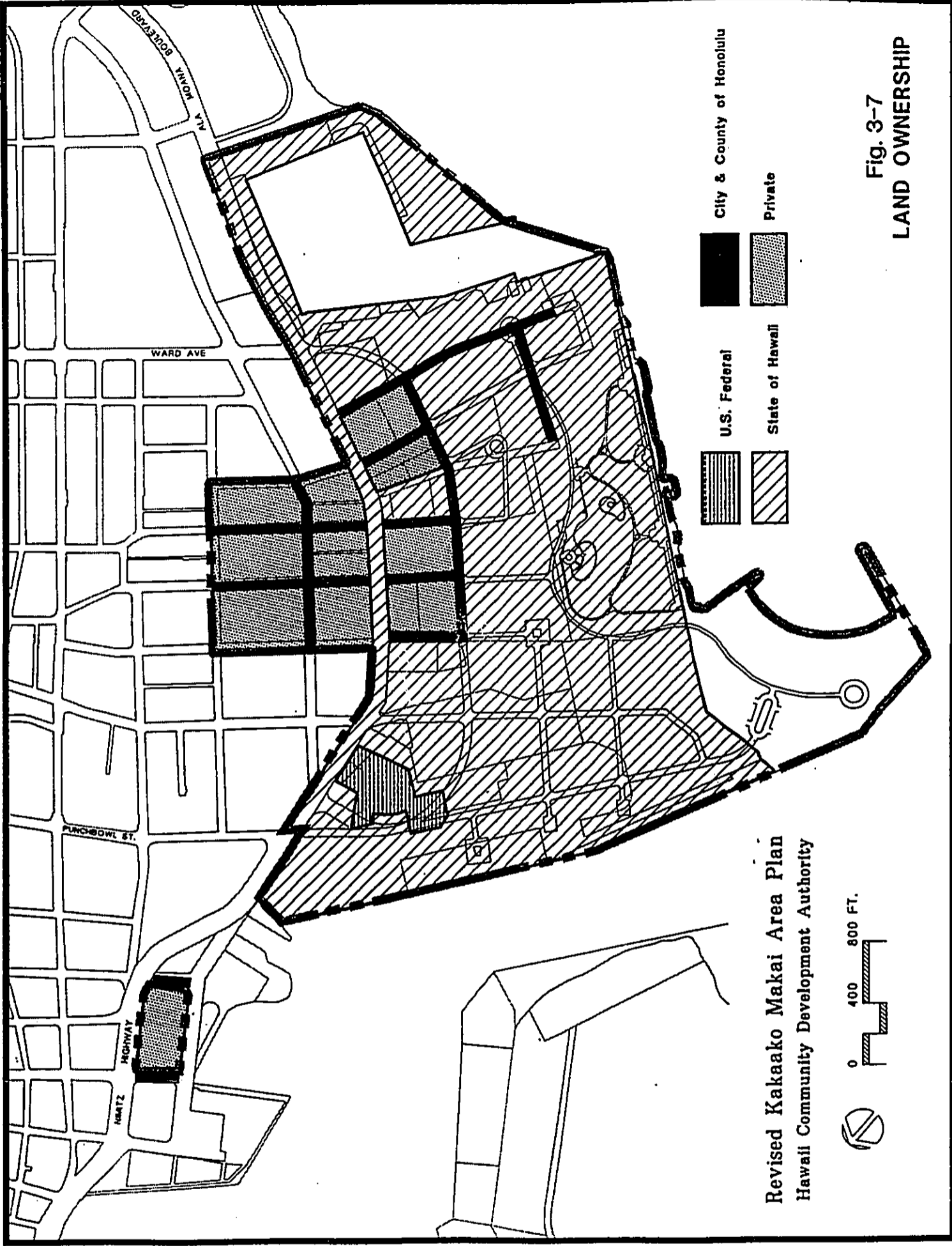
Chapter 3
EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

Table 3-3 LAND AREA SUMMARY		
Sub-area	Acres	Percent
Kewalo Basin	28.0	12%
Kakaako Peninsula (up to Pier 3)	189.5	79%
HECO Parcel	3.5	1%
Mauka Expansion Area	20.0	8%
TOTAL PROJECT AREA	241.0	100%

Table 3-4 LAND OWNERSHIP SUMMARY		
Owner	Acres	Percent
State of Hawaii	201.0	83.5%
Federal Government	5.0	2.0%
Bishop Estate	27.2	11.0%
Kakaako Investment Company	4.3	2.0%
HECO	3.5	1.5%
TOTAL AREA	241.0	100%

landfilled Kewalo Peninsula which shelters the harbor from open ocean disturbances and marks the makai boundary of the area. The sub-area also fronts on Ala Moana Boulevard, makai of Victoria Ward Ltd.'s Ward Warehouse.

- Land and Water Uses - Kewalo Basin contains 25 acres of land and 30 acres of water area, providing the primary berthing space for Oahu's commercial fishing fleet, cruise/excursion boats and charter fishing fleet. Water access into the harbor is via a 350-foot wide entrance channel between the Kewalo and Kakaako Peninsulas. The area surrounding the harbor is occupied by activities which support maritime operations, marine research and commercial restaurant operations.
- Landownership and Leases - The entire Kewalo Basin is owned by the State of Hawaii. Long-term leases exist for most of the property along the Ewa edge of the Kewalo Basin sub-area. Existing uses include: Pacific Biomedical Research Center, John Dominis



Chapter 3

EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

Restaurant, fish auction operation, Honolulu Marine, Inc. drydock and shipyard facility, the Hawaiian Tuna Packers cannery and ice plant, Fisherman's Wharf Restaurant, Kewalo Basin Park, and National Marine Fisheries Service Laboratory.

3.3.1.2 Kakaako Peninsula

The Kakaako Peninsula sub-area lies between the Kewalo and HECO sub-areas, on a largely man-made peninsula, and is identified by TMKs 2-1-15 (excluding parcel 4), 2-1-59, and 2-1-60 (excluding parcel 13). Ahui Street marks the Diamond Head boundary, while pier frontage at Fort Armstrong (Piers 1 and 2) marks the Ewa boundary.

- Land and Water Uses - The Kakaako Peninsula consists of approximately 189.5 acres. Specific land uses in this area include maritime industrial, commercial, recreational, marine research, and public facilities.

Maritime industrial uses occupy the Fort Armstrong area at Piers 1 and 2. This area, once the primary container cargo facility on Oahu, is currently dedicated to maritime break-bulk and limited container cargo operations, ship maintenance operations, and the Foreign Trade Zone warehouse and offices.

Commercial uses occupy much of the central portion of the sub-area. Four blocks which run along the makai side of Ala Moana Boulevard between Koula, Keawe, and Ilalo Streets, are owned by the Bernice Pauahi Bishop Estate, and are presently dominated by new and used car sales businesses, and the Bank of America Building (formerly the Gold Bond Building). Makai of this area, between Ilalo and Kelikoi Streets, are 14 acres of State land presently leased as a major food distribution center.

The 30-acre Kakaako Waterfront Park provides such recreational uses as shoreline fishing, picnicking, biking, jogging, and scenic viewing.

Marine research activities located near Point Panic include the University of Hawaii Hyperbaric Treatment Center and Look Laboratory. Marine research at Look Laboratory includes the use of an area offshore for underwater studies on topics such as ocean mining.

The Kakaako Peninsula accommodates public facilities such as the City and County of Honolulu's Board of Water Supply and Department of Public Works equipment storage and maintenance areas, and the Ala Moana Wastewater Pump Station (WPS). The Department of Agriculture's Plant Quarantine Station, and Weights and Measures Branch are located adjacent to the Food Distribution Center. Two historic structures located in this sub-area include the U.S. Immigration Station and the former Ala Moana WPS situated along Ala Moana Boulevard in the Fort Armstrong area.

- **Landownership and Leases** - State-owned lands total approximately 159 acres in the Kakaako Peninsula, while privately owned lands are estimated at 11 acres. Federal lands total about 5 acres which includes the Immigration Station in the Fort Armstrong area.

A major portion of State-owned land is encumbered by leases. The marine research activities are operating on a 65-year lease which will expire in 2030. Relocation and consolidation of the marine research programs are being planned at Pier 38. Operations at the Food Distribution Center have leases which will expire in the years 2021 and 2029. *The existing bulk cargo operation at Fort Armstrong holds a lease on covered office and storage space until 1996. Remaining activities and operations are either on a one-year or month-to-month revocable permit basis.*

3.3.1.3 HECO Parcel

The HECO parcel is identified by TMK 2-1-14:4 and encompasses about 3.4 acres of privately owned land. The parcel is bounded by Nimitz Highway, Bishop and Richards Streets and a former portion of Ala Moana Boulevard, and is occupied by the Honolulu Power Plant. With a capacity of 120 megawatts of electricity, the plant currently services the Downtown area.

3.3.1.4 Mauka Expansion Area

Encompassing approximately 20 acres of privately owned land, this sub-area is bounded by Ala Moana Boulevard, Pohukaina, Keawe, and Koula Streets. Identified by TMKs 2-1-53:5, 2-1-54:1, 21 and 33, 2-1-55:1,2,3,6,18,21,26,32, to 35,38; and 2-1-56:3 and 4, the sub-area is occupied primarily by commercial and light industrial users under private lease agreements.

With the exception of the Coral Commercial Center owned by the Kakaako Investment Company, (bordered by Keawe, Pohukaina, Coral, and Auahi Streets), all other lands in this sub-area are owned by the Bernice Pauahi Bishop Estate.

Chapter 3
EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

Impacts and Mitigation Measures

Implementation of the Makai Area Plan will upgrade a predominantly older, underutilized commercial-industrial area into a modern, higher density environment, and will introduce a new residential population. The land use changes and road and infrastructure improvements proposed for all phases of the Makai Area Plan will result in the displacement of current users and activities. These displaced activities will be relocating to appropriate, more compatible areas adjacent to similar industrial and semi-industrial facilities. Because displacement will be necessary for redevelopment in the Makai Area, the timing and phasing of the transition will be critical in terms of mitigation. Landowners and lessees will be kept informed of pending developments through the monthly newsletter and special notices as deemed necessary.

Inclusion of the Mauka Expansion Area would slightly alter the development standards applicable to this sub-area by modifying building setbacks and increasing open space requirements (See Section 2.5).

The long-term impacts on the existing land uses and activities in the Makai Area will be positive, as the net result of the plan's implementation will be increased waterfront recreational and economic development opportunities. The proposed roadway system will facilitate traffic flow through the Makai Area, while urban design and open space enhancements will improve the overall appearance of the area.

Land ownership in the Makai Area would be impacted minimally by implementation of the Plan, as the existing public-private ownership pattern is expected to remain unchanged.

3.3.2 Population Characteristics

The Makai Area lies within the geographical area identified by Census Tract Numbers 38 and 39. Census Tract 38 includes most of the Makai Area east of Fort Armstrong as well as the portion of the Mauka Area bounded by Ward Avenue, King Street and South Street. Census Tract 39 includes the Fort Armstrong area and lower Downtown Honolulu, bounded generally by South Street, Beretania Street, Richard Street, Halekauwila Street and Nuuanu Avenue. Relevant population characteristics are as follows in Table 3-5:

Based on the 1990 Census, Census Tracts 38 and 39 have a combined population of 902 persons comprising 392 households. This resident population is located in portions of lower Downtown Honolulu and in the Mauka Area. Within the Makai Area, no resident population presently exists.

Table 3-5 POPULATION CHARACTERISTICS			
	CT 38	CT 39	TOTAL
1990 Population	721	181	902
1980 Population	387	115	502
Percent Change	86.3%	57.4%	79.7%
Median Age	36.7	15.6	--
Household Size	1.89	2.75	2.3
<i>Source: U.S. Bureau of the Census, 1990</i>			

The resident population in the vicinity of the Makai Area is characterized by a slightly older population with smaller household size than the island-wide average. Census Tract 38 has a median age of 36.7 compared to the Oahu median of 32.2 years. The combined household size of Census Tracts 38 and 39 is 2.3 persons per household, compared to the Oahu average of 3.02 persons per household. In Census Tract 38, median household income was \$45,764 in 1989, higher than the Oahu median household income of \$40,581.

Relative to the City and County of Honolulu Neighborhood Board system, the Makai Area lies within the boundaries of the Ala Moana-Kakaako Neighborhood Board No. 11 and the Downtown Neighborhood Board No. 13.

Impacts and Mitigation Measures

The revised Makai Area Plan proposes the development of approximately 2,000 to 3,000 residential units makai of Ala Moana Boulevard (an estimated 1,000 to 1,500 each for public and private lands). Based on 2.3 persons per household (1990 Census household size for Census Tracts 38 and 39), the plan could potentially increase the area's resident population from zero to approximately 4,600 to 6,900 persons.

Since there are no residences in the existing Makai Area, implementation of the Makai Area Plan will significantly change the social characteristics of the area. The character of the neighborhood will change from a predominantly light-industrial area to a higher density residential-commercial

Chapter 3
EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

area with extensive landscaped open space and maritime uses. Resident demographics of those moving into housing units in the Makai Area will largely depend on the types of units developed and the targeted market for the units. It may generally be expected that, typical of higher density developments nearby, the population will be younger families with smaller household size or older persons seeking retirement accommodations.

The addition of a residential population will require that recreational needs be addressed. Substantial park and open space areas are already available and will be expanded in the revised Makai Area Plan. Public services will also need to be provided to service the residential population, notably with respect to police, fire, health and educational services. Among these, it is acknowledged that the projected school capacity may be insufficient because the current Department of Education (DOE) facility planning projections do not include the potential student population generated from the Makai Area residential developments (see Chapter 3.4.9). Currently, there is no need for additional schools. However, the HCDA will continue to coordinate its planning with the DOE to ensure the availability of adequate school facilities prior to the approval of residential development in the existing Makai Area.

Security will become an increasing concern in the area, although the inclusion of housing ensures that there will be a population in the area 24 hours a day. To the extent that retail, cultural and recreational activities including theater productions, amphitheater events, and lighted ballfields attract people to the area after work hours and on weekends, the vitality and safety of the area should be increased.

Security in the park areas will also be of concern, although increased park use throughout the day by a diverse population will promote safety. The proposed park road bisects the majority of the park space and will provide both convenient access and the security of a public street the entire length of the park. A higher level of maintenance and security patrols will also increase safety.

3.3.3 Housing Characteristics

The number of housing units on Oahu increased from 252,000 in 1980 to 282,000 in 1990 and 289,000 in 1992. The existing Makai Area does not presently contain any residential units. Within the census tracts encompassing the Makai Area, Census Tract 38 had 437 housing units and Census Tract 39 had 26 housing units in 1990. (Note: with the Harbor Square development situated in Census Tract 39, population and housing units in this tract may have been

undercounted.) Most of these units are in high-rise multi-family structures -- 88 percent of housing units in Census Tract 38 were in buildings with 50 or more units.

In Census Tract 38 (portion of Mauka Area), 56 percent of the units were owner-occupied in 1990. Median rent in this area was \$1,001 per month, with a rental vacancy rate of 7.4 percent.

Impacts and Mitigation Measures

The State of Hawaii and island of Oahu continue to face a significant shortfall in the supply of affordable housing. About 22 percent of Hawaii households are either crowded by the U.S. Census definition and/or doubled up (multiple generations of one family) or sharing (with unrelated families or individuals). Total pent-up housing demand in the State of Hawaii was estimated at 27,865 units in 1992, with 18,508 units of shortfall demand on Oahu (Hawaii Housing Policy Study, 1993).

The proposed addition of residential units in the Makai Area will help to ease the overall housing shortfall on Oahu. An estimated total of approximately 2,000 to 3,000 residential units are proposed in the Makai Area at full build-out. The Makai Area's proposed dwelling units will benefit island-wide residents by increasing the supply of affordable rental and for-sale units. These units will provide a solution for families who are unable to afford to rent or buy market-priced units, or are otherwise faced with an inadequate supply of affordably priced homes. Further, the affordable-priced units will provide housing opportunities for people who choose to reside within urban Honolulu in proximity to major transportation corridors and employment generators.

3.3.4 Economic Characteristics

Oahu is continuing to experience effects of the economic slump of the early 1990s which has affected the State of Hawaii. The visitor industry is slowly recovering as of early 1994 with small percentage increases in both eastbound and westbound visitor arrivals and higher hotel occupancy rates. Construction activity continues to be weak, particularly in the non-residential sector.

Two notable commercial projects in the vicinity of Kakaako are underway. The Aloha Tower Marketplace on the downtown Honolulu waterfront is a 190,000 square foot low-rise shopping and dining complex built around the Aloha Tower, which is expected to be complete by late

Chapter 3
EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

1994. The First Hawaiian Center, a 27-story building which will be the tallest building in the State at 430 feet, will add 379,000 square feet of commercial office space to downtown Honolulu by 1996 (Economic Indicators, First Hawaiian Bank, May 1994).

The primary economic activities in the Makai Area include commercial uses along the Ala Moana Boulevard corridor, and light industrial, warehousing and food distribution activities in the interior of the Peninsula (see Section 3.3.1).

Impacts and Mitigation Measures

Short-term economic impacts will arise from the displacement of businesses required to relocate as the area undergoes redevelopment. Even for those businesses that remain, temporary construction impacts such as roadway and infrastructure improvements could cause disruption of traffic and inconveniences to clients and customers.

Short-term construction jobs will be generated over the entire planning period as public and private developments proceed in the Makai Area. The number of construction jobs created would be a function of the development's phasing, duration and design.

Long-term employment would be provided by the commercial, retail, restaurant, office and maritime industrial activities. The number of jobs directly created would be dependent on the type and mix of commercial and retail establishments which would be dependent on market demand. Based on a potential build-out of 7 million square feet of leasable commercial space, using a factor of 250 employees per square foot, the Makai Area could ultimately support direct employment of 28,000 employees.

An overall growth in the economic activity of the area is envisioned to provide increased revenue to State-financed redevelopment activities in Kakaako. The State will derive lease rent revenues from the commercial developments as well as increased general excise and income tax revenues. The City will benefit from the higher property tax base created by redevelopment of the Makai Area.

3.3.5 Displacement

Implementation of the Makai Area Plan will require the displacement or relocation of a number of tenants currently occupying the Makai Area, with various lease commitments ranging from

month-to-month revocable permits to 45-year remaining terms. The major relocation actions proposed within the Makai Area include those by the Food Distribution Center, Y. Hata & Company, Fort Armstrong marine cargo operations, and the Foreign Trade Zone to new facilities some of which may be accommodated within the State-owned Kapalama Military Reservation. By an agreement with the State, the City and County of Honolulu will relocate its baseyard facilities from within the Makai Area to Sand Island upon development of corporation yard facilities. Relocation and consolidation of the marine research programs are being planned at Pier 38.

Impacts and Mitigation Measures

Businesses facing displacement may encounter the attendant inconveniences and hardships of moving. Generally, the size and nature of relocation services and payments by public agencies are dictated throughout the State by standards established in Chapter 111 and Chapter 206E Sections 4 and 10.5, Hawaii Revised Statutes (HRS), as amended. These payments are limited to direct government actions. The following presents an overview of the types of compensation that are allowed by Chapters 111 and 206E, HRS provisions:

- State will compensate a landowner who also owns the existing structures and operates the business, the fair market value of the land and any improvements. Furthermore, the State may be required to pay a moving expense not to exceed \$5,000, or a fixed relocation payment based on the average annual net earnings over the past two years up to a maximum of \$5,000;
- State will compensate the owner for the fair market value of the land;
- State will compensate the owner for the fair market value of the improvements on the land; and
- State may provide either a moving expense payment or a fixed relocation payment of no more than \$5,000, to lessees who operate a business but have no ownership of land or structures.

Relocation program objectives are intended to provide meaningful assistance for all businesses displaced due to government action. The basic objectives include:

- Phasing redevelopment to minimize disruption;

Chapter 3
EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

- Ensuring that businesses are, to the extent practicable, properly relocated before permitting their displacements by new developments, redevelopment, or district-wide rehabilitation;
- Minimizing or ameliorating any serious negative impacts on displacees, such as loss of employment, business, or monetary losses; and
- Providing counseling, information and referral services to displacees affected by private sector actions, induced or stimulated by governmental planning decisions.

Special actions may include the establishment and operation of a central relocation office, relocation payments for actual moving costs, fixed payments for losses suffered, payments for replacement housing or business locations, purchase and/or renegotiation of lease where eventual use is consistent with the Makai Area Plan and other similar relocation matters.

3.3.6 Open Space, Recreational and Visual Resources

The Makai Area consists of low-rise structures with the exception of the ten-story Bank of America (formerly Gold Bond) Building. Although there are pockets of open spaces in the Makai Area, the major open spaces are in the Fort Armstrong area and the 30-acre Kakaako Waterfront Park.

The ocean-front location of the Makai Area is one of its most favorable attributes. A variety of cruise ships, catamarans, fishing vessels, and barges can be seen entering and leaving Honolulu Harbor and Kewalo Basin, lending an active waterfront atmosphere to the area. This area is also one of the few places in Honolulu where a 360-degree panoramic view of the ocean, the Koolau and Waianae Ranges, Barbers Point, Downtown Honolulu, and Waikiki can be enjoyed. The Kakaako Waterfront Park also increased and enhanced the view amenities in the area. In itself, the park is a valuable oceanfront view amenity which also provides various viewing platforms.

Recreational uses include the popular Kewalo Basin Park and the adjacent 30-acre Kakaako Waterfront Park. The Kakaako Waterfront Park features a shoreline promenade, picnic sites, an outdoor amphitheater, a scenic lookout, and expansive grassed areas. Point Panic is a popular site for body surfers and viewing vessel traffic in and out of Kewalo Basin, while the Kakaako Waterfront Park offers a variety of activities including shoreline fishing, picnicking, biking, jogging, and scenic viewing. Kewalo Basin Park also offers opportunities for fishing, particularly at its farthest makai point.

A Coastal View Study was prepared by the City and County of Honolulu to identify significant views from within the Special Management Area (SMA) boundary on Oahu. Five types of views are categorized in the study, of which Type 5, "Highly Urbanized Areas" typifies the Makai Area. The following are significant views occurring in the Downtown and Ala Moana subsections, in which the Makai Area lies.

- Continuous and intermittent views of Honolulu Harbor from Nimitz Highway;
- Stationary views from Sand Island Park looking east, west and mauka; and
- Continuous makai views across Kewalo Basin and Ala Moana Park.

Impacts and Mitigation Measures

The current Makai Area Plan contains development guidance policies and building height limits intended to preserve major view planes, view corridors, and Honolulu shoreline and ocean views. In addition, open space and recreational plans to increase and enhance these resources are also presented in conjunction with the overall Makai Area Plan. The revised plan will positively impact open space, recreational and visual resources through: a) a stronger linkage of waterfront park to the city; b) a continuation of mauka-makai views through the mauka-makai street grid system; c) a continuous open space system within the Makai Area, to extend the park's value to nearby blocks; and d) a variety of park environments within the Makai Area. An enhanced mauka-makai view corridor along Cooke Street will also be created with the implementation of the promenade and open spaces of the Makai Area Plan.

The preservation and enhancement of mauka-makai views will be facilitated by building height guidelines. View planes and view corridors will be afforded full consideration in the development of the recreational areas as well as future commercial and office spaces. Standards and urban design criteria have been developed and utilized as guidelines to ensure preservation and enhancement of these natural resources in the Makai Area.

Overall building heights will gradually descend from taller structures mauka of Ala Moana Boulevard to lower structures along the Makai Area water frontages. Limits on heights will range from 400 and 300 feet on the lands just mauka and makai, respectively, of Ala Moana Boulevard, to as low as 45 feet along park edges, and shorelines.

As prescribed in the Parks and Open Space Plan (see Section 2.4), these resources will notably increase with the implementation of the Makai Area Plan. The Plan is envisioned as a continuous

Chapter 3
EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

system of broad, shady walks, arcades, passages and courtyards linked to the Kakaako Waterfront Park. This open space system will serve the broader purpose of integrating the city and the Kakaako Waterfront Park, and extending the park's amenity value to those development parcels which do not front directly on it.

In addition to the Kakaako Waterfront Park, a variety of passive and active open space and park environments will increase the number of recreational opportunities for a broader spectrum of the community. The Kakaako Waterfront Park would be flanked by a new beach park proposed on the southwestern corner of Kakaako Peninsula, and three active recreation areas, theaters, and children's museum planned on the southeastern corner.

3.3.7 Historic and Archaeological Resources

Significant historic resources in the Makai Area include the Department of Health Building, the U.S. Immigration Station, and the former Ala Moana WPS. These structures were constructed prior to 1941, and have been associated with a historic period or architectural style. The latter two are currently listed on the National Register of Historic Places, although all of these buildings are considered to have "high" preservation potential, historic significance, and can be feasibly maintained and sustained in their present condition.

According to the DLNR State Historic Preservation Division (SHPD), the proposed mauka expansion area includes an area of former sandy beaches where traditional Hawaiian dwellings were previously located. As such, it is likely that unmarked human burials are also present in the area.

Impacts and Mitigation Measures

The historic resources in the Makai Area are proposed to be preserved, hence no significant adverse impacts are anticipated as a result of the revised plan. The U.S. Immigration Station and Department of Health Building are government owned and are currently functioning for public use. As such, continued preservation of these sites can be reasonably expected. The function of the historic Ala Moana WPS was replaced by the City and County of Honolulu's new Ala Moana WPS located adjacent to the historic structure. Any future uses will be compatible and consistent with preserving its cultural significance and role in the historic development of the Honolulu Waterfront. As warrants, renovation and restoration of these sites will focus on such uses as cultural and educational centers. The Ala Makai Walking Tour proposed by the Honolulu

Waterfront Master Plan will also bring special attention to these historic waterfront features. This walking tour will involve a pathway spanning along the waterfront from Ala Moana Beach to the Aloha Tower with historic and other points of interest marked along the route for the enjoyment of passersby.

Review by the SHPD of the proposed mauka expansion area will consider the likelihood that the remains of dwelling sites and human burials may be extant below the surface.

In the event that any archaeological features or remains are uncovered in the Makai Area during construction, work will cease immediately and the SHPD will be notified to determine and direct the proper course of action.

3.4 INFRASTRUCTURE SYSTEMS AND SERVICES

This section addresses the existing conditions, impacts and mitigative measures relating to infrastructure systems and services which include roadways, water, wastewater, drainage, solid waste, power and communications, police and fire, medical and schools as they apply to the Makai Area.

3.4.1 Transportation System

A transportation impact study was prepared by Wilbur Smith Associates in conjunction with the revised Makai Area Plan to assess the transportation-related effects of the proposed revisions to the Plan. This study updates a previous traffic impact study prepared in conjunction with the 1990 Supplemental EIS. Included in this study's findings are estimated travel demands, effects on area traffic circulation, sufficiency of the planned streets, and effects on public transit access and bicycle facilities (See Appendix C).

3.4.1.1 Existing Roadway System

Several streets comprise the roadway system which services the Makai Area and vicinity, primarily including Ala Moana Boulevard, Ward Avenue, Punchbowl, Cooke and South Streets. Also providing access in and around the Makai Area are Pohukaina, Koula, Coral, Keawe, Auahi, Ilalo, and Ohe Streets.

The State-owned Ala Moana Boulevard serves as a major east-west artery providing access through the Makai Area, with three through-lanes in each direction, in addition to separate left-

Chapter 3
EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

turn lanes at most intersections. Traffic signal controls are located at each cross street except for Ahui and Ohe Streets, which are restricted to right-turns in or out of these streets. Parking is permitted along Ala Moana Boulevard.

Punchbowl and South Streets provide mauka-makai access to the Makai Area, and function as a one-way street couplet. Punchbowl Street provides three makai direction lanes below Halekauwila Street, ending with two left-turn lanes and one right-turn lane on Ala Moana Boulevard. Parking is permitted along both curbs. South Street is a two-way street makai of Pohukaina Street. The segment makai of Ala Moana Boulevard provides access to the Fort Armstrong area port operations. Parking is permitted mauka of Ala Moana Boulevard.

Ward Avenue also provides primary mauka-makai access to the Makai Area, with two travel lanes in each direction, and left-turn lanes in intersections makai of Kapiolani Boulevard. On-street parking is permitted between Ala Moana Boulevard and Queen Street. As another secondary street facilitating mauka-makai travel through the Makai Area, Cooke Street has been widened to four lanes between Ala Moana Boulevard and Kapiolani Boulevard. Four-way STOP signs are used at the intersections of Pohukaina and Halekauwila Streets, while signalized controls are used at Queen Street. Parking is permitted in the curb lanes of most blocks.

Other secondary and minor streets are two-way, two-lane streets, most of which provide a 20- to 28-foot-wide pavement with parking allowed along the unsurfaced shoulder areas. Several segments have been improved to include sidewalks and curb/gutter sections.

3.4.1.2 Existing Bus and Bikeway Systems

A number of TheBus trunk routes provide public transit access to the Makai Area. Most of these routes operate along Ala Moana Boulevard, although several of the routes also operate along Ward Avenue or Punchbowl Street. Buses typically carry less than seated loads (typically 20 to 30 riders per bus) on the portion of the route between Ala Moana Center and Downtown Honolulu, although other portions of these routes may frequently experience seated or standing loads during peak periods.

Ala Moana Boulevard, Ward Avenue, South Street, and Punchbowl Street are designated as bicycle routes. There are no marked bicycle lanes or bicycle paths along these streets.

3.4.1.3 Methodology for Analyzing Traffic Conditions

The study analysis addresses traffic conditions during the weekday peak commute hours since these should represent the highest traffic volumes that occur on a frequent basis. The study analyzes key intersections that would be most directly affected by the proposed revisions in the Makai Area Plan. These include:

- Ala Moana Boulevard intersections between Ward Avenue and Punchbowl Street;
- Ilalo Street/Ward Avenue Extension intersections; and
- Pohukaina Street intersections with Cooke Street.

The intersection analyses were performed using procedures outlined in the 1985 HCM², which are based on a concept referred to as Level-of-Service (LOS). The LOS method describes traffic conditions on a letter basis from A to F, which signify excellent to unacceptable conditions, respectively. LOS D is considered acceptable as a design basis for peak hour conditions, whereas LOS F generally indicates the need for mitigative actions. The volume-to-capacity (V/C) ratio is also provided to indicate the portions of the theoretical capacity of the intersections being used by the existing or estimated traffic volumes. A V/C ratio of over 1.00 indicates that additional roadway capacity may be needed to accommodate the existing or estimated traffic volumes at an intersection.

3.4.1.4 Existing Traffic Conditions

Roadway and traffic data collected in field surveys was used to analyze existing traffic conditions at key intersections in the Makai Area. Ala Moana Boulevard is the most heavily-travelled roadway within the Makai Area. Traffic counts taken over a 24-hour period by the State Department of Transportation (DOT) and the City and County of Honolulu Department of Transportation Services (DTS) indicate the weekday traffic volumes as summarized in Table 3-6.

The morning and afternoon peak hours volumes were determined through field counts. The highest peak hour volumes occur along Ala Moana Boulevard with two-way volumes up to 5,200 vehicles during both the morning and afternoon peak hours, particularly at the intersections of South and Punchbowl Streets.

² *Highway Capacity Manual, Special Report 209, Transportation Research Board, 1985.*

Chapter 3
EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

Existing service levels calculated during the afternoon peak hour at selected intersections within the Makai Area are summarized in Table 3-7. While the intersections generally operate at acceptable levels in the morning period, congested conditions primarily occur in the afternoon period at several locations along Ala Moana Boulevard. Conditions during both periods are worsened by the close spacing between signal-controlled intersections along Ala Moana Boulevard, which limits the extent that the signal timing can be coordinated to minimize the number of stops along this segment of the roadway.

Roadway	Vehicles Per Day
Ala Moana Boulevard	60,000
Ward Avenue	18,000
Punchbowl Street	13,000
South Street	10,000
Cooke Street	6,000
Pohukaina Street	6,000
Other Makai Area Streets	2,000-4,000

In the afternoon peak hour, the Ala Moana Boulevard-Ward Avenue intersection is the primary constraint on traffic flow along Ala Moana Boulevard. Existing volumes approximate the theoretical capacity of this intersection and result in lengthy delays at LOS F. The South Street intersection with Ala Moana Boulevard functions at LOS D, while other area intersections operate at very good service levels, particularly those intersections which are controlled by Stop signs.

3.4.1.5 Future Traffic Conditions Without Project (Current Plan)

The previous transportation impact study prepared in conjunction with the 1990 Supplemental EIS for the current Makai Area Plan was based on a horizon year of 2010, which represented a 20-year forecast period at the time of that analysis³. The year 2010 forecasts were used to represent

³ Included in the transportation impact study prepared for the 1990 Supplemental EIS are traffic forecasts for the Convention Center and Aloha Tower developments, as well as counts for Downtown and Kakaako projects reflected in the Rapid Transit Development Project.

**Table 3-7
LEVEL OF SERVICE AT STUDY INTERSECTIONS
FOR EXISTING CONDITIONS, FUTURE WITHOUT PROJECT,
FUTURE WITH PROJECT, AND WITH PROJECT AND MITIGATION MEASURES
DURING AFTERNOON PEAK PERIOD**

Study Intersection	1994 Existing Conditions			2010 Future Without Project			2015 Future With Project			2015 Future With Project and Mitigation		
	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
	Punchbowl St./Ala Moana Blvd.	0.84	17.5	C	1.30*	556	F	1.43	510	F	1.25	104
South St./Ala Moana Blvd.	0.90	32.4	D	1.47*	547	F	1.08	50	E	0.88	23	C
Keawe St./Ala Moana Blvd.	0.84	23.8	C	1.52*	720	F	1.47	350	F	0.79	17	C
Cooke St./Ala Moana Blvd.	0.84	18.5	C	1.23*	489	F	0.95	25	C	0.79	9	B
Koula St./Ala Moana Blvd.	0.82	12.5	B	NA	NA	NA	1.09	62	F	0.87	17	C
Ward Ave./Ala Moana Blvd.	0.97	79.4	F	1.47*	390	F	1.22	59	E	0.88	18.6	C
Cooke St./Pohukaina St.	NA	NA	NA	NA	NA	NA	0.61	19	C	0.61	NA	C
Cooke St./Ward Ave. Extension	NA	NA	NA	0.97	34	D	0.97	25	C	0.77	10	B
Koula St./Ward Ave. Extension	NA	NA	NA	NA	NA	NA	1.05	33	D	0.91	14	B

V/C = Ratio of volume to theoretical intersection capacity

Delay = Average delay per vehicle in seconds

LOS = Level-of-Service

* = Analysis results do not reflect unidentified improvements assumed along Ala Moana Blvd. in the 1990 traffic study.

NA = Not Available

Source: Wilbur Smith Associates, June 1994

Chapter 3**EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES**

the "No Project" alternative in the current study, although 2015 is used herein to represent the "With Project" traffic conditions.

The LOS analysis was applied to the projected traffic volumes provided in the previous EIS to assess operating conditions at the study area intersections. Six Ala Moana Boulevard intersections two Ward Avenue Extension intersections at Ohe and Cooke Streets would operate at near capacity conditions (see Figure 3-8 and Table 3-7).

3.4.1.6 Future Traffic Conditions With Project

Future travel volumes with the revised plan were estimated using the standard procedure of trip generation, trip distribution, and traffic assignment. Estimates of background traffic growth were prepared independently of the forecast for the current Makai Area Plan ("No Project").

Based on the revised Makai Area Plan, the anticipated level of development within the Makai Area by 2015 would result in an estimated net increase of 4,525 and 6,878 vehicle trips during the morning and afternoon peak hours, respectively, as compared to existing land uses. These vehicle trips include those generated by new development anticipated within the six-block area mauka of Ala Moana Boulevard.

Overall, peak hour volumes along the Ala Moana Boulevard-Ward Avenue Extension corridor would be similar with either the existing or revised Makai Area Plan. Traffic volumes with the revised plan generally range from about 7,700 to 10,500 vehicles, versus 7,900 to 10,500 vehicles with the existing plan. The primary difference would be the traffic split between Ala Moana Boulevard and Ward Avenue Extension, which would be divided comparably as a one-way couplet in the revised plan versus most traffic using Ala Moana Boulevard with the existing plan. In the afternoon peak hour, the intersections would operate at varying service levels from LOS C to LOS F (see Figure 3-9 and Table 3-7).

The Ala Moana Boulevard-Punchbowl Street intersection would be the key traffic constraint in the afternoon peak hour, with estimated volumes exceeding planned capacity by about 43 percent and with extremely long delays. The Ala Moana Boulevard-Ward Avenue intersection is indicated as experiencing forecast traffic volumes of up to 22 percent above planned capacity in the afternoon peak hour. The Keawe Street intersection with Ala Moana Boulevard is indicated

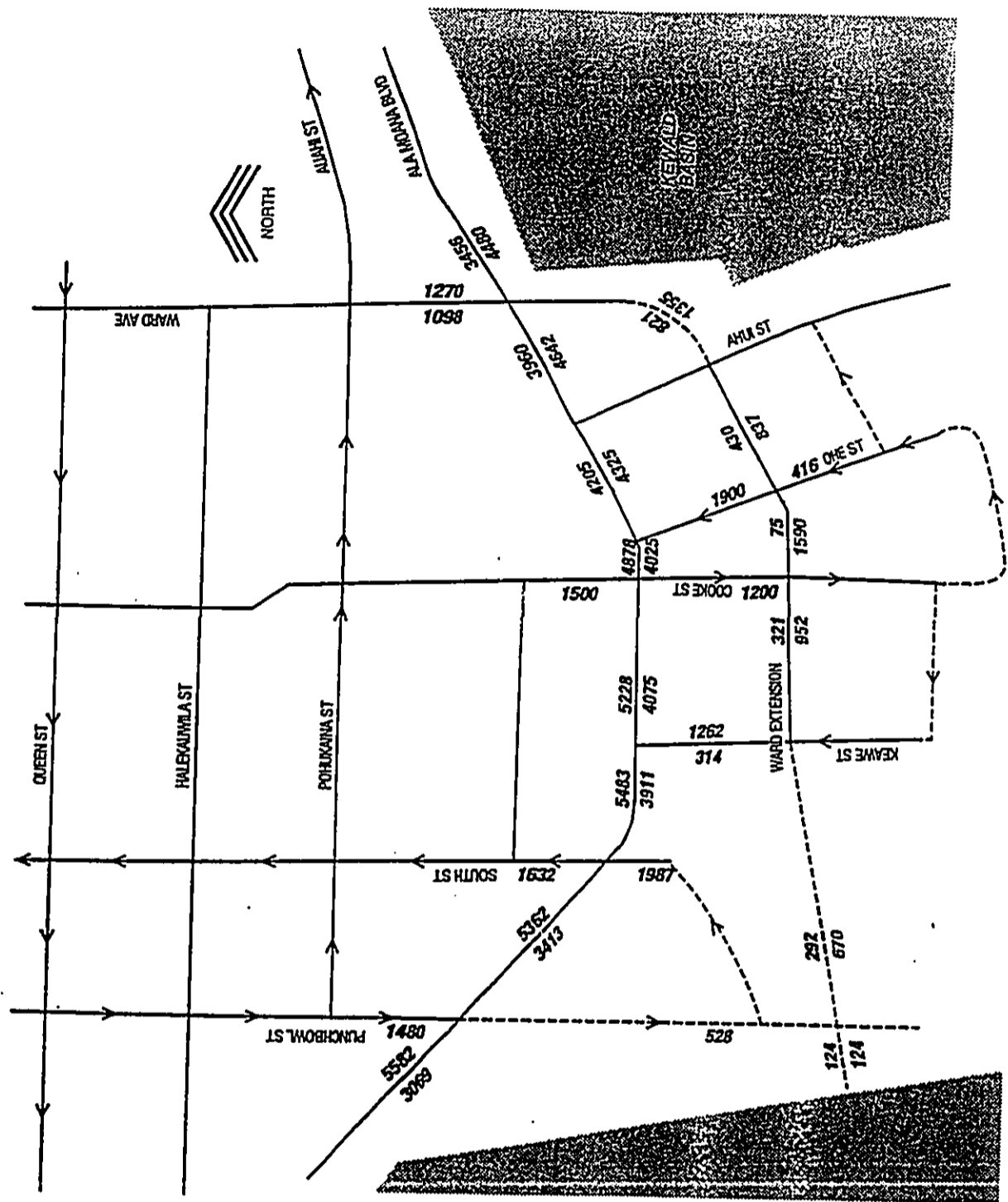


Fig. 3-8
 YEAR 2010 WITH NO PROJECT
 PM PEAK HOUR TRAFFIC

Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority

Source: Wilbur Smith Associates, June 1994

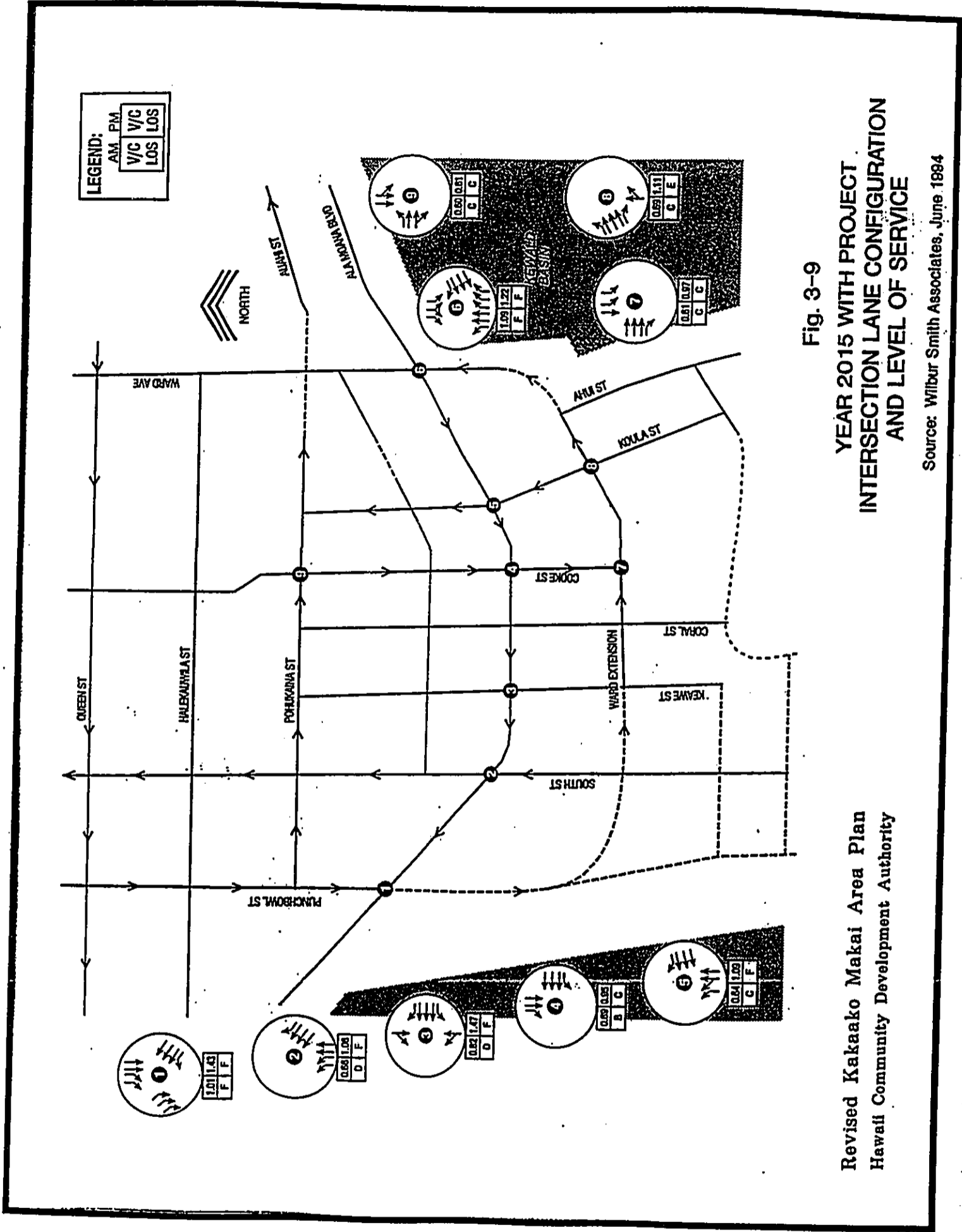


Fig. 3-9
 YEAR 2015 WITH PROJECT
 INTERSECTION LANE CONFIGURATION
 AND LEVEL OF SERVICE

Source: Wilbur Smith Associates, June 1984

Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority

as having forecast traffic volumes 47 percent in excess of available capacity. However, this reflects the assumption that Keawe Street would continue to have a single lane in each direction since no redevelopment or street widening is anticipated adjacent to the intersection.

Table 3-8 provides a description of the adequacy of a full build-out scenario of the maximum allowable level of development on planned streets within the Makai Area. Full buildout would occur well after year 2015.

Table 3-8 ADEQUACY OF ROADWAY SYSTEM WITH PROJECT FULL BUILDOUT DURING AFTERNOON PEAK HOUR		
Roadway	Peak Hr. Trips	Adequacy
Punchbowl Street South of Ward Extension Two-way	1,000	Two lanes should be adequate.
South Street North of Ward Extension (One-Way)	3,000	Two lanes will be at or over capacity.
South of Ward Extension (Two-way)	1,050	Two lanes should be adequate.
Keawe Street North of Ward Extension	550	Two lanes should be adequate.
South of Ward Extension Two-way	450	Two lanes should be adequate.
Coral Street North of Ward Extension	1,200	Two lanes will be near capacity.
South of Ward Extension Two-way	400	Two lanes should be adequate.

Public Transit and Bicycle Systems

With respect to the public transit system, the new development within the Makai Area is expected to add about 2,200 passengers to the TheBus routes serving the area. This estimate reflects the continuation of current service levels and the average ridership ratios reported for the Kakaako-

Chapter 3
EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

Ala Moana area in a 1991 bus survey⁴. The Bus routes along Ala Moana Boulevard may be able to accommodate such increased levels of transit ridership without adding capacity specifically for this area. The peak loads for the routes serving this area occur on other portions of these routes, with unused capacity available along the Kakaako segment.

Modifications to the existing roadway system, however, would also have some effect upon transit system users. The Ala Moana Boulevard bus routes would be split between the two one-way couplet streets with the Diamond Head direction buses using Ward Avenue. This would increase walking distances for bus riders mauka of Ala Moana Boulevard.

Regarding impacts on existing bikeways, Ala Moana Boulevard and Ward Avenue would be classified as bicycle lanes under either the existing plan or the revised plan. The revised Makai Area Plan also includes a bicycle route on Coral, Punchbowl and Cooke Streets, and a bicycle path through the park.

3.4.1.7 Future Traffic Conditions With Project and With Mitigation

The proposed revisions to the Makai Area Plan are intended as mitigation actions to the existing and future roadway congestion in the Ala Moana Boulevard corridor. The mitigative effects would occur principally in two ways:

1. **Increased Roadway Capacity** - The development of an Ala Moana Boulevard-Ward Avenue Extension one-way couplet would reduce traffic conflicts, increase east-west capacity, and enhance traffic flow along the section between Punchbowl Street and Ward Avenue. The Cooke-Koula Street couplet would further contribute to improved conditions at their intersections with Ala Moana Boulevard and the Ward Avenue Extension.
2. **Reduced Vehicle Trips** - The permitting of residential uses within the existing commercial use-only area would likely reduce vehicle travel through several mechanisms.
 - i. Residential uses would generate lower traffic volumes than the development of an equivalent floor area of commercial use;

⁴ *Honolulu TheBus Comprehensive Operations Analysis, prepared for the Honolulu Public Transit Authority by Barton-Aschman Associates, Inc., August 1993.*

- ii. Many residents would likely work and shop within the area, thus reducing the number of regional trips to and from the area; and
- iii. Many resident trips may be via walking or public transit.

However, the traffic analyses indicate that the proposed roadways in the Makai Area may not provide sufficient capacity to accommodate the traffic volumes anticipated for the 2015 forecast year (see Table 3-7). Further mitigative actions are recommended as described in the following sections.

New Traffic Signals

For year 2015 travel volumes, new traffic signals would likely be required at the intersections of: Ward Avenue Extension with South, Keawe, Coral, Cooke, and Koula Streets; and Cooke and Pohukaina Streets.

Ala Moana Boulevard - Ward Avenue Extension Couplet

With three through-lanes in each direction, the 2015 peak hour traffic at many of the intersections along the proposed one-way couplet would either approximate or exceed the planned capacities. Conditions at several of the intersections could be improved to acceptable levels by widening the approaches on the cross streets. However, the provision of four through-lanes in each direction on the proposed couplet would be the most effective approach to improving overall traffic conditions through this section, based on the year 2015 traffic forecasts.

The proposed plan calls for on-street parking on each side of the couplet. This could be implemented initially, with parking later to be removed when needed to provide a fourth through-lane. If the necessary turn lanes on the one-way couplet street are initially provided by restricting the on-street parking at those intersections, then the fourth lane would eliminate the separate turn lanes. This would require future widening at those intersections to replace the displaced turn lanes. However, the planned right-of-way for Ala Moana Boulevard and Ward Avenue Extension would be sufficient to accommodate this widening.

Ala Moana Boulevard - Ward Avenue Intersection

Acceptable conditions could be provided at this intersection by providing four west-bound through-lanes from the two-way section of Ala Moana Boulevard onto the one-way couplet, but

Chapter 3
EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

with only three lanes from the couplet onto the east-bound two-way segment of Ala Moana Boulevard. A fourth west-bound lane would be provided by converting the existing west-bound left-turn lane to use as a through-lane.

An additional makai-bound lane would be needed on Ward Avenue to provide two left-turn and two right-turn lanes. The additional lane may require removal of on-street parking along the Diamond Head side next to Ward Warehouse, and/or widening of Ward Avenue. With this configuration, the intersection would provide LOS B and C conditions in the morning and afternoon peak hours, respectively, with forecast traffic using 88 percent or less of planned capacity (see Figure 3-10).

Punchbowl Street - Ala Moana Boulevard Intersection

As aforementioned, this intersection would be the key constraint to traffic flow in the Makai Area, particularly during the afternoon peak hour. Basic mitigative actions, which could be implemented with limited property impacts, would be as follows:

1. Modify east-bound approach of Ala Moana Boulevard to provide four through lanes entering the one-way segment. This could be accomplished by widening the street, or by reducing lane and sidewalk widths; and
2. Modify makai-bound Punchbowl Street to increase the number of through-lanes to three (from two lanes). This could be accomplished with parking restrictions and restriping.

Implementation of these proposed modifications would improve morning conditions to acceptable levels, but result in afternoon conditions at LOS F with volumes 25 percent above intersection capacity. Although these proposed modifications would not improve conditions to acceptable levels (LOS D, with a V/C ratio of less than 1.00), the conditions with the revised plan (With Project) would be better than those with the existing plan (Without Project).

Two additional roadway modifications were evaluated to further improve conditions at the intersection:

1. Modify Punchbowl Street to provide four makai-bound through-lanes, which would reduce the V/C ratio to 1.08 (8 percent over capacity), and would require the widening of Punchbowl Street between Pohukaina Street and Ala Moana Boulevard.

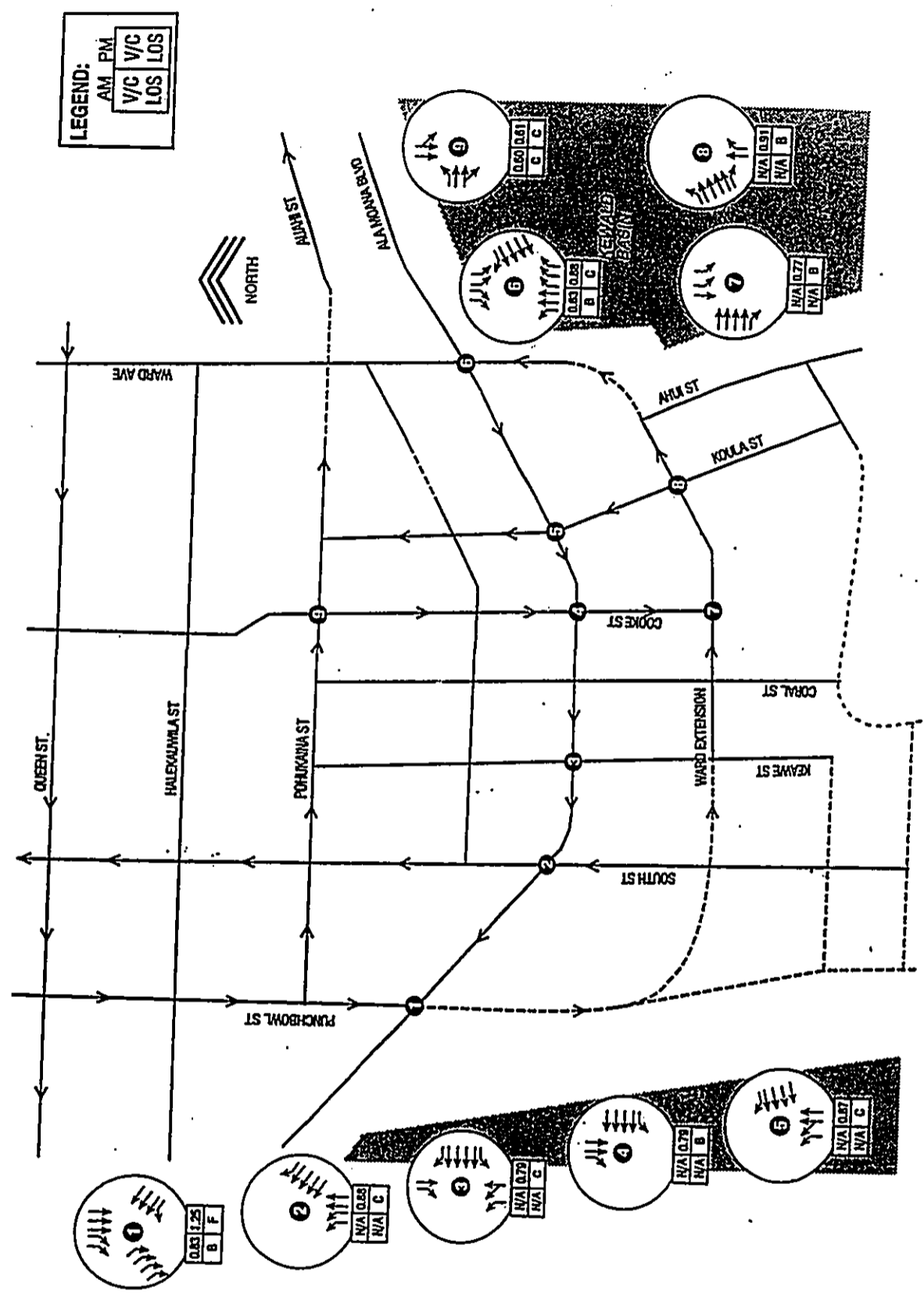


Fig. 3-10
**YEAR 2015
 WITH PROJECT AND MITIGATION ACTIONS
 AND LEVEL OF SERVICE**

Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority

Source: Wilbur Smith Associates, June 1984

Chapter 3
EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

2. Modify Ala Moana Boulevard to continue four west-bound through-lanes beyond the Punchbowl Street intersection, probably to Alakea Street. This would likely require reduction of lane widths and widening of this section of Ala Moana Boulevard, and could require additional right-of-way. Implementation of the section between Richards and Alakea Streets could be dependent upon the eventual redevelopment of the HECO power plant property to secure adequate width for a pedestrian walkway along the makai side.

Because of the implementation issues, the eventual future configuration of the Ala Moana Boulevard - Punchbowl Street intersection may remain an unresolved issue.

Cooke - Koula Streets One-way Couplet

The proposed one-way couplet, with two through-lanes plus turn lanes at key intersections, would provide sufficient capacity to accommodate year 2015 traffic forecasts. However, modifications to the roadway pattern are recommended in conjunction with the couplet to optimize efficiency. As the couplet is currently proposed, Koula Street is to extend mauka only to Pohukaina Street, which, as indicated by the current Mauka Area Plan, is to be converted to a one-way east-bound street as part of a future one-way couplet with Queen Street. With these future couplets, mauka direction traffic on Koula Street cannot reach the two-way section of Cooke Street to continue in the mauka-bound direction, and would have to either turn east-bound on Pohukaina Street and use Ward Avenue, or turn west-bound on Ala Moana Boulevard or Auahi Street and use South Street.

More effective use of Koula Street with a connection to the two-way portion of Cooke Street can be realized via one of the following approaches:

1. Use of Auahi Street as the mauka end of the Cooke-Koula Streets couplet to allow travel from Koula Street to Cooke Street via Auahi Street;
2. Extension of Koula Street mauka to Halekauwila Street, which would require right-of-way; or
3. Use of Halekauwila Street as the east-bound street of the Queen Street couplet, and retain two-way traffic flow on Pohukaina Street.

Implementation of Roadway Improvements

The construction schedule for the roadway improvements will be determined by the availability of funding, the expiration of current leases, and the pace of redevelopment within the Makai Area Plan. Anticipated implementation time frames for the key roadway modifications are as follows:

- a) Construction of the Ward Avenue Extension segment to Keawe Street is scheduled to begin within the next five years, contingent on Legislative approval of funding;
- b) Realignment and widening of Keawe Street at the interim ewa terminus of this first phase of the Ward Avenue Extension would occur within the same time as the construction of the initial extension, again contingent on approval of funding;
- c) Completion of the final section of the Ward Avenue Extension to connect to Punchbowl Street is planned to occur within 15 years; and
- d) Upon completion of the final Ward Avenue Extension segment, one-way operation would be implemented for both the Ala Moana Boulevard/Ward Avenue Extension and Cooke/Koula Street couplets.

Construction plans for work within State highway rights-of-way will be submitted to the DOT for review.

3.4.2 Water System

At present, main distribution water lines are located along Ala Moana Boulevard, Ohe Street, and in the Fort Armstrong area. Smaller waterlines are located along Keawe, Koula, and Ilalo Streets, and the Fort Armstrong area. All lines are maintained by the City and County of Honolulu, Board of Water Supply (BWS).

The Makai Area is served by the Bella Vista and Punchbowl Reservoirs, which provide water storage for a portion of peak hourly demands as well as emergencies. Major water pump stations which also service the project area during peak hours include the Kalihi and Beretania Stations.

Impacts and Mitigation Measures

Approximately 17,200 lineal feet of new and replacement water lines will be required to meet expected business and domestic water usage and fire flow requirements. Local improvements will include the installation of 8 and 12-inch water lines in major and local streets. Total cost for the

Chapter 3**EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES**

Makai Area water system improvements is estimated to be \$5.3 million. As required, the proposed water system improvements will be upgraded in accordance with the standards of the BWS. Additionally, construction drawings for the installation of any three-inch or larger meters will be submitted to BWS for review and approval. The BWS has indicated that a revised water master plan the Kakaako Makai and Mauka Areas must be submitted for review and approval, and that the project developer may be required to participate in the development of an off-site transmission main to convey water the Kakaako area. Further, the BWS will require water allocation from the State or Bishop Estate for the development of parcels owned by the respective landowners. Developers will also be required to pay Water System Facilities Charges for transmission and daily storage. HCDA will explore alternative water systems such as the potential of accommodating a non-potable water system for irrigation purposes, thereby reducing water requirements.

3.4.3 Wastewater System

Maintained by the City and County of Honolulu Department of Wastewater Management (DWM), the primary wastewater lines servicing the Makai Area are located along Ala Moana Boulevard, as well as Ward Avenue. Wastewater is conveyed to the Sand Island Wastewater Treatment Plant (WTP) via the Ala Moana Wastewater Pump Station (WPS) located on Keawe Street. Two force mains, 60 and 78-inch lines, convey wastewater from the Ala Moana WPS to the Sand Island WTP. The average daily wastewater flow rate recorded from May 1990 to May 1992 through the Ala Moana WPS was 56.7 million gallons per day. Wastewater in the area is conveyed primarily through a 6-foot by 6-foot reinforced concrete box which traverses Ward Avenue to Auahi Street, subsequently entering the Ala Moana WPS from Keawe Street. A 69-inch gravity line located along Ala Moana Boulevard runs from the Ala Moana Park WPS to the Ala Moana WPS. (*East Mamala Bay Wastewater Facilities Plan and Environmental Impact Statement, December 1993*).

Impacts and Mitigation Measures

Implementation of the Makai Area Plan is not expected to significantly impact the existing wastewater system. Approximately 13,000 lineal feet of wastewater lines will be required. Other improvements include replacement of existing lines with larger lines to accommodate projected flows and meet City standards. Total cost for wastewater system improvement in the Makai Area is estimated to be \$10.3. As required, the proposed wastewater system improvements will be

upgraded in accordance with the standards of the DWM. The DWM has indicated that no improvements to the existing wastewater system are planned within their six-year capital improvements program (CIP).

3.4.4 Drainage System

To implement the Makai Area Plan, an extensive system of catch basins, drain inlets and drain lines will be developed within the roadways to convey runoff from the developed areas.

Constructed as early as 1921, the drainage system in the Makai Area generally has not been designed to the present City and County standards and there is inadequate drainage along the existing substandard roads and driveways.

Impacts and Mitigation Measures

During the short-term construction period, runoff may enter the existing municipal drainage system particularly during rainy periods and sprinkling activities needed for dust control. During construction, temporary cofferdams, debris-sediment traps or alternative methods may be employed at drainage outlets to mitigate potential water quality impacts. These measures will trap a majority of the sediment and debris which may otherwise flow to coastal areas. In addition, erosion control measures have been designed in conjunction with the Kakaako Waterfront Park.

As mentioned in Sections 3.2.3 and 3.2.8, NPDES Permits will be required by the DOH for discharges to State waters as a result of construction clearing and grading, or construction dewatering activities anticipated, pursuant to Section 11-5-34.08(b) HAR. A construction dewatering permit will be also required by the City and County of Honolulu DPW pursuant to City Ordinance. BMP Plans which include appropriate structural or non-structural mitigative methods will be prepared for to control discharge of effluent resulting from both construction and dewatering activities. Where possible, BMP Plans will be incorporated in open spaces and recreational areas to minimize the discharge of pollutants into Kewalo Basin and Mamala Bay from storm water runoff. Further, an erosion control plan will prepared in conjunction with the City and County of Honolulu's grading permit.

Chapter 3
EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

3.4.5 Solid Waste Collection and Disposal System

Private refuse collectors serve some commercial and industrial users in the area. City collected solid wastes from the Honolulu District are hauled to a transfer station at Keehi and hauled to the Waipahu incinerator and/or the Campbell Industrial Park H-Power Plant for eventual disposal at the Waimanalo Gulch Sanitary Landfill.

Impacts and Mitigation Measures

Solid waste collection and disposal systems and services would increase as demands for services increase in the Makai Area. There will likely be an increase in the demand for private refuse collection services as commercial office and retail development occur.

As a result of Oahu's diminishing disposal capacity for solid waste, both the State and City and County of Honolulu have set aggressive waste reduction goals for the next several years. The State, through Act 324, SLH 1991, has determined to reduce solid waste by 25 percent by the 1995, and 50 percent by 2000. The objective of the City and County of Honolulu is to reduce solid waste by 50 percent by 1995, and 75 percent by the year 2000. In order to help meet these waste reduction goals, the project's design will consider incorporating diversion and reduction activities into its uses, such as providing separate trash bins for recycle waste materials.

3.4.6 Power and Communication Systems

Power and communication requirements in the Makai Area are currently served by Hawaiian Electric Company, Inc. (HECO) and GTE Hawaiian Telephone (GTE), respectively, via overhead and underground systems. HECO's nearby Honolulu Power Plant is located in the Aloha Tower area, however, power for the Makai Area will be provided by the Iwilei Substation via a 25 kV service line. GTE's central office is located on Bishop Street, and maintains a baseyard in the Kakaako Peninsula. Cable television service is provided by Oceanic Cable, through their headquarters studio located on Waimanu Street. Both utility companies will be consulted to determine the adequacy of existing capacity of services to the site and for recommendations on any necessary improvements. Future connections will be coordinated with the companies to minimize any potential conflicts with the proposed development.

3.4.7 Police and Fire Services

Police protection services are provided by the Honolulu Police Department (HPD). The Makai Area is located within the Honolulu Metropolitan Police District 1 which extends from Hawaii Kai to Pearl City. District 1 headquarters is located on Hotel Street between Beretania and King Streets. Fire service is provided through the Honolulu Fire Department's (HFD) Kakaako, Pawa, and Central stations.

Impacts and Mitigation Measures

During the short-term construction period, potential crime-related impacts may be mitigated through the use of locks, adequate lighting, barricades, and/or screening around the project site, in addition to hiring security personnel during evening, weekend and holiday hours. The HPD has preliminary indicated that the project should not have a significant impact on police services. However, coordination with the HPD will be undertaken during construction to ensure public safety regarding possible parking and traffic congestion. In the long-term, on-site security measures including well-designed and lighted areas, and security personnel will further assist in reducing the preventing crime.

The HFD has indicated that they foresee no adverse impact on fire facilities or services. Prior to commencement of construction, building and construction plans will be submitted to the building and fire departments for permit review and approval. Development will comply with fire protection requirements of the HFD's Fire Prevention Bureau, including access for fire apparatus, water supply, and building construction. Fire accessibility of existing fire connections will be maintained.

3.4.8 Medical Services

Major medical service facilities in the vicinity of Kakaako include Queen's Medical Center located on the corner of Beretania and Punchbowl Streets, and Straub Clinic and Hospital located on King Street and Ward Avenue, and the Kaiser Permanente Medical Center's Honolulu Clinic on Pensacola Street. The proximity of these major medical facilities will assume that adequate medical service will be available to Makai Area developments.

Chapter 3
EXISTING ENVIRONMENT, IMPACTS AND MITIGATION MEASURES

3.4.9 Schools

Schools which serve the Makai Area include Royal Elementary School located at the intersection of Punchbowl and Lusitana Streets, Central Intermediate School located at Queen Emma Street and Vineyard Boulevard, and McKinley High School located on the corner of King and Pensacola Streets, adjacent to the Neal Blaisdell Center.

Impacts and Mitigation Measures

Based on a potential total of 3,000 new residential units (1,500 units each for privately and publicly owned lands) the project is anticipated to generate approximately 375 students at the kindergarten to 5th grade level, 125 students at the 6th-8th grade level, and 175 students at the 9th-12th grade level (DOE correspondence, September 7, 1994). It is anticipated that this projected increase will significantly affect existing facilities. With a current enrollment of 675 students, Royal Elementary School is operating at capacity and cannot expand due to a limited campus size. Similarly, enrollment at McKinley High School is at capacity. Adequate enrollment capacity, however, is expected at Central Intermediate School in the long-term upon completion of the facility's planned renovations.

The existing Mauka and Makai Area Rules require developers to provide a public facilities dedication contribution towards the development of necessary public amenities related to education, health, safety and welfare of the affected community populations. The extent to which HCDA's public facilities dedication policy may coincide with the Department of Education's (DOE) stated plans to collect a fair share contribution from developers for educational facilities impacted by respective developments remains to be determined pending the development of more definitive guidelines from the DOE.

Due to the current capacity of educational facilities in the service area, HCDA is prepared to defer approval of residential developments in the area makai of Ala Moana Boulevard until appropriate plans and strategies are developed by DOE to accommodate the projected demands of a potential project. Meanwhile, HCDA will continue to coordinate educational facility requirements for the Makai Area with the DOE to ensure that projected demands on school facilities can be adequately monitored and addressed.

Revised Kakaako Makai Area Plan

Chapter 4

**RELATIONSHIP TO LAND
USE PLANS AND POLICIES**

4. RELATIONSHIP TO LAND USE PLANS AND POLICIES

4.1 Overview

This section describes the proposed action in relation to the applicable policies and controls of the Federal government, State of Hawaii, and City and County of Honolulu agencies.

4.2 Federal Policies and Controls

Any project that proposes work or discharges into U.S. navigable waters must comply with the following laws and Executive Orders:

Section 10 of the Rivers and Harbors Act (P.L. 90-483), Sections 401 and 404 of the Federal Clean Water Act Amendments (P.L. 95-217), and applicable implementing regulations;

Section 307 of the Coastal Zone Management (CZM) Act (92-583), as amended and applicable implementing regulations;

Section 208 of the Federal Water Pollution Control Act Amendments (P.L. 92-500), and applicable implementing regulations;

National Historic Preservation act (P.L. 89-665), and applicable implementing regulations.

Section 10 of the Rivers and Harbors Act, and Sections 401 and 404 of the Clean Water Act stipulate that a permit is required for work performed in or affecting navigable waters which will have an impact on navigable capacity and certain discharges of dredged or fill material into U.S. waters. Completed as part of the initial phase of project implementation, the repair and rehabilitation of the seawall along Kewalo Basin and Kakaako Peninsula was performed in accordance with these regulations. A Department of the Army permit application is currently under review by the Army Corps of Engineers for work in navigable waters which includes filling and dredging activities to create the beach park off of Fort Armstrong.

The Kakaako Peninsula's location on the Honolulu waterfront places it in proximity to aircraft departures from Honolulu International Airport. Federal Aviation Regulations (FAR) Part 77 sets forth standards for determining obstructions in navigable airspace, and requirements for notice to the Federal Aviation Administration (FAA). The FAR Part 77 is administered when navigable airspace may be affected by any object (erected or altered) which a height of more than 200 feet.

Chapter 4
RELATIONSHIP TO LAND USE PLANS AND POLICIES

Makai Area developments which are designated for heights in exceedance of 200 feet will be subject to FAA review.

4.3 State Plans, Policies, and Controls

A number of State plans, policies and controls provide guidelines for development within the State of Hawaii. These guidelines include the Hawaii State Plan, State Functional Plans, State Land Use Districts, Coastal Zone Management, Honolulu Waterfront Master Plan, Kakaako Community Development District Plan and Conservation District Law. The following describes the relationship of the proposed action to these plans.

4.3.1 Hawaii State Plan

The Hawaii State Plan was developed to serve as a guide for future development of the State of Hawaii in the areas of population growth, economic benefits, enhancement and preservation of the physical environment, facility systems maintenance and development, and socio-cultural advancement, Chapter 226, Hawaii Revised Statutes (HRS) as amended. The Plan identifies the goals, objectives, policies and priorities for the development and growth of the State, for which guidelines have been provided to give direction to the overall development of the State.

The Makai Area Plan is consistent with the objectives and policies of the Hawaii State Plan. Described in the following sections are the relationship and compatibility of the proposed project with the overall plans for the State of Hawaii as set forth in the Hawaii State Plan.

4.3.1.1 Population (HRS §226-5)

[§226-5] Objectives and policies for population. (a) "It shall be the objective in planning for the State's population to guide population growth to be consistent with the achievement of physical, economic, and social objectives ... :

(b) To achieve the population objective, it shall be the policy of this State to: (1) "Manage population growth statewide in a manner that provides increased opportunities for Hawaii's people to pursue their physical, social, and economic aspirations while recognizing the unique needs of each county"; ... and (4) "Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the islands".

The proposed project will achieve the population objectives by increasing and encouraging the physical, social and economic opportunities and aspirations for the people of the State of Hawaii.

The overall goal of the project to create a "people-oriented gathering place" directly relates to the population policies.

Increased physical, social and economic opportunities will be accomplished by the development of commercial, social and recreational facilities. Numerous job opportunities will be created by the various uses, thereby increasing economic activity. The unique mix of passive and active social and recreational facilities will enhance the mental and physical well-being of the people in the community. People will be attracted to this area because of its amenities, social and recreational activities, employment opportunities, and proximity to the ocean, Downtown, and Waikiki.

4.3.1.2 Economy (HRS §226-6, -8, and -10)

[§226-6] "Objectives and policies for the economy - in general. (a) Planning for the State's economy in general shall be directed toward achievement of ... : (a) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawaii's people.

(b) To achieve the general economic objectives, it shall be the policy of this State to: ... (6) Strive to achieve a sustained level of construction activity responsive to, and consistent with, state growth objectives; ... (14) Encourage businesses that have favorable financial multiplier effects within Hawaii's economy; and (15) Promote and protect intangible resources in Hawaii, such as scenic beauty and the aloha spirit, which are vital to a healthy economy".

[§226-10] "Objectives and policies for the economy - potential growth activities. (a) Planning for the State's economy with regard to potential growth activities shall be directed towards achievement of the objective of development and expansion of potential growth activities that serve to increase and diversify Hawaii's economic base.

(b) To achieve the potential growth activity objective, it shall be the policy of this State to: (1) Encourage investment and employment in economic activities that have the potential for growth such as ... marine-related industries; ... and (3) Enhance Hawaii's role as a center for ... education, culture, and the arts".

The proposed project will create numerous short-term and long-term employment opportunities. Short-term employment will be available during the course of construction. Diversified employment opportunities will be created by commercial and retail uses, as well as cultural, arts, educational and recreational facilities, with choices in the variety of indoor and outdoor jobs which will be created.

Chapter 4
RELATIONSHIP TO LAND USE PLANS AND POLICIES

In addition to increasing employment opportunities, the diversity of planned uses will facilitate growth in educational, cultural and artistic programs. These uses will contribute to the mental and physical well-being of Hawaii's present and future generations.

4.3.1.3 Physical Environment (HRS §226-11, -12, and -13)

[§226-11] "Objectives and policies for the physical environment - land-based, shoreline, and marine resources. (a) Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives: (1) Prudent use of Hawaii's land-based, shoreline, and marine resources; and (2) Effective protection of Hawaii's unique and fragile environmental resources.

(b) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of the State to: ... (2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems; (3) Take into account the physical attributes of areas when planning and designing activities and facilities; ... (8) Pursue compatible relationships among activities, facilities, and natural resources, especially within shoreline areas; and (9) Promote greater accessibility and prudent use of the shoreline for public recreational, educational, and scientific purposes."

[§226-12] "Objectives and policies for the physical environment - scenic, natural beauty, an historic resources. (a) Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawaii's scenic assets, natural beauty, and multi-cultural/historical resources.

(b) To achieve the scenic, natural beauty, and historic resources objective, it shall be the policy of this State to: (1) Promote the preservation and restoration of significant natural and historic resources; ... (3) Promote the visual and aesthetic enjoyment of mountains, ocean vistas, scenic landscapes, and other natural features; (4) Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage; ... and (5) Encourage the design of developments and activities that complement the natural beauty of the islands."

[§226-13] "Objectives and policies for the physical environment - land, air, and water quality. (a) Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives: (1) Maintenance and pursuit of improved quality in Hawaii's land, air and water resources; and (2) Greater public awareness and appreciation of Hawaii's environmental resources.

(b) To achieve the land, air, and water quality objectives, it shall be the policy of this State to: ... (2) Promote the proper management of Hawaii's land and water resources; (3) Promote effective measures to achieve desired quality in Hawaii's surface, ground,

and coastal waters; ... (5) Reduce the threat to life and property from erosion, flooding, tsunamis, earthquakes, and other natural or man-induced hazards and disasters; (6) Encourage design and construction practices that enhance the physical qualities of Hawaii's communities; (7) Encourage urban developments in close proximity to existing services and facilities; and (8) Foster recognition of the importance and value of the land, air, and water resources to Hawaii's people and their cultures."

Much care was taken in the planning of this coastal area to achieve an aesthetically pleasing environment and a compatible relationship between land and water activities. The sculpting of the previous landfill mound has opened mauka-makai view corridors and expanded Diamond Head-Ewa view planes.

Building requirements will include at-grade open space, building setbacks, and view corridor setbacks. Planned developments are still required to have a minimum of 20 percent at-grade open space, which is intended to provide sufficient light and air on the ground and sufficient areas for pedestrian circulation and amenities, landscaping, and recreational space.

Building setbacks along the front, side and rear property lines affect the three-dimensional building form in a number of ways. Building setbacks provide safety measures for the general public's welfare. They also provide ground-level open space for sidewalk cafes, pedestrian-oriented shops, landscaping, pedestrian circulation and amenities, and provide view corridors between buildings and along streets. Furthermore, the landscaping and open lawns in the park areas will promote a sense of openness.

Two historic sites will be preserved -- the existing Immigration Station and the former Ala Moana Pump Station. Future uses of the buildings should help to ensure protection of the structures. Preservation will be assured through provisions of the Makai Area Rules, as well as design guidelines proposed for transition areas.

4.3.1.4 Facilities Systems (HRS §226-14, 16 and -17)

[§226-14] "Objective and policies for facility systems - in general. (a) Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste-disposal, and utility systems that support statewide social, economic, and physical objectives."

Chapter 4
RELATIONSHIP TO LAND USE PLANS AND POLICIES

(b) To achieve the general facility systems objective, it shall be the policy of this State to: (1) Accommodate the needs of Hawaii's people through improvement priorities established through the planning process."

[§226-16] "Objectives and policies for facility systems - water. (a) Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic ... commercial ... and other needs within resource capacities.

(b) To achieve the facility systems water objective, it shall be the policy of this State to: ... (2) Support research and development of alternative water sources; ... and (4) Assist in improving th the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use."

[§226-17] "Objectives and policies for facility systems - transportation. (a) Planning for the State's facility systems with regard to transportation shall be directed towards the achievement of the following objectives. (1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods; and (2) A statewide transportation system consistent with planned growth objectives throughout the State.

(b) To achieve the transportation objectives, it shall be the policy of this State to: ... (6) Encourage the use of transportation systems that serve as a means of accommodating present and future development needs of communities; ... (10) Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawaii's natural environment."

[§226-18] "Objectives and policies for facility systems-energy/utilities. (a) Planning for the State's facility systems with regard to energy/telecommunications shall be directed towards the achievement of the following objectives: (2) Increased energy self-sufficiency.

(c) To further achieve the energy objectives, it shall be the policy of this State to: (3) Promote prudent use of power and fuel supplies through conservation measures including: (A) Development of cost-effective demand-side management programs; (b) Education; and (C) Adoption of energy-efficient practices and technologies."

There will be significant improvements or additions of public facility systems including drainage, wastewater and water resulting from the proposed action. In particular, implementation of a new drainage system will provide marked improvements to the Makai Area which currently experiences spot flooding and ponding problems during periods of heavy rain. Implementation of the Makai Area Plan will also require the development of new water source and storage

facilities to meet the potable water demands. The new water source will be developed in accordance with Chapter 20, Title 11, DOH Hawaii Administrative Rules (HAR) relating to potable water systems.

It is also anticipated that the roadway system will be improved by widening roadways and including curbs, gutters, sidewalks and street lighting. These improvements will greatly improve traffic circulation, pedestrian circulation and the overall appearance of the area. Implementation of roadway and utility improvements will be completed in accordance with applicable City and County of Honolulu and State Department of Transportation standards.

The Makai Area project will incorporate efficient use of energy resources through conservation and recycling measures. The project will utilize energy-efficient equipment to minimize energy costs. Further, the project's design will consider incorporating waste diversion and reduction activities into facility design. Such design measures could include provisions for centralized storage and processing facilities in all buildings.

4.3.1.5 Socio-cultural Advancement (HRS §226-19, -21, -23, -25 and -26)

[§226-19] "Objectives and policies for socio-cultural advancement - housing. (a) Planning for the State's socio-cultural advancement with regard to housing shall be directed towards achievement of the following objectives: (1) Greater opportunities for Hawaii's people to secure reasonably priced, safe, sanitary, livable homes located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals; and (2) The orderly development of residential areas sensitive to community needs and other land uses.

(b) To achieve the housing objectives, it shall be the policy of this State to: (1) Effectively accommodate the housing needs of Hawaii's people ...; ... and (3) Increase homeownership and rental opportunities and choices ..."

[§226-21] "Objectives and policies for socio-cultural advancement - education. (a) Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations.

(b) To achieve the education objective, it shall be the policy of this State to: (1) Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups; (2) Ensure the

Chapter 4
RELATIONSHIP TO LAND USE PLANS AND POLICIES

provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs."

[§226-23] *"Objectives and policies for socio-cultural advancement - leisure. (a) Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations.*

(b) To achieve the leisure objective, it shall be the policy of this State to: .. (2) Provide a wide range of activities and facilities to fulfill the recreation needs of all diverse and special groups; (3) Enhance the enjoyment of recreational experiences through safety measures, educational opportunities, and improved facility design and maintenance; (4) Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values; (5) Ensure opportunities for everyone to use and enjoy Hawaii's recreational resources; .. and (8) Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, and musical arts."

[§226-25] *"Objectives and policies for socio-cultural advancement - culture. (a) Planning for the State's socio-cultural advancement with regard to culture shall be directed towards achievement of the objective of enhancement of cultural identities, traditions, values, customs, and arts of Hawaii's people.*

(b) To achieve the culture objective, it shall be the policy of this State to: ... (2) Support activities and conditions that promote cultural values, customs, and arts that enrich the life styles of Hawaii's people."

[§226-26] *"Objectives and policies for socio-cultural advancement - public safety. (a) Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards achievement of the following objectives: (1) Assurance of public safety and adequate protection of life and property for all people; ... and (3) Promotion of a sense of community responsibility for the welfare and safety of Hawaii's people.*

(b) To achieve the public safety objective, it shall be the policy of this State to: ... (3) Ensure that public safety programs are effective and responsive to community needs; and (4) Encourage increased community awareness and participation in public safety programs."

Both publicly-owned and privately-owned lands within the project will allow for a contiguous mixed-use development for residential, commercial and recreational areas. Approximately 2,000 to 3,000 new residential units will be offered under affordable, gap and market prices to

accommodate a range of income levels. Both public and private funds will be used in the development of the residential units. Residing adjacent to Downtown Honolulu, residents will have convenient access to employment, services, and shops.

The proposed indoor and outdoor recreational facilities, museums, amphitheater, and variety of park environments will provide healthy mental and physical enrichment to the general public. These facilities will help to meet the growing demand for a wide variety of social, cultural, educational and recreational activities which will be enjoyed by the community. The community will benefit culturally by the implementation of the theater, children's museum, and the preservation of two historic sites.

The Makai Area Plan will provide safe public access to the ocean and along the water's edge. The improved traffic and circulation patterns within and around the area will also foster public safety.

The plan will encourage private sector redevelopment wherever possible by providing sufficient infrastructure development to reduce the private sector risks and insure long-term project viability. Public/private sector development partnerships will also be encouraged. Revenue generating development which would attract private sector development would include the Kewalo Complex, and mixed use areas.

4.3.1.6 Statewide Planning (HRS §226-52)

[§226-52] "Statewide Planning System. (a) The statewide planning system shall consist of the following policies, plans, and programs: (1) The overall theme, goals, objectives, and policies established in this chapter that shall provide the broad guidelines for the State; (2) The priority guidelines established in in this chapter that shall provide guidelines for decisionmaking by the State and the counties for the immediate future and set priorities for the allocation of resources. The formulation and revision of state functional plans shall be in conformance with the priority guidelines; (3) State functional plans that shall be prepared to address, but not be limited to, the areas of agriculture, conservation lands, education, energy, higher education, health, historic preservation, housing, recreation, tourism, and transportation. The preparing agency for each state functional plan shall also consider applicable federal laws, policies, or programs that impact upon the functional plan area. State functional plans shall define, implement, and be in conformance with the overall theme, goals, objectives, policies, and priority guidelines contained within this chapter. County general plans and development plans shall be taken into consideration in the formulation and revision of state functional plans; and (4) County general plans that

Chapter 4
RELATIONSHIP TO LAND USE PLANS AND POLICIES

shall indicate desired population and physical development patterns for each county and regions within each county. In addition, county general plans or development plans shall address the unique problems and needs of each county and regions within each county. County general plans or development plans shall further define the overall theme, goals, objectives, policies, and priority...

(b) The statewide planning system shall also consist of several implementation mechanisms, including: (2) The state budgetary, land use, and other decisionmaking processes shall consist of: (D) Land use decisionmaking processes of state agencies. Land use decisions made by state agencies shall be in conformance with the overall theme, goals, objectives, and policies, and shall utilize as guidelines the priority guidelines contained within this chapter, and the state functional plans approved pursuant to this chapter. The rules adopted by appropriate state agencies to govern land use decisionmaking shall be in conformance with the overall theme, goals, objectives, and policies contained within this chapter."

4.3.1.7 Economic Priority (HRS §226-103)

[§226-103(f)] "Priority Guidelines for Energy Use and Development. (1) Encourage the development, demonstration, and commercialization of renewable energy sources; and (2) Initiate, maintain, and improve energy conservation programs aimed at reducing energy waste and increasing public awareness of the need to conserve energy."

The Makai Area project will incorporate efficient use of energy resources through conservation and recycling measures. The project will utilize energy-efficient equipment to minimize energy costs. Further, the project's design will consider incorporating waste diversion and reduction activities into facility design. Such design measures could include provisions for centralized storage and processing facilities in all buildings.

4.3.2 State Environmental Policy (HRS §344)

[§344-4] "Guidelines. In pursuance of the state policy to conserve the natural resources and enhance the quality of life, all agencies, in the development of programs, shall, insofar as practicable, consider the following guidelines: (7) Encourage the efficient use of energy resources."

See comment in Section 4.3.1.7.

4.3.3 State Functional Plans

The Statewide planning system requires the development of State Functional Plans which are approved by the Governor of Hawaii. These plans were formulated to specify in greater detail the policies, guidelines and priorities set forth in the Hawaii State Plan. The State Functional Plans guide the implementation of State and County actions in the areas of: Energy, Transportation, Historic Preservation, Recreation, Health, Education, Housing, Tourism, Conservation Lands, Employment, Water Resources, Human Services, Education, Higher Education, and Agriculture. The following are objectives, policies and implementing actions as they relate to the Makai Area Plan:

4.3.3.1 State Energy Functional Plan

Objective A: Moderate the Growth in Energy Demand through Conservation and Energy Efficiency.

Policy A(1): Promote and Stimulate Greater Energy Efficiency and Conservation in Non-transportation Sectors.

Implementing Action A(1)(d): Provide Technical Assistance for Energy Conservation/Efficiency Projects for Residential and Commercial Projects.

Policy A(2): Stimulate and Promote Greater Energy Efficiency and Conservation in the Transportation Sector.

Implementing Action A(2)(a): Provide Assistance to Counties, Regional Transportation Management Associations and Major Employers in the Development of Ridesharing Programs.

The project will incorporate energy-efficient equipment and design where feasible. Such design elements may include the use of individual meters for the residential and commercial/retail uses to provide incentive for energy conservation, high-efficiency motors and chillers, energy-efficient ballasts for all fluorescent lamps, building design which maximizes indoor light without increasing indoor heat, use of insulation and double-glazed windows and doors, and energy-efficient metal halide lights for outdoor lighting.

To conserve energy consumed by motor vehicles, landscaped sidewalks are planned to encourage greater use by pedestrians. In addition, car/van pools, easy access to public transportation systems and staggered work hours will be encouraged to reduce the amount of energy used by

Chapter 4
RELATIONSHIP TO LAND USE PLANS AND POLICIES

motor vehicles. HCDA will explore the feasibility of implementing a non-rail, shuttle system integrating the Makai Area with Downtown Honolulu and other adjacent areas.

In addition, the extensive amount of landscaping proposed throughout the Makai Area will reduce heat reflectants. Energy conservation devices or methods can be used to conserve energy. The use of solar water heaters and designing buildings to maximize indoor light without increasing heat will help to lessen electrical power demands. These design alternatives could include tinting of glass windows or landscaping around buildings to provide shade. Other newly developed energy efficient retrofits will also be encouraged during design.

4.3.3.2 State Transportation Functional Plan

Objective I.B: Reduction of travel demand through zoning and decentralization initiatives.

Policy I.B.1.: Close the gap between where people live and work through decentralization, mixed zoning, and related incentives.

Implementing Action I.B.1.c.: Promote the development of homes near jobs. Examples are residential condominiums in the Kakaako area to allow employees to live close to their downtown offices and employee housing built by resort developers in close proximity to resorts.

Objective II.A: Development of a transportation infrastructure that supports economic development initiatives.

Policy II.A.1: Support State economic development initiatives.

Implementing Action II.A.1.b: Complete acquisition of Kapalama Military Reservation. Develop incrementally to relocate industrial uses and to meet projected containerize cargo demand.

Situated in close proximity to Downtown Honolulu, the proposed 2,000 to 3,000 new residential units in the Makai Area will provide close access to job centers for those residing in the development. These residents will also have convenient access to employment, services, and shops in the Makai Area.

The State has acquired the Kapalama Military Reservation which may be used to relocate industrial users currently occupying the Makai Area.

To provide a safe, efficient and convenient movement of people and goods, roadway and harbor improvements will be provided. Significant upgrades to the existing roadway system are also planned as described in Section 2.6. Harbor improvements include the expansion of cruise and passenger ship berths in the Pier 1 and 2 areas. Plans for this expansion will be consistent with the State's policy to foster and support commerce and other industries.

4.3.3.3 State Historic Preservation Functional Plan

Objective B: Protection of Historic Properties.

Policy B.2.: Establish and make available a variety of mechanisms to better protect historic properties.

Implementing Action B.2.b.: Support and assist the Counties to protect historic properties through zoning ordinances and other mechanisms.

The Immigration Station and former Ala Moana Wastewater Pumping Station which are listed on the National Register of Historic Places will be preserved. Although the use of these sites may be changed, the architectural integrity of the structures will be maintained.

4.3.3.4 State Recreational Functional Plan

Objective II-C: Improve and expand the provision of recreation facilities in urban areas and local communities.

Policy II-C(1): Meet the demand for recreational opportunities in local communities.

Implementing Action II-C(1)b: Provide additional playing fields and upgrade existing fields for both youth and adult sports leagues.

The Makai Area Plan will provide a wide diversity of recreational opportunities which will be available to the public. Encompassing a large portion of the Makai Area, the recreation and open space component provides for active outdoor recreational facilities, including playing fields, that will be provided for the enjoyment of the community. The entire waterfront area from Ala Moana Park to Pier 1, including the existing Kakaako Waterfront Park, will be made accessible to the public.

Outdoor recreational facilities will also include the amphitheater, pedestrianways, and various park environments. Water-related recreational opportunities include swimming, fishing and

Chapter 4
RELATIONSHIP TO LAND USE PLANS AND POLICIES

surfing areas, and sport fishing and dinner cruise boat facilities. These facilities will provide ample recreational opportunities for the community as a whole.

4.3.3.5 State Education Functional Plan

Cluster A(4): Services and Facilities.

Policy: Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.

Goal: Provide facilities that are sufficient in number, functional, well-paced and compatible with the physical surroundings.

Cluster B(4): Personal Development.

Policy: Support education programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.

Goal: Help schools effectively handle the whole length and breadth of required learning experiences.

The existing Mauka and Makai Area Rules require developers to provide a public facilities dedication contribution towards the development of necessary public amenities related to education, health, safety and welfare of the affected community populations. The Department of Education has indicated their concern regarding projected demand on educational facilities in the service area. As such, approvals by HCDA for construction of the Makai Area's residential component will be deferred until appropriate plans and strategies for the provision of educational facilities to meet projected service area needs are developed by the DOE. Meanwhile, HCDA will continue to coordinate educational facility requirements for the Makai Area with the DOE to ensure that planning for school facilities in the Honolulu District adequately recognizes the potential future demand that might be generated from residential growth in the area.

The Makai Area Plan will increase opportunities for appreciation and participation in music and arts through the development of the theater and children's museum. These facilities will provide the means for development of creative expression in the artistic disciplines.

4.3.3.6 State Housing Functional Plan

Objective B: Sufficient amount of affordable rental housing units by the year 2000 so as to increase the State's rental vacancy rate to at least 3%.

Policy B(1): Direct State, County and Federal resources toward the financing and development of rental housing projects.

Implementing Action B(1)(a): Participate in the development of below-market rental projects.

Objective E: Acquire and designate lands suitable for housing development in sufficient amounts to locate the deficit in housing units by the year 2000.

Policy E(1): Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, employment and other concerns of existing communities and surrounding areas.

Implementing Action E(1)(a): Assess, delineate, and where feasible, acquire, master plan, and develop lands suitable for future residential development.

Policy E(2): Wherever practical, develop affordable housing projects on public lands.

Implementing Action E(2)(a): Survey and reserve for future development State and county owned lands which are suitable for housing development.

The housing component of the Makai Area Plan promotes the State's housing goals by increasing the number of available for-rent and for-sale residential supply by about 2,000 to 3,000 units through the allowance of housing on the public and private lands. In order to accommodate housing in the project, the previously zoned Commercial areas (C) would be rezoned to Mixed-Use (MUZ). In order to ensure a luxury enclave is not created, a range of affordable and market priced units will be established for public lands in the Makai Area.

4.3.4 State Land Use Districts

According to the State Land Use Commission, lands in the Makai Area are designated within the "Urban" District. The proposed plan is in conformance with Urban District standards.

The "Conservation" District lies seaward of the shoreline in the Resource Subzone. The objective of this subzone is "to develop, with proper management, areas to ensure sustained use of the natural resources of those areas" (§13-2-13, Hawaii Administrative Rules). Uses within the Conservation District require a Conservation District Use Permit from the State Board of Land and Natural Resources. The Conservation District rules and permit would apply to the offshore filling of a portion of the reef off Fort Armstrong to create a new beach park.

Chapter 4
RELATIONSHIP TO LAND USE PLANS AND POLICIES

4.3.5 Coastal Zone Management

Section 307 of the National Coastal Zone Management (CZM) Act of 1972 (16 USC 111451 et. seq.) provides for State review of Federal actions or permits affecting the coastal zone of states with approved CZM programs. Hawaii's CZM program, established pursuant to Chapter 205A, HRS, is administered by the OSP and provides for the beneficial use, protection, and development of the State's coastal zone. A CZM Federal Consistency Review would be required in conjunction with the Department of the Army Permit, for improvements extending into the water. Prior to issuance of the Federal Permit, the OSP must determine the project's consistency with the enforceable policies of the Hawaii CZM Program. These policies encompass broad concerns such as impact on recreational resources, historic and archaeological resources, coastal hazards, and the management of development. The relationship of the CZM objectives and policies as they apply to the Makai Area are summarized as follows:

[§205A-2] Coastal zone management program objectives.

- (1) Recreational resources - provide coastal recreational opportunities accessible to the public;*
- (2) Historic resources - protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture;*
- (3) Scenic and Open Space Resources - Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources;*
- (4) Coastal ecosystems - Protect valuable coastal ecosystems from disruption and minimize adverse impacts on all coastal ecosystems;*
- (5) Economic uses - provide public or private facilities and improvement important to the State's economy in suitable locations;*
- (6) Coastal hazards - Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, and subsidence; and*
- (7) Managing development - Improve the development review process, communication, and public participation in the management of coastal resources and hazards.*

The recreation objective will be satisfied by creating diverse recreational opportunities in a variety of park environments available for public use. The Kakaako Waterfront Park and Kewalo Basin

Park provide significant shoreline park resources with full public access for fishing and picnicking activities, while the proposed plan will increase park and recreational areas and opportunities.

The historic resource objective will be satisfied by the preservation of two historic sites within the Makai Area. These sites include the U.S. Immigration Station and the Ala Moana Wastewater Pumping Station. These sites will either be preserved as is or refurbished while maintaining the architectural integrity of these buildings.

With respect to the scenic and open space resources objective, the formerly unsightly condition of the coastal area has been enhanced by opening up valuable view corridors, providing ample open space and landscaping, and improving the overall appearance of the area through the development of the Kakaako Waterfront Park. The proposed promenade and Central Plaza will extend the view corridor to and beyond Ala Moana Boulevard, extending the open space resources and linking the Mauka and Makai Areas.

The coastal ecosystems objective will be fulfilled by complying with water quality permits and conditions designed to protect coastal water quality.

The coastal hazards objective will be met through proposed improvements in the drainage system. The current drainage system is inadequate and causes flooding problems in the area during storms.

The enhancement of berthing areas and facilities for cruise ship, commercial fishing, and dinner cruise activities will help to support the economic uses objective relative to coastal dependent uses.

Relative to the managing development objective, adoption and implementation of the revised Makai Area Plan will involve extensive participation by the public, private interests, and government agencies. Short and long-term impacts resulting from this project are being disclosed to the public through this Supplemental EIS process. The development process will utilize and implement existing laws, and application for permits will be conducted in a timely manner.

Chapter 4
RELATIONSHIP TO LAND USE PLANS AND POLICIES

4.3.6 Special Management Area and Shoreline Setback Variance

The Office of State Planning (OSP) through HAR Title 1, Subtitle 1, OSP, Chapter 2 (Rules Governing SMAs and Shoreline Areas within Community Development Districts) regulates development in the Special Management Area (SMA) of the Kakaako Community Development District. The Makai Area lies largely within the SMA as illustrated in Figure 4-1. Any "development" within the SMA boundary requires an SMA Use Permit administered by the OSP. All phases of the project will be in accordance with the rules and regulations of the SMA.

The objectives of the State's CZM Program are discussed in Section 4.3.5 above. Guidelines for review of an SMA Use Permit application include coastal and environmental considerations as flood hazards, recreational resources, coastal ecosystems, public shoreline access, wastewater management, and coastal views. An environmental assessment or EIS may also be required.

The State's shoreline setback law, also administered by the OSP for the Kakaako Community Development District, prohibits virtually any development or related activity including the removal of sand, rocks and soil from the shoreline setback area, determined as a 40-foot strip of land mauka of the shoreline. OSP is authorized to grant variances for construction that would encroach in the setback area within this development district.

Variances may be granted based on consideration of a structure or activity being in the public interest, hardship to the applicant (if the proposed activity is not allowed), and the effect a structure or activity would have on natural shoreline processes, particularly with regard to shoreline erosion (excluding harbor areas). The Makai Area will require a Shoreline Setback Variance for proposed improvements along the shoreline areas of Piers 1 and 2, beach park expansion, and Kewalo Basin improvements. The Shoreline Setback Variance request may be processed concurrently with the SMA Use Permit.

4.3.7 Honolulu Waterfront Master Plan

The Honolulu Waterfront Master Plan was prepared by the Office of State Planning and approved by the Governor in December 1989 as a comprehensive master plan for development and improvement of the six-mile coastal stretch of the Honolulu waterfront from Ala Wai Yacht Club to the Honolulu International Airport.

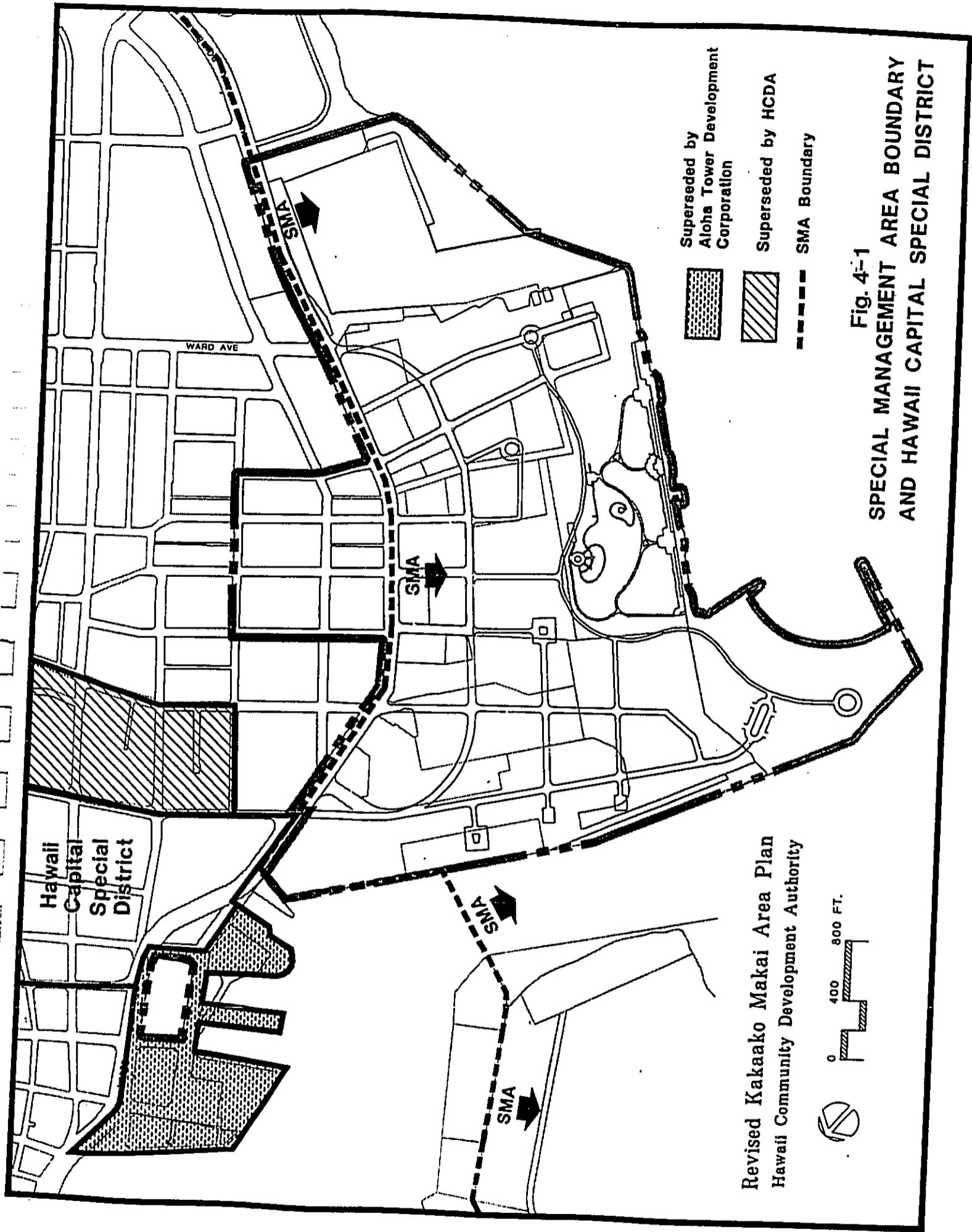


Fig. 4-1
 SPECIAL MANAGEMENT AREA BOUNDARY
 AND HAWAII CAPITAL SPECIAL DISTRICT

Revised Kakaako Makai Area Plan
 Hawaii Community Development Authority



Chapter 4
RELATIONSHIP TO LAND USE PLANS AND POLICIES

The Waterfront Master Plan contains physical, social and economic goals to improve the existing functional and operational aspects of maritime activities, economic/urban development, recreation/leisure and circulation, and transform the waterfront into a "people-oriented gathering place". To accommodate waterfront activities to the year 2010, the land use plan reorganizes the uses along the waterfront by relocating, expanding and creating facilities to accommodate maritime, urban, and recreational activities and improve the circulation pattern.

The overall land use pattern proposed by the Waterfront Master Plan promotes the Makai Area as a vibrant, centrally located people-oriented gathering place. The original 1983 Makai Area Plan was revised to reflect the changes recommended by the Waterfront Master Plan. The major components of the proposed Makai Area Plan are consistent with the Waterfront Master Plan, including the existing 30-acre waterfront park which will be expanded to 89 acres upon full implementation of the Makai Area Plan.

4.3.8 Kakaako Community Development District Plan

In 1976 the State Legislature created the Hawaii Community Development Authority (HCDA) to initiate and guide the timely revitalization of underdeveloped urban communities in the State. Kakaako was selected as the HCDA's first community development district. The State Legislature established development guidance policies which provide the planning basis for the Kakaako District and Makai Area. Urban use of the Makai Area is appropriate given its classification within the Urban District by the State Land Use Commission. In compliance with the Hawaii State Plan (Chapter 225, HRS), development is being encouraged within an already urbanized area and the physical and locational attributes of the area have been accounted for during the planning and designing of activities and facilities.

4.3.8.1 Revisions to the Makai Area Boundary

The boundary of the initial phase for the Kakaako District was Piikoi Street, King Street, Punchbowl Street, and Ala Moana Boulevard. A Kakaako Community Development District Plan was completed and executed in February 1982. In 1982 the State Legislature expanded the boundary makai of this development district to include an additional 133 acres involving a portion of the Kakaako Peninsula. The first plan for this Makai Area was issued in October 1983. In 1987, the Legislature expanded the Makai Area boundary to extend from Ala Moana Park to the Aloha Tower, thus increasing its size from 133 acres to 227 acres. The latest amendment to the Makai Area boundary occurred during the 1990 Legislative session, whereby fast and submerged

lands between Piers 4 and 8 were deleted. However, the property occupied by Hawaiian Electric Company makai of Nimitz Highway remains part of the Makai Area, for a total of 221 acres.

4.3.8.2 Revisions to the Makai Area Plan

The original 1983 Makai Area Plan consisted of "Mixed Use Zone Commercial", "Mixed Use Zone Residential", "Waterfront Industrial", and "Public Use Areas and Parks". The revised 1987 plan consisted of "Commercial", "Waterfront Commercial", "Recreational Commercial", "Waterfront Service", "Park", and "Public Facilities". The major difference in the two plans was the elimination of residential and industrial uses in the revised plan. The Honolulu Waterfront Master Plan study identified more suitable areas for Waterfront Industrial uses in Honolulu Harbor, and determined that Kakaako District's residential uses should be restricted to the Mauka Area, because of certain environmental and market concerns, such as the potential exclusion of lower income families from the Makai Area since higher land values would necessitate higher priced housing.

Concurrent with the waterfront master planning process in 1988 and 1989, HCDA was involved in updating the Makai Area Plan based not only on an expanded area, but also on current market, traffic, engineering and harbor planning studies. HCDA's participation was also critical to ensure that plans for the Makai Area were compatible with and supportive of the comprehensive Waterfront Master Plan. Subsequent to the finalization of the waterfront planning effort, the Makai Area Plan and Rules were revised to reflect the recommended changes.

As the focus of this Supplemental EIS, the latest proposed revisions to the Makai Area Plan mainly relate to land use, transportation network, and open space. Relative to land use, a mixed land use concept is proposed to enable residential uses in the Makai Area. The transportation network has been reevaluated to accommodate two major couplets (pair of one-way streets) for Ala Moana Boulevard-Ward Avenue, and Cooke-Koula Streets. The previously proposed large superblocks will be replaced with smaller blocks which are more conducive to incremental development and which will improve the relationship of the Mauka and Makai Areas. The earlier planned inland waterway system has been deleted and replaced by a system of open spaces and pedestrianways. The open space and recreation plan is reoriented to lend a stronger focus to a central promenade extending up from the waterfront park to better connect the Mauka and Makai Areas. Several blocks above Ala Moana Boulevard along Cooke Street are proposed to be added

Chapter 4
RELATIONSHIP TO LAND USE PLANS AND POLICIES

to the Makai Area boundary to continue and reinforce the central promenade theme up through the Mauka Area.

4.3.8.3 Revisions to the Makai Area Rules

The purpose of the Makai Area Rules is to enable HCDA to implement the policies and programs relating to the Kakaako District. Revisions to the January 1988 Kakaako District Rules, which covered both Mauka and Makai Areas, included the following: general language relative to the entire district was retained, references to the Waterfront Master Plan and the Aloha Tower Development Corporation added, and language specifically related to the Mauka Area were removed. Language relating to the Makai Area was amended to conform with the recommendations of the October 1989 Draft Makai Area Plan. The Makai Area Rules were developed as a separate document which supports the recommendations of the Honolulu Waterfront Master Plan and Revised Makai Area Plan.

The original Makai Area land use zone rules featured the MUZ-C, MUZ-R, and WI zones, which were subsequently replaced with C, WC, RC, and W zones. The Makai Area Rules regulate allowable uses within these zones and establish development standards such as size, density, setbacks, open space, parking, and landscaping. The currently proposed land use zones call for Mixed Use Zone (MUZ), Waterfront Commercial (WC), Waterfront Service (W), Park (P) and Public (PU). Proposed revisions to urban design include the use of continuous streetwalls along the major boulevards, more variable heights than previously allowed (but with the same densities and maximum floor areas) ranging from 45 to 300 feet (up to 400 feet is presently allowed mauka of Ala Moana Boulevard). These revisions are intended to improve the definition of public spaces and enhance pedestrian-scale activities.

4.4 County Plans, Policies, and Controls

Pursuant to Act 153, SLH 1976, authority was granted by the Legislature to HCDA to supersede County ordinances. With the adoption of the Kakaako District and existing Makai Area Plans and Rules, HCDA has overridden certain local controls such as the Development Plan and Zoning. The Kakaako Plans, however, will foster the goals of both the State Plan and the County General Plan.

4.4.1 City and County of Honolulu Development Plan

The Development Plan designations within the Makai Area as shown in Figure 4-2 include "Public Facilities" (PF), "Park" (P) and "Commercial" (C). The HCDA is not required to conform to the City's Development Plan land use designations.

4.4.2 Zoning

The City and County of Honolulu Land Use Ordinance (LUO) regulates land use in accordance with adopted land use policies, including the Oahu General Plan and DP. Under the current LUO zoning, a designation exists only for the former Ala Moana Pump Station site, as Preservation General (P-2). The P-2 designation preserves and manages major open spaces and recreation lands, as well as lands of scenic and other natural resource value. The Makai Area is otherwise not zoned by the City.

4.5 Necessary Permits and Approvals

The following are permits and approvals required prior to project construction:

Federal

U.S. Corps of Engineers

- Department of the Army Permit (Section 10 and 404) for construction of structures or work in navigable waters

Federal Aviation Administration

- FAA Airspace Review (Federal Aviation Regulations Part 77) for construction which may affect navigable airspace

State of Hawaii

Department of Land and Natural Resources

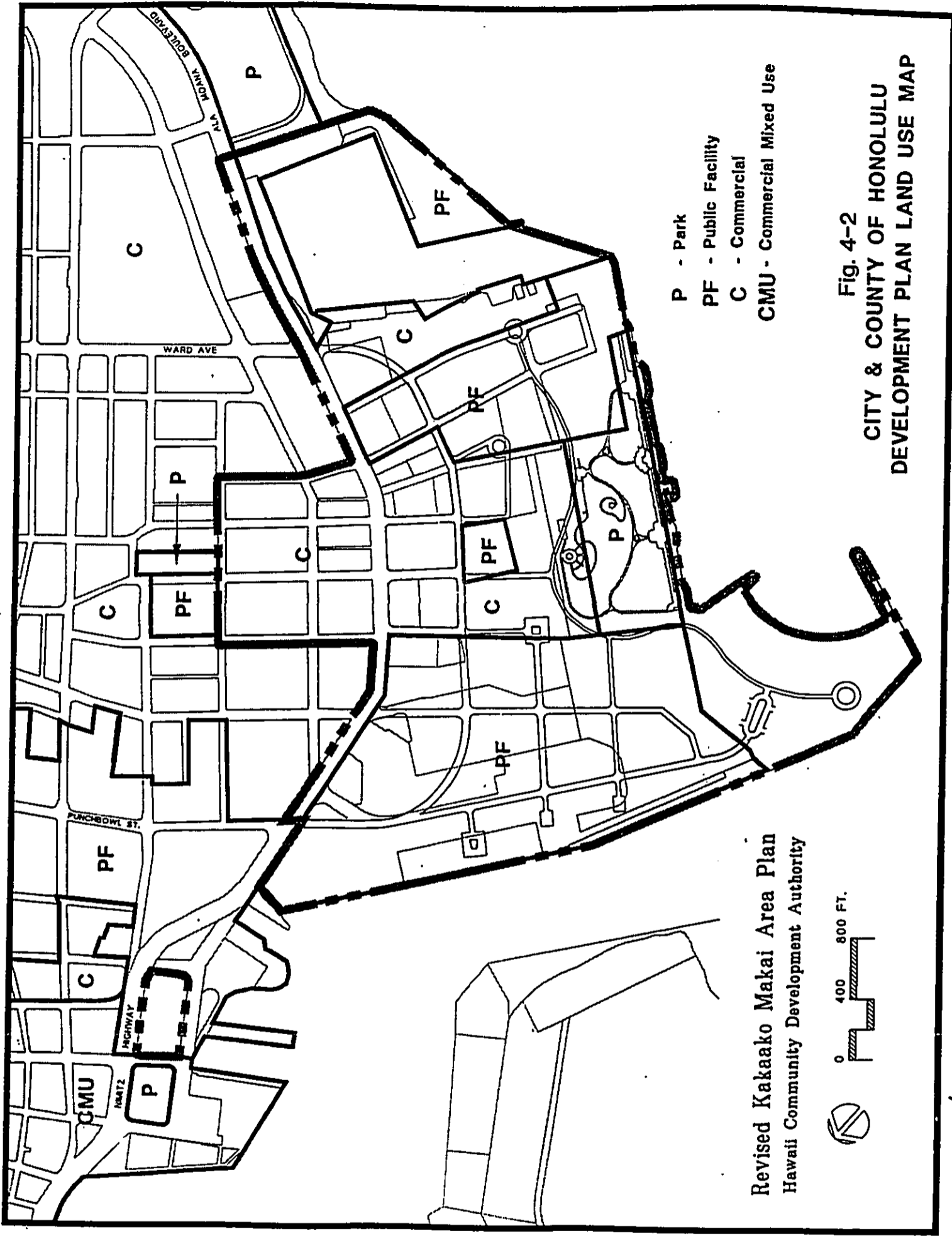
- Conservation District Use Application
- Historic Sites
- Review use of State-owned lands

Department of Transportation

- Highway Construction and right-of-way approval
- Approval for utilities and traffic rerouting

Department of Health

- National Pollutant Discharge Elimination System (NPDES) Permit
- Noise Variance Permit
- Section 401 Water Quality Certification



State of Hawaii (continued)

Office of State Planning

- Coastal Zone Management Federal Consisting review.
- Special Management Area premit
- Shoreline Setback Variance

Office of Environmental Quality Control

- Supplemental EIS

City and County of Honolulu

Department of Public Works

- Stockpiling Permit
- Grubbing Permit
- Grading Permit
- Demolition Permit

Department of Public Works

- Dewatering Permit
- Excavation Permit

Building Department

- Building Permit

Board of Water Supply

- Water source

Other

GTE Hawaiian Telephone Company

- Permit or concurrence regarding work on utility lines

Hawaiian Electric Company

- Permit or concurrence regarding work on utility lines

Gas Company

- Permit or concurrence regarding work on utility lines

Cable TV

- Permit or concurrence regarding work on utility lines

Revised Kakaako Makai Area Plan

Chapters 5 - 9

***ALTERNATIVES TO THE
PROPOSED ACTION***

***SHORT-TERM USES VS.
LONG-TERM PRODUCTIVITY***

***IRREVERSIBLE AND IRRETRIEVABLE
COMMITMENT OF RESOURCES***

UNAVOIDABLE IMPACTS

UNRESOLVED ISSUES

The permitting of residential uses within the existing commercial use-only area would likely reduce vehicle travel since residential uses would generate much lower numbers of vehicle trips than the development of an equivalent floor area of commercial use; many residents would work and shop within the area; and, many of the resident trips within the area, or to adjacent employment and shopping areas, may be made by walking or public transit.

Long-term traffic impacts will occur, but conditions are expected to be improved over the existing plan. The development of an Ala Moana Boulevard-Ward Avenue Extension one-way couplet would reduce traffic conflicts, increase east-west capacity, and enhance traffic flow along the section between Punchbowl Street and Ward Avenue. The Cooke-Koula Streets one-way couplet would further contribute to improved conditions at the intersections of these two streets with Ala Moana Boulevard and Ward Avenue Extension.

Noise impacts are expected to slightly increase during the long-term operational phase of the Makai Area, due to the implementation of one-way streets which results in higher vehicular operating speeds. In addition, noise impacts from aircraft operations will continue in the Makai Area, although these levels are expected to gradually decrease as older, noisier aircraft are replaced by the introduction of quieter aircraft. Mitigation such as air-conditioning and enclosure of noise-sensitive uses such as residential units in the Makai Area should be provided. Commercial and recreational uses should not be adversely affected.

Long-term air quality impacts are expected to be traffic-related since increased levels of carbon monoxide (CO) are anticipated as a result of increased traffic volumes in the Makai Area. The elevated CO levels are anticipated to exceed the State ambient air quality standards (AAQS), particularly during morning and afternoon peak traffic hours. These impacts, however, are expected with or without the project. In addition, improvements to the proposed roadway system, in particular, implementation of a one-way roadway couplet with Ala Moana Boulevard and the Ward Avenue Extension, will mitigate the accumulated levels of CO by facilitating greater efficiency in the flow of traffic through the area. Furthermore, despite projected increases in traffic, the project vicinity is anticipated to experience a reduction in overall ambient air quality impacts over the long-term due to projected rate of reduction in emissions per vehicle resulting from the Federal motor vehicle control program.

Chapter 8
UNAVOIDABLE ENVIRONMENTAL IMPACTS

CORRECTION

THE PRECEDING DOCUMENT(S) HAS
BEEN REPHOTOGRAPHED TO ASSURE
LEGIBILITY
SEE FRAME(S)
IMMEDIATELY FOLLOWING

Revised Kakaako Makai Area Plan

Chapters 5 - 9

*ALTERNATIVES TO THE
PROPOSED ACTION*

*SHORT-TERM USES VS.
LONG-TERM PRODUCTIVITY*

*IRREVERSIBLE AND IRRETRIEVABLE
COMMITMENT OF RESOURCES*

UNAVOIDABLE IMPACTS

UNRESOLVED ISSUES

5. ALTERNATIVES TO THE PROPOSED ACTION

Alternatives to the proposed action were developed and evaluated against the planning objectives for the Makai Area Plan.

5.1 No Action Alternative: Existing Makai Area Plan

Under the no action alternative, implementation of the Makai Area would be pursued as provided by the existing Makai Area Plan, and the boundary, land use mix, and roadway system would remain as planned and described in Chapter 1. This alternative would eliminate the need for a boundary revision, as the 20 acres of land located mauka of Ala Moana Boulevard will remain part of the Kakaako Mauka Area. However, without the mauka expansion area, the goal of strengthening the relationship between Mauka Area and Makai Area lands would not be realized. Ala Moana Boulevard would continue to be a visual and geographical boundary between the Mauka and Makai Areas.

The existing plan emphasizes commercial uses and disallows residential uses. Current economic trends indicate that demand for large-scale commercial development in the Makai Area has decreased, and the concentration of commercial use proposed by the current Makai Area Plan may not be absorbed as easily as in previous years. The lack of a residential component, which remains a strong need on Oahu, would limit the development and phasing options of the Makai Area. In contrast to commercial development, residential development would more readily be absorbed given current market conditions, and would afford greater flexibility in the Plan's implementation.

Although the costly inland waterway system has been deleted from the existing Plan, an integrated development strategy would be lacking. Roadway congestion along Ala Moana Boulevard between Punchbowl Street and Ward Avenue would continue to worsen without the planned one-way street couplet using the Ward Avenue Extension and Ala Moana Boulevard. The Cooke Street-Ohe Street couplet would not be a viable roadway improvement. The centralized parking structure would also contribute to traffic congestion and substantially limit public access to the Makai Area.

The inclusion of a large 13,300-seat amphitheater would encourage the exclusive, infrequent use of large amounts of public land, as well as increase the demand for parking. Further, such a large facility would likely require extensive mitigation measures for noise and traffic impacts.

Chapter 5
ALTERNATIVES TO THE PROPOSED ACTION

Pursuing the existing plan would forego opportunities to make urban design and open space changes which better integrate the Kakaako Waterfront Park with mauka areas. Specifically, the Central Plaza, Mauka-Makai Promenade, and urban design standards creating better definition of public and open spaces and enhancing pedestrian-scale activities would be foregone.

Implementation of the current Makai Area Plan would also require dredge and fill activities for the Kewalo Basin Expansion, which would have significant potential to impact water quality and shoreline and coastal resources. Mitigation measures would be costly, but necessary to minimize the potential for impact.

5.2 Alternative Locations

Development of the project at alternative locations was not considered.

5.3 Alternative Urban Design Schemes

In the course of revising the overall development strategy for the Makai Area, two alternative urban design schemes were evaluated. In one scheme, a major boulevard along the mauka edge of the Kakaako Waterfront Park would be established. This would separate the City from the Park, but the transition was deemed abrupt and undesirable.

A second scheme would have involved radial boulevards from a central plaza extending to the corners and edges of the Kakaako Peninsula. The scale and purpose of a monumental central plaza, however, was deemed questionable.

**6. RELATIONSHIP BETWEEN SHORT-TERM USES & LONG-TERM
PRODUCTIVITY**

Implementation of the Makai Area Plan will involve short-term trade-offs associated with environmental impacts during construction phases. Construction activities will create some adverse impacts such as minor disruptions of traffic, temporary air quality degradation from grading and fugitive dust, and increased ambient noise levels in the vicinity of the construction activity.

Some short-term benefits from construction would include direct economic benefits resulting from construction expenditures both through the purchase of material from local suppliers and through the employment of local labor. Indirect economic impacts may include benefits to local retail businesses resulting from construction activities.

Redevelopment of the Makai Area will displace existing uses by current occupants, with the exception of the historic structures. The primary trade-off of redevelopment in the Kakaako Makai Area involves the relocation of existing light-industrial businesses and activities in return for higher density commercial and office spaces, urban residential uses, regional urban waterfront recreational uses, and growth areas for maritime commercial activities. Displacement of existing on-site establishments will result in disruption of businesses as well as economic impacts. Eligible businesses, however, will be provided relocation benefits and services in compliance with applicable Federal and State requirements.

The proposed action is expected to enhance the long-term vitality of this presently underutilized urban area by upgrading the infrastructure necessary for redevelopment and by providing additional residential units and recreational amenities. Further, the Makai Area relocation and consolidation for the industrial and harbor uses are programmed with respect to other activities throughout the Honolulu Waterfront. Ultimately, the development of new, more efficient facilities will dramatically improve operations and land use. The residential component will increase the availability of both affordable and market-priced units, and in turn, businesses in the project vicinity can expect increased patronage from this additional resident population. Residents

Chapter 6
RELATIONSHIP BETWEEN SHORT-TERM USES
& LONG-TERM PRODUCTIVITY

and pedestrians will be afforded an aesthetically pleasing environment as the project will revitalize the existing area.

The proposed action is expected to enhance the long-term viability of this presently underutilized urban site by upgrading the infrastructure necessary for the proposed level of development and by providing additional improvements and amenities for residents and businesses of the area, as well as for the surrounding Kakaako, Downtown, and Waikiki communities. Secondary long-term benefits can be expected from the additional tax base created by the additional employment and services provided by the construction and operation of the project.

7. IRREVERSIBLE/IRRETRIEVABLE COMMITMENT OF RESOURCES BY THE PROPOSED ACTION

In the short-term, construction of the proposed development will require an irreversible and irretrievable commitment of a number of resources including land, capital, construction materials, manpower, energy, and water. Financial, material and manpower resources will also be irretrievably committed to the planning and design of the improvements.

Land committed to this project is presently urbanized, therefore, the proposed action represents an intensified use of existing land resources rather than a commitment of any new land resources. However, implementation of the project will result in a commitment of land which, once in a higher density use, is not likely to be reverted to a lower intensity usage in the distant future. Development of the project will involve the long-term commitment of land for attaining residential, maritime, commercial, recreational and open space objectives. The Makai Area has been in urban use for an extended period and proposed uses for the site would be appropriate in relation to the urban waterfront context of the surrounding environment.

Operation of the project upon its completion will also require the expenditure of certain irretrievable and irreversible commitments, including labor, materials, and resources (consumption of potable water, gas and petroleum-generated electricity) which will be required for effective operation and maintenance.

8. PROBABLE ADVERSE ENVIRONMENTAL IMPACTS WHICH ARE UNAVOIDABLE

Adverse impacts can be classified as short-term and long-term effects relative to the construction and implementation of a specific action. Short-term impacts are usually construction-related occurring during the course of construction and which cease upon completion of development. Long-term impacts generally the result of the on-going operation of the proposed project.

SHORT-TERM IMPACTS

Unavoidable short-term impacts are expected to be construction-related including air and noise quality, and traffic inconveniences. Construction-related air quality impacts include excavation activities, transportation of excavated material, and emission of exhaust fumes from construction equipment and employee vehicles. It is expected that dust and fumes will disperse away from construction areas toward the ocean under normal tradewind conditions. Impacts associated with construction equipment will be mitigated through conformance with emission control laws.

Short-term increases in noise levels may be caused by construction activities, vehicles, and equipment. Pile drivers, rock drills, and earthmoving equipment are anticipated to emit the highest noise levels. The use of muffled equipment as well as adherence to DOH regulations on noise mitigation will minimize construction and traffic-related noise.

Construction-related activities may increase traffic congestion in the streets adjacent to the Makai Area. To avoid potential traffic congestion, movement of construction vehicles to and from construction areas and any lane closures will be restricted during the morning and afternoon peak traffic hours. The increased traffic from construction-related vehicles should not be significant, but may cause inconveniences to businesses and motorists in the vicinity. The use of flagmen or off-duty police officers to direct traffic during significant phases of construction will be implemented as needed to minimize traffic congestion.

LONG-TERM IMPACTS

Unavoidable long-term impacts resulting from the implementation of the Makai Area Plan include those associated with air and noise quality, traffic, displacement, and the introduction of a new residential population to the area.

Chapter 8
UNAVOIDABLE ENVIRONMENTAL IMPACTS

Long-term air quality impacts are expected to be traffic-related since increased levels of carbon monoxide (CO) are anticipated as a result of increased traffic volumes in the Makai Area. The elevated CO levels are anticipated to exceed the State ambient air quality standards (AAQS), particularly during morning and afternoon peak traffic hours. These impacts, however, are expected with or without the project. In addition, improvements to the proposed roadway system, in particular, implementation of a one-way roadway couplet with Ala Moana Boulevard and the Ward Avenue Extension, will mitigate the accumulated levels of CO by facilitating greater efficiency in the flow of traffic through the area. Furthermore, despite projected increases in traffic, the project vicinity is anticipated to experience a reduction in overall ambient air quality impacts over the long-term due to projected rate of reduction in emissions per vehicle resulting from the Federal motor vehicle control program.

Noise impacts are expected to slightly increase during the long-term operational phase of the Makai Area, due to the implementation of one-way streets which results in higher vehicular operating speeds. In addition, noise impacts from aircraft operations will continue in the Makai Area, although these levels are expected to gradually decrease as older, noisier aircraft are replaced by the introduction of quieter aircraft. Mitigation such as air-conditioning and enclosure of noise-sensitive uses such as residential units in the Makai Area should be provided. Commercial and recreational uses should not be adversely affected.

Long-term traffic impacts will occur, but conditions are expected to be improved over the existing plan. The development of an Ala Moana Boulevard-Ward Avenue Extension one-way couplet would reduce traffic conflicts, increase east-west capacity, and enhance traffic flow along the section between Punchbowl Street and Ward Avenue. The Cooke-Koula Streets one-way couplet would further contribute to improved conditions at the intersections of these two streets with Ala Moana Boulevard and Ward Avenue Extension.

The permitting of residential uses within the existing commercial use-only area would likely reduce vehicle travel since residential uses would generate much lower numbers of vehicle trips than the development of an equivalent floor area of commercial use; many residents would work and shop within the area; and, many of the resident trips within the area, or to adjacent employment and shopping areas, may be made by walking or public transit.

Chapter 8

UNAVOIDABLE ENVIRONMENTAL IMPACTS

Displacement impacts will also result from implementation of the Makai Area Plan. Potential impacts to the displacees include moving and change of neighborhood, and disruption of business operations. Eligible businesses, however, will be provided relocation benefits and services in compliance with applicable government requirements. Relocation assistance for displacees will help to minimize business disruptions.

9. SUMMARY OF UNRESOLVED ISSUES

Unresolved issues are often associated with uncertainties in the early planning stages of proposed actions. Consequently, the planning process attempts to identify these issues and develop appropriate mitigative measures.

Project Plan and Design: The proposed revised Makai Area Plan and Rules remain to be finalized. The Plan may undergo revisions based on response to public input and to conform to applicable agency requirements. HCDA will continue to consult and coordinate with applicable agencies and reviewers during the course of the planning process until the Plan is finalized. Site-specific design features are also unresolved, and will evolve incrementally as the Makai Area Plan is implemented.

Permits: A number of permits and approvals will be required prior to construction of the project, and are listed in Chapter 4.

Relocation: Upon completion of negotiations with the lessees currently occupying the Makai Area, the State will assist in relocating businesses who will be displaced in accordance with applicable Federal and State requirements. During the course of the planning process, more definitive parameters and timetables for displacement and relocation will be established to minimize business disruptions by the displacees.

Roadway System and Traffic: A specific timetable for implementation of the proposed roadway improvements has yet to be determined. To a large extent, it will be dependent on the pace of redevelopment in the Makai Area and availability of funds.

Utility Systems: Implementation of the Makai Area Plan will involve significant improvements to the existing water, wastewater and drainage systems in the area. The timing of infrastructure improvements is unresolved and will be dependent on the availability of funds and pace of redevelopment in the area.

Educational Facilities: The provision of adequate school facilities to accommodate projected increases in student enrollment is unresolved. HCDA will continue to coordinate with the State Department of Education to meet the needs of students generated by housing created under the Makai Area Plan.

Revised Kakaako Makai Area Plan

Chapters 10 and 11

***PARTIES CONSULTED
FOR THE EISPN PRE-ASSESSMENT***

***PARTIES CONSULTED FOR THE
PREPARATION OF THE DSEIS***

**10. EARLY CONSULTATION OF PARTIES DURING THE PREPARATION OF THE
EISPN**

The following agencies were consulted during the pre-assessment phase of the EISPN:

State Department of Transportation, Highways Division,
Statewide Transportation Planning Office

and

City and County of Honolulu, Department of Transportation Services.

In addition, the American Institute of Architects contributed comments regarding the Kakaako
Makai Area Development Strategy - Urban Design, included herein.



AIA Honolulu

A Chapter of the American Institute of Architects
Representing the Counties of Hawaii, Honolulu, and Maui

April 15, 1994

Mr. Michael Scarfone
Executive Director of the Hawaii Community Development Authority
677 Ala Moana Boulevard
Suite 1001
Honolulu, HI. 96813

Re: Kakaako Makai Area Development Strategy - Urban Design

Dear Director Scarfone,

The AIA/Honolulu has reviewed the Kakaako Makai Master Plan and our assessment is summarized as follows:

1. The goals set a clear course of action, providing "new options" for Honolulu. These new options accept and take advantage of the fact that Honolulu is a "city".
2. The principles described are positive descriptions of a city. These are principles that have generally been missing in the development of Honolulu during the past thirty years.
3. The plan illustrates the principles clearly.
4. Development Rules provide straight forward regulations for the implementation of these principles.
5. Housing is an important aspect of the Makai area plan, that helps create the sense of a community. People living in the area will help protect and activate the public parks and streets.
6. Alternatives should be explored for the flow of thru traffic along Ala Moana Blvd.
7. More specific guidelines should be given for secondary streets.
8. More descriptive First Floor Uses should be indicated for the Mauka-Makai Promenade.
9. The Walk/View Corridor to Aloha Tower from the park should be strengthened with a descriptive concept for the edge conditions and programmed uses.

Goals, Principles and Rules

First, it is important to accept the fact that Honolulu has the population density of a city and second, to take advantage of this density to create places for people. The most important aspect of this plan is that it returns the city to people. The plan "encourages variety and vitality, unique to city life".

1128 Nuuanou Avenue
Honolulu, Hawaii 96817
Telephone 808.545.4242
Facsimile 808.537.1483

1. A more finely grained urban pattern of blocks and roads. Breaking down the scale to a pedestrian friendly environment helps control the speed of traffic and spreads public street parking throughout the area, thus distributing people over a larger area (promoting activity).
2. Well defined public spaces (streets and parks). Establishing "street walls" with entrances directly onto the sidewalks creates points of interest and activity for the people as they pass by, an asset of a city. The street wall "defines and frames" the public realm. Face to face width of street walls limited to a 120 foot (street section) provides continuous definition. The street wall sections work well to balance the heights of buildings and the widths of streets, creating a comfortable proportion of space (simulating the Golden Section).
3. Ground Floor uses. By requiring ground floor continuous, zero-setback retail frontage with no curb cuts or other gaps along Ward Ave. extension, the plan encourages pedestrian activity.
4. Retail Storefronts and Signage. By developing canopies, shade trees and street furniture that are consistent throughout the neighborhood, a rich environment is created for pedestrians.
5. Integration of autos and pedestrians. By distributing parking and pedestrians over a larger area, the streets become more active and personal. Parking along a street creates activity, making the streets safer for the pedestrian by providing a natural barrier between the pedestrian and moving traffic. (This is much more pedestrian friendly than parking in a central garage).
6. A variety of park spaces. These open spaces can now have more meaning due to the contrast with the public streets. These spaces are also physically defined and programmed, clearly establishing what is public and what is not. In an urban context the consolidation of public space into usable land area rather than "left over space" around buildings provides a much better use of public land for people.
7. Location of tall buildings. Upper floor massing is designed to step away from the waterfront and from the Mauka-Makai Promenade, thus preserving and creating view corridors for the towers behind these buildings. The height limits and massing work like the Capitol District, creating pedestrian areas with buildings scaled to humans. Locating towers at corners of city blocks helps articulate the building massing and define the public way.
8. Continuous open space system. The links between public spaces along streets, through courtyards and parks works well to tie the waterfront back to the city for the pedestrian. Cities are full of various types and sizes of public space, this plan encourages that variety.

Concerns

1. Activities along the Mauka-Makai Promenade do not appear to be programmed. Hopefully active offices, business and restaurants as well as residential entrances will locate along Cook Street, but without some direction to ground floor use some unwanted uses may occur. This Promenade seems particularly attractive for cafes and restaurants used during the day and evening. The Promenade appears to be designed as a more important commercial street than Ward Ave and needs to have

- defined uses. This activity would greatly strengthen the waterfront link and is a key aspect of the plan.
2. Traffic patterns along Ala Moana Boulevard and Ward Avenue extension make sense to move traffic better and narrow the streets, but if Ward Avenue is to be the main shopping street, traffic would be better left on Ala Moana or moved Mauka of Ala Moana, not Makai. A one way pair with Auahi Street could help tie the commercial area Mauka of Kewalo Basin to the waterfront by reducing traffic flow and narrowing the right-of-way. Another approach is to really establish Ala Moana as a Boulevard with a large median planted with trees providing a place for safety when crossing the street. The intersection of Ala Moana and Cook Street could be the location of a large fountain or sculpture indicating the center of Kakaako. This alternative would offer a much more grand approach to Waikiki for the tourist as they arrive from the airport. Secondary streets are left without strong notions of activities, thus falling prey to blank street walls of parking or backs of buildings. Although prescribed landscape and parking structure descriptions help, an effort should be made to offer a "carrot" for better use of these street frontages.
 3. The Walk/View Corridor, particularly along Ward Avenue extension, needs programmed uses and definition. Without some specific purpose this area may become a back corridor with little activity. The idea is appropriate but needs further development.
 4. Parking is always an issue. Some public parking could be located under the public parks in the central space. This would also allow the parks and street levels to step up toward the waterfront creating vistas where the view is blocked by the large berm at the waterfront.

Recommendation

This plan makes an effort to return this part of the city to people. Public streets and spaces are defined and programmed for the sharing of the public right-of-way between people and cars. The plan opens up to the water by creating a wedge of lower buildings, related to the pedestrian. The system of open spaces and public ways (including streets) does not accomplish the goal, to link the city to the waterfront and provide new options for urban living.

Kakaako has a unique chance to establish a role model for the rest of the city. The general intentions and direction of this plan are endorsed and praised by the AIA and should be studied for the positive qualities demonstrated.

If you have any questions or desire further information please contact the AIA Urban Design Committee.

Sincerely,



Sheryl B. Scaman, AIA
President

CC: Eric Masutomi
HCDA Planning Director

11. PARTIES CONSULTAED DURING THE PREPARATION OF THE DRAFT SUPPLEMENTAL EIS

Copies of the EISPN were sent to the agencies, organizations, and individuals listed below, with a request for their comments on the project. As of June 9, 1994, a total of 22 comment letters were received. Of those who formally replied, some had no comments while others provided substantive comments as indicated by the ✓ and ✓✓, respectively. All written comments and responses are reproduced herein.

Federal Agencies

- ✓ Department of the Interior, Geological Survey, Water Resources Division
- ✓✓ Department of the Interior, Fish and Wildlife Service
- Department of the Army, U.S. Army Engineer District

State Agencies

- ✓✓ Office of Environmental Quality Control
- ✓✓ Land Use Commission
- ✓ Department of Human Services
- ✓✓ Housing Finance and Development Corporation
- ✓✓ Department of Accounting and General Services
- ✓ Department of Health (DOH)
- ✓ Department of Business, Economic Development & Tourism (DBED)
- ✓ Department of Land and Natural Resources (DLNR)
- ✓✓ Department of Education
- ✓✓ Department of Transportation, Airports, Highways, and Harbors Divisions
- DBED, State Energy Office
- DOH, Environmental Management Division
- DLNR, State Historic Preservation Office
- Office of State Planning

University of Hawaii Environmental Center

City and County of Honolulu Agencies

- ✓✓ Department of Public Works
- ✓ Police Department
- ✓✓ Fire Department
- ✓✓ Department of Wastewater Management
- ✓✓ Board of Water Supply
- ✓✓ Department of Parks and Recreation
- ✓ Department of Housing and Community Development
- ✓✓ Department of Transportation Services
- Building Department

Chapter 11
PARTIES CONSULTED DURING THE PREPARATION OF THE DSEIS

Department of Land Utilization
Department of Planning

Public Utility Agencies

✓✓ Hawaiian Electric Company, Inc.
GTE Hawaiian Telephone

Other Interested Parties

✓✓ Downtown Neighborhood Board #13
Ala Moana/Kakaako Neighborhood Board #11



United States Department of the Interior

U.S. GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
677 Ala Moana Blvd., Suite 415
Honolulu, Hawaii 96813



WATER RESOURCES DIVISION
HAWAIIAN ISLANDS



KAKAOKO
Water Resources Division

Mr. Michael N. Scarfone
Executive Director
Hawaii Community Development Authority
677 Ala Moana Blvd., Suite 1001
Honolulu, Hawaii 96813

April 21, 1994

Dear Mr. Scarfone:

Subject: Supplemental Environmental Impact Statement Preparation Notice (SEISP), Revised Kakaoko Makai Area Plan, Honolulu, Hawaii

The staff of the U.S. Geological Survey, Water Resources Division, Honolulu District, has reviewed the subject SEISP and we have no comments to offer at this time.

Thank you for allowing us to review this SEISP.

We are returning the SEISP to your office for your future use.

Sincerely,

William Meyer

William Meyer
District Chief

Enclosure

cc: Dr. Bruce S. Anderson
Interim Director
Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, HI 96813

Mr. Rodney Funakoshi
Project Manager
Wilson Okamoto & Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, HI 96826

Ref. No.: PL EIS 6.20

July 1, 1994

Mr. William Meyer, District Chief
U.S. Department of the Interior
Water Resources Division
677 Ala Moana Boulevard, Suite 415
Honolulu, Hawaii 96813

Dear Mr. Meyer:

Re: Supplemental Environmental Impact Statement (SEIS) Preparation Notice, Revised Kakaoko Makai Area Plan
TMKS: 2-1-15, 58 to 60 and portions of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of April 21, 1994 indicating that you have no comments on the subject SEIS Preparation Notice. We appreciate your interest and participation in the consultation phase of the environmental review process.

Very truly yours,

Michael N. Scarfone

Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 527-2870
Facsimile
(808) 527-2811



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Pacific Islands Office
P.O. Box 50167
Honolulu, Hawaii 96850

In Reply Refer To: MEM

MAY 18 1994

Mr. Michael Scarfone
Hawaii Community Development Authority
677 Ala Moana Blvd., Suite 1001
Honolulu, HI 96813

Re: Revised Kakaako Makai Area Plan Supplemental EIS Preparation Notice.

Dear Mr. Scarfone:

The U.S. Fish and Wildlife Service (Service) has received a copy of the Revised Kakaako Makai Area Plan Supplemental Environmental Impact Statement (EIS) Preparation Notice, dated March 1994. The document presents changes to the Kakaako Makai Area Plan, including roadway system changes, allowance of residential development in mixed use zones, deletion of inland waterways, development of a central plaza and promenade, and various urban design changes. Included within the revised plan is the construction of a beach park by filling in part of the reef fronting the Kakaako peninsula. The Service offers the following comments for your consideration.

On October 29, 1993, the Service released comments to the U.S. Army Corps of Engineers for their consideration in deciding whether to issue a Department of the Army permit for construction of the proposed beach park. For your convenience, a copy of these comments is enclosed with this letter. In those comments, the Service recommended denial of permit issuance for the beach park on the basis that the proposed discharge of fill is not consistent with (a) the Section 404(b)(1) Guidelines for the Federal Water Pollution Control Act of 1948 [33 U.S.C. 1251 et seq.; 62 Stat. 1155], as amended (Clean Water Act), and (b) the Service's Mitigation Policy [46 CFR No. 15:7644-7633].

On February 15, 1994, the Service met with the Hawaii Community Development Authority and the National Marine Fisheries Service (NMFS) to discuss concerns over the proposed beach park. At that meeting, the prevention of nonwater-dependent fills on coral reefs and at other special aquatic sites (as provided for by the Section 404(b)(1) Guidelines) and the sequencing of avoidance, minimization, and compensation for adverse impacts to fish and wildlife resources during the project planning process (as provided for by the Service's Mitigation Policy) were discussed. The Service recommended that the Kakaako development plan be revised to (a) eliminate all nonwater-dependent fills in the aquatic environment and (b) minimize project-related adverse impacts to fish and wildlife resources.

Revised Kakaako Makai Area Plan
Supplemental EIS Preparation Notice
Kakaako, Oahu, Hawaii

The Service appreciates the opportunity to provide comments on the revised plan and is willing to further discuss our project-related concerns with your agency and/or the consultant responsible for preparing the supplemental EIS. If you have questions regarding these comments, please contact staff biologist, Michael Molina at 808/541-3441.

Sincerely,

Brooks Harper
Acting Field Supervisor
Pacific Islands Office

Enclosure

cc: NMFS-PAO, Honolulu
EPA-Region IX, San Francisco
DAR, Hawaii
CZMP, Hawaii
CWB, Hawaii
OEQC, Hawaii
Wilson, Okamoto & Associates, Hawaii



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Pacific Islands Office
P.O. Box 50167
Honolulu, Hawaii 96850

PODCO 93-028
Kakaako Beach Park Construction
Honolulu, Oahu, Hawaii

In Reply Refer To: MEM

OCT 29 1993

Lt. Colonel M. Bruce Elliott
District Engineer
U.S. Army Corps of Engineers
Building 230
Fort Shafter, Hawaii 96858-5440

Re: PODCO 93-028, Beach Park Construction, Kakaako Peninsula Waterfront.
Honolulu, Oahu, Hawaii.

Dear Lieutenant Colonel Elliott:

The U.S. Fish and Wildlife Service (Service) has reviewed the Public Notice for the referenced permit application dated September 29, 1993. The applicant is the State of Hawaii Community Development Authority. This letter has been prepared under the authority of and in accordance with provisions of the Fish and Wildlife Coordination Act of 1934 [16 U.S.C. 661 et seq.; 48 Stat. 401], as amended, the Endangered Species Act of 1973 [16 U.S.C. 1531 et seq.; 87 Stat. 884], as amended, and other authorities mandating Department of the Interior concern for environmental values. Based on these authorities, the Service offers the following comments for your consideration.

The applicant proposes to construct on the reef flat a beach park as an extension of the existing Kakaako Waterfront Park. The proposed park includes approximately 4.5 ha (11 ac) of picnic grounds, landscaped buffer areas, comfort stations, and paved parking space; 1.2 ha (3 ac) of sand beach; and 4 ha (10 ac) of breakwater, groin, revetment, and subtidal reef shoal. A total of 9.7 ha (24 ac) of reef would be filled with approximately 320,000 yds³ of fill material. The total reef area impacted within the outer limits of the existing shoreline and proposed revetment, groin, breakwater and reef shoal structures would be approximately 12.1 ha (30 ac).

Service biologists have discussed the proposed project with staff of the National Marine Fisheries Service's (NMFS) Pacific Area Office, the Division of Aquatic Resources of the Hawaii Department of Land and Natural Resources, and the Coastal Zone Management Program of the Hawaii Office of State Planning. The proposed project site was inspected by biologists from the Service and the NMFS on October 20, 1993. Observations were made of the overall state of the reef to an approximate depth of 4.5 m (15 ft) within the nearshore

portion of the proposed 12.1-ha (30-ac) area of impact. The survey lasted approximately 1.5 hours and was accomplished with the aid of snorkel gear.

In general, this portion of the reef platform is widest and exhibits the greatest substrate relief at its western end. The inner part of this reef is mostly a consolidated limestone platform, pitted with holes and cracks and covered by low algal turf, interspersed with sand/rubble depressions. Further from shore the reef depressions and adjacent overhanging ledges become more numerous and well developed. These ledge/depression features become larger and deeper further out from shore and eventually give way to a more defined spur and groove system.

The spur and groove system consists of sand/rubble bottoms within the grooves, numerous horizontal holes, cracks, and other fissures in the vertical relief of the grooves, and scattered coral colonies (mostly *Pocillopora meandrina*) on the tops of the raised spurs. Algal turf interspersed with larger macroalgae species (most noticeably *Dicyota* sp. and *Bryopsis* sp.) cover the surfaces of the reef not supporting corals or buried under sand or rubble. Coral coverage on the spurs was estimated to be between 30% and 40% within localized areas of densest coral growth, approximately 15% on the spurs and raised ledges only, and approximately 5% throughout the entire reef area surveyed.

The most conspicuous noncoral macroinvertebrates observed on the reef include the boring sea urchin, *Echinomeya mathaei*; the black urchin, *Echinocyathus diadema*; the sea cucumber, *Acanthopora mauritiana*; the cowrie, *Cypraea mauritiana*; the octopus, *Octopus cyaneus*; and the spiny lobster, *Panulirus penicillatus*.

Several species of reef fishes, including some important to humans for food, were observed on the reef platform and adjacent to the existing northern shoreline revetment and western breakwater. Among the most common of these fishes were surgeonfishes (*Acanthuridae*), goatfishes (*Mullidae*), parrotfishes (*Scaridae*), rudderfishes (*Kyphosidae*), butterflyfishes (*Chaetodontidae*), soldierfishes (*Holocentridae*), triggerfishes (*Balistidae*), and wrasses (*Labridae*). Mixed aggregations seen foraging for algae over the reef were comprised primarily of the convict tang, *Acanthurus triostegus*; the achilles tang, *Acanthurus achilles*; the ringtail surgeonfish, *Acanthurus blochii*; the orange-spine unicornfish, *Naso lituratus*; and the bluespine unicornfish, *Naso unicornis*. A relatively large school of juvenile yellowfin goatfish, *Mulloidichthys vanicolensis*, was observed near the end of the existing west breakwater. A small school of the juvenile jack, *Caranx melampygus*, was also seen.

Although no federally-listed, threatened green sea turtles (*Chelonia mydas*) were observed during the brief survey, the ledges and depressions in the reef substrate provide potential resting habitat for this species, which is known to be common in the surrounding waters. The

PODCO 93-028
Kakaako Beach Park Construction
Honolulu, Oahu, Hawaii

reef also supports the growth of algae known to be fed upon by green sea turtles in the main Hawaiian Islands (e.g., *Amansia glomerata* and *Pterocladia spiffaces*).

The proposed construction involves the discharging of fill material onto coral-reef habitat, which has been given institutional significance through its formal designation and protection as a "special aquatic site." The proposed filling and land extension is not water dependent, and we believe the applicant has not fully considered less environmentally damaging alternatives to achieve the project purpose in accordance with the 404 (b) (1) Guidelines (40 CFR Part 230 §230.44 / FR v.45 a.249). Specifically, we believe that sufficient upland exists within the proposed development area to allow for construction of the park without encroaching into open water and coral reef habitat.

In addition, it does not appear that the applicant has followed the sequencing of avoidance, minimization, and compensation of adverse impacts to fish and wildlife resources in their planning process. In order to gain Service support for projects or other proposals, the applicant must make reasonable efforts to avoid or minimize damage or loss of fish and wildlife resources and uses. Compensation for unavoidable resource losses are then considered and evaluated consistent with the Service's mitigation planning goals (U.S. Fish and Wildlife Service Mitigation Policy, 46 CFR No. 15: 7644-7663). In accordance with the Service's Mitigation Policy, coral reefs are considered Resource Category 2 habitats, which are of high value to evaluation species (reef fishes and marine macroinvertebrates) and relatively scarce on a national basis. The Service's mitigation goal for Resource Category 2 habitats is no net loss of in-kind habitat values.

Construction of the beach park would permanently remove 9.7 ha (24 ac) of coral reef from the marine environment. It would also change the characteristics of another 2.4 ha (6 ac) of coral reef habitat within the bounds of the semi-enclosed swimming area by trapping sediments and filling in the substrate relief currently existing on that portion of reef. Adverse impacts to species and habitat on adjacent reefs would likely occur due to the alteration of nearshore current patterns.

Approximately 1.7 ha (4.2 ac) of new boulder and rubble habitat would be created as follows: breakwater = 0.4 ha (1.0 ac); revetment = 0.5 ha (0.8 ac); groin = 0.2 ha (0.5 ac); and shoal losses in the form of an artificial reef of unknown size and design.

Although these structures would provide limited habitat for some species, they would not duplicate the physical heterogeneity, interstitial complexity, and vertical relief of the existing habitat they would cover. Not only would the physical structure of the boulders reduce opportunities for many organisms to find suitable shelter, it would affect the levels of light

PODCO 93-028
Kakaako Beach Park Construction
Honolulu, Oahu, Hawaii

penetration and localized current patterns that influence food availability. As a result, competition among organisms for food and space and interactions between predators and prey would also be affected. Many highly specialized coral-reef species displaced by the loss of coral-reef habitat may attempt to use the new boulder habitat, but only the most generalized of these species would be successful in this attempt and their growth and survival may be adversely affected. Therefore, the habitat values of the artificial structures would not replace the values of the coral-reef habitat that would be lost.

Based on the above considerations, it is the opinion of the Department of the Interior that the proposed project may result in substantial and unacceptable impacts on aquatic resources of national importance. We are also concerned that supporting a permit for a non-water dependent project, which includes a discharge of this magnitude, would establish a dangerous precedent encouraging similar proposals involving coral-reef habitats in Hawaii and other Pacific Islands. Therefore, the Service recommends denial of permit issuance for the project as it is currently proposed. The Service is, however, willing to meet with other resource agencies and the applicant to discuss our concerns.

The Service appreciates the opportunity to provide comments on the proposed project. If you have questions regarding these comments, please contact staff biologists, Karen Evans or Michael Molina (808/541-3441).

Sincerely,



Robert P. Smith
Field Supervisor
Pacific Islands Office

cc: NMFS-PAO, Honolulu
EPA-Region IX, San Francisco
DAR, Hawaii
CZMP, Hawaii
CWB, Hawaii



HAWAII COUNTY
DEPARTMENT OF HEALTH



KAKAIAO
Water Wastewater Control Division

John D. Walker
Chairman

Gary Caulfield
Chairman

Michael N. Scarfone
Executive Director

Ref. No.: PL EIS 6.20

July 1, 1994

Mr. Brooks Harper,
Acting Field Supervisor
Pacific Islands Office
U.S. Department of the Interior
Fish and Wildlife Service
P.O. Box 50167
Honolulu, Hawaii 96850

Dear Mr. Harper:

Re: Supplemental Environmental Impact
Statement (SEIS)
Preparation Notice, Revised Kakaako
Makai Area Plan
TMKs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
HONOLULU, OAHU, HAWAII

Thank you for your letter of May 18, 1994 (Ref. MEH) commenting on the subject SEIS Preparation Notice. We acknowledge your concerns regarding potential impacts to the marine environment from the new beach area. It should be noted, however, that the proposed beach expansion plans are unchanged in this revised Makai Area Plan. As such, its assessment will not be part of this Supplemental EIS process. Notwithstanding, your concerns will surely be addressed as part of securing our needed development permits and approvals. We appreciate your interest and participation in the consultation phase of the environmental review process.

Very truly yours,

Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

67 Alii Avenue, Suite 200
Honolulu, Hawaii 96813
Telephone: (808) 551-3270
Facsimile: (808) 551-3413



STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

200 SOUTH KING STREET
FOURTH FLOOR
HONOLULU, HAWAII 96813
TELEPHONE 535-5115
FACSIMILE 535-5142

April 5, 1994

BRUCE S. ANDERSON, Ph.D.
INTERIM DIRECTOR

RECEIVED
APR 6 1994

WILSON OKAMOTO & ASSOC., INC.

Mr. Michael N. Scarfone
Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Attention: Eric Masutomi

Dear Mr. Scarfone:

Subject: Supplemental Environmental Impact Statement Preparation
Notice for the Revised Kakaako Makai Area Plan, Honolulu,
Hawaii, Tax Map Keys 2-1-15:58, 59, 60, and portions of
2-1-25-through 60.

We have reviewed the subject document and have the following
comments:

1. Please describe the existing plans for the Mauka lots proposed for inclusion in the Makai Area Plan. What will be the impact of the proposed changes on the implementation of existing development plans for the Mauka Area?
2. Provide a map documenting current ownership of parcels included in the revised Makai Area Plan and all adjoining properties.
3. Present data on urban housing demand (by income level) and discuss how the proposed residential uses in the Makai Area Plan meet these specific needs.
4. Provide discussion of affordable housing requirements attached to market-priced housing development in the area. Will development on private and public lands have the same requirements? Will mandated affordable housing be provided within the Makai Area or at other sites?

Mr. Michael N. Scarfone
April 5, 1994
Page 2

5. The traffic impact study should include a safety study and analyze the speed of traffic in the portion of Ala Moana Boulevard that will be affected by the proposed one-way couplet. Careful consideration must be given to the design of the intersections with Punchbowl Street and Ward Avenue to prevent creating a safety hazard, given the typical speed of vehicular traffic on Ala Moana Boulevard.

6. Please consult with all landowners of parcels included in the Makai Area Plan.

If you have any questions, please call Betty Wood at 586-4185.

Sincerely,

Bruce S. Anderson

BRUCE S. ANDERSON, Ph.D.
Interim Director

BSA:bjw

cc: Wilson Okamoto & Associates



HAWAII QUALITY CONTROL AUTHORITY



KAKAKO
Kauai - Hawaii - Oahu - Maui - Molokai

John P. Walker
Executive Director

Cary Caulfield
Executive Director

Michael N. Scarfone
Executive Director

Ref. No.: PL EIS 6.20

July 1, 1994

The Honorable Bruce S. Anderson, Ph.D.
Interim Director
Office of Environmental Quality
Control

State of Hawaii
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Dear Dr. Anderson:

Re: Revised Kakaako Makai Area Plan
Supplemental Draft Environmental Impact
Statement (DEIS)
THMs: 2-1-15, 58 to 60 and
portions of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of April 5, 1994 commenting on the subject SEIS Preparation Notice. We provide the following in response to your concerns:

- Existing plans for the Mauka lots proposed for incorporation into the Makai project area will be discussed in the forthcoming Draft SEIS. We do not anticipate any significant impacts to the implementation of the Mauka Area Plan as a result of this action.
- As requested, we will provide a map depicting land ownership of parcels within the Makai Area.
- A summary of market considerations prepared in conjunction with the development strategy will be included in the forthcoming Draft SEIS.
- Plans for affordable housing requirements will be addressed in the forthcoming Draft SEIS.
- We concur with your concerns regarding potential safety hazards of the new roadway system. A safety study relative to traffic speed, however, would be premature at this time since we are only in the preliminary planning stage for the roadway couplet. In general, traffic speed depends on signal timing. A one-way road may result in somewhat faster speeds depending on signal timing, but it is actually

Honorable Bruce S. Anderson, Ph.D.
Page Two
July 1, 1994

safer for pedestrians because there is less turning and conflicting traffic movements.

6. As suggested, all landowners of parcels included within the project area will be consulted.

We appreciate your interest and participation in the consultation phase of the environmental review process.

Very truly yours,

Michael N. Scarfone
Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

7 Ala Moana Boulevard
Suite 1201
Honolulu, Hawaii
96813
Telephone
(808) 587-3370
Facsimile
(808) 599-3113



DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
Room 194, Old Federal Building
133 Merchant Street
Honolulu, Hawaii 96813
Telephone: 587-3822

ESTHER UEDA
EXECUTIVE OFFICER

We have no other comments to offer at this time.

Should you have any questions, please feel free to call me or Kathy Murakami of our office at 587-3822.

Sincerely,

ESTHER UEDA
Executive Officer

EU:KM:th

cc: Bruce S. Anderson, Ph.D., OEQC
✓Rodney Funakoshi, Wilson Okamoto & Assoc., Inc.
DBEDT (94-117-F)

April 18, 1994

Mr. Michael N. Scarfone
Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: Supplement Environmental Impact Statement (EIS)
Preparation Notice, Revised Kakaako Makai Area
Plan, Honolulu, Hawaii

We have review the subject document transmitted with your letter dated April 6, 1994, and have the following comments to offer:

- 1) We confirm that portions of the project area, as referenced by THKs 2-1: 15, 58, 59, 60, and portions of 2-1-53 through 56, are in the State Land Use Urban District. We would like to note that all submerged parcels within the plats listed above, are located within the State Land Use Conservation District, pursuant to Section 15-15-20(6), Hawaii Administrative Rules.
- 2) Based on a review of figure 3, it appears that portions of the project site may include the development of areas which are currently composed of offshore marine waters. Pursuant to Section 15-15-20(6), Hawaii Administrative Rules, these areas are located within the State Land Use Conservation District. In addition, areas of man made fill located within the State Land Use Conservation District remain in said District, unless otherwise designated by the Land Use Commission, pursuant to Chapter 205, Hawaii Revised Statutes.
- 3) We would also like to note that your letter dated April 6, 1994, appears to reference THKs: 2-1-15: parcel 58, parcel 59, and parcel 60, however, the Supplemental EIS appears to reference THKs: 2-1: plat 15, plat 58, plat 59, and plat 60. This discrepancy should be clarified.



HAWAII COASTAL AND ESTUARINE AGENCY



KAKAOKO
Where Honolulu Comes To Sea

John D. Wahe
Commissioner

Cary Caulfield
Commissioner

Michael N. Scarfone
Executive Director

Ref. No.: PL EIS 6.20

July 1, 1994

Ms. Esther Ueda
Executive Officer
Land Use Commission
State of Hawaii
Old Federal Building,
Room 104
335 Merchant Street
Honolulu, Hawaii 96813

Dear Ms. Ueda:

Re: Supplemental Environmental Impact
Statement (SEIS)
Preparation Notice, Revised Kakaako
Makai Area Plan
THKS: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of April 18, 1994 commenting on the subject SEIS Preparation Notice. We appreciate your verification of the State Land Use Urban District designation for all Tax Map Keys (TMK) identified in the project. The State Land Use Conservation District designation for all parcels of submerged land within these TMKs as well as offshore marine waters are duly noted. The discrepancies noted in TMKs will be clarified in the forthcoming Draft SEIS.

We appreciate your interest and participation in the consultation phase of the environmental review process.

Very truly yours,

Michael N. Scarfone
Executive Director

57 Ala Moana Boulevard
Suite 507
Honolulu, Hawaii
96813
Telephone
(808) 587-3279
Facsimile
(808) 595-3213



STATE OF HAWAII
DEPARTMENT OF HUMAN SERVICES
Planning Office
P.O. Box 339
Honolulu, Hawaii 96809

April 18, 1994

Mr. Michael N. Scarfone
Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: SEIS PN, Revised Kakaako Makai Area Plan,
TMK-2-1-15: 58, 59, 60, and por of 2-1-53 through 56
(PL EIS 6.19/GF ST 3.22)

Thank you for the opportunity to review this document. We have no
comments to offer at this time.

Sincerely,

Winona E. Rubin
Director

cc: OEQC
Wilson Okamoto & Associates, Inc.

WINONA E. RUBIN
DIRECTOR
LYNN K. FALLON
DEPUTY DIRECTOR
LESLIE MATTHEW
DEPUTY DIRECTOR



HAWAII COMMUNITY
DEVELOPMENT AUTHORITY



KAKAOKO
Hawaii Community Development Authority

John D. Wallace
Chairman

Gary Caulfield
Chairman

Michael N. Scarfone
Executive Director

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 561-5570
Facsimile
(808) 774-5813

Ref. No. PL EIS 6.20

July 1, 1994

The Honorable Winona E. Rubin,
Director
Planning Office
Department of Human Services
State of Hawaii
P.O. Box 339
Honolulu, Hawaii 96809

Dear Ms. Rubin:

Re: Supplemental Environmental Impact
Statement (SEIS)
Preparation Notice, Revised Kakaako
Makai Area Plan
TMKs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of April 18, 1994 (Ref. PL
EIS 6.19/GF ST 3.22) indicating that you have no comments
on the subject SEIS Preparation Notice. We appreciate
your interest and participation in the consultation phase
of the environmental review process.

Very truly yours,

Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.



STATE OF HAWAII
DEPARTMENT OF BUDGET AND FINANCE
HOUSING FINANCE AND DEVELOPMENT CORPORATION
677 QUEEN STREET, SUITE 300
HONOLULU, HAWAII 96813
FAX (808) 587-6888

JOSEPH K. CONANT
EXECUTIVE DIRECTOR

WE REFER TO:
94.PPE/2597

April 19, 1994

TO: Michael N. Scarfone, Executive Director
Hawaii Community Development Authority

FROM: Joseph K. Conant
Executive Director

SUBJECT: Supplemental Environmental Impact Statement
Preparation Notice for the Revised Kakaako Makai Area
Plan

We have reviewed the subject document and offer the following comments.

Strategies in the State Housing Functional Plan seek to expand the supply of affordably priced for-sale and rental units through joint public/private sector efforts. This issue should be addressed in the Supplemental EIS.

Thank you for the opportunity to comment.

C: OEQC
Wilson Okamoto & Associates



John D. Walker
Executive Director

Cary Cusick
Executive Director

Michael N. Scarfone
Executive Director

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 587-6888
Facsimile
(808) 587-6888

Ref. No.: PL EIS 6.20

July 1, 1994

Mr. Joseph K. Conant,
Executive Director
Housing Finance and
Development Corporation
State of Hawaii
677 Queen Street, Suite 300
Honolulu, Hawaii 96813

Dear Mr. Conant:

Re: Supplemental Environmental Impact
Statement (SEIS)
Preparation Notice, Revised Kakaako
Makai Area Plan
TWKs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of April 19, 1994 (Ref. 94.PPE/2597) commenting on the subject SEIS Preparation Notice. As suggested, we will incorporate into the forthcoming Draft SEIS a discussion of strategies cited in the State Housing Functional Plan which encourage expansion of the affordable housing supply.

We appreciate your interest and participation in the consultation phase of the environmental review process.

Very truly yours,

Michael N. Scarfone
Michael N. Scarfone
Executive Director



STATE OF HAWAII

DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES

P. O. BOX 114, HONOLULU, HAWAII 96810

ROBERT P. TAKUSHI
COMPTROLLER

LLOYD LUREBAGAWA
DEPUTY COMPTROLLER

LETTER NO. (P) 1310.4

JOHN WANEZ
COUNCILOR

APR 26 1994

Michael N. Scarfone, Executive Director
Hawaii Community Development Authority
577 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: Revised Kakaako Makai Area Plan
Honolulu, Hawaii
Supplemental EIS Preparation Notice

Thank you for the opportunity to review the subject EIS
Preparation Notice. The following comments are provided:

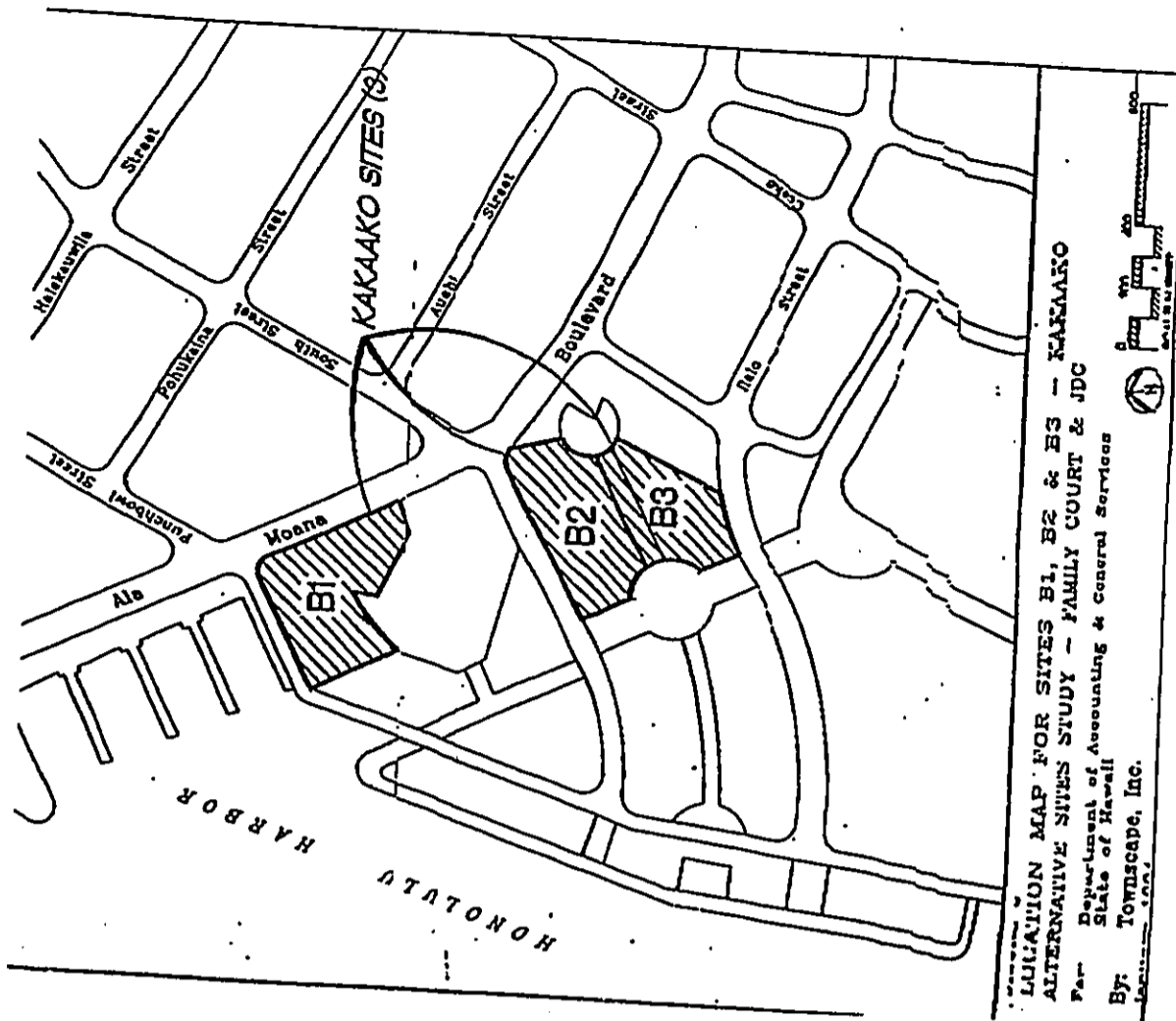
1. DAGS is near completion of the Family Court & Juvenile
Detention Centers Alternative sites study for the
Judiciary.
2. This study has identified six sites which can be
considered for siting the Family Court Center, three
of which are located in the Kakaako Makai development
area, as shown in the attachment.

If there are any questions regarding the above, please have
your staff call Mr. Ralph Yukumoto of the Planning Branch at
586-0488.

Very truly yours,

Gordon Matsuoka
GORDON MATSUOKA
State Public Works Engineer

RY:ln
Attachment



LOCATION MAP FOR SITES B1, B2 & B3 - KAKAAKO
ALTERNATIVE SITES STUDY - FAMILY COURT & JDC
Prepared by: Department of Accounting & General Services
State of Hawaii
By: Townscape, Inc.



HAWAII COUNTY
ENVIRONMENTAL AGENCY



'ĀKĀKO
Keep Hawaii Clean and Safe

John D. Wake
Chairman

Gary Caulfield
Commissioner

Michael N. Scarfone
Business Director

1441 Kamehameha Boulevard
Suite 100
Honolulu, Hawaii
96813
Telephone
(808) 587-5870
Facsimile
(808) 597-3113

Ref. No.: PL EIS 6.20

July 1, 1994

Mr. Gordon Matsuoka
State Public Works Engineer
Department of Accounting
and General Services
State of Hawaii
P.O. Box 119
Honolulu, Hawaii 96810

Dear Mr. Matsuoka:

Re: Supplemental Environmental Impact
Statement (SEIS)
Preparation Notice, Revised Kakaako
Makai Area Plan
TMKs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of April 26, 1994 (Ref. Letter No. (P)1310.4) commenting on the subject SEIS Preparation Notice. References to the Family Court and Juvenile Detention Centers Alternatives Sites Study are duly noted. Should one of these sites be selected, please note the revised street layout, planned land uses, and urban design characteristics of these areas. These will be described in the forthcoming Draft SEIS. We appreciate your interest and participation in the consultation phase of the environmental review process.

Very truly yours,

Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

JOHN WALKER
DIRECTOR OF HEALTH



STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3473
HONOLULU, HAWAII 96813

JOHN C. LEWIN, M.D.
DIRECTOR OF HEALTH

In reply, please refer to:

May 2, 1994

94-064/epo

Mr. Michael N. Scarfone
Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: Supplemental Environmental Impact Statement (EIS)
Preparation Notice
Revised Kakaako Makai Area Plan
Honolulu, Hawaii
TKNs: 2-1-15; 58, 59, & 60 and por. of 2-1-53 through 56

Thank you for allowing us to review and comment on the subject project. We do not have any comments to offer at this time. However, we would like to review a copy of the Supplemental Draft Environmental Impact Statement.

Very truly yours,

John C. Lewin
JOHN C. LEWIN, M.D.
Director of Health

c: Office of Environmental Quality Control
Wilson Okamoto & Associates Inc.



OFFICE OF ENVIRONMENTAL QUALITY CONTROL
DEPARTMENT OF HEALTH



John D. Wight
Executive Director

Gary Caudill
Executive Director

Michael N. Scarfone
Executive Director

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 587-3070
Facsimile
(808) 779-3813

Ref. No.: PL EIS 6.20

July 1, 1994

The Honorable John C. Lewin, M.D.
Director of Health
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Dr. Lewin:

Re: Supplemental Environmental Impact
Statement (SEIS)
Preparation Notice, Revised Kakaako
Makai Area Plan
TKNs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
HONOLULU, OAHU, HAWAII

Thank you for your letter of May 2, 1994 (Ref. 94-064/epo) indicating that you have no comments on the subject SEIS Preparation Notice. We appreciate your interest and participation in the consultation phase of the environmental review process.

Very truly yours,

Michael N. Scarfone
Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.



DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM

ENERGY DIVISION, 333 KAPALANUI ST., RM. 115, HONOLULU, HAWAII 96813 PHONE: (808) 587-3400 FAX: (808) 587-3428

Director
MURRAY HANAUSSER
Deputy Director
JAMES SCHULTZ
Deputy Director
ERIC LOOHD
Deputy Director
MARIKA YOSHIZAKA
Deputy Director



HAWAIIAN ENERGY AUTHORITY



KAKAOKO
Hawaii's Renewable Energy Program

Mr. Michael N. Scarfone, Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

May 3, 1994

Dear Mr Scarfone:

Subject: Supplemental Environmental Impact Statement (EIS)
Preparation Notice
Revised Kakaako Makai Area Plan
Tax Map Key Numbers: 2-1-15: 58, 59 and 60 and
portions of 2-1-53 through 56
Honolulu, Hawaii

This is to inform you that we have no comments on the subject Revised
Kakaako Makai Area Plan Supplemental EIS Preparation Notice.

Thank you for the opportunity to comment on the subject EIS.

Sincerely,

Maurice H. Keys

Maurice H. Keys
Energy Program Administrator

MHK/hkels106

cc: Director, OEQC

Ref. No. PL EIS 6.20

July 1, 1994

The Honorable Maurice H. Kaya
Energy Program Administrator
Energy Division
Department of Business,
Economic Development & Tourism
State of Hawaii
335 Merchant Street, Room 110
Honolulu, Hawaii 96813

Dear Mr. Kaya:

Re: Supplemental Environmental Impact
Statement (SEIS)
Preparation Notice, Revised Kakaako
Makai Area Plan
TMNs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of May 3, 1994 indicating
that you have no comments on the subject SEIS Preparation
Notice at this time. We appreciate your interest and
participation in the consultation phase of the
environmental review process.

Very truly yours,

Michael N. Scarfone

Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 587-3470
Facsimile
(808) 587-3413



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 821
HONOLULU, HAWAII 96809

REF:OCEA:SKK

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF THE CHIEF OF BUREAU OF CONSERVATION

AGRICULTURE DEVELOPMENT
LAND AND NATURAL RESOURCES
PLANNING AND OCEAN REGULATION
CONSERVATION AND
ENVIRONMENTAL AFFAIRS
DEVELOPMENT AND
CONSERVATION
CONSERVATION
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND MANAGEMENT
WATER AND LAND DEVELOPMENT

FILE NO.: 94-586
DOC. NO.: 4437

MAY 10 1994

Mr. Michael N. Scarfone, Executive Director
Hawaii Community Development Authority
677 Ala Heana Blvd., Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

SUBJECT: Supplemental Environmental Impact Statement Preparation Notice
(SEISPN); Revised Kakaako Makai Area Plan, Honolulu, Oahu,
TMKs 2-1-15: 59-60, and pers. 2-1-53 through 56

We have reviewed the SEISPN information transmitted by your letter dated
April 6, 1994, and have no comments to offer at this time.

We will forward any historic preservation concerns as they become
available.

Thank you for the opportunity to comment in this process.

Please feel free to call Steve Tagawa at our Office of Conservation and
Environmental Affairs, at 587-0377, should you have any questions.

Very truly yours,

Keith W. Ahue
KEITH W. AHUE

cc: OEQC
Rodney Furukoshi, Wilson Okamoto
& Assoc., Inc.



John D. Wulke

Cary Caulfield

Michael N. Scarfone
Executive Director

677 Ala Heana Boulevard
Suite 1001
Honolulu, Hawaii
Telephone
(808) 527-3270
Facsimile
(808) 529-3411

Ref. No.: PL EIS 6.20

July 1, 1994

The Honorable Keith W. Ahue,
Chairperson
Department of Land
and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Ahue:

Re: Supplemental Environmental Impact
Statement (SEIS)
Preparation Notice, Revised Kakaako
Makai Area Plan
TMKs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of May 10, 1994 (File 94-
586, Doc. No. 4437) indicating that you have no comments
on the subject SEIS Preparation Notice. We appreciate
your interest and participation in the consultation phase
of the environmental review process.

Very truly yours,

Michael N. Scarfone
Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

Herman M. Aizawa
Superintendent

FACILITIES' COPY



STATE OF HAWAII
DEPARTMENT OF EDUCATION
P. O. BOX 2208
HONOLULU, HAWAII 96810

May 10, 1994

OFFICE OF THE SUPERINTENDENT

Mr. Michael N. Scarfone -2- May 10, 1994

2) Royal Elementary School is currently at capacity and cannot expand due to a limited campus size. The present enrollment of the school is 395 students. An additional 300 students from this area of development alone will nearly double the size of the school. Even if year-round/multi-track education is implemented, the school cannot accommodate all of the students from the area. Assuming there are no additional developments in the Makai area, some of the elementary developments will be inconvenienced by having to attend school outside of the service area either by busing to other schools or by filing for geographic exceptions.

The Mauka Area Plan for Kakaako also includes plans for various residential developments. There is currently no school site identified in the area. The DOE recommends that the Hawaii Community Development Authority (HCDA) assist the DOE in identifying a school site(s) in the area to accommodate students from Kakaako. A determination of the number of sites should be discussed between the HCDA and the DOE.

3) Central Intermediate School should be able to accommodate the students from the area in the long term. However, since the facility will be undergoing renovation of the old buildings, some capacity will be unavailable during reconstruction of wings of the main buildings.

4) McKinley High School is already operating at capacity and will be required to accommodate students from the Mauka Area of Kakaako. The additional students from the Makai Area will create additional stress on the high school.

5) The DOE will be requiring developers to contribute a fair share for the development of facilities to accommodate the students. The contribution will be utilized only on the impacted schools and will represent only a small portion of the total costs of servicing the students who are generated by the Makai Area development.

Mr. Michael N. Scarfone
Executive Director
Department of Housing and
Community Development
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

SUBJECT: Supplemental Environmental Impact Statement
Preparation Notice - March 1994
Revised Kakaako Makai Area Plan

The Department of Education (DOE) has reviewed the subject document and has the following comments regarding the proposed plan:

1) The addition of 1,500 residential units on privately owned lands and 1,500 additional residential units on State-owned lands will have a significant impact on the public schools. The projected enrollment figures for the total 3,000 units are:

SCHOOL	GRADES	PROJECTED ENROLLMENT
Royal Elementary	K-5	300
Central Intermediate	6-8	60
McKinley High	9-12	90

Please note that the factors utilized to estimate the projected number of students are less than the average statewide factors utilized for residential-housing developments. Hence, they represent a conservative estimate and should not be questioned.

Mr. Michael N. Scarfone

-3-

May 10, 1994

6) We note that on page 3-10 the impacts associated with the support infrastructure systems and services will be addressed during the Draft Supplemental Environmental Impact Statement (EIS). We will make additional comments at the time the Draft EIS is circulated.

Should there be any questions, please call the Facilities Branch at 737-4743.

Sincerely,

Herman M. Aizawa

Herman M. Aizawa, Ph.D.
Superintendent

HMA:hy/cl

cc: A. Suga, OBS
E. Masagatani, HDO
B. Anderson, OEQC
✓ R. Funakoshi, Wilson, Okamoto, & Assoc., Inc.



HAWAII COMMUNITY DEVELOPMENT AUTHORITY



KAKAOKO
Water Wastewater Control Plant

John D. Washie
Chairman

Gary Caulfield
Chairman

Michael N. Scarfone
Executive Director

Ref. No. PL EIS 6.20

July 1, 1994

The Honorable Herman M. Aizawa, Ph.D.
Superintendent
Department of Education
State of Hawaii
P.O. Box 2360
Honolulu, Hawaii 96804

Dear Dr. Aizawa:

Re: Supplemental Environmental Impact Statement (SEIS) Preparation Notice, Revised Kakaako Makai Area Plan
THKs: 2-1-15, 58 to 60 and portions of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of May 10, 1994 commenting on the subject SEIS Preparation Notice. We acknowledge the present inadequacies with school facilities in the vicinity of Kakaako and will endeavor to coordinate our planning efforts with your department to ensure that the educational facilities will be available to accommodate students from the project. We very much appreciate the planning information you have provided as part of the consultation phase of the environmental review process.

Very truly yours,

Michael N. Scarfone
Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 567-3670
Facsimile
(808) 596-3413

JOHN WASKER
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
809 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

June 6, 1994

Mr. Michael N. Scarfone
Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: Supplemental Environmental Impact Statement
Preparation Notice (EISFN)
Revised Kakaako Makai Area Plan
TMK: 2-1-15: 58, 59, & 60; portions of 2-1-53
through 56

A Traffic Impact Analysis Report (TIAR) must be submitted for our review. It should identify the measures required to mitigate any adverse traffic impacts resulting from the revised plan. These measures should include both the long-term and interim improvements to Ala Moana Boulevard and affected intersections.

Plans for work within the State highway right-of-way must be coordinated and approved by our department. The cost of all required roadway improvements will be borne by the developer.

Additional comments may be forthcoming after we have reviewed the TIAR and draft environmental impact statement.

We appreciate the opportunity to provide comments.

Sincerely,

Rex D. Johnson
Director of Transportation

c: Dr. Bruce S. Anderson, OEQC
Mr. Rodney Funakoshi, Wilson Okamoto & Assoc., Inc.

REX D. JOHNSON
DIRECTOR
DEPUTY DIRECTOR
JANIS HOLT
GLENN H. HARRIS
JOYCE T. KUMAR
CALVIN A. TSUDA

IN REPLY REFER TO:
STP 8.6064



HAWAII COMMUNITY
DEVELOPMENT AUTHORITY



KAKAOKO
Maui Kakaako Center, Inc.

John D. Washie
Chairman

Gary Caulfield
Chairman

Michael N. Scarfone
Executive Director

67 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 567-3070
Facsimile
(808) 567-3413

Ref. No. PL EIS 6.20

July 11, 1994

The Honorable Rex D. Johnson
Director of Transportation
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

Dear Mr. Johnson:

Re: Supplemental Environmental Impact
Statement (SEIS)
Preparation Notice, Revised Kakaako
Makai Area Plan
TMKs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of June 6, 1994 (Ref. STP 8.6064) commenting on the subject SEIS Preparation Notice. A transportation study which includes a traffic impact analysis has been prepared in conjunction with the Draft SEIS. As required, we will consult with your agency regarding any work proposed within the State highway right-of-way.

We appreciate your interest and participation in the consultation phase of the environmental review process.

Very truly yours,

Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813



KENNETH E. SPRAGUE
DIRECTOR AND CHIEF ENGINEER

ENV 94-112



John D. Wahee
Commissioner

Cory Caulfield
Commissioner

Michael N. Scarfone
Business Director

677 Ala Moana Boulevard
Suite 2011
Honolulu, Hawaii
1511
Telephone
(808) 527-2770
Facsimile
(808) 527-2610

Ref. No.: PL EIS 6.20
July 1, 1994

The Honorable Kenneth E. Sprague
Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Sprague:

Re: Supplemental Environmental Impact
Statement (SEIS)
Preparation Notice, Revised Kakaako
Makai Area Plan
TKMs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
HONOLULU, OAHU, HAWAII

Thank you for your comments of April 18, 1994 (Ref. ENV 94-112) regarding the subject SEIS preparation Notice. Requisite review and consultation with the Department of Transportation Services (DTS) and the State Department of Transportation (DOT) will be completed prior to final design of the roadway system. We also intend to consult with the Accessibility Guidelines as prescribed by the Americans with Disabilities Act, and will incorporate these guidelines into the project's design as required. A Best Management Practices (BMP) Plan will be prepared in conjunction with the National Pollutant Discharge Elimination System (NPDES) Permit(s) anticipated for the project. Where possible, BMPs will be applied in open spaces and recreational areas to minimize the potential for discharge of pollutants to State Waters.

We appreciate your interest and participation in the consultation phase of the environmental review process.

Very truly yours,

Michael N. Scarfone
Michael N. Scarfone
Executive Director

Mr. Michael N. Scarfone
Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: Supplemental Environmental Impact
Statement Preparation Notice (SEIS/SPN)
Revised Kakaako Makai Area Plan
TKM: 2-1-15: 58, 59 and 60/
POR. of 2-1-53 Thru 56

We have reviewed the subject SEIS/SPN and have the following comments:

1. Frontage improvements within the City right-of-way should be constructed in accordance with the City standards as well as the Americans with Disabilities Act Accessibility Guidelines.
2. Recommend Best Management Practices (BMPs) be incorporated in open spaces/recreational areas to minimize the discharge of pollutants into Kevalo Basin and Mamala Bay from storm water runoff.

Should you have any questions, please contact Mr. Alex Ho, Environmental Engineer, at 523-4150.

Very truly yours,

Alex Ho
KENNETH E. SPRAGUE
Director and Chief Engineer

cc: OEQC
Wilson Okamoto & Associates, Inc.
Mr. Rodney Funakoshi

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU
801 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 - AREA CODE (808) 935-3111



MICHAEL S. NAKAMURA
CHIEF
HAROLD M. KAWASAKI
DEPUTY CHIEF

FRANK F. FASI
MAYOR

OUR REFERENCE BS-MK

April 25, 1994

Mr. Michael N. Scarfone
Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: Supplemental Environmental Impact Statement (EIS)
Preparation Notice
Revised Kakaako Makai Area Plan
TMKs: 2-1-15: 58, 59 and 60 and portions of
2-1-53 through 56, Honolulu, Hawaii

This is in response to your request for comments on the Revised Kakaako Makai Area Plan Supplemental EIS Preparation Notice.

The changes proposed in the supplemental plan are expected to have no significant impact on police services. We have no additional comments to make at this time.

Thank you for the opportunity to review this document.

Sincerely,

MICHAEL S. NAKAMURA
Chief of Police

BY *Eugene Uemura*

EUGENE UEMURA
Assistant Chief of Police
Administrative Bureau

cc: Office of Environmental
Quality Control
Wilson Okamoto & Associates



John D. Wallace
Counselor

Gary Caulfield
Counselor

Michael N. Scarfone
Executive Director

Ref. No.: PL EIS 6.20

July 1, 1994

The Honorable Michael S. Nakamura
Chief of Police
Police Department
City and County of Honolulu
801 South Beretania Street
Honolulu, Hawaii 96813

Dear Mr. Nakamura:

Re: Supplemental Environmental Impact
Statement (SEIS)
Preparation Notice, Revised Kakaako
Makai Area Plan
TMKs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of April 25, 1994 (Ref. BS-WK) indicating that the subject project is not anticipated to have significant impact on police services. We appreciate your interest and participation in the consultation phase of the environmental review process.

Very truly yours,

Michael N. Scarfone

Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

677 Ala Moana Boulevard
Honolulu, Hawaii 96813
Telephone
(808) 521-2570
Facsimile
(808) 521-2613

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
3375 KOAPAKA STREET, SUITE H425
HONOLULU, HAWAII 96819-1869



May 3, 1994

Mr. Michael N. Scarfone
Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Re: Supplemental Environmental Impact Statement (EIS) Preparation Notice
Revised Kakaako Makai Area Plan
TMKs: 2-1-15: 58, 59 and 60 and portions of 2-1-53 through 56
Honolulu, Hawaii

We have reviewed the application and made an on-site assessment of the Revised Kakaako Makai Area Plan, Supplemental Environmental Impact Statement Preparation Notice, and have no objections to the proposal providing the following conditions are complied with prior to approval. Compliance with Article 10 of the Uniform Fire Code should also be made, but not limited to the following:

1. Submit construction plans to the Building Department and the Honolulu Fire Department for review and approval before starting the project.
2. Maintain fire accessibility of all existing fire connections.
3. Ambulatory service is not provided by the Honolulu Fire Department.

If you have any further questions, please call Captain Miles Fonseca of our Fire Prevention Bureau, Plans Examining Section at 523-4186.

Very truly yours,

Richard R. Seto-Mook
RICHARD R. SETO-MOOK
Acting Fire Chief

MF:ga

FRANK P. PARR
20109

RICHARD R. SETO-MOOK
ACTING FIRE CHIEF



HAWAII COUNTY
DEVELOPMENT AUTHORITY



John D. Walsh
General Manager

Gary Caulfield
Assistant Manager

Michael N. Scarfone
Executive Director

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 587-2800
Facsimile
(808) 595-3413

Ref. No.: PL EIS 6.20

July 1, 1994

The Honorable Richard R. Seto-Mook
Fire Chief
Fire Department
City and County of Honolulu
3375 Koapaka Street, Suite H425
Honolulu, Hawaii 96819-1869

Dear Mr. Seto-Mook:

Re: Supplemental Environmental Impact
Statement (SEIS)
Preparation Notice, Revised Kakaako
Makai Area Plan
TMKs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of May 3, 1994 commenting on the subject project. We will comply with Article 10 of the Uniform Fire Code, and will incorporate all required elements of the Code into the project's design. All construction plans will be submitted to the Building and Fire Departments for review and approval. In addition, accessibility to all retained fire connections will be maintained as requested.

We appreciate your interest and participation in the consultation phase of the environmental review process.

Very truly yours,

Michael N. Scarfone
Michael N. Scarfone
Executive Director

DEPARTMENT OF WASTEWATER MANAGEMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813



FRANK FARI
DIRECTOR

KENNETH M. RAPPOLT
DIRECTOR

FELIX B. LIMTIACO
DEPUTY DIRECTOR

WPP 94-160

May 9, 1994

Mr. Michael N. Scarfone
Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: Supplemental EIS Preparation Notice
Revised Kakaako Makai Area Plan
TKMs: 2-1-15, 58, 60 and POR 2-1-3 through 56

We have reviewed the EIS preparation notice for the subject project. The existing municipal wastewater facilities are inadequate to service this project; there is no improvement planned within the six-year CIP.

Thank you for the opportunity to review the supplemental EIS preparation notice.

If you have any questions, please call Tessa Yuen at 527-6732.

Very truly yours,

KENNETH M. RAPPOLT
Director

cc: DOH (Bruce Anderson)
Wilson Okamoto & Assoc. (Rodney Funakoshi)



HAWAII COMMUNITY
DEVELOPMENT AUTHORITY



KAKAOKO
Many Hands Make The Work

John D. Washer
Chairman

Gary C. Caulfield
Chairman

Michael N. Scarfone
Executive Director

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 527-2870
Facsimile
(808) 527-2813

Ref. No. PL EIS 6.20

July 1, 1994

The Honorable Kenneth M. Rappolt,
Director
Department of Wastewater Management
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Rappolt:

Re: Supplemental Environmental Impact
Statement (SEIS)
Preparation Notice, Revised Kakaako
Makai Area Plan
TKMs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of May 9, 1994 (Ref. WPP 94-160) commenting on the subject SEIS Preparation Notice. We are aware of the present inadequacies in the project area and will coordinate with your agency to ensure that the wastewater facilities and services comply with your requirements. We appreciate your interest and participation in the consultation phase of the environmental review process.

Very truly yours,

Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.



COPY



COPY

May 9, 1994

Mr. Michael N. Searfone, Executive Director
Hawaii Community Development Authority
State of Hawaii
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Searfone:

Subject: Supplemental Environmental Impact Statement Preparation Notice (EISPN)
for the Revised Kakaako Makai Area Plan, TMRs: 2-1-15: 58, 59, and 60 and
Portions of 2-1-53 through 56, Honolulu, Hawaii

Thank you for the opportunity to review and comment on the EISPN for the revised
Kakaako Makai Area Plan.

We have the following comments to offer:

1. The developer will be required to install the necessary water system improvements including water sources to serve the proposed development.
2. The developer is required to submit a revised water master plan for the Kakaako Mauka and Makai Areas for our review and approval. Estimated water requirements and proposed water facilities should be shown with supporting calculations for peak hour pressures and fire flows at maximum day demand.
3. The developer may be required to participate in an off-site transmission main to transport water to the Kakaako area.
4. The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.
5. If a three-inch or larger meter is required to serve the project, construction drawings showing the installation of the meter should be submitted for our review and approval.

Mr. Michael N. Searfone
Page 2
May 9, 1994

6. The proposed project is subject to Board of Water Supply cross-connection control requirements prior to the issuance of the building permit application.

If you have any questions, please contact Barry Usagawa at 527-5235.

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer

cc: Office of Environmental Quality Control
Attention: Bruce S. Anderson, Ph.D.

Wilson Okamoto and Associates, Inc.
Attention: Mr. Rodney Funakoshi



WORLD COMMUNITY DEVELOPMENT ASSOCIATION



John D. Walker
Executive Director

Cory Casfield
Executive Director

Michael N. Scarfone
Executive Director

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 587-3370
Facsimile
(808) 594-3111

940896

Ref. Nos.: PL EIS 6.19/
GF COUN 5.12

April 6, 1994

The Honorable Kazu Hayashida
Page Two
April 6, 1994

The Honorable Kazu Hayashida
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96813

Wilson Okamoto & Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
Attention: Mr. Rodney Funakoshi
Project Manager

In order to be included in the forthcoming Supplemental Draft EIS, your comments must be postmarked by May 9, 1994. We appreciate your input to this EIS Preparation Notice.

Dear Mr. Hayashida:

Re: Supplemental Environmental Impact Statement
(EIS) Preparation Notice
Revised Kakaako Makai Area Plan
TRMs: 2-1-15: 58, 59 and 60 and portions of
2-1-53 through 56
Honolulu, Hawaii

Very truly yours,

Michael N. Scarfone
Michael N. Scarfone
Executive Director

MNS/RK:gst
Enc.

Enclosed for your review is a copy of the Revised Kakaako Makai Area Plan Supplemental EIS Preparation Notice which was prepared pursuant to Chapter 343, Hawaii Revised Statutes, and Chapter 200 of Title 11, Department of Health Administrative Rules. The document will be published in the April 8 bulletin of the Office of Environmental Quality Control (OEQC). Please send your original comments regarding the subject document to:

Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813
Attention: Mr. Michael N. Scarfone
Executive Director

Additionally, we request that copies of the comments be sent to the following parties:

Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, Hawaii 96813
Attention: Bruce S. Anderson, Ph.D.
Interim Director



John D. Washer
Executive Director

Gary Chulifield
Assistant Director

Michael N. Scarfone
Executive Director

67 Ala Moana Boulevard
Suite 1007
Honolulu, Hawaii
96813
Telephone
(808) 587-3570
Facsimile
(808) 599-3413

REVISED KAKAOKO MAKAI AREA PLAN

SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE

Prepared for:

STATE OF HAWAII
HAWAII COMMUNITY
DEVELOPMENT AUTHORITY

Prepared by:

WILSON OKAMOTO & ASSOCIATES, INC.

March 1994

Ref. No.: PL EIS 6.20

July 1, 1994

The Honorable Kazu Hayashida
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South King Street
Honolulu, Hawaii 96813

Dear Mr. Hayashida:

Re: Supplemental Environmental Impact
Statement (SEIS)
Preparation Notice, Revised Kakaako
Makai Area Plan
THKS: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of May 9, 1994 commenting
on the subject SEIS Preparation Notice.

As requested, a water master plan will be prepared
and submitted for your review and approval. The design
and construction plans for the project will be
coordinated with your agency to ensure that the integrity
of water facilities and services in the area is
maintained. The project will comply with all
requirements and recommendations stated in your letter
including consultation with the Honolulu Fire Department
Fire Prevention Bureau regarding on-site fire protection
requirements.

We appreciate your interest and participation in the
consultation phase of the environmental review process.

Very truly yours,

Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU
150 SOUTH KING STREET
HONOLULU, HAWAII 96813



FRANK FARR
SECRET

WALTER M. OZAWA
DIRECTOR
ALVIN K. AU
DEPUTY DIRECTOR

May 9, 1994

Mr. Michael Scarfone, Executive Director
Hawaii Community Development Authority
Department of Business & Economic Development
State of Hawaii
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: Supplemental Environmental Impact Statement
Preparation Notice
Revised Kakaako Makai Area Plan
Tax Map Keys 2-1-015: 058, 059 and 060 and
Portions of 2-1-053 through 056
Honolulu, O'ahu, Hawaii
Ref. Nos.: PL EIS 6.19/GF COUN 5.14

The revised plan for the proposed project will create much needed park space for area residents, therefore, we support the project. Active parks for organized games and team sports and the open waterfront park should enhance the recreational aspects of this plan over the previous one.

Thank you for the opportunity to comment on this project.

Should you have any questions, please contact Lester Lai of our Advance Planning Branch at 523-4696.

Sincerely,

For WALTER M. OZAWA, Director

WMO:ei

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates



HAWAII COMMUNITY
DEVELOPMENT AUTHORITY



KAKAAKO
Hawaii Honolulu Oahu The Sea

John D. Wallace
Chairman

Cary Canfield
Chairman

Michael N. Scarfone
Executive Director

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 527-3200
Facsimile
(808) 595-3413

Ref. No. PL EIS 6.20

July 1, 1994

The Honorable Walter M. Ozawa,
Director
Department of Parks and Recreation
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Ozawa:

Re: Supplemental Environmental
Impact Statement (SEIS)
Preparation Notice, Revised Kakaako
Makai Area Plan
THKs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of May 9, 1994 (Ref. PL EIS 6.19/GF COUN 5.14) commenting on the subject SEIS Preparation Notice. We very much appreciate your support for the project and its park and recreational components.

Very truly yours,

Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

850 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 533-4277 FAX: (808) 531-8488



FRANK P. ...

GAIL M. KAITO
Acting Director
RONALD S. LIM
Acting Deputy Director



Mr. Michael N. Scarfone, Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

MAY 18, 1994

Dear Mr. Scarfone:

Subject: Supplemental Environmental Impact Statement (EIS)
Preparation Notice
Revised Kakaako Makai Area Plan
Tax Map Keys: 2-1-15; 58, 59 and 60 and Portions of
2-1-53 through 55
Honolulu, Hawaii

We would like to reserve any comment until we have had an opportunity to review the affordable guidelines for the residential community that will be contained in the plan amendment for the Kakaako Makai Area Plan.

Should you have any questions, please contact Jason Ching of our Planning and Analysis Division at 523-4366.

Thank you for the opportunity to comment.

Signature
RONALD S. LIM
Acting Director

Ref. No. PL EIS 6.20

July 1, 1994

Mr. Ronald S. Lim,
Acting Deputy Director
Department of Housing
and Community Development
City and County of Honolulu
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Lim:

Re: Supplemental Environmental Impact
Statement (SEIS)
Preparation Notice, Revised Kakaako
Makai Area Plan
THKs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of May 18, 1994 indicating that you have no comments to offer on the subject SEIS Preparation Notice at this time. We appreciate your interest and participation in the consultation phase of the environmental review process.

Very truly yours,

Signature
Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
Telephone
(808) 522-2070
Facsimile
(808) 529-2613

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

PACIFIC PARK PLAZA
711 KAPOLAHU BOULEVARD, SUITE 1500
HONOLULU, HAWAII 96813



FRANK F. FARI
MAYOR

JOSEPH M. MASALDI, JR.
DIRECTOR
AMAR RAFFAL
DEPUTY DIRECTOR

TE-1546
PL94.1.110
PL EIS 6.19/
GF COUN 5.17

May 24, 1994

Mr. Michael N. Scarfone
Page 2
May 24, 1994

4. We understand that a traffic impact study will be prepared as part of the Draft Supplemental EIS. We will provide more specific comments when we review this portion of the report.

If you have any questions, please contact Mel Hirayama of my staff at 523-4119.

Sincerely,

JOSEPH M. MASALDI, JR.
Director

Mr. Michael N. Scarfone
Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: Kakaako Makai Area Plan
Supplemental Environmental Impact Statement
Preparation Notice (SEISPN)
Tax Map Key: 2-1-15: 58, 59 & 60; 2-1-53 to 56

This is in response to your letter dated April 6, 1994 requesting our comments on the SEISPN for the subject plan.

Based on our review, we have the following comments which should be addressed in the revised Makai Area Plan and the Draft Supplemental EIS:

1. The jurisdictional limits of the roadways within the area should be specified. These limits should be designated as State, City, and park or private road. Our department will primarily be involved in the review of those roadways which are designated as City.
2. City designated roadways should be designed to all applicable City standards.
3. Roadway cross-sections of all City designated streets should be provided and should conform to typical City roadway sections. Modifications to these sections should be specified and the reasons for the nonconformity justified.

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates



HAWAIIAN ISLANDS
DEVELOPMENT AUTHORITY



KAKAIAKO
When Honolulu Comes To You

John D. Walker
Commissioner

Gary Caulfield
Commissioner

Michael N. Scarfone
Executive Director

Ref. No.: PL EIS 6.20

July 1, 1994

The Honorable Joseph M. Magaldi, Jr.,
Director
Department of Transportation Services
City and County of Honolulu
Pacific Park Plaza
711 Kapiolani Boulevard, Suite 1200
Honolulu, Hawaii 96813

Dear Mr. Magaldi:

Re: Supplemental Environmental Impact
Statement (SEIS)
Preparation Notice, Revised Kakaiko
Makai Area Plan
TRMS: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of May 24, 1994 (Ref. TE-1546, PL94.1.110, PL EIS 6.19/CP COUN 5.17) commenting on the subject SEIS Preparation Notice. The following is provided in response to your comments.

1. Jurisdiction of roadways will be indicated in the Draft SEIS.
2. City designated roads will be designed to meet applicable standards, and road improvements will be closely coordinated with your office.
3. Typical roadway sections will be included in the Draft SEIS.
4. A traffic impact study is being prepared for the project, and will be included in the forthcoming Draft SEIS.

Honorable Joseph M. Magaldi, Jr.
Page Two
July 1, 1994

We appreciate your interest and participation in the consultation phase of the environmental review process.

Very truly yours,

Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

67 Ala Moana Boulevard
Suite 1021
Honolulu, Hawaii
96813
Telephone
(808) 537-3200
Facsimile
(808) 537-3111



DOWNTOWN NEIGHBORHOOD BOARD NO. 13

140 NEIGHBORHOOD COMMISSION • CITY HALL, ROOM 400 • HONOLULU, HAWAII 96813

description on how it will be reintegrated into two way traffic at both ends.

Our board members have been following the development of Kakaako with varying levels of interest over the years. For that reason, we would like each of our members to be consulted in the preparation of the EIS.

Sincerely,
Linda Martell

Linda Martell, Chair

cc: OEQC; Wilson Okamoto & Associates

May 6, 1994

Mr. Michael N. Scarfone
Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, HI 96813

Re: Supplemental EIS Prep Notice, Revised Kakaako Makai Area Plan

Dear Mike:

Thank you for the opportunity to comment on the above referenced item.

The Downtown Neighborhood Board #13 is pleased that the amphitheatre and inland waterways will be dropped from the plan. As you know, we have long believed that the inclusion of those two items was ill advised and we have repeatedly asked that they be dropped. We are glad you support our position that the space taken up by the now discarded waterways will be devoted to parks. We would like the EIS to address what type of parks and specifically when the active recreation areas will come on line.

Regarding the transfer of some of the mauka portion to the makai area, we would like the EIS to show which businesses will be affected by the switch and how. Will the light industrial space in that area be preserved? We would also like the EIS to explain how the 7.53 million square feet of floor area stays the same if area from the mauka portion is going to be transferred to the makai portion.

We were very surprised that there was no mention of the proposed wellness center. Given the time your board has spent on this subject and the amount of space devoted to it in your latest newsletter, we cannot understand why it was not addressed. We would like the EIS to discuss the benefits and drawbacks of the proposed center, how it will impact on traffic and infrastructure, how it will impact on current medical facilities on Oahu, how it will complement and compete with the proposed wellness facility for Ewa, and how it will be used by locals and non-residents.

We would also like the EIS to address the danger of earthquakes, tsunamis, and flooding. The prep notice states, "much of Kakaako is subject to localized flooding because of its flat topography and inadequate drainage facilities." What will be done to mitigate this situation? We would also like the EIS to address the nature of infrastructure problems in phase I.

We would like to know how the area of open space between buildings linked in a continuous public realm of parks, walks and courtyards will be secured. Will the homeless and prostitutes be attracted to the area?

Regarding the new one way street pattern for part of Ala Moana Boulevard, we would like a





HAWAII QUALITY
ENVIRONMENT AGENCY



KAKAIAKO
Where Honolulu Comes To Be

John D. Walker
Chairman

Gary Caulfield
Chairman

Michael N. Scarfone
Executive Director

Ref. No.: PL EIS 6.20

July 1, 1994

Ms. Linda Martell, Chair
Downtown Neighborhood Board No. 13
c/o Neighborhood Commission
City Hall, Room 400
Honolulu, Hawaii 96813

Dear Ms. Martell:

Re: Supplemental Environmental Impact
Statement (SEIS)
Preparation Notice, Revised Kakaako
Makai Area Plan
TKMs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of May 6, 1994 commenting on the subject SEIS Preparation Notice. We provide the following in response to your comments.

Your concurrence with the deletion of the inland waterways is appreciated. We would like to clarify, however, that a down-sized amphitheater would remain under the revised plan. The forthcoming Draft SEIS will describe in detail the variety of park environments proposed by the Open Space and Recreation Plan.

The Draft SEIS will discuss the inclusion of the approximately 25 acres of land previously earmarked for the Mauka Area Plan into the Makai Area Plan. Clarification on the floor area estimations will also be provided.

While the proposed wellness center is being explored as a possible activity which could provide greater economic diversification in the Makai Area, its viability remains to be confirmed. Although it would be inappropriate to include specific analysis of an idea that is still highly conceptual, the uses that would be developed in a wellness center or other induced markets are covered under the "commercial" designation.

As noted in Section 3.1.3, improvements to the drainage system will be required to mitigate current drainage problems, and are anticipated to be implemented in conjunction with other infrastructure improvements.

Ms. Linda Martell
Page Two
July 1, 1994

The Draft SEIS will address the proposed drainage improvement needs in greater detail.

While it is difficult to completely ensure the security of public areas, the extensive amount of land devoted to areas of public realm is clearly a benefit in terms of open space and recreation for the community. Security of park areas will be increased by continuous use of the areas by a wide range of the population which will be encouraged through the programming of functions within the park areas. A higher level of maintenance and security patrols will also increase safety. Courtyards and passageways will be configured to avoid obscure corners by employing well-defined edges, thereby reducing areas of higher risk. If necessary, selected areas may be gated at night.

Details regarding the transition of the Ala Moana Boulevard/Ward Avenue Couplet from one-way to two-way patterns will be provided in the Draft SEIS.

We appreciate your interest and participation in the consultation phase of the environmental review process.

Very truly yours,

Michael N. Scarfone
Executive Director

CC: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

67 Ala Moana Boulevard
Suite 1021
Honolulu, Hawaii
96813
Telephone
(808) 587-3300
Facsimile
(808) 599-3613

KAHAKO COMMUNITY DEVELOPMENT AUTHORITY, 877 ALA MOANA BOULEVARD, SUITE 1001, HONOLULU, HAWAII 96813



William A. Bonnet
Manager
Environmental Department

May 23, 1994

Mr. Michael N. Scarfone
Executive Director
Department of Hawaii Community
Development Authority
City & County of Honolulu
877 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Subject: Supplemental Environmental Impact Statement
Preparation Notice (SEISPN)
Revised Kahako Makai Area Plan
Honolulu, Hawaii

Dear Mr. Scarfone:

Thank you for the opportunity to comment on your April 6, 1994 EIS preparation notice for the revised Kahako Makai Area Plan, as proposed by the Hawaii Community Development Authority of the State of Hawaii. Hawaiian Electric's comments are as follows:

1. Both new and recently installed infrastructure may be changed. Several streets in the expanded area were just converted to underground by HECO as part of the Kahako re-development project, and may require total re-configuration to meet the needs of the new layout.
2. Honolulu Power Plant Substation will not be the source of power for the proposed project. Power for the area will come from Mlalei Substation via a 25 KV service line to the project.
3. Additional electrical facilities will be required to develop the Kahako Makai Area. Three to four substation sites may be required depending on the electrical load.

HECO will reserve further comment pertaining to the protection of existing power lines in the project area until construction plans are finalized. Our point of contact for this project, and the originator of these comments, is Bill Muench (543-5657) senior distribution engineer. I suggest your staff and consultants deal directly with Bill to coordinate HECO's continuing input on this plan.

Sincerely,

William A. Bonnet

An HEI Company



HAWAII COMMUNITY DEVELOPMENT AUTHORITY
KAHAKO
Hawaiian Electric Company, Inc.

John D. Wallace
Executive Director

Gary Caulfield
Executive Director

Michael N. Scarfone
Executive Director

877 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Tel: 543-5657
Fax: 543-5657
E-mail: mscarf@hawaii.net

Ref. No.: PL EIS 6.20

July 1, 1994

Mr. William A. Bonnet, Manager
Environmental Department
Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, Hawaii 96840-0001

Dear Mr. Bonnet:

Re: Supplemental Environmental Impact Statement (SEIS) Preparation Notice, Revised Kakaako Makai Area Plan
TWKs: 2-1-15, 58 to 60 and portions of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of May 23, 1994 commenting on the subject SEIS Preparation Notice. The information provided regarding the electrical services in the project area are duly noted. During the design phases of the project, we will coordinate with your company regarding any additional service or facility requirements. We appreciate your interest and participation in the consultation phase of the environmental review process.

Very truly yours,

Michael N. Scarfone
Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

Chapter 12

**PARTIES CONSULTED FOR THE
PREPARATION OF THE FSEIS**

PARTIES CONSULTED DURING THE PREPARATION OF THE FSEIS

12. PARTIES CONSULTED DURING THE PREPARATION OF THE FINAL SUPPLEMENTAL EIS

Copies of the Draft Supplemental EIS were sent to the agencies, organizations, and individuals listed below, with a request for their comments on the project. As of September 7, 1994, a total of 25 comment letters were received. Of those who formally replied, some had no comments while others provided substantive comments as indicated by the ✓ and ✓✓, respectively. Written comments and responses for these agencies are reproduced herein.

Federal Agencies

- ✓ Department of the Navy
- ✓✓ Department of the Army, U.S. Army Engineer District
- ✓ Department of the Interior, Geological Survey, Water Resources Division
- Department of the Interior, Fish and Wildlife Service

State Agencies

- ✓✓ Land Use Commission
- ✓✓ DLNR, State Historic Preservation Office
- ✓✓ Department of Accounting and General Services
- ✓ Housing Finance and Development Corporation
- ✓✓ DBED, State Energy Office
- ✓✓ Office of Environmental Quality Control
- ✓✓ Department of Education
- ✓✓ Department of Transportation, Airports, Highways, and Harbors Divisions
- ✓✓ Department of Land and Natural Resources (DLNR)
- Department of Human Services
- Department of Health (DOH)
- DOH, Environmental Management Division
- Department of Business, Economic Development & Tourism (DBED)
- Office of State Planning

- ✓✓ University of Hawaii Environmental Center

City and County of Honolulu Agencies

- ✓ Building Department
- ✓✓ Fire Department
- ✓✓ Department of Public Works
- ✓✓ Board of Water Supply
- ✓✓ Department of Parks and Recreation
- Department of Transportation Services
- Police Department

Chapter 12
PARTIES CONSULTED DURING THE PREPARATION OF THE FSEIS

City and County of Honolulu Agencies (con't.)
Department of Wastewater Management
Department of Housing and Community Development
Department of Land Utilization
Department of Planning

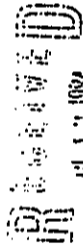
Public Utility Agencies
Hawaiian Electric Company, Inc.
GTE Hawaiian Telephone

Other Interested Parties
✓✓ Downtown Neighborhood Board #13
✓✓ Honolulu District PTA
✓✓ McKinley High School Teachers Association, Executive Board
✓✓ Representative Kenneth T. Hiraki, 25th District
✓✓ Save McKinley Coalition
✓✓ McKinley High School PTSA
✓✓ Royal School PTA
Ala Moana/Kakaako Neighborhood Board #11



DEPARTMENT OF THE NAVY
 COMMANDER
 NAVAL BASE PEARL HARBOR
 BOX 110
 PEARL HARBOR, HAWAII 96860-5020

IN REPLY REFER TO
 11010
 Ser N4(23)/7377
 1 12 1994



Mr. Michael N. Scarfone
 Executive Director
 Hawaii Community Development Authority
 677 Ala Moana Boulevard, Suite 1001
 Honolulu, HI 96813

Dear Mr. Scarfone:

REVISED KAKAAKO MAKAI AREA PLAN
 DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

Thank you for the opportunity to review the revised Kakaako Makai Area Plan Draft Supplemental Environmental Impact Statement dated July 1994.

The Navy has no comments to offer at this time and appreciates the opportunity to participate in your review process.

The Navy's point of contact is Mr. Stanford Yuen at 474-0439.

Sincerely,

Stanford Yuen
 Stanford Yuen, PE
 Facilities Engineer
 By Direction of
 Mr. Commander

Copy to:
 Dr. Bruce S. Anderson
 Interim Director
 Office of Environmental Quality Control
 220 South King Street, 4th Floor
 Honolulu, HI 96813

Mr. Rodney Funakoshi
 Wilson Okamoto and Associates, Inc.
 1907 South Beretania Street, Suite 400
 Honolulu, HI 96826



NAVY COMMUNITY DEVELOPMENT AUTHORITY



John D. Walker
 Chairman

Michael Kwaakana
 Chairman

Michael N. Scarfone
 Executive Director

677 Ala Moana Boulevard
 Suite 1001
 Honolulu, Hawaii
 HI 96813
 Telephone
 (808) 535-5000
 Fax
 (808) 774-6113

Ref. No.: PL EIS 6.20

October 26, 1994

Mr. Stanford B.C. Yuen, P.E.
 Facilities Engineer
 By Direction of the Commander
 Naval Base Pearl Harbor
 Box 110
 Pearl Harbor, Hawaii 96860-5020

Dear Mr. Yuen:

Re: Draft Supplemental Environmental Impact Statement (SEIS)
 Revised Kakaako Makai Area Plan
 TMKs: 2-1-15, 58 to 60 and portions of 2-1-14, 53 to 60
 Honolulu, Oahu, Hawaii

Thank you for your letter of August 10, 1994 (Ref. 11010 Ser N4(23)/7377) indicating that you have no comments to offer on the subject Draft SEIS at this time. We appreciate your time and effort in reviewing the Draft SEIS.

Very truly yours,

Michael N. Scarfone
 Michael N. Scarfone
 Executive Director

cc: Office of Environmental Quality Control
 Wilson Okamoto & Associates, Inc.



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FORT SHAFTER, HAWAII 96858-5440

ATTENTION

August 26, 1994

Planning Division

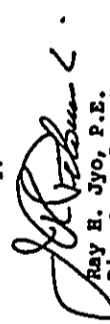
Mr. Michael N. Scarfone, Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Thank you for the opportunity to review and comment on the Draft Supplemental Environmental Impact Statement for the Revised Kakaako Makai Area Plan, Honolulu, Hawaii. The following comments are provided pursuant to Corps of Engineers authorities to disseminate flood hazard information under the Flood Control Act of 1960 and to issue Department of the Army (DA) permits under the Clean Water Act; the Rivers and Harbors Act of 1899; and the Marine Protection, Research and Sanctuaries Act.

- a. The DA permit application is currently being reviewed by our Operations Division (File Number P00CO 93-028). In addition, some figures showing the proposed beach park as existing are misleading. For example, Figure 1.4 (Existing Land Use Zones) shows the proposed beach park with an existing area zoned for a park. Although the layout appears to be the same, Figure 2-1 (Proposed Development Concept Plan) differs from the plan submitted to the Corps with the DA permit application. These figures need to be corrected. Please contact Ms. Suzanne Baba for further inquiries at 438-9258 (extension 17).
- b. The flood hazard information provided on page 3-6 of the report is correct.

Sincerely,


Ray H. Jyo, P.E.
Director of Engineering

Copies Furnished:

Mr. Bruce S. Anderson
Interim Director
Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Mr. Rodney Funakoshi, Project Manager
Wilson Okamoto and Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826



HAWAII COMMUNITY
DEVELOPMENT
AUTHORITY



KAKAAKO
Hawaii's Beaches Come To Life

John D. Walker
Commissioner

Michael Keachurak
Chairman

Michael N. Scarfone
President/Chairman

October 26, 1994

Ref. No.: PL EIS 6.20

Mr. Ray H. Jyo, P.E.
Director of Engineering
U.S. Army Corps of Engineers
Pacific Ocean Division
Building 230
Fort Shafter, HI 96858-5440

Dear Mr. Jyo:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaako Makai Area Plan
TPKS: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
HONOLULU, OAHU, HAWAII

Thank you for your letter of August 26, 1994, commenting on the Draft SEIS. By way of clarification, the January 1990 SEIS discusses the concept of a new beach park as a proposed land use under the existing Makai Area Plan, subject to more detailed feasibility studies, design, permit review, and funding. Figure 1-4, therefore, does not refer to the proposed beach park as physically existing but rather to the established land use zoning. Elements of the 1990 SEIS which remain unchanged in the revised Makai Area Plan are not assessed in the 1994 SEIS. As a result, Figure 2-1 continues to reflect the land area and zone designation as previously defined. The DA permit application currently under review by your Operations Division features detailed refinements in the design and layout of the proposed beach park which are reflective of its advance stage in design development. It, however, remains consistent with the parameters established in the Makai Area Plan and 1990 SEIS.

The changes that are illustrated in Figure 2-1 pertain to the deletion of waterways from the Makai Area Plan and Rules in February 1993, and the realignment of area-wide traffic circulation proposed in the 1994 revision. These changes do not fundamentally alter the previously established, broad land use designation.

67 Ala Moana Boulevard
Suite 201
Honolulu, Hawaii
Tel: 531-1111
Fax: 531-1111
GPO: 1993-261-313

RECEIVED
'94 AUG 29 AM 10 03
HAWAII COMMUNITY
DEVELOPMENT
AUTHORITY

Mr. Ray H. Jyo, P.E.
Page 2
October 26, 1994

Finally, we appreciate your validation of the flood hazard information provided. Thank you, again, for your effort in reviewing the Draft SEIS.

Very truly yours,


Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.



United States Department of the Interior
 U.S. GEOLOGICAL SURVEY
 WATER RESOURCES DIVISION
 677 Ala Moana Boulevard, Suite 415
 Honolulu, Hawaii 96813

WATER RESOURCES DIVISION

September 6, 1994

Hawaii Community Development Authority
 677 Ala Moana Boulevard, Suite 1001
 Honolulu, Hawaii 96813
 Attention: Mr. Michael N. Scarfone
 Executive Director

Re: Revised Kakaako Makai Area Plan
 Draft Supplemental Environmental Impact Statement (SEIS)
 TMKs: 2-1-15, 2-1-58, 2-1-59, 2-1-60, (all parcels), 2-1-14-4, 2-1-53-5, 2-1-54-1, 21,
 33, 2-1-55:1, 2, 3, 6, 18, 21, 26, 32 to 35, 38, and 2-1-56:3, 4
 Honolulu, Oahu, Hawaii

The staff of the U.S. Geological Survey, Water Resources Division, Honolulu, Hawaii, has reviewed the subject SEIS, and we have no comments to offer at this time.

Thank you for allowing us to review this document.

We are returning the document to your office for your future use.

Sincerely,

William Meyer
 William Meyer
 District Chief

Enclosure

cc: Office of Environmental Quality Control
 220 South King Street, 4th Floor
 Honolulu, Hawaii 96813
 Attention: Bruce S. Anderson, Ph.D., Interim Director

Wilson Okamoto and Associates, Inc.
 1907 South Beretania Street, Suite 400
 Honolulu, Hawaii 96826
 Attention: Mr. Rodney I'unakoshi, Project Manager



HAWAII COMMUNITY DEVELOPMENT AUTHORITY



KAKAOKO
 Where Honolulu Grows The Sea

John D. Washer
 Chairman

Michael Kawaibara
 Chairman

Michael N. Scarfone
 Executive Director

677 Ala Moana Boulevard
 Honolulu, Hawaii
 96813
 Telephone
 (808) 585-3970
 Facsimile
 (808) 575-3413

Ref. No.: PL EIS 6.20

October 26, 1994

Mr. William Meyer, District Chief
 U.S. Department of the Interior
 Geological Survey
 Water Resources Division
 677 Ala Moana Boulevard, Suite 415
 Honolulu, Hawaii 96813

Dear Mr. Meyer:

Re: Draft Supplemental Environmental Impact
 Statement (SEIS)
 Revised Kakaako Makai Area Plan
 TMKs: 2-1-15, 58 to 60 and portions
 of 2-1-14, 53 to 60
 Honolulu, Oahu, Hawaii

Thank you for your letter of September 6, 1994 indicating that you have no comments regarding the subject Draft SEIS. We appreciate your time and effort in reviewing the Draft SEIS.

Very truly yours,

Michael N. Scarfone
 Michael N. Scarfone
 Executive Director

cc: Office of Environmental Quality Control
 Wilson Okamoto & Associates, Inc.

FOIA b(7) - CONFIDENTIAL



STATE OF HAWAII
DEPARTMENT OF BUSINESS ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
Room 104, Old Federal Building
335 Merchant Street
Honolulu, Hawaii 96813
Telephone: 597-3423

ESTHER UEDA
EXECUTIVE OFFICER

U
1994

Mr. Michael N. Scarfone
Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

July 28, 1994

Dear Mr. Scarfone

Subject: Revised Kakaako Makai Area Plan Draft Supplemental
Environmental Impact Statement (SEIS)

We have reviewed the subject revised draft SEIS submitted with your letter dated July 21, 1994, and have the following comments to offer:

- In addition to our comment letter dated April 18, 1994, to the SEIS Preparation Notice; we confirm that TMKs 2-1-14: 6, 2-1-54: 1, 21, 33, and 2-1-55: 1, 2, 3, 6, 18, 21, 26, 32-35, and 38, are located within the State Land Use Urban District.
- We would also like to note that the 3.4 acre site occupied by the Hawaiian Electric Company appears to be located within TMK 2-1-14: 6, not TMK 2-1-14: 4. This discrepancy should be clarified.

We have no other comments to offer at this time.

Should you have any questions, please feel free to call me or Kathy Murakami of our office at 587-3822.

Sincerely,

Esther Ueda
ESTHER UEDA
Executive Officer

EU:XM:th

cc: Bruce S. Anderson, Ph.D., OEQC
Rodney Funakoshi, Wilson Okamoto & Assoc. Inc.
DBEDT (94-248-E)



HAWAII COMMUNITY DEVELOPMENT AUTHORITY
KAKAOKO
New Honolulu Civic Plaza

John D. Wallace
Commissioner

Michael N. Scarfone
Executive Director

Ref. No.: PL EIS 6.20

October 26, 1994

Ms. Esther Ueda
Executive Officer
Land Use Commission
State of Hawaii
Old Federal Building, Room 104
335 Merchant Street
Honolulu, Hawaii 96813

Dear Ms. Ueda:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaako Makai Area Plan
TMKs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
HONOLULU, OAHU, HAWAII

Thank you for your letter of July 28, 1994 commenting on the subject Draft SEIS. We appreciate your verification of the State Land Use Urban District designation for Tax Map Keys (TMKs) 2-1-4:6, 2-1-54:1, 21, 33, and 2-1-55: 1, 2, 3, 6, 18, 21, 26, 32-35, and 38 identified in the project (in addition to other TMKs cited in your comment letter dated April 18, 1994). The discrepancy noted in the TMK for the HECO parcel will be corrected in the forthcoming Final SEIS.

We appreciate your time and effort in reviewing the Draft SEIS.

Very truly yours,

Michael N. Scarfone
Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
808-587-3500
Facsimile
808-595-3823



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

August 4, 1994

Michael N. Scarfone
Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

STATE LANDS, CULTURE AND
SOILS OF LAND AND NATURAL RESOURCES
BOUVIERS
ADRIAN P. KAPALANA
DONNA L. WAIWAI
AGRICULTURE DEVELOPMENT
PROGRAMS
ADULTS RECREATION
CONSERVATION AND
ENVIRONMENTAL AFFAIRS
CONSERVATION AND
RESOURCES DEPARTMENT
CONTRACTS
FORESTRY AND WILDLIFE
HAWAIIAN HERITAGE
LAND MANAGEMENT
PLATE PLANS
WATER AND LAND DEVELOPMENT



HAWAII COMMUNITY
DEVELOPMENT
AUTHORITY



KAKAIAKO
Hawai'i Historical Group, Inc.

John D. Wahine
Chairman

Michael Kawaharada
Chairman

Michael N. Scarfone
Executive Director

LOG NO: 12296
DOC NO: 9408TD05

Dear Mr. Scarfone:

SUBJECT: Draft Supplemental Environmental Impact Statement (DSEIS): Revised
Kakaiko Makai Area Plan
Honolulu, Kona, O'ahu
TMK: 2-1-25; 2-1-58; 2-1-14; 4; 2-1-53; 5; 2-1-54; 1, 21, 33;
2-1-55; 1, 2, 3, 6, 18, 21, 26, 32-35, 38; and 2-1-56; 3, 4

The Makai Area Plan advocates preservation of historic sites. The DSEIS correctly notes on pages 3-32 and 3-33 the presence of three historic buildings in the Makai area. These include the Department of Health Building, the U.S. Immigration Station, and the former Ala Moana Wastewater Pump Station.

Please note that the proposed expansion of the Makai Area mauka of Ala Moana Boulevard includes an area of former sandy beaches where traditional Hawaiian dwellings were located in the past. It is likely that unmarked human burials are also present in the area of the proposed expansion. Our review of projects in this proposed expansion area will take into account the likelihood that the remains of dwelling sites and human burials are extant below the surface here.

If you have any questions about archaeological sites please call Tom Dye at 587-0014. Questions about historic buildings can be directed to Carol Ogata at 587-0004.

Sincerely,

DON HIBBARD, Administrator
State Historic Preservation Division

TD/ja

RECEIVED

'94 AUG 8 AM 10 10

HAWAII COMMUNITY
DEVELOPMENT
AUTHORITY

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone:
(808) 587-0000
Facsimile:
(808) 587-3433

Ref. No.: PL EIS 6.20
October 26, 1994

Mr. Don Hibbard, Administrator
State Historic Preservation Division
Department of Land and Natural Resources
State of Hawaii
33 South King Street, 6th Floor
Honolulu, Hawaii 96813

Dear Mr. Hibbard:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaiko Makai Area Plan
TMKS: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of August 4, 1994 (Log No. 12296, Doc No. 9408TD05) concurring with the identification of three historic buildings noted in the subject Draft SEIS. We will include in the Final SEIS your information regarding the potential for unmarked burials to be present in the proposed mauka expansion area.

We appreciate your time and effort in reviewing the Draft SEIS.

Very truly yours,

Michael N. Scarfone
Executive Director

CC: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

October 26, 1994

Mr. Gordon Masuoka
State Public Works Engineer
Department of Accounting
and General Services
State of Hawaii
P.O. Box 119
Honolulu, Hawaii 96810

Dear Mr. Masuoka:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaako Makai Area Plan
TMS: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
HONOLULU, OAHU, HAWAII

Thank you for your letter of August 5, 1994 (Ref. (P)1706.4) commenting on the subject Draft SEIS. References to the Family Court and Juvenile Detention Centers Alternatives Sites Study are duly noted. As indicated in our March 18, 1994 written comments to your consultants on the alternative site study, the three potential sites are zoned primarily for commercial, revenue-generating uses. Also, the revised street layout, phasing and urban design standards being proposed for these areas may influence your rating of these sites.

We appreciate your time and effort in reviewing the Draft SEIS.

Very truly yours,

Michael N. Scarfone
For Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.



DEPARTMENT OF ACCOUNTING
AND GENERAL SERVICES



John D. Walker
Chairman

Michael Kweharada
Chairman

Michael N. Scarfone
Executive Director

67 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 562-3270
Facsimile
(808) 574-3213

(P)1706.4

AUG 5 1994

Mr. Michael N. Scarfone
Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: Revised Kakaako Makai Area Plan
Honolulu, Hawaii
Draft Supplemental EIS

Thank you for the opportunity to review the subject Draft Supplemental EIS. The following comments are provided:

1. DAGS has finalized the Family Court and Juvenile Detention Centers Alternative Sites Study for the Judiciary.
2. This study has identified six sites which can be considered for siting the Family Court Center, three of which are located in the Kakaako Makai development area.

If there are any questions regarding the above, please have your staff call Mr. Ralph Yukumoto of the Planning Branch at 586-0488.

Very truly yours,

Gordon Masuoka
GORDON MATSUOKA
State Public Works Engineer

RY:Jy OEQC
cc: Wilson Okamoto and Associates, Inc.



HAWAII QUALITY DEVELOPMENT AUTHORITY



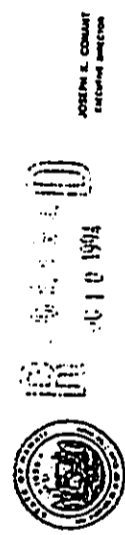
KAKAOKO
Hawaii's Community Development Authority

John D. Wallace
Chairman

Michael N. Scarfone
Executive Director

Michael N. Scarfone
Executive Director

67 Ala Moana Boulevard
Suite 202
Honolulu, Hawaii
96813
Telephone:
(808) 557-2570
Facsimile:
(808) 554-2413



STATE OF HAWAII
DEPARTMENT OF BUDGET AND FINANCE
HOUSING FINANCE AND DEVELOPMENT CORPORATION
877 OWEN STREET, SUITE 204
HONOLULU, HAWAII 96813
FAX: (808) 547-4889

August 5, 1994

TO: Michael N. Scarfone, Executive Director
Hawaii Community Development Authority

FROM: *Joseph K. Conant*
Joseph K. Conant
Executive Director

SUBJECT: Supplemental Draft EIS for the Revised Kakaako Makai Area Plan

We have reviewed the subject EIS and have no comments to offer at this time.
Thank you for the opportunity to comment.

C: OEQC
Wilson Okamoto & Associates

JOSEPH K. CONANT
EXECUTIVE DIRECTOR

BY MARY REVER ID:
94:PEE/4311

RECEIVED
OCT 10 1994

October 26, 1994
Ref. No. PL EIS 6.20

Mr. Joseph K. Conant,
Executive Director
Housing Finance and
Development Corporation
State of Hawaii
677 Queen Street, Suite 300
Honolulu, Hawaii, 96813

Dear Mr. Conant:

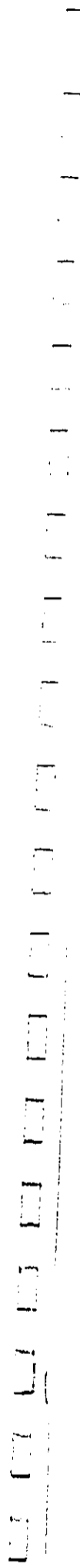
Re: Draft Supplemental Environmental Impact Statement (SEIS) Revised Kakaako Makai Area Plan
TWKs: 2-1-15, 58 to 60 and portions of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of August 5, 1994 (Ref. 94:PEE/4311) indicating that you have no comments to offer on the subject Draft SEIS at this time. We appreciate your time and effort in reviewing the Draft SEIS.

Very truly yours,

Michael N. Scarfone
Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.





**DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM**

ENERGY DIVISION, 335 MERCHANT ST., RM. 110, HONOLULU, HAWAII 96813 PHONE: (808) 587-3800 FAX: (808) 587-3820

JOHN WANKER
Director
JANE SCHULTZ
Director
PICK BOGGS
Deputy Director
TAMARA TOSHIKAWA
Deputy Director

Mr. Michael N. Scarfone
Page 2
August 8, 1994

We also would like to call your attention to the Model Energy Code which may be used as a guide for energy efficiency. If you do not already have a copy of the Energy Code, please call my office and we will forward one to you.

Sincerely,

Maurice H. Kaya
Energy Program Administrator

MHK/ER-do

cc: OEQC
Wilson Okamoto & Assocs. Inc.

RECEIVED
AUG 10 1994

August 8, 1994

Mr. Michael N. Scarfone
Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

WILSON OKAMOTO & ASSOC., INC.

Dear Mr. Scarfone:

Subject: Revised Kakaako Makai Area Plan Draft
Supplemental Environmental Impact Statement (SEIS)

Thank you for the opportunity to provide input in the Revised Kakaako Makai Area Plan Draft SEIS.

We note that you have cited the Energy Functional Plan's objective to moderate energy demand through conservation and energy efficiency in the transportation sector. We recommend energy savings measures for residential and commercial developments should also be considered.

We urge that the project reflect a "Hawaiian sense of place" which can be accomplished through innovative architectural design incorporating natural ventilation as well as the landscaping which you have mentioned.

Draft Environmental Impact Statements should comply with the requirements found in State laws for evaluating any energy impacts that the project will have. The mandate for such an evaluation is found in Chapter 344, HRS ("State Environmental Policy") and Chapter 226, HRS ("Hawaii State Planning Act"). In particular Chapter 226-18 (a)(2) and (c)(3); 226-52 (a) and (b)(2)(D); and 226-103 (f)(1) and (2) should be considered.



HAWAII DEPARTMENT OF ENERGY



KAKAAKO
Hawaii's Renewable Energy Program

John D. Wallace
General Manager

Michael N. Scarfone
Executive Director

Michael N. Scarfone
Executive Director

Ref. No. PL EIS 6.20
October 26, 1994

The Honorable Maurice H. Kaya
Energy Program Administrator
Department of Business,
Economic Development & Tourism
State of Hawaii
335 Merchant Street, Room 110
Honolulu, Hawaii 96813

Dear Mr. Kaya:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaako Makai Area Plan
TRMS: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of August 8, 1994
commenting on the subject Draft SEIS.

Your recommendation to consider energy saving
measures for residential and commercial developments will
be addressed under "Policy A(1) Promote & Stimulate
Greater Energy Efficiency and Conservation in Non-
transportation Sectors" which will be included in the
forthcoming Final SEIS.

We concur with your concern that the project reflect
a "Hawaiian sense of place", as exemplified in the
project's Open Space and Recreation plan. We also agree
that the key to achieving this is the incorporation of
specific elements of architectural design and natural
ventilation, which will be determined during the design
phases of the various projects.

Your comments regarding EIS compliance with Hawaii
Revised Statutes (HRS) which evaluate energy impacts are
duly noted. Chapter 226-103, "Priority guidelines for
energy use and development", together with Chapters 344,
226-16, and 226-52, will be referenced in the forthcoming
Final SEIS.

Where feasible, we will seek to incorporate elements
of the Model Energy Code into the future Makai Area
projects.

67 Ala Moana Boulevard
Suite 201
Honolulu, Hawaii
96813
Telephone
(808) 551-3700
Facsimile
(808) 551-3413

Mr. Maurice H. Kaya
Page 2
October 26, 1994

We appreciate your time and effort in reviewing the
Draft SEIS.

Very truly yours,

Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.



JOHN WAINHE
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

215 SOUTH KING STREET
FOURTH FLOOR
HONOLULU, HAWAII 96813
TELEPHONE 551-1111
FACSIMILE 551-1111

September 6, 1994

BRUCE S. ANDERSON, Ph.D.
INTERIM DIRECTOR

RECEIVED
SEP 07 1994

HONOLULU, HAWAII

Mr. Michael N. Scarfone, Executive Director
Hawaii Community Development Authority
Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Attention: Mr. Eric Masutomi

Dear Mr. Scarfone:

Subject: Draft Supplemental Environmental Impact Statement for
the Revised Kakaako Makai Area Plan, Honolulu, Hawaii

We have reviewed the subject document and have the following
comments.

Because Ala Moana Boulevard serves as a major east-west artery
from Waikiki, through central Honolulu to the Airport and Pearl
Harbor, the Ala Moana Boulevard-Ward Avenue intersections would
impede traffic flow through the Makai Area.

The redevelopment of the Makai Area provides a unique opportunity
for the State and City to collaboratively improve traffic flow in
this area. Since the majority of the land in the Makai Area is
publicly owned, relocating roadways at this time would be least
expensive. We request that you work with the State Department of
Transportation, City Department of Transportation Services, and
the Downtown and Waikiki Neighborhood Boards to consider the
impacts of the proposed configuration in addition to all possible
alternatives and mitigation measures needed to improve both
regional and local traffic circulation.

Mr. Michael Scarfone
September 6, 1994
Page 2

If you have any questions, please call Mr. Jeyan Thirugnanam at
586-4185. Thank you.

Very truly yours,

Bruce S. Anderson

BRUCE S. ANDERSON, Ph.D.
Interim Director

cc: DOT
DTS
Wilson Okamoto and Associates
Waikiki Neighborhood Board
Downtown Neighborhood Board



HAWAII DEPARTMENT OF TRANSPORTATION



KAKAOKO
Kakaoko, Hawaii

John D. Wahee
Chairman

Michael Kawaharada
Chairman

Michael N. Scarfone
Executive Director

Ref. No.: PL EIS 6.20
October 26, 1994

Bruce S. Anderson Ph.D.
Page 2
October 26, 1994

The Honorable Bruce S. Anderson, Ph.D.
Interim Director
Office of Environmental Quality
Control
State of Hawaii
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

We appreciate your time and effort in reviewing the Draft SEIS.

Very truly yours,

Michael N. Scarfone
Michael N. Scarfone
Executive Director

Re: Revised Kakaoko Makai Area Plan
Draft Supplemental Environmental Impact
Statement (SEIS)
TMS: 2-1-15, 58 to 60 and
portions of 2-1-14, 53 to 60
Honolulu, OAHU, Hawaii

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

Dear Dr. Anderson:

Thank you for your letter of September 6, 1994 commenting on the subject Draft SEIS. HCDA recognizes the importance of Ala Moana Boulevard to east-west traffic flow in Honolulu, as well as its role in providing access to the Kakaoko area. The portion of Ala Moana Boulevard between Punchbowl Street and Ward Avenue has long been one of the bottlenecks along the Nimitz Highway/Ala Moana Boulevard travel corridor, with the combination of large volumes of traffic in both directions coupled with closely spaced traffic signals resulting in congested conditions during peak travel hours.

The proposed Ala Moana Boulevard-Ward Avenue Extension one-way couplet offers the opportunity to improve traffic flow through this bottleneck area. We have met with both the State Department of Transportation and City Department of Transportation Services to review our proposed street configuration and to solicit their input in this planning phase. We will continue to work with these agencies and the neighborhood boards throughout the planning and design process to identify and address their concerns.

67 Ala Moana Boulevard
Suite 101
Honolulu, Hawaii
96813
Telephone
(808) 581-3370
Facsimile
(808) 579-3813

FACILITIES COPY
HERMAN M. AIZAWA, Ph.D.
SUPERINTENDENT



STATE OF HAWAII
DEPARTMENT OF EDUCATION
P. O. BOX 2300
HONOLULU, HAWAII 96810

OFFICE OF THE SUPERINTENDENT

September 7, 1994

Mr. Michael N. Scarfone
Executive Director
Hawaii Community
Development Authority
677 Ala Moana Boulevard,
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

SUBJECT: Revised Kakaako Makai Area Plan
Draft Supplemental Environmental Impact Statement
Honolulu, Oahu, Hawaii

We have reviewed the revised subject area plan and draft supplemental Environmental Impact Statement and have determined that our comments dated May 10, 1994 are applicable to the development. However, the number of students projected based on approximately 3,000 affordable and market-priced residential units has been revised to reflect the mix of affordable and market residential units listed in the draft. The proposed residential development will generate the following number of students:

School	Grade	Projected Students
Royal Elementary	K-5	375
Central Intermediate	6-8	125
McKinley High	9-12	175

We reserve the right to adjust the projections as more information regarding the actual number of units and the types of units are revealed for the proposed development. As you are aware, any increase in the number of affordable units will generate more students and may increase the current projections.

The Department of Education (DOE) cannot assure the availability of classrooms to accommodate the 675 students projected from this residential development. Royal Elementary School is operating at capacity and will not be able to accommodate the students projected.

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

Mr. Michael N. Scarfone

-2-

September 7, 1994

We need to cooperatively identify a school site in the Kakaako area. It is our understanding that this document does not include any proposals by Bishop Estate which would generate enough additional students for a new elementary school.

Bussing students may become a necessity but is not the desire of the DOE, nor are parents of elementary school students greatly supportive of the notion.

The DOE is also concerned with the overall impact when the Kakaako Mauka development is also included. It is imperative that planning for the entire Kakaako area be discussed to develop a mutually agreeable plan to accommodate all of the projected students from future housing units and not only to discuss one development at a time.

Furthermore, we request that the following statements be added to the report and addressed under Section 4.3.2.5 of the State Education Functional Plan:

"Cluster A(4): Services and Facilities

Policy: Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.

Goal: Provide facilities that are sufficient in number, functional, well-paced and compatible with the physical surroundings."

The DOE will require a fair-share contribution from developers for the construction of needed school facilities to accommodate the students from this development.

Should there be any questions, please call the Facilities Branch at 733-4862.

Sincerely,

Herman M. Aizawa, Ph.D.
Superintendent

HMA:hy

cc: A. Suga, OBS
J. Sosa, HDO
B. Anderson, OEOC
R. Funakoshi, Wilson, Okamoto, & Assoc., Inc.



HAWAII DEPARTMENT OF EDUCATION



John D. Wahee
Superintendent

Michael N. Scafone
Executive Director

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 551-3270
Facsimile
(808) 551-3413

Ref. No. PL EIS 6.20

October 26, 1994

The Honorable Herman M. Aizawa, Ph.D.
Superintendent
Department of Education
State of Hawaii
P.O. Box 2360
Honolulu, Hawaii 96804

Dear Dr. Aizawa:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaako Makai Area Plan
TMS: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of September 7, 1994
commenting on the Draft SEIS and updating projected
school enrollment figures.

As you are aware, we are presently working with your
staff to identify a suitable school site within Kakaako.
Meanwhile, recognizing the current capacity of
educational facilities in the service area, HCDA is
prepared to defer approval of residential developments in
the area Makai of Ala Moana Boulevard until appropriate
plans and strategies are developed by DOE to accommodate
the projected demands of a proposed project. This will
be reflected in the Final SEIS.

Section 4.3.2.5 of the State Educational Functional
Plan regarding "Services and Facilities" will be
referenced in the forthcoming Final SEIS.

Mr. Herman Aizawa, Ph.D.
Page 2
October 26, 1994

We appreciate your cooperation and assistance in
resolving this matter of mutual concern.

Very truly yours,

Michael N. Scafone
Michael N. Scafone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.
Peggy Anderson, et al., McKinley Teachers Assn.
(with DOE letter)
Dennis Chun, Downtown Neighborhood Board
(with DOE letter)
Kenneth Hiraki, House of Representatives
(with DOE letter)
Paul Kadooka, Save McKinley Coalition
(with DOE letter)
Amy Kimura, McKinley High School PTSA
(with DOE letter)
Joey Ching, Royal School PTA
(with DOE letter)
Anita Malama, Honolulu District PTA
(with DOE letter)



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
808 PUNICHOIL STREET
HONOLULU, HAWAII 96813-5007
September 7, 1994

REX D. JOHNSON
DIRECTOR
DEPUTY DIRECTORS
KANANI HOLO
GLENN M. OSMUND
JOYCE T. OBIKKE
CALVIN M. TSUDA
IN REPLY REFER TO:

STP 8.6289

Mr. Michael N. Scarfone
Page 2
September 7, 1994

STP 8.6289

Mr. Michael N. Scarfone
Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: Draft Supplemental Environmental Impact Statement (SEIS)
Revised Kakaako Makai Area Plan
TMK: 2-1-15, 2-1-58, 2-1-59, 2-1-60 (all parcels);
2-1-14: 4; 2-1-53: 5; 2-1-54: 1, 21, and 33;
2-1-55: 1, 2, 3, 6, 18, 21, 26, 32 to 35, and 38;
2-1-56: 3 and 4

We have the following comments on the draft SEIS for the Revised Kakaako Makai Area Plan:

1. Reducing lane widths within the existing roadways is not an acceptable option for providing additional travel lanes unless safety and roadway capacity are not compromised.
2. Bus bays should be provided to maximize through traffic.
3. The intersection of Pohukaina Street and South Street should be included in the analysis.
4. The Cooke Street - Koula Street one-way couplet should be further evaluated and the preferred or optimal alternative selected.
5. Traffic signals along the Ala Moana Boulevard - Ward Street Extension couplet should be minimized to the extent possible to maximize through traffic capacity.
6. Mitigative measures should be provided for the interim period until roadway improvements are implemented to minimize traffic impacts.

7. The SEIS should provide an implementation plan/schedule for the construction of roadway improvements. Kakaako is a phased development and it is unclear as to what associated "phased" roadway improvements are required.
8. SEIS is unclear on extent to which major adjacent developments in the area are incorporated in the study. Specifically, the Convention Center and Aloha Tower developments should be reflected in the forecasts and their respective traffic plans need to be reflected in the analysis.
9. Construction plans for work within the State highway right-of-way must be submitted for our review. The cost of required roadway improvements will be borne by the developer.

We appreciate the opportunity to provide comments.

Sincerely,

Rex D. Johnson
Director of Transportation

RECEIVED
94 SEP 13 AM 9 54
HAWAII COMMUNITY
DEVELOPMENT
AUTHORITY



HAWAII STATE DEPARTMENT OF TRANSPORTATION



KAKAOKO
Hawaii's Most Beautiful Area

John D. Wallace
Chairman

Michael Kawaharada
Chairman

Michael N. Scorsone
Chairman

Ref. No. PL EIS 6.20

October 26, 1994

The Honorable Rex D. Johnson
Director of Transportation
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

Dear Mr. Johnson:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaako Makai Area Plan
TRMS: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
HONOLULU, OAHU, HAWAII

Thank you for your letter of September 7, 1994 (Ref. STP 8.6289) commenting on the subject Draft SEIS. We offer the following in response to your comments:

1. The reduction of lane widths along Ala Moana Boulevard was mentioned as a possible method of minimizing any right-of-way acquisition if widening is needed in the future between Punchbowl and Alakea Streets. If this roadway widening is needed, further study would be pursued as part of the design process to ensure that sufficient lane widths are maintained for safe and effective usage.
2. When the segments of Ala Moana Boulevard and the Ward Avenue Extension are initially converted to one-way operation, on-street parking would be permitted along the curb of both streets. "Pull-outs" for bus stops could be provided by restricting the on-street parking at the bus stop locations. Bus bays could be constructed in the future when the on-street parking is removed to provide an additional travel lane.
3. The intersection of South and Pohukaina Streets was not studied since only a small portion of the available capacity is currently being utilized, and the conversion to one-way operation would further simplify operations at the intersection. Major improvements are not expected to be needed at the

Mr. Rex D. Johnson
Page 2
October 26, 1994

intersection, although installation of traffic signal controls may be needed in the future. We would also note that the traffic on Pohukaina Street may be reduced if Halekauwila Street is made the Koko Head-bound direction street in a one-way couplet with Queen Street, which would reduce Pohukaina Street to a collector street serving adjacent properties (see response below).

4. Option 3 (page 5-3 of the TIAR) is the preferred alternative to address the potential problem of the Cooke-Koula Streets couplet ending at Pohukaina Street, in the event that it is later converted to a one-way street in the Koko Head bound direction. In Option 3, Halekauwila Street would be made one-way for Koko Head direction travel as part of a one-way street couplet with Queen Street. Pohukaina Street would remain a two-way collector street and serve traffic flow from Koula to Cooke Street.

At present, the Victoria Ward Estate is proceeding with preparation of an Environmental Assessment for the extension of Halekauwila Street through the former Gemco site and the development of a one-way couplet with Queen-Halekauwila Streets. Pohukaina Street would remain a two-way street.

5. We concur that use of traffic signals should be held to a minimum to maximize capacity on the through streets.
6. Interim measures to mitigate traffic increases will include:
 - a) Construction of the initial extension of Ward Avenue from the Ala Moana Boulevard intersection ewa to Keawe Street, with this section initially operating as a two-way roadway.
 - b) Realignment and widening of Keawe Street between Ala Moana Boulevard and Iialo Street.
 - c) Local street widening and intersection improvements as adjacent properties are redeveloped.

677 Ala Moana Boulevard
Suite 501
Honolulu, Hawaii
96813
Telephone
(808) 535-3200
Facsimile
(808) 535-3213

Mr. Rex D. Johnson
Page 3
October 26, 1994

7. The construction schedule for the roadway improvements will be determined by the availability of funding, the renegotiation of maritime leases, and the pace of redevelopment within the Makai Area Plan. The anticipated implementation time frames for the key roadway modifications are as follows:
- a) The construction of the Ward Avenue Extension segment to Keawe Street is scheduled to begin within the next five years, contingent on Legislative approval of funding.
 - b) The realignment and widening of Keawe Street at the interim ewa terminus of this first phase of the Ward Avenue Extension would occur within the same time as the construction of the initial extension, again contingent on approval of funding.
 - c) The completion of the final section of the Ward Avenue Extension to connect to Punchbowl Street is planned to occur within 15 years. This segment will require renegotiation of present maritime leases for and reconfiguration of the Foreign Trade Zone facilities.
 - d) Upon completion of the final Ward Avenue Extension segment, one-way operation would be implemented for both the Ala Moana Boulevard/Ward Avenue Extension and Cooke/Koula Street couplets.

Since the Ala Moana/Ward Avenue Extension one-way couplet should greatly improve traffic flow through the closely-spaced traffic signals along this section of Ala Moana Boulevard and help alleviate the current congested conditions, we would appreciate whatever support your Department can provide in securing the necessary funding for these projects.

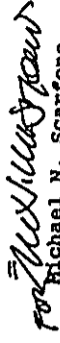
8. Future traffic for the Convention Center and Aloha Tower projects is included in the forecasts, as are the Downtown and Kakaako projects as reflected in the Rapid Transit Development Project forecasts and in the 1991 Kakaako Traffic Study prepared by Austin Tsutsumi and Associates.

Mr. Rex D. Johnson
Page 4
October 26, 1994

9. Construction plans for work within State highway rights-of-way will be submitted to your Department for review.

We appreciate your time and effort in reviewing the Draft SEIS.

Very truly yours,


Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

REF: OCEA:SKK
P.O. BOX #21
HONOLULU, HAWAII 96829

SEP 7 1994
FILE NO.: 95-054
DOC. ID.: 4885

SENIOR ASST. COMMISSIONER
BOARD OF LAND AND NATURAL RESOURCES
DEPUTY
CHIEF ADMINISTRATIVE
OFFICER
AGRICULTURE DEVELOPMENT
NATURAL RESOURCES
PLANNING AND OCEAN REGULATION
CONSERVATION AND
ENVIRONMENTAL AFFAIRS
COMMUNITY DEVELOPMENT
CONSERVATION AND
RECREATION
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
STATE PARKS
WATER AND LAND DEVELOPMENT

MEMORANDUM

TO: Mr. Michael H. Scarfone, Executive Director
Hawaii Community Development Authority

FROM: Keith W. Ahue, Chairperson
Board of Land and Natural Resources

SUBJECT: Draft Supplemental Environmental Impact Statement (DSEIS):
Revised Kakaako Makai Area Plan, Honolulu, Hawaii, TRKS:
2-1-15; 58; 59; 60 (all parcels); 2-1-14; 4; 2-1-53; 5; 2-1-54;
1, 21, 33; 2-1-55; 1, 2, 3, 6, 18, 21, 26, 32-35, 38, and
2-1-56; 3, 4

We have reviewed the DSEIS information for the subject Plan transmitted by your letter dated July 21, 1994, and have the following comments:

Office of Conservation and Environmental Affairs

The Office of Conservation and Environmental Affairs (OCEA) comments that the beach park portion of the subject plan was the subject of Conservation District Use Application (CIUA) CA-2652, accepted for processing on June 21, 1993. Although the subject CIUA was withdrawn on November 24, 1993, our concerns raised during the CIUA processing (see enclosed) remain applicable.

Historic Preservation Division

The Historic Preservation Division (HPD) comments the Makai Area Plan advocates preservation of historic sites. The DSEIS correctly notes on pages 3-32 and 3-33 the presence of three historic buildings in the Makai area. These include the Department of Health Building, the U.S. Immigration Station, and the former Ala Moana Wastewater Pump Station.

Please note that the proposed expansion of the Makai Area Mauka of Ala Moana Boulevard includes an area of former sandy beaches where traditional Hawaiian dwellings were located in the past. It is likely that unmarked human burials are also present in the area of the proposed expansion. HPD's review of the projects in this proposed expansion area will take into account the likelihood that the remains of dwelling sites and human burials are extant below the surface there.

Mr. M. Scarfone - 2 - File No.: 95-054

We have no other comments to offer at this time. Please feel free to call Steve Tagawa at our Office of Conservation and Environmental Affairs, at 587-0377, should you have any questions.

Enclosure

c: Rodney Funakoshi, Wilson Okamoto & Assoc. Inc.
OEOC



HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES



KAKAAKO
Maui, Hawaii, Come To See

John D. Walker
Chairman

Michael Kwaharunda
Chairman

Michael N. Scarfone
Executive Director

Ref. No. PL EIS 6.20

October 26, 1994

The Honorable Keith W. Ahue
Chairperson
Department of Land
and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Ahue:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaako Makai Area Plan
TMKs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of September 7, 1994 (Ref. File No. 95-054, Doc. Id. 4885) commenting on the subject Draft SEIS. We offer the following in response to your comments:

Office of Conservation and Environmental Affairs
We acknowledge your concerns regarding potential impacts to the marine environment from the new beach area. It should be noted, however, that the proposed beach expansion plans are unchanged in this revised Makai Area plan. As such, its assessment has not been a part of this Supplemental EIS process. Notwithstanding, your concerns will surely be addressed as part of securing our needed development permits and approvals.

Historic Preservation Division
We appreciate your concurrence with the identification and preservation of the three historic buildings noted in the subject draft SEIS. Your information regarding the potential for unmarked burials to be present in the proposed mauka expansion area is acknowledged and will be included in the Final SEIS.

Mr. Keith Ahue
Page 2
October 26, 1994

We appreciate your time and effort in reviewing the Draft SEIS.

Very truly yours,

Michael N. Scarfone
Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

67 Ala Moana Boulevard
Suite 201
Honolulu, Hawaii
96813
Telephone
(808) 551-3370
Facsimile
(808) 591-3413



University of Hawai'i at Mānoa

Environmental Center
A Unit of Water Resources Research Center
Crawford 317 • 2550 Campus Road • Honolulu, Hawaii 96822
Telephone: (808) 956-7361 • Facsimile: (808) 956-3980

September 6, 1994

Governor, State of Hawaii
c/o Office of Environmental Quality Control
220 South King Street, Suite 400
Honolulu, Hawaii 96813

Dear Governor:

Draft Supplemental Environmental Impact Statement (SEIS)
Kakaako Makai Area Plan Revised
Honolulu, Oahu

The referenced document focuses on proposed changes to the Kakaako Makai Area Plan. Included in the Draft SEIS is an amendment to expand the Makai Area boundary to include 20 acres mauka of Ala Moana Boulevard, a reallocation of land uses, a revised roadway stem into a one-way couplet to facilitate an anticipated increase in traffic, and alternate urban design concepts. The amphitheater, Marine Research Center, and inland waterways projected in the 1990 Final SEIS are deleted in the revised plan.

We have reviewed the Draft SEIS with the assistance of Shelley Mark, Professor Emeritus and Senior Fellow, Panos Prevedouras, Civil Engineering, and Mallia Akutagawa of the Environmental Center.

Our reviewers have offered a variety of comments regarding land use designations, environmental impacts, traffic concerns, and recreational, housing and employment opportunities.

State Land Use Conservation District

Among the parties consulted in the preparation of this document was the Department of Business, Economic Development & Tourism (DBEDT), Land Use Commission. In their letter dated April 18, 1994, they state that in Figure 3:

It appears that portions of the project site may include the development of areas which are currently composed of offshore marine waters. Pursuant to Section 15-15-20(b), Hawaii Administrative Rules, these areas are located within the State Land Use Conservation District. In addition, areas of man made fill located within the State Land

An Equal Opportunity/Affirmative Action Institution

Governor, State of Hawaii
September 6, 1994
Page 2

Use Conservation District remain in said District, unless otherwise designated by the Land Use Commission, pursuant to Chapter 205, Hawaii Revised Statutes.

Mr. Scarfone, Executive Director of the Hawaii Community Development Authority, in his letter dated July 1, 1994 responded, "The discrepancies noted in TMKs will be clarified in the forthcoming Draft SEIS."

Does this mean that the project site is not, in fact, located in the State Land Use Conservation District? It is difficult to tell in the Draft SEIS. Does the letter by DBEDT refer to the construction of stormwater discharges and dewatering activities mentioned on Page 3-16? Or does the letter perhaps refer to the plans for making a beach park as stated in previous impact statements? If there are further development plans affecting offshore marine waters that were not mentioned in this Draft SEIS and previous documents, then the necessary permits must be sought and impacts to the environment assessed.

Best Management Practices (BMP)

As in many comparable documents, the term Best Management Practices (BMP) frequently is employed as a descriptor of adequate mitigation measures without further elaboration as to what such practices entail. Only in rare instances, did the applicant clarify what construction activities would take place. Are Best Management Practices considered optimal from an industrial standpoint or an environmental standpoint? Is one sacrificed for the other? Who establishes these practices, and, more to the point, to what level and frequency of objective technical review are they subjected? Do general industry standards accommodate specificities of sites as unique as Hawaii?

Air Quality

In the Air Quality analysis, page 3-10, it is stated, "Nitrogen dioxide is no longer monitored by the DOH. Concentrations of this pollutant were measured from 1971 through 1976 ... annual mean values were found to vary from 11 to 29 micrograms per cubic meter (ug/m³), safely within the State and Federal AAQS. As one of the seven criteria pollutants, nitrogen dioxide (NO₂) measurements are required. There should be more current data of NO₂ concentrations in the Kakaako region. To make the assumption that NO₂ levels are the same today as they were in 1976 is clearly erroneous, what with increased urban development and industrial activities which have taken place over the past two decades. Will NO₂ concentrations exceed their limits today and prove detrimental to plants, animals, and humans? To what extent will the projected increase of traffic flow contribute to emissions of nitrogen oxides as well as hydrocarbons?"

Traffic

The traffic analyses are appropriate and follow well established procedures. The proposed Ward Extension for circulation is interesting. Unfortunately, the traffic performance indices show that the situation is very bad and will be so in the future. We are disappointed that the consultant did not propose any bold solutions to the problem. Given the large re-development that will take place in Kakaako, the developer should consider grade separation for the Ward and Punchbowl intersections with Ala Moana Boulevard. Adding lanes is becoming ridiculous, and the mitigation

Governor, State of Hawaii
September 6, 1994
Page 3

proposal has four turning lanes along the meandering Ward Extension. These four lanes are not likely to provide enough capacity because of the necessary slow maneuvering of the vehicles. Thus, in terms of seconds of delay, the actual level of service may be even worse than estimated in the study. Even with the addition of lanes, the anticipated year 2015 level of service is unacceptable both for the AM and the PM peak periods. A better solution is to separate major conflicting traffic streams and pedestrians.

Pedestrian overpasses are discussed and should be strongly recommended (e.g., we roughly estimate that the Diamond Head traffic on the Ward Extension at Ward and Ala Moana would require 70% of the cycle - green - for a barely adequate service, which may result in unacceptable short times for pedestrian crossings).

Our reviewers recommend a single lane (plus shoulder) underpass for Punchbowl to Ward Extension (makai bound traffic) and the same for Ward Extension to Ward (mauka bound). With proper design, both the cost and the aesthetics of the underpasses would be preferred to the "limitless" widening of streets.

There is an error which may affect the results considerably if it is not typographical. In Appendix C, Figure 4-2 (PM peak flows), intersection of Ward Extension and Cooke, there are 1011 vehicles missing. From flow conservation: $4941 - 4637 - 1315 = -1011$. It is not likely that so many vehicles will park in the block between Coral and Cooke. This problem is not evident in Figure 4-1 (AM peak flows).

Housing

The provision of an additional 2,000-3,000 units is commendable. The definition of "affordable" remains in question, however. Given the state's persistent housing shortage, it would seem that an 80% allocation to affordable units is entirely defensible, and a large portion of that amount should be dedicated to rental use.

Heights and Density

The increase in height limitation in the existing Makai Area to 300 feet does not enhance visual appearance of the district particularly from the vantage of urban dwellers elsewhere in the community. Given the proposed change in the Makai Area, the statement on page 3-24 that building heights and densities remain unchanged is somewhat misleading.

Mixed Use

The proposed mixed use is commendable. However, with technological and productivity advances, there should be a more intensive effort to accommodate small businesses throughout the area.

Governor, State of Hawaii
September 6, 1994
Page 4

Recreation

Areas are designated for team sports, but the type of activity more amenable to the anticipated residential clientele is more likely to be individual or small group pastimes as tennis and putting greens. These should be specifically acknowledged.

Economic Activity and Employment

As is common in environmental impact statements, economic and employment projections are over-optimistic. Presuming a maximum buildup of 7 million square feet of commercial area at 250 employees per for an ultimate employment of 28,000, is highly overblown.

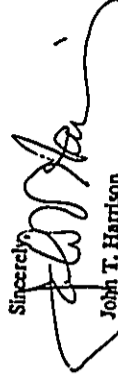
What and/or where is the major economic stimulus to generate this level of employment? Taking in each other's laundry will not do it. A figure of 5,000 more employees is also optimistic but perhaps more reasonable.

Summary

Overall, the Draft SEIS appears adequate in meeting the requirements of Chapter 343, Hawaii Revised Statutes and Title 11 of the Hawaii Administrative Rules. The document tends to overemphasize the positive aspects of the project with respect to housing and employment opportunities, as well as, entertainment and recreational benefits. Assessments of environmental conditions, impacts and mitigation measures generally are satisfactory; however, it would have been helpful to clarify what Best Management Practices (BMP) actually entail. It is difficult to determine whether such Best Management Practices are superior from an industrial standpoint and/or an environmental standpoint.

Thank you for the opportunity to review this Draft SEIS.

Sincerely,



John T. Harrison
Environmental Coordinator

cc: OEOC

Hawaii Community Development Authority
Wilson Okamoto and Associates, Inc.
Roger Fujioka
Shelley Mark
Panos Prevedourous
Malita Akutagawa



HAWAII DEPARTMENT OF HEALTH



KAKAOKO
Water Wastewater Control Authority

John D. Walker
Chairman

Michael Kawaharada
Chairman

Michael N. Scarfone
Executive Director

Ref. No.: PL EIS 6.20

October 26, 1994

John T. Harrison, Ph.D.
Environmental Coordinator
University of Hawaii at Manoa
2550 Campus Road, Crawfurd 317
Honolulu, Hawaii 96822

Dear Dr. Harrison:

Re: Revised Kakaoko Makai Area Plan
Draft Supplemental Environmental Impact
Statement (SEIS)
TKMs: 2-1-15, 58 to 60 and
portions of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of September 6, 1994
commenting on the subject Draft SEIS. We provide the
following in response to your concerns:

State Land Use Conservation District

As indicated in Section 4.3.3 of the Draft SEIS,
lands within the Makai Area are designated within the
Urban District. The Conservation District lies seaward
of the shoreline in the Resource Subzone, and applies to
the offshore filling to create a new beach park. As
explained in Paragraph 4 of Section 1.1, this proposed
development was previously assessed in the 1990 SEIS and
is, therefore, not specifically being covered in this
SEIS.

Best Management Practices

The term Best Management Practices (BMP) is
generally defined as any program, technology, process,
siting criteria, operating method, measure, or device
which controls, prevents, removes, or reduces pollution.
The objective of the BMP Plan is to establish the
procedures and practices that will be implemented to
assure that any effluent discharge associated with
construction or dewatering activities will comply with
basic water quality criteria as set forth by Chapter 11-
54, Hawaii Administrative Rules.

John T. Harrison, Ph.D.
Page 2
October 26, 1994

BMP Plans are prepared by applicants for development
approvals and submitted for review and approval to the
State Department of Health (DOH) and City and County of
Honolulu Department of Public Works in conjunction with
Water Quality Certifications, National Pollutant
Discharge Elimination System (NPDES) Permits, and grading
permits, which are required prior to construction. At
this time we cannot identify the BMPs which are site-
project-specific, but they generally would include and
treatment, containment, or filtration of sediment and
pollutants prior to discharge to the coastal and inland
receiving waters. The BMPs are reviewed by regulatory
agencies from an environmental pollution-control
standpoint.

Air Quality

We understand from the DOH that new air quality
monitoring stations located in Kapolei and West Beach are
currently collecting data on nitrogen dioxide (NO₂).
However, during the preparation of the Draft SEIS,
information on NO₂ collected at these stations was
unavailable.

Traffic

Your suggestion of underpass crossings below Ala
Moana Boulevard for Punchbowl Street and Ward Avenue
would be an effective approach to improving future
traffic conditions at these intersections. However, an
underpass or overpass was not considered for the Ward
Avenue crossings due to the short block length to Auahi
Street. This short distance would affect access between
the underpass roadway and Auahi Street.

An underpass was considered at the Punchbowl Street
intersection, but was eliminated due to concerns with
underground utilities, construction and maintenance
costs, and flood potential of this important roadway
connection. An overpass structure was also considered
not in keeping with the pedestrian vistas and urban
environment intended in the revised plan.

In Appendix C, Figure 4-2 (PM Traffic Flows), the
traffic volume on Cooke Street mauka of the Ward Avenue
Extension should be 446 vehicles, not the 1,315 shown.
The 446 vehicles was the number developed from the
traffic assignments and used in the intersection
analysis.

67 Ala Moana Boulevard
Suite 100
Honolulu, Hawaii
96813
Telephone
(808) 521-3770
Facsimile
(808) 521-3413

Mr. John T. Harrison, Ph.D.
Page 3
October 26, 1994

Housing

The housing component of the project will increase the supply of affordable rental and for-sale units. We concur that the percentage of affordable housing should be increased if possible, and we will seek to provide the maximum amount feasible, particularly for housing on State land which is projected to account for approximately half of the total number of units in the Makai Area. Of the units developed on private land, approximately 20 percent will be required to be affordable (affordable to families earning between 80 and 140 percent of median family income).

Heights and Density

In and of itself, increased height would not enhance the visual appearance of the area. However, the increased height of 300 feet in certain areas will allow heights to be reduced in other locations while retaining the same amount of developable area. Additionally, the added height allows for tall, slim towers as opposed to broad, short forms with the same floor-to-area ratio. We believe the net effect is improved urban design for the Makai Area. Notwithstanding, we will delete the statement on page 3-24.

Mixed Use

We concur that the small businesses should be accommodated within the areas designated for mixed use.

Recreation

Your suggestion to consider recreational pursuits geared toward individual or small group activities warrants further review. As these require less space, however, it is prudent to plan for potential recreational uses with larger land area requirements, while maintaining our options to accommodate individual/small group activities as we proceed in more detailed programming for these sites.

Economic Activity and Employment

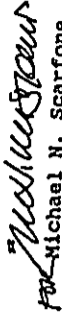
The employment projection is based on a factor of 250 square feet of leasable commercial space per employee -- comparable to commercial retail and office space in downtown Honolulu. While it is unlikely that the entire 7 million square feet of allowable space will be

Mr. John T. Harrison, Ph.D.
Page 4
October 26, 1994

developed within the 20-year planning horizon, use of the maximum developable area was assumed in order to disclose maximum potential environmental impact. Our market absorption projections, based on existing markets, are much lower. However, we believe the site holds potential to attract new markets that can be realized through a more aggressive, entrepreneurial approach over time.

We appreciate your time and effort in reviewing the Draft SEIS.

Very truly yours,


Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.



HAWAII COMMUNITY DEVELOPMENT AUTHORITY



KAKAOKO
Honolulu, Hawaii

John D. Wallace
Commissioner

Michael N. Scarfone
Chairman

Michael N. Scarfone
Executive Director

PB 94-853

July 27, 1994

Michael N. Scarfone, Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: Revised Kakaako Makai Area Plan
Draft Supplemental Environmental Impact
Statement (SEIS)
TMKs: 2-1-15, 2-1-58, 2-1-59, 2-1-60 (all
parcels), 2-1-14:4, 2-1-53:5, 2-1-54:1,
21, 33 3-1-55:1, 2, 3, 6, 18, 21, 26, 32
to 35, 38, and 2-1-56:3, 4
Honolulu, Oahu, Hawaii

We have reviewed the subject draft SEIS and have no comments
to offer. Thank you for allowing to be part of the review
process.

Very truly yours,

Herbert K. Muraoka

HERBERT K. MURAOKA
Director and Building Superintendent

CN:jo
cc: J. Harada
Office of Environmental
Quality Control
Wilson Okamoto & Associates

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 535-5200
Facsimile
(808) 778-3111

Ref. No. PL EIS 6.20

October 26, 1994

The Honorable Herbert K. Muraoka
Director and Building Superintendent
Building Department
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Muraoka:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaako Makai Area Plan
TMKs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of July 27, 1994 (Ref. PB
94-853) indicating that you have no comments to offer on
the subject Draft SEIS at this time. We appreciate your
time and effort in reviewing the Draft SEIS.

Very truly yours,

Michael N. Scarfone

Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
3375 KOAPAKA STREET, SUITE H425
HONOLULU, HAWAII 96819-1869



JEREMY WILKINS
S-1018

RICHARD R. SETO-MOOK
FIRE CHIEF
ERNEST Y. SUENOTO
FIRE DEPUTY CHIEF

August 15, 1994

Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Attention: Mr. Michael N. Scarfone, Executive Director

Dear Sir:

SUBJECT: Revised Kakaako Makai Area Plan
Draft Supplemental Environmental Impact Statement
TMKs: 2-1-15, 2-1-58, 2-1-59, 2-1-60 (all parcels), 2-1-14.4,
2-1-53.5, 2-1-54.1, 21, 33, 2-1-55.1, 2, 3, 6, 18, 21, 26,
32 to 35, 38, and 2-1-56.3, 4
Honolulu, Oahu, Hawaii

We have reviewed the subject material provided and foresee no adverse impact in Fire Department facilities or services.

Access for fire apparatus, water supply and building construction shall be in conformance to existing codes and standards.

Should you have any questions, please call Assistant Chief Attilio Leonardi of our Administrative Services Bureau at 831-7775.

Sincerely,

Richard R. Seto-Mook
RICHARD R. SETO-MOOK
Fire Chief

AKL:ny

cc: Office of Environmental Quality Control w/EIS report
Wilson Okamoto and Associates



HONOLULU
COMMUNITY
DEVELOPMENT
AUTHORITY
KAKAOKO
Here! Honolulu Comes To Sea

John D. Washoe
Chairman

Michael Kneeburda
Chairman

Michael N. Scarfone
Executive Director

Ref. No. PL EIS 6.20

October 26, 1994

The Honorable Richard R. Seto-Mook
Fire Chief
Fire Department
City and County of Honolulu
3375 Koapaka Street, Suite H425
Honolulu, Hawaii 96819-1869

Dear Mr. Seto-Mook:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaako Makai Area Plan
TMKs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of July 27, 1994 (Ref. PB 94-853) commenting on the subject Draft SEIS that there will be no adverse impacts on the facilities or services of your department. As noted in section 3.4.7. Police and Fire Services (page 3-50) of the Draft SEIS, proposed developments will comply with requirements for access to all fire connections, water supply and building construction.

We appreciate your time and effort in reviewing the Draft SEIS.

Very truly yours,

Michael N. Scarfone
Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 587-5250
Facsimile
(808) 799-5213

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813



STRENGTH
WATER

KENNETH E. SPRAGUE
DIRECTOR AND CHIEF ENGINEER

ENV 94-202

August 22, 1994

RECEIVED
AUG 24 1994

Mr. Michael N. Scarfone
Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

Subject: Draft Supplementary Environmental Impact
Statement - Revised Kakaako Area Plan
Tax Map Key: Various

We have reviewed the subject document and have the following
comment:

One way traffic on Ala Moana Boulevard does not only
affect Kakaako area. Therefore, study should be more
extensive to the outlying areas.

Should you have any questions, please contact Mr. Alex Ho,
Environmental Engineer, at 523-4150.

Very truly yours,

Kenneth E. Sprague
KENNETH E. SPRAGUE
Director and Chief Engineer

cc: OEQC
Wilson Okamoto & Assoc.



HAWAII COMMUNITY
DEVELOPMENT AUTHORITY



KAKAOKO
Where Honolulu Grew The Sea

John D. Waihee
Chairman

Michael Kawaharada
Chairman

Michael N. Scarfone
Executive Director

Ref. No. PL EIS 6.20

October 26, 1994

The Honorable Kenneth E. Sprague
Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Sprague:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaako Hakai Area Plan
TMKS: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

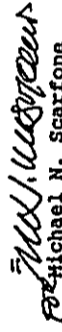
Thank you for your letter of August 22, 1994 (Ref. ENV 94-202) commenting on the subject Draft SEIS. The traffic analysis is intended to supplement the studies prepared for the previous plans for the Hakai Area, as documented in earlier EIS's. Since the revised Hakai Area Plan is forecast to generate slightly less traffic than the earlier plans, the traffic impacts outside the study area should be similar to or slightly less than those indicated for the previous plans. The Ala Moana Boulevard/Ward Avenue Extension one-way street plan would increase capacity along this portion of the east-west travel corridor. However, there are other bottlenecks along Ala Moana Boulevard and Nimitz Highway that would likely limit any diversion of through traffic from parallel streets to Ala Moana Boulevard. Therefore, the traffic study was limited to those intersections within the Kakaako area that would be directly affected by the modifications to the planned roadway system.

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 527-3270
Facsimile
(808) 527-3613

Mr. Kenneth E. Sprague
Page 2
October 26, 1994

We appreciate your time and effort in reviewing the
Draft SEIS.

Very truly yours,


Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.



COPY

September 6, 1994

RECEIVED
SEP 12 1994

Mr. Michael W. Scarfone, Executive Director
Hawaii Community Development Authority
State of Hawaii
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

WILSON OKAMOTO & ASSOCIATES, INC.

Dear Mr. Scarfone:

Subject: Draft Supplemental Environment Impact Statement (SEIS) for the
Revised Kakaako Makai Area Plan, TMS: 2-1-15, 2-1-58, 2-1-59,
2-1-60 (all parcels), 2-1-14: 4, 2-1-53: 5, 2-1-54: 1, 21, 33,
2-1-55: 1, 2, 3, 6, 18, 21, 26, 32 to 35, 38, and 2-1-56: 3, 4,
Honolulu, Oahu, Hawaii

Thank you for the opportunity to review and comment on the Draft SEIS for the
revised Kakaako Makai Area Plan. Our comments of May 5, 1994 are still
applicable and are included in the Draft SEIS.

We have the following additional comments to offer:

1. Developments on parcels owned by the State or Bishop Estate will
require a water allocation from the respective land owner. The
developers will also be required to pay our Water System Facilities
Charges for transmission and daily storage.
2. A revised water master plan incorporating the installation of on-
site and off site water system improvements should be submitted for
our review and approval.
3. The makai area plan should also include the findings of the
desalination site study for Kakaako, which is currently being
performed for Hawaii Community Development Authority.

If you have questions, please contact Barry Usagawa at 527-5235.

Very truly yours,

Raymond N. Scarfone
For KAZU HAYASHIDA
Manager and Chief Engineer

cc: Office of Environmental Quality Control
Attention: Peter Sybinsky, Ph.D.
Wilson Okamoto and Associates, Inc.
Attention: Mr. Rodney Funakoshi



HAWAII COMMUNITY
DEVELOPMENT AUTHORITY



KAKAOKO
Hawaii Community Development Authority

John D. Washie
Chairman

Cary Caulfield
Chairman

Michael N. Scarfone
Executive Director

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 567-5200
Facsimile
(808) 774-5313

RECEIVED
BOARD OF WATER SUPPLY
JUL 25 9 03 AM '94

Ref. No.: PL EIS 6.20

July 21, 1994

The Honorable Kazu Hayashida
Manager and Chief Engineer
Board of Water Supply
City & County of Honolulu
630 South Beretania Street
Honolulu, HI 96843

Dear Mr. Hayashida:

Re: Revised Kakaako Makai Area Plan
Draft Supplemental Environmental Impact
Statement (SEIS)

TMS: 2-1-15, 2-1-58, 2-1-59, 2-1-60 (all
parcels), 2-1-14: 4, 2-1-53: 5, 2-1-54: 1,
21, 33, 2-1-55: 1, 2, 3, 6, 18, 21, 26, 32
to 35, 38, and 2-1-56: 3, 4
Honolulu, Oahu, Hawaii

Enclosed for your review is a copy of the Revised
Kakaako Makai Area Plan Draft SEIS which was prepared
pursuant to Chapter 343, Hawaii Revised Statutes, and
Chapter 200 of Title 11, Department of Health
Administrative Rules. The document will be published in
the July 23rd Bulletin of the Office of Environmental
Quality Control (OEQC). Please send your original
comments regarding the subject document to:

Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813
Attention: Mr. Michael N. Scarfone
Executive Director

Additionally, we request that copies of your
comments be sent to the following parties:

Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, Hawaii 96813
Attention: Bruce S. Anderson, Ph.D.
Interim Director

and

Wilson Okamoto and Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
Attention: Mr. Rodney Funakoshi
Project Manager

d

The Honorable Kazu Hayashida
Page Two
July 21, 1994

In order to be included in the forthcoming Final SEIS, we request that your comments be postmarked by September 6, 1994. We appreciate your input to this Draft SEIS.

Very truly yours,

Michael N. Scarfone
Michael N. Scarfone
Executive Director

cc: Wilson Okamoto & Associates, Inc.
Enc.



HAWAII DEPARTMENT OF HEALTH



KAKAIAKO
Water Wastewater Control The Sea

John D. Wehner
Commissioner

Michael Kawabara
Chairman

Michael N. Scarfone
Executive Director

Ref. No. PL EIS 6.20

October 26, 1994

The Honorable Kazu Hayashida
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South King Street
Honolulu, Hawaii 96813

Dear Mr. Hayashida:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaiko Makai Area Plan
TMAs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter dated September 6, 1994 commenting on the subject Draft SEIS. We offer the following in response to your comments:

1. The requirement for obtaining water allocation from the State or Bishop Estate is duly noted and will be mentioned in the Final SEIS.
2. As requested, a revised water master plan will be prepared and submitted for your review and approval.
3. The Makai Area Plan will be revised as needed to reflect the findings of the desalination site study for Kakaiko. However, a desalination site in the Makai Area will not be designated at this time due to the low ranking of possible/likely locations (rated the last of ten possible sites per the "Honolulu Desalination Plant Site Study", dated September 7, 1993).

We appreciate your time and effort in reviewing the Draft SEIS.

Very truly yours,

Michael N. Scarfone
Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

67 Ala Moana Boulevard
Suite 201
Honolulu, Hawaii
96813
Telephone
(808) 587-2070
Facsimile
(808) 591-3113

DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU
450 SOUTH KING STREET
HONOLULU, HAWAII 96813



ALBERT H. HARRIS
DIRECTOR

WALTER M. OZAWA
DIRECTOR
ALVIN K.C. AU
DEPUTY DIRECTOR

Hawaii Community Development Authority
Page Two
September 7, 1994

If we can be of any assistance, please do not hesitate to contact us.

Sincerely,

For WALTER M. OZAWA, Director

WHO:js

cc: Office of Environmental Quality Control
(Bruce S. Anderson, Ph.D., Interim Director)
Wilson Okamoto and Associates, Inc.
(Mr. Rodney Funakoshi, Project Manager)

September 7, 1994

Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Attention: Mr. Michael N. Scarfone
Executive Director

Gentlemen:

Subject: Revised Kakaako Makai Area Plan
Draft Supplemental Environmental
Impact Statement (SEIS)

Thank you for providing us an opportunity to review and comment on the revised Kakaako Makai Area Plan Draft SEIS.

The SEIS describes an increase in the population of the Kakaako area of up to almost 7,000 new residents. According to the SEIS, the new plan provides for the creation of additional parklands totalling almost 19 acres. We are pleased that you have been able to formulate a plan which will increase the recreational opportunities that will be available in Kakaako.

We would, however, like to see diversified "active" recreation facilities made available in the three areas that have been designated for park use.

We think that the recreational aspects of the Makai Plan revisions represent a step in the right direction. We understand that you are also at present working on a recreational plan for the mauka area. We look forward to reviewing the changes to your mauka plans and hope that you are as successful in dealing with the challenges posed by the recreational shortfalls in the mauka area.

We Add Quality to Life



MAKAI COUNCIL
ON ENVIRONMENTAL ACTION



KAKAIAKO
Kakaiaiko Community Foundation

John D. Walker
Chairman

Michael K. Kahanaka
Chairman

Michael N. Scarfone
Executive Director

Ref. No. PL EIS 6.20

October 26, 1994

The Honorable Walter M. Ozawa
Director
Department of Parks and Recreation
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Ozawa:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaiko Makai Area Plan
TRMS: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter dated September 7, 1994 commenting on the subject Draft SEIS. We very much appreciate your continued support for the project and its park and recreational components. We concur with your suggestion to diversify the open areas designated for "active" recreation, as these areas will lend themselves well to a variety of active uses. Your input will continue to be sought during the program and design stage of the park and recreation components, when specific recreational uses are considered.

We appreciate your time and effort in reviewing the Draft SEIS, and look forward to maintaining the cooperative relationship that we have been able to forge in the planning and development of recreational facilities in both mauka and makai areas of Kakaiko.

Very truly yours,

Michael N. Scarfone
Michael N. Scarfone
Executive Director

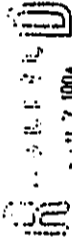
cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.

677 Ala Moana Boulevard
Honolulu, Hawaii
96813
Telephone
(808) 557-3200
Facsimile
(808) 594-3413



DOWNTOWN NEIGHBORHOOD BOARD NO. 13

410 NEIGHBORHOOD COMMISSION • CITY HALL, ROOM 400 • HONOLULU, HAWAII 96813



September 6, 1994

Mr. Michael N. Scarfone
Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, HI 96813

RECEIVED
SEP 7 1994

Re: Revised Kakaako Makai Area Plan, Draft SEIS

Dear Mr. Scarfone:

The Downtown Neighborhood Board #13 welcomes the opportunity to comment on the Draft SEIS for the Makai Area Plan.

Education

We are very disturbed at some of Department of Education Superintendent Herman Aizawa's comments in chapter 11. For years the Downtown Neighborhood Board has said that the HCDA must identify future school sites. When built out, the Kakaako area is estimated to have more than 30,000 residents. Unless you identify and obtain sites for new schools the children living in Kakaako will not be able to attend schools in the area. In his May 10 letter to you, Mr. Aizawa says, "Royal Elementary School is currently at capacity and cannot expand due to a limited campus size....Even if year-round multi-track education is implemented, the school cannot accommodate all of the students from the area. Assuming there are no additional developments in the makai area, some of the elementary students will be inconvenienced by having to attend school outside of the service area either by busing to other schools or by filling for geographic exceptions." Kaahumanu Elementary School is operating at capacity. If the Hale Kewalo project is built, according to the DOE space will need to be found for 72 additional students. We can only assume that the alternatives mentioned by Superintendent Aizawa for Royal will be the same for Kaahumanu. We cannot accept the notion that kindergartners and other young children will be bused to school in other parts of Honolulu. In developing the Kakaako community, the HCDA must develop a total community, where people can live, work, and attend schools in their own community.

Mr. Aizawa continues, "McKinley High School is already operating at capacity and will be required to accommodate students from the Mamala Area of Kakaako. The additional students from the Makai Area will create additional stress on the High School." This is precisely why the Downtown Neighborhood Board opposes the Hale Kewalo project. McKinley land should be used for an expansion of McKinley, to accommodate the educational needs of the residential areas you are creating, and not for any other purpose.

Active Recreation

We are pleased that you are making provisions for active recreation. We would like the Final SEIS to



Oahu's Neighborhood Board System - Established 1973

be more specific than the Draft SEIS, specifically, we would like you to state exactly what types of active recreation will be developed and exactly when that will occur. The Draft SEIS gives the impression that it will be in phase one, but we would like it clarified.

Transportation

The analysis assumes no new or alternative transportation modes such as jimeys in addition to cars and buses. They should be included.

The Draft SEIS assumes a 60% buildout of the area. Yet since the state took control of Kakaako, only six private and three public projects other than Ward Center and Ward Warehouse have been built. You are expecting much activity but there is no real demonstration it will occur. Before spending tax dollars on assumptions, a professional study on the buildout needs to be done.

We are concerned about making Pohukaina and Auahi Streets one way Koko Head. A special light sequence will be needed for left hand turns off of Ala Moana Ewa bound. This will slow down traffic. A method needs to be found to bleed traffic off of Ala Moana by using Auahi Street on the other side of Ward Warehouse and Center. If traffic could take Auahi Street to Punchbowl it could then go makai of Ala Moana.

There is one small blurb in the Draft SEIS that perhaps it is not a good idea to make Pohukaina one way Koko Head. That statement needs to be amplified in the Final SEIS.

The 1990 EIS included a Sand Island Bypass. It is not clear in the Draft SEIS if the bypass is included.

We are concerned that there is no word on the impact of traffic on adjacent areas. This type of study must be included in the Final SEIS.

Making South Street one way creates a major problem at Restaurant Row. Currently, South Street at Restaurant Row is two way, enabling those leaving Restaurant Row who wish to go Ewa to make a right hand turn onto Ala Moana. With Pohukaina one way Koko Head, and South Street one way Mauka, these vehicles will have to take a circuitous route, adding to congestion in the area, to go Ewa.

The proposed one way streets will also, by your own admission, create extra walking distance from the buses. This could be a hardship for the young, elderly, and handicapped. If you proceed with this one way plan, you should consider having one bus lane operating in the opposite direction. New York City is planning to convert 42nd Street, a major cross-town two-way thoroughfare, into a one-way street. However, it will be reserving one lane for a bus or trolley line to go in the opposite direction so as not to inconvenience users of mass transportation.

We are also concerned about comments that the buses passing through the area are underutilized, with only 20 to 30 passengers. Have you looked at the 19,20, and 47 lately? Many times it is impossible to get on these buses. They are full to capacity by the time they reach Punchbowl and King Streets, and often do not stop to pick up passengers on the way to Ala Moana Center for that reason. The same is true at certain times of day in the opposite direction. These buses are used heavily by tourists going to and from the Arizona Memorial at Pearl Harbor and to and from the Airport. This issue needs to be restudied.

On page 3-43, concerning the Ala Moana-Ward Extension Couplet, you state, "The proposed plan

calls for on-street parking on each side of the couplet. This could be implemented initially, with parking later to be removed when needed to provide a fourth through-lane." If you remove a lane of parking, where will the cars park?

Also of concern is the intersection of Punchbowl and Ala Moana. The Draft SEIS states on page 5-2 that the "...proposed modifications to the plan, depicted in figure 5-1, would improve morning conditions to acceptable levels, but would result in afternoon conditions of LOSE with volumes 25% above intersection capacity." The afternoon use of this intersection is already stressing this road to the maximum level. Any worsening of this situation is unacceptable and should be addressed in the Final SEIS. How do you determine a 10 minute delay at this intersection?

Public Safety

In the Draft SEIS you mention that Central is one of the Fire Stations serving the area. The City commissioned a report by Towers Perrin regarding city services. Based on the report, the Fire Department is considering transferring the engine company located at Central to the new station scheduled to open at Campbell Industrial Park in February, 1995. In that instance, the Nuuanu, Kalihi, and Kakaako stations would serve downtown and Kakaako. The Downtown Neighborhood Board has expressed its concerns about this proposed transfer to Acting Mayor Jeremy Harris, former Councilmember Gary Gill, and Councilmember Audrey Hildano. The Towers Perrin study was based on response times. In our objections, we pointed out that Central is the only fire station that does not back up another station. This is because of the critical nature of the fires that the station may be asked to handle. In addition, we pointed out that the population is increasing as more high rise buildings are constructed, the wooden buildings in Chinatown give us cause for concern, many elderly live in these wooden buildings, and the business area is congested. We have also been informed that when there is a structural fire in the downtown area the Fire Department employs a capital force response. That means sending 3 engines, 2 ladders, 1 rescue unit, and a battalion chief. We presume the same response would be required for any high rise fire or one that involved a lot of people in Kakaako. Acting Mayor Harris has informed us that because no consideration was given to population density, nature of the structure, and other demographic factors which go into the planning of locating and relocating fire companies that he supports our position and he will not move Engine Co. 1 from the Central Fire Station. However, we do not know whether a different mayor or council will follow Acting Mayor Harris' position. You may wish to look into this matter.

The Draft SEIS does not respond to the questions we raised in commenting on the Preparation Notice concerning earthquakes, tsunamis, and hurricane storm surge. We urge you to address these issues in the Final SEIS.

Environment

In Chapter 11 the U. S. Fish and Wildlife Service indicates that it may not grant some permits. What happens to that part of the project if the Service does not grant the permits?

Also, the Department of Wastewater Management states that existing municipal wastewater facilities are inadequate to service the project and no improvement is planned within the six-year CIP. How do you anticipate paying for this?

A Full Service Community

In the Supplemental DEIS it is stated that the contemplated cost of the proposed improvements to the area infrastructure will cost \$85 million. The fact that not one single dollar is being considered to

address the needs of 390 plus additional students that will have no school to attend is extremely disturbing. A viable plan to address this issue is critical or the future residents of this area will have been poorly served by this process. We have already discussed the need to identify and secure land for future school sites.

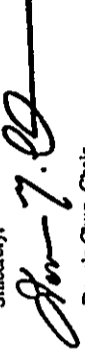
We are also concerned about the proposal to relocate all of family court to Kapiolani. We believe state agencies which have heavy in person public contact should not be moved in their entirety to Kapiolani. If that happens, people will not be able to live, work, and obtain services where they live but will be forced to travel long distances. This would defeat the state's own policy as stated on page 4-10 in the Draft SEIS.

Social Impacts

We do not see anything that mentions the social impacts of the project. Given the size of this project, the Supplemental FEIS needs to address the social impacts of the project on both the immediate area and adjacent communities.

Again, thank you for the opportunity to respond to the Draft SEIS.

Sincerely,



Dennis Chun, Chair

cc: OEQC, Dr. Bruce Anderson
Wilson Okamoto and Associates, Mr. Rodney Funakoshi



HAWAII DEPARTMENT OF TRANSPORTATION



John D. Wahne
Chairman

Michael Kawaharada
Chairman

Michael N. Scarpone
Member Director

67 Ala Moana Boulevard
Suite 201
Honolulu, Hawaii
96813
Telephone
(808) 587-3700
Facsimile
(808) 595-3813

Ref. No. PL EIS 6.20

October 26, 1994

Mr. Dennis Chun, Chair
Downtown Neighborhood Board No. 13
c/o Neighborhood Commission
City Hall, Room 400
Honolulu, Hawaii 96813

Dear Mr. Chun:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaako Makai Area Plan
TRMs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter dated September 6, 1994
commenting on the subject Draft SEIS. We offer the
following in response to your comments:

Education

See attached correspondence with the Department of
Education.

Active Recreation

We appreciate your support for the project's active
recreational component. As noted in Section 2.4 of the
EIS, active recreation types will include organized games
and team sports. The specific types of activities will
be determined at a later date when programming and
conceptual design of the site is initiated. The exact
time of development also cannot be pinpointed at this
stage, since site availability and funding issues still
need to be finalized.

Transportation

A shuttle bus service to-and-from downtown is
currently being examined. When demand warrants,
implementation of a shuttle system should provide
assistance with improving area-wide circulation and
encouraging utilization of public transportation systems.

The conversion of Ala Moana Boulevard to a one-way
street for ewa-bound traffic would eliminate the need for
any special left-turn phases at traffic signals along
this section since there would be no opposing traffic.

Mr. Dennis Chun
Page 2
October 26, 1994

Koko Head-bound traffic would be traveling on the Ward
Avenue Extension.

Auahi Street will remain a two-way street.
Currently, alternatives to preserve Pohukaina Street as
a two-way street and reconfigure the proposed Pohukaina-
Queen Street couplet are being investigated by the
Victoria Ward Estate (VWE). VWE is proceeding with
preparation of an Environmental Assessment that includes
the extension of Halekauwila Street through the former
Gemco site to connect to Queen Street. Halekauwila
Street would become the Koko Head-bound street in a one-
way couplet, with Queen Street as the ewa-bound street.
With Halekauwila street as part of the one-way street
couplet, Pohukaina Street would remain as a two-way
street.

The Sand Island Bypass is not included in the
revised Makai Area Plan. However, the refined physical
design will not preclude a bypass system should such a
project become feasible.

The traffic analysis is intended to supplement the
studies made for the previous plans for the Makai Area,
as documented in earlier EIS's. Since the revised Makai
Area Plan is forecast to generate slightly less traffic
than the earlier plans, the traffic impacts outside the
study area should be similar to or slightly less than
those indicated for the previous plans. The Ala Moana
Boulevard/Ward Avenue Extension one-way street plan would
increase capacity along this portion of the east-west
travel corridor. However, there are other "bottlenecks"
likely limit any diversion of through traffic from
parallel streets to Ala Moana Boulevard. Therefore, the
traffic study was limited to those intersections within
the Kakaako area that would be directly affected by the
modifications to the planned roadway system.

With Pohukaina Street one-way in the Koko Head
direction, traffic exiting Restaurant Row could use Queen
Street to travel ewa-bound, or could make a circuitous
loop within the Kakaako area. However, note in response
item 2 that the street plans may be revised to retain
Pohukaina Street as a two-way street.

Mr. Dennis Chun
Page 3
October 26, 1994

The operation of Ala Moana Boulevard and Ward Avenue Extension as a one-way couplet would increase the walking distance to Koko Head-bound bus stops for those bus riders on the mauka side of Ala Moana Boulevard, but would reduce the walking distance for those riders going to and from the areas located makai of the Ward Avenue Extension.

A "contraflow" bus-only lane could be provided for Koko Head-bound buses along the one-way segment of Ala Moana Boulevard; this would retain bus service in both directions along Ala Moana Boulevard. However, this would require widening the street by about 12 feet or more, with the additional street width being taken from the planned widening of the landscaped park strips along each side of the street. Therefore, a bus lane is not included within the plan.

The statement concerning bus loads of 20 to 30 passengers through the area is intended as representative of conditions typical on the buses along Ala Moana Boulevard. As you indicated, many of the Route 19, 20, and 47 buses do carry full loads which affect area riders desiring to travel to locations on these specific routes.

On-street parking is currently prohibited along Ala Moana Boulevard and much of Ilalo Street (Ward Avenue Extension). The temporary provision of on-street parking for several years along these two streets will be providing an additional parking resource for the area.

Also note that the new developments in the area will be required to provide off-street parking, many of which will be displacing land uses that currently provide little or no off-street parking.

The statement referred to on page 5-2 refers to conditions with the base set of mitigation actions. Additional actions are discussed on page 5-3 that could improve conditions at the Ala Moana/Punchbowl Street intersection to acceptable levels.

The average vehicle delay times are calculated through a computer simulation of traffic conditions given the estimated traffic volumes, and the proposed roadway widths and traffic controls.

Mr. Dennis Chun
Page 4
October 26, 1994

Public Safety

We appreciate your information regarding the facilities and services of the Honolulu Fire Department (HFD). The HFD has indicated in their letter of July 27, 1994 that there will be no adverse impacts on their facilities or services.

Generally the risk of earthquake hazard to Oahu is minimal, however all structures within the project site will be designed to meet seismic zone 2A requirements as per the Building Code. According to the Civil Defense Tsunami Inundation Map for Oahu, most of the Makai Area is within the tsunami inundation zone. Section 3.2.4 of the Draft Supplemental EIS addresses the issue of coastal flood hazards in the Makai Area as it relates to storm waves and associated flooding.

Environment

With respect to the proposed beach park, we refer you to Paragraph 4 of Section 1.1 in the Draft Supplemental EIS which explains that because this proposed development remains unchanged in the revised Makai Area Plan, it is not being assessed in this Supplemental EIS.

Alternative financing methods for improvements to the municipal wastewater facilities may include issuance of assessment bonds, State CIP appropriations, general obligation bonds, pay-as-you-go financing from project area revenues, and private developer funds.

A Full Service Community See response under "Education".

The Department of Accounting and General Services has prepared the Family Court and Juvenile Detention Center Alternative Sites Study for the Judiciary. The study identifies six alternative sites for the Family Court Center, three of which are located in the Makai Area. We have advised DAGS to consider the revised street layout, planned land uses, and urban design characteristics of these areas as described in the EIS should one of the sites in the Makai Area be selected.

Social Impacts

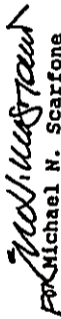
Social impacts and socio-economic issues including land uses and encumbrances, population, housing, economic

Mr. Dennis Chun
Page 5
October 26, 1994

characteristics, and displacement were addressed in
Section 3.3 of the Draft Supplemental EIS.

We appreciate your time and effort in reviewing the
Draft SEIS.

Very truly yours,


Michael N. Scarfone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.
attachment



HAWAII DEPARTMENT
OF EDUCATION



KAKA'AKO
Where Honolulu Grows The Sun

John D. Wahee
Chairman

Michael Knevelarada
Chairman

Michael N. Scarfone
Executive Director

Ref. NO. PL EIS 6.20

October 26, 1994

The Honorable Herman M. Aizawa, Ph.D.
Superintendent
Department of Education
State of Hawaii
P.O. Box 2360
Honolulu, Hawaii 96804

Dear Dr. Aizawa:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaako Makai Area Plan
TRMS: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of September 7, 1994
commenting on the Draft SEIS and updating projected
school enrollment figures.

As you are aware, we are presently working with your
staff to identify a suitable school site within Kakaako.
Meanwhile, recognizing the current capacity of
educational facilities in the service area, HCDA is
prepared to defer approval of residential developments in
the area makai of Ala Moana Boulevard until appropriate
plans and strategies are developed by DOE to accommodate
the projected demands of a proposed project. This will
be reflected in the Final SEIS.

Section 4.3.2.5 of the State Educational Functional
Plan regarding "Services and Facilities" will be
referenced in the forthcoming Final SEIS.

677 Ala Moana Boulevard
Suite 2021
Honolulu, Hawaii
96813
Telephone
(808) 587-2670
Facsimile
(808) 595-3413

Mr. Herman Aizawa, Ph.D.
Page 2
October 26, 1994

We appreciate your cooperation and assistance in resolving this matter of mutual concern.

Very truly yours,


Michael N. Scaffone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.
Peggy Anderson, et al., McKinley Teachers Assn.
✓ (with DOE letter)
Dennis Chun, Downtown Neighborhood Board
(with DOE letter)
Kenneth Hiraki, House of Representatives
(with DOE letter)
Paul Kadooka, Save McKinley Coalition
(with DOE letter)
Amy Kimura, McKinley High School PTSA
(with DOE letter)
Joey Ching, Royal School PTA
(with DOE letter)
Anita Malama, Honolulu District PTA
(with DOE letter)

HONOLULU DISTRICT PTA
c/o 533 Lauiki St.
Honolulu, Hawaii 96826
Sept. 6, 1994

Mr. Michael Scarfone, Director
Hawaii Community Development Authority, State
677 Ala Moana Blvd., Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone:

SUBJECT: Revised Kakaako Makai Area Plan, Draft Supplemental
Environmental Impact Statement

The Honolulu District PTA has just learned of your new plans for Kakaako. We have not had a chance to study the new plan but understand 3,000 new apartments are to be built. These 3,000 new apartments are expected to have an effect on public schools in the area as follows:

- 300 new students in Grades K-5
- 60 new students in Grades 6-8
- 90 new students in Grades 9-12

The three schools nearest this development are Royal Elementary, Central Intermediate, and McKinley High. As you know, Royal is already full and cannot expand. McKinley is also full and unable to accept Geographic Exceptions who wish to take advantage of special programs offered only at McKinley, and not at their home schools.

Our concern is adequate educational facilities. We would like to know what plans and financial arrangements are being made now to provide adequate educational facilities for these students when the apartments are built. For example, on what sites would future elementary schools be built in Kakaako? What funds are being assessed or set aside to pay for acquiring lands and building schools in or near these developments?

We respectfully request an extension of the comment deadline (today, Sept. 6) to give our members sufficient time to review and comment on the plan.

May we also obtain a copy of the document? Please inform me 1. where we can pick up a copy and 2. your decision on an extension.

Kahalo and aloha,

Mrs. Anita Malama
(Mrs.) Anita Malama President

cc: Wilson Okamoto Associates, OEQC, Honolulu District PTA members
State PTA



HAWAII
COMMUNITY
DEVELOPMENT
AUTHORITY



KAKAAKO
Where Possibilities Come To Life

John D. Walker
Executive Director

Cary Caulfield
Assistant Director

Michael N. Scarfone
Executive Director

67 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 537-2870
Facsimile
(808) 539-3611

Ref. No.: PL EIS 6.20

September 12, 1994

RECEIVED
SEP 14 1994

Mrs. Anita Malama
President
Honolulu District PTA
c/o 533 Lauiki Street
Honolulu, Hawaii 96826

Dear Mrs. Malama:

Re: Revised Kakaako Makai Area Plan Draft
Supplemental Environmental Impact
Statement (SEIS)

We regret that we are unable to accommodate your request to extend the official 45-day deadline for comments on the subject SEIS. We would, nonetheless, encourage your organization to proceed in submitting any review comments to our office at the earliest practical date. Should our schedule preclude the incorporation of your comments in the final document, we will attempt to compile and make available the material as an attachment to the Final EIS.

Copies of the Draft SEIS remain available for review at the locations listed on the attached sheet. If you wish to obtain a personal copy, we can reproduce the document at a cost of \$75.25.

Thank you for your interest and participation in the environmental review process. Should you have any further questions, please contact our Planning Office at 587-2865.

Very truly yours,

Michael N. Scarfone
Michael N. Scarfone
Executive Director

MNS/EN:ak
Enc.

cc: Office of Environmental
Quality Control

bcc: Wilson Okamoto & Associates, Inc.

Copies of the July 1994 Kakaako Makai Area Draft Supplemental Environmental Impact Statement are available for public review at the following locations:

- State of Hawaii
Department of Business and Economic Development & Tourism Library (DBEDT)
220 South King Street, 4th Floor
Honolulu, Hawaii 96813
- State of Hawaii
Department of Health
Office of Environmental Quality Control (OEQC)
220 South King Street, 4th Floor
Honolulu, Hawaii 96813
- State of Hawaii
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813
- State of Hawaii
Legislative Reference Bureau
State Office Tower
235 South Beretania Street
Honolulu, Hawaii 96813
- City & County of Honolulu
Municipal Reference and Records Center
City Hall Annex
558 South King Street
Honolulu, Hawaii 96813
- University of Hawaii
Hamilton Library
- State of Hawaii Libraries:
 - State Main Library
 - Kaneohe Regional Library
 - Hilo Regional Library
 - Kauai Regional Library
 - Hawaii Kai Library
 - Liliha Library
 - McCully Moiliili Library
 - Kaimuki Regional Library
 - Pearl City Regional Library
 - Wailuku Regional Library
 - Ala Hina Library
 - Kalihi Palama Library
 - Manoa Library
 - Waikiki Kapahulu Library



HONOLULU
DEVELOPMENT AUTHORITY



KAKAOKO
Kakaako Center for the Arts

John D. Walker
Chairman

Michael Kawaharada
Chairman

Michael N. Scaifone
Executive Director

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 522-2270
Facsimile
(808) 524-2413

Ref. No. PL EIS 6.20
October 26, 1994

The Honorable Herman M. Aizawa, Ph.D.
Superintendent
Department of Education
State of Hawaii
P.O. Box 2360
Honolulu, Hawaii 96804

Dear Dr. Aizawa:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaako Makai Area Plan
TRMS: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of September 7, 1994 commenting on the Draft SEIS and updating projected school enrollment figures.

As you are aware, we are presently working with your staff to identify a suitable school site within Kakaako. Meanwhile, recognizing the current capacity of educational facilities in the service area, RCDA is prepared to defer approval of residential developments in the area makai of Ala Moana Boulevard until appropriate plans and strategies are developed by DOE to accommodate the projected demands of a proposed project. This will be reflected in the Final SEIS.

Section 4.3.2.5 of the State Educational Functional Plan regarding "Services and Facilities" will be referenced in the forthcoming Final SEIS.

Mr. Herman Alzawa, Ph.D.
Page 2
October 26, 1994

We appreciate your cooperation and assistance in resolving this matter of mutual concern.

Very truly yours,


Michael N. Scafone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.
Peggy Anderson, et al., McKinley Teachers Assn.
(with DOE letter)
Dennis Chun, Downtown Neighborhood Board
(with DOE letter)
Kenneth Hiraki, House of Representatives
(with DOE letter)
Paul Kadooka, Save McKinley Coalition
(with DOE letter)
Amy Kimura, McKinley High School PTSA
(with DOE letter)
Joey Ching, Royal School PTA
(with DOE letter)
✓ Anita Malama, Honolulu District PTA
(with DOE letter)



STATE OF HAWAII
DEPARTMENT OF EDUCATION
President William McKinley High School

1039 S. KING STREET
HONOLULU, HAWAII 96814
TELEPHONE: (808) 583-9008

September 3, 1994

RECEIVED
SEP 07 1994

STATE OF HAWAII DEPARTMENT OF EDUCATION

Governor, State of Hawaii
c/o Office of Environmental Quality Control
220 S. King Street, Suite 400
Honolulu, Hawaii 96813

Dear Governor Waihee and OEOC:

On August 30, 1994, members of the McKinley Teacher's Association learned, via a concerned citizen, about the Revised Kakaako Makai Area Plan Draft Supplemental Environmental Impact Statement (EIS). Although McKinley High School is in the Hauka Plan, we were told that new students would be targeted for McKinley from the revised residential plans. Upon learning this, we believe that the Makai Area Plan Draft Supplemental EIS will impact education at McKinley High School.

We were finally able to have one member of the Teachers Association get a copy of the revised EIS late Friday evening, September 3, 1994. We note, however, that the deadline for comments is today, September 6, 1994. Since the proposed changes do affect McKinley High School's future enrollment, we respectfully request an extension of two weeks to allow us to dialogue on this plan before submitting our final comments.

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

Governor, State of Hawaii
and OEOC

-2- September 3, 1994

We are pleased that the plan does acknowledge that McKinley High School is functioning at capacity. We were informed last Friday that we are, as of this writing, "over projection" on student enrollment.

We are glad that HCDA and the DOE have a policy of public facilities dedication. However, we realize that funds generated from a developer for educational facilities or the impact that the development makes on a specific facility such as McKinley, may not be sufficient to create the "space" needed for additional students from the Makai area and the Hauka area.

We would appreciate a written response to our request for an extension. It may be faxed to McKinley at 531-3132.

Sincerely,

Executive Board
McKinley Teachers Association

Peggy Anderson
Peggy Anderson

Joan Hayward
Joan Hayward

Richard Emerson
Richard Emerson

Galle Sykes
Galle Sykes

cc: HCDA
William Okimoto and Associates



WAIKĪMOLOLO



AKAHO
Hawaii's Green Trust

John D. Walker

City Council

Richard H. Scarfone

Copies of the July 1994-Kakaako Makai Area Draft Supplemental Environmental Impact Statement are available for public review at the following locations:

State of Hawaii
Department of Business and Economic Development & Tourism Library (DBEDT)
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

State of Hawaii
Department of Health
Office of Environmental Quality Control (OEQC)
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

State of Hawaii
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

State of Hawaii
Legislative Reference Bureau
State Office Tower
235 South Beretania Street
Honolulu, Hawaii 96813

City & County of Honolulu
Municipal Reference and Records Center
City Hall Annex
558 South King Street
Honolulu, Hawaii 96813

University of Hawaii
Hamilton Library

State of Hawaii Libraries:
State Main Library
Kaneohe Regional Library
Hilo Regional Library
Kauai Regional Library
Hawaii Kai Library
Liliha Library
McCully Motiini Library

Kaimuki Regional Library
Pearl City Regional Library
Wailuku Regional Library
Aiea Hina Library
Kalihi Palama Library
Manoa Library
Waikiki Kapahulu Library

September 12, 1994
Ref. No.: PL EIS 6.20

Executive Board
McKinley Teachers Association
1039 South King Street
Honolulu, Hawaii 96814

Attention: Ms. Peg Anderson

Gentlemen:

Re: Revised Kakaako Makai Area Plan Draft
Supplemental Environmental Impact
Statement (SEIS)

We regret that we are unable to accommodate your request to extend the official 45-day deadline for comments on the subject SEIS. We would, nonetheless, encourage your organization to proceed in submitting any review comments to our office at the earliest practical date. Should our schedule preclude the incorporation of your comments in the final document, we will attempt to compile and make available the material as an attachment to the Final EIS.

Copies of the Draft SEIS remain available for review at the locations listed on the attached sheet. If you wish to obtain a personal copy, we can reproduce the document at a cost of \$75.25.

Thank you for your interest and participation in the environmental review process. Should you have any further questions, please contact our Planning Office at 587-2865.

Very truly yours,
Michael N. Scarfone
Michael N. Scarfone
Executive Director

MNS/EM:ak
ENC.
CC: Office of Environmental
Quality Control
bcc: Wilson Okamoto & Associates, Inc.

Alu Moore Building
Suite 101
Honolulu, Hawaii
96813
Telephone
(808) 587-2865
Facsimile
(808) 799-3813



STATE OF HAWAII
DEPARTMENT OF EDUCATION



John D. Waihele
Chairman

Michael N. Scaifone
Executive Director

Michael N. Scaifone
Executive Director

Michael N. Scaifone
Executive Director

Ref. No. PL EIS 6.20
October 26, 1994

The Honorable Herman M. Aizawa, Ph.D.
Superintendent
Department of Education
State of Hawaii
P.O. Box 2360
Honolulu, Hawaii 96804

Dear Dr. Aizawa:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaako Makai Area Plan
TMKs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, OAHU, Hawaii

Thank you for your letter of September 7, 1994
commenting on the Draft SEIS and updating projected
school enrollment figures.

As you are aware, we are presently working with your
staff to identify a suitable school site within Kakaako.
Meanwhile, recognizing the current capacity of
educational facilities in the service area, HCDA is
prepared to defer approval of residential developments in
the area makai of Ala Moana Boulevard until appropriate
plans and strategies are developed by DOE to accommodate
the projected demands of a proposed project. This will
be reflected in the Final SEIS.

Section 4.3.2.5 of the State Educational Functional
Plan regarding "Services and Facilities" will be
referenced in the forthcoming Final SEIS.

Mr. Herman Aizawa, Ph.D.
Page 2
October 26, 1994

We appreciate your cooperation and assistance in
resolving this matter of mutual concern.

Very truly yours,

Michael N. Scaifone
Executive Director

- cc: Office of Environmental Quality Control
- Wilson Okamoto & Associates, Inc.
- ✓Peggy Anderson, et al., McKinley Teachers Assn.
(with DOE letter)
- Dennis Chun, Downtown Neighborhood Board
(with DOE letter)
- Kenneth Hiraki, House of Representatives
(with DOE letter)
- Paul Kadooka, Save McKinley Coalition
(with DOE letter)
- Amy Kimura, McKinley High School PTSA
(with DOE letter)
- Joey Ching, Royal School PTA
(with DOE letter)
- Anita Malama, Honolulu District PTA
(with DOE letter)

67 Ala Moana Boulevard
Suite 801
Honolulu, Hawaii
96813
Telephone
(808) 587-5700
Facsimile
(808) 577-5113

October 26, 1994

The Honorable Herman M. Aizawa, Ph.D.
Superintendent
Department of Education
State of Hawaii
P.O. Box 2360
Honolulu, Hawaii 96804

Dear Dr. Aizawa:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaako Makai Area Plan
TMEs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of September 7, 1994
commenting on the Draft SEIS and updating projected
school enrollment figures.

As you are aware, we are presently working with your
staff to identify a suitable school site within Kakaako.
Meanwhile, recognizing the current capacity of
educational facilities in the service area, HCDA is
prepared to defer approval of residential developments in
the area makai of Ala Moana Boulevard until appropriate
plans and strategies are developed by DOE to accommodate
the projected demands of a proposed project. This will
be reflected in the Final SEIS.

Section 4.3.2.5 of the State Educational Functional
Plan regarding "Services and Facilities" will be
referenced in the forthcoming Final SEIS.



LAND USE AND
ENVIRONMENTAL
DEPARTMENT



John D. Wabbe
Director

Michael Kawahara
Assistant Director

Michael N. Scarfone
Executive Director

67 Ala Moana Boulevard
Suite 101
Honolulu, Hawaii
96813
Telephone
(808) 535-2070
Facsimile
(808) 535-3113

HOUSE OF REPRESENTATIVES
STATE OF HAWAII
STATE CAPITOL
HONOLULU, HAWAII 96813



September 6, 1994

Mr. Michael N. Scarfone
Executive Director
677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii 96813

RE: THE REVISED KAKAAKO MAKAI AREA PLAN - DRAFT SUPPLEMENTAL
ENVIRONMENTAL IMPACT STATEMENT (EIS)

Dear Mr. Scarfone:

In reviewing the Revised Kakaako Makai Area Plan's Draft
Supplemental EIS, the plan expands its original boundaries to
include six blocks North of Ala Moana Boulevard, and all areas
South of Ala Moana Boulevard designated previously as
commercial, has been re-zoned as mix-use.

These two amendments to the plan impacts the community directly.
Schools are already at a maximum-capacity level and are not able
to accommodate the influx of students created by the new plan's
expansion. The EIS also acknowledges this fact as an unresolved
issue (ch. 9, pg. 1).

I would like to recommend that before we continue with the
planning process, this issue must be resolved. We must create
solutions and/or create alternatives for the benefit of the
children of Kakaako. If you need assistance and/or more
information, please call me at 586-6180.

Sincerely,

KENNETH T. HIRAKI
State Representative
25th District

cc: Dr. Bruce Anderson, OEQC
Rodney Funakoshi, Wilson Okamoto & Assoc. Inc.

Mr. Herman Aizawa, Ph.D.
Page 2
October 26, 1994

We appreciate your cooperation and assistance in resolving this matter of mutual concern.

Very truly yours,


Michael N. Scaffone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.
Peggy Anderson, et al., McKinley Teachers Assn.
(with DOE letter)
Dennis Chun, Downtown Neighborhood Board
(with DOE letter)
✓ Kenneth Hiraki, House of Representatives
(with DOE letter)
Paul Kadooka, Save McKinley Coalition
(with DOE letter)
Amy Kimura, McKinley High School PTSA
(with DOE letter)
Joey Ching, Royal School PTA
(with DOE letter)
Anita Halema, Honolulu District PTA
(with DOE letter)

SAVE MCKINLEY COALITION

98-351 Kaauka Loop, C1806
Aiea, Hawaii 96701

September 6, 1994

Mr. Michael Scarfone, Executive Director
Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

Dear Mr. Scarfone,

Subject: Draft Supplemental Environmental Impact Statement
Revised Kakaako Makai Area Plan
TMK: 2-1-15, 58 to 60 and portions of
2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

The Save McKinley Coalition has reviewed the subject document and has the following comments regarding the proposed plan:

1. Under the proposed plan the increase in the area's resident population could be 6,900 persons. This addition of residential population of this size to an area that has no residential population will require that the educational needs be provided for by the Supplemental Environmental Impact Statement of the Revised Kakaako Makai Area Plan.

Yes, there are other public services that needs to be provided, such as police, fire, & health, but non has a greater impact than "EDUCATION". At present in both the "Kakaako Mauka Area Plan" and the "Kakaako Makai Area Plan" has never addressed the need for "Educational Facilities" or what the Save McKinley Coalition calls "EDUCATIONAL LAND" requirements. There is not a square foot of "EDUCATIONAL LAND" provided for in this Draft Supplemental Environmental Impact Statement.

2. UNRESOLVED ISSUES: "Resolution of educational facilities requirements". The Save McKinley Coalition would like to see that this issue be resolved and addressed before the "Final Supplemental Environmental Impact Statement" is issued for the Kakaako Makai Area.

3. In Chapter 4, Section 4.3.2.5 State Education Functional Plan: it is nice to see the Revised Makai Area Plan will increase opportunities for appreciation and participation in music and arts through the development of the theater and children's museum. The Save McKinley Coalition would like to see that the "BASIC" educational needs are provided for by the "Revised Makai Area Plan".

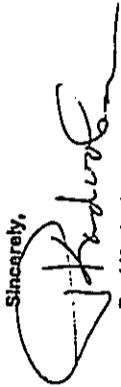
The Department of Education response to Supplemental Environmental Impact Statement of May 10, 1994 by Superintendent, Dr. Herman M. Alzawa, clearly addresses the need for additional "Educational Facilities" or "Educational Land" requirements. We also realize that the projections by the DOE is on the low end and is only looking at the projections of 3,000 residential units being built in the Kakaako Makai Area.

We continue to ask about the impact of the Kakaako Makai Area, which could add much more than the 3,000 residential units being built in the Kakaako Makai Area? Also, what about the surrounding residential area that will add as much as or more than the combined Kakaako Makai Area and the Kakaako Makai Area to the schools that are impacted by this Revised Kakaako Makai Area Plan? Schools such as Kaahumanu Elementary are already at capacity, Royal Elementary also at capacity with an enrollment of 400 students this school year, and McKinley High School at capacity one month before this school year started.

While we do realize that there is a need for residential housing, there also is a need of educational facilities and/or EDUCATIONAL LAND!

We appreciate the opportunity to provide comments.

Sincerely,



Paul Kadooka,
President

cc: OEQC
Wilson, Okamoto & Associates, Inc.



HAWAII DEPARTMENT OF EDUCATION



KAKAOKO
Honolulu, Hawaii

John D. Washoe
Chairman

Michael N. Scaffone
Executive Director

Michael N. Scaffone
Executive Director

Ref. No. PL EIS 6.20

October 26, 1994

The Honorable Herman M. Aizawa, Ph.D.
Superintendent
Department of Education
State of Hawaii
P.O. Box 2360
Honolulu, Hawaii 96804

Dear Dr. Aizawa:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaako Makai Area Plan
TRMs: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
HONOLULU, OAHU, HAWAII

Thank you for your letter of September 7, 1994
commenting on the draft SEIS and updating projected
school enrollment figures.

As you are aware, we are presently working with your
staff to identify a suitable school site within Kakaako.
Meanwhile, recognizing the current capacity of
educational facilities in the service area, HCDA is
prepared to defer approval of residential developments in
the area makai of Ala Moana Boulevard until appropriate
plans and strategies are developed by DOE to accommodate
the projected demands of a proposed project. This will
be reflected in the Final SEIS.

Section 4.3.2.5 of the State Educational Functional
Plan regarding "Services and Facilities" will be
referenced in the forthcoming Final SEIS.

Mr. Herman Aizawa, Ph.D.
Page 2
October 26, 1994

We appreciate your cooperation and assistance in
resolving this matter of mutual concern.

Very truly yours,

Michael N. Scaffone
Executive Director

- cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.
Peggy Anderson, et al., McKinley Teachers Assn.
(with DOE letter)
Dennis Chun, Downtown Neighborhood Board
(with DOE letter)
Kenneth Hiraki, House of Representatives
(with DOE letter)
✓ Paul Kadooke, Save McKinley Coalition
(with DOE letter)
Amy Kimura, McKinley High School PTSA
(with DOE letter)
Joey Ching, Royal School PTA
(with DOE letter)
Anita Malama, Honolulu District PTA
(with DOE letter)

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 597-3270
Facsimile
(808) 597-3413

McKinley High School PTSA
1039 S. King St.
Honolulu, HI 96814

Wilson Okamoto and Associates, Inc.
Attention: Mr. Rodney Funakoshi, Project Manager
1907 So. Beretania St., Suite 400
Honolulu, HI 96826

Subject: Revised Kakaako Makai Area Plan
Draft Supplemental Environmental Impact Statement

The McKinley PTSA was surprised to discover the proposed new Makai Area Plan will have an impact on McKinley High School. Previously the Makai Area Plan had no effect on the educational facilities because there were no housing units in the Makai Area.

However, the addition of six blocks above Ala Moana Boulevard planned for housing units and the rezoning of all the Commercial zoned area (which includes no housing) below Ala Moana Boulevard to Mixed Use (which includes housing), will impact McKinley. The anticipated 3000 housing units will definitely have an effect on educational facilities. The Draft SEIS gives a conservative estimate of 90 new students generated for McKinley High School and 300 for Royal Elementary. Yet it has no plans for sites for future schools. McKinley is presently at 75 over capacity and our principal is unable to accept the many requests for geographic exceptions from students who want to take advantage of the special programs offered such as the Finance Academy or the Humanities Program.

Why is HCDA still trying to build future housing with no provision for school facilities to support the children who will live in the housing units? HCDA has built or is trying to build on the only two sites previously designated for future elementary schools in Kaka'ako, the Hale Kevalo next to McKinley and the former Pohukaina School site, without replacing them with alternative sites.

The McKinley PTSA feels HCDA should plan so that educational needs of future students from Kaka'ako will be adequately met. Thank you.

Yours truly,

Amy Kimura

Amy Kimura, 2nd Vice-President

cc: HCDA, OEQC, legislators, State and District PTAs



HAWAII STATE
DEPARTMENT OF EDUCATION



KAKA'AKO
Maui Hanaui Opa The Sea

John D. Waiher
Director

Michael Kawahara
Chairman

Michael N. Scarfone
Executive Director

Ref. No. PL EIS 6.20

October 26, 1994

The Honorable Herman M. Aizawa, Ph.D.
Superintendent
Department of Education
State of Hawaii
P.O. Box 2360
Honolulu, Hawaii 96804

Dear Dr. Aizawa:

Re: Draft Supplemental Environmental Impact
Statement (SEIS)
Revised Kakaako Makai Area Plan
TRMS: 2-1-15, 58 to 60 and portions
of 2-1-14, 53 to 60
HONOLULU, OAHU, HAWAII

Thank you for your letter of September 7, 1994 commenting on the Draft SEIS and updating projected school enrollment figures.

As you are aware, we are presently working with your staff to identify a suitable school site within Kakaako. Meanwhile, recognizing the current capacity of educational facilities in the service area, HCDA is prepared to defer approval of residential developments in the area makai of Ala Moana Boulevard until appropriate plans and strategies are developed by DOS to accommodate the projected demands of a proposed project. This will be reflected in the Final SEIS.

Section 4.3.2.5 of the State Educational Functional Plan regarding "Services and Facilities" will be referenced in the forthcoming Final SEIS.

67 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 535-5270
Facsimile
(808) 775-5433

Mr. Herman Aizawa, Ph.D.
Page 2
October 26, 1994

We appreciate your cooperation and assistance in
resolving this matter of mutual concern.

Very truly yours,


Michael N. Scafone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.
Peggy Anderson, et al., McKinley Teachers Assn.
(with DOE letter)
Dennis Chun, DOWNTOWN Neighborhood Board
(with DOE letter)
Kenneth Hiraki, House of Representatives
(with DOE letter)
Paul Kadooka, Save McKinley Coalition
(with DOE letter)
/ Amy Kimura, McKinley High School PTSA
(with DOE letter)
Joey Ching, Royal School PTA
(with DOE letter)
Anita Malasa, Honolulu District PTA
(with DOE letter)

RECEIVED
EP 7 AM 10 1
ENVIRONMENT
HONOLULU

Royal School
Parent-Teacher-Association
1519 Queen Emma Street
Honolulu, Hawaii, 96813
(808) 538-8063

HCDA
677 Ala Moana Sulte 1001
Honolulu, Hawaii 96813

Gentlemen:

We have been recently informed of the revised Kakaako Makai Area Planned development and request that you extend the deadline so that we can study how the project will impact our school and community.

Please send a copy of the Draft Supplement Environmental Impact Statement to the above address.

Thank you very much for your cooperation.

Sincerely,

Joey Ching
Joey Ching, PTA President.



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES



KAKAOKO
Honolulu, Hawaii

John D. Walker
Executive Director

Gary Cullis
Assistant Director

Michael N. Scarlone
Executive Director

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 587-2870
Facsimile
(808) 587-3413

Ref. No.: PL EIS 6.20
September 12, 1994

Mr. Joey Ching, President
Royal School PTA
1519 Queen Emma Street
Honolulu, Hawaii 96813

Dear Mr. Ching:

Re: Revised Kakaako Makai Area Plan Draft
Supplemental Environmental Impact
Statement (SEIS)

We regret that we are unable to accommodate your request to extend the official 45-day deadline for comments on the subject SEIS. We would, nonetheless, encourage your organization to proceed in submitting any review comments to our office at the earliest practical date. Should our schedule preclude the incorporation of your comments in the final document, we will attempt to compile and make available the material as an attachment to the Final EIS.

Copies of the Draft SEIS remain available for review at the locations listed on the attached sheet. If you wish to obtain a personal copy, we can reproduce the document at a cost of \$75.25.

Thank you for your interest and participation in the environmental review process. Should you have any further questions, please contact our Planning Office at 587-2865.

Very truly yours,

Michael N. Scarlone
Michael N. Scarlone
Executive Director

MNS/EM:ak
Enc.

cc: Office of Environmental
Quality Control
bcc: Wilson Okamoto & Associates, Inc.

Copies of the July 1994-Kakaako Makai Area Draft Supplemental Environmental Impact Statement are available for public review at the following locations:

State of Hawaii

Department of Business and Economic Development & Tourism Library (DBEDT)
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

State of Hawaii

Department of Health
Office of Environmental Quality Control (OEQC)
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

State of Hawaii

Hawaii Community Development Authority
677 Ala Moana Boulevard, Suite 1001
Honolulu, Hawaii 96813

State of Hawaii

Legislative Reference Bureau
State Office Tower
235 South Beretania Street
Honolulu, Hawaii 96813

City & County of Honolulu

Municipal Reference and Records Center
City Hall Annex
558 South King Street
Honolulu, Hawaii 96813

University of Hawaii

Hamilton Library

State of Hawaii Libraries:

State Main Library
Kaneohe Regional Library
Hilo Regional Library
Kauai Regional Library
Hawaii Kai Library
Liliha Library
McCully Moliili Library

Kaimuki Regional Library
Pearl City Regional Library
Wailuku Regional Library
Aiea Hina Library
Kalihi Palama Library
Manoa Library
Waikiki Kapahulu Library



KAKAOKO
HAWAIIAN COMMUNITY DEVELOPMENT AUTHORITY



KAKAOKO
HAWAIIAN COMMUNITY DEVELOPMENT AUTHORITY

John D. Wulber
Chairman

Michael Kawaharada
Chairman

Michael N. Scaifone
Executive Director

Ref. No. PL EIS 6.20

October 26, 1994

The Honorable Herman M. Aizawa, Ph.D.
Superintendent
Department of Education
State of Hawaii
P.O. Box 2360
Honolulu, Hawaii 96804

Dear Dr. Aizawa:

Re: Draft Supplemental Environmental Impact Statement (SEIS)
Revised Kakaako Makai Area Plan
TRMS: 2-1-15, 58 to 60 and portions of 2-1-14, 53 to 60
Honolulu, Oahu, Hawaii

Thank you for your letter of September 7, 1994 commenting on the Draft SEIS and updating projected school enrollment figures.

As you are aware, we are presently working with your staff to identify a suitable school site within Kakaako. Meanwhile, recognizing the current capacity of educational facilities in the service area, HCDA is prepared to defer approval of residential developments in the area makai of Ala Moana Boulevard until appropriate plans and strategies are developed by DOE to accommodate the projected demands of a proposed project. This will be reflected in the Final SEIS.

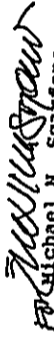
Section 4.3.2.5 of the State Educational Functional Plan regarding "Services and Facilities" will be referenced in the forthcoming Final SEIS.

677 Ala Moana Boulevard
Suite 1001
Honolulu, Hawaii
96813
Telephone
(808) 538-5200
Fax
(808) 538-5213

Mr. Herman Aizawa, Ph.D.
Page 2
October 26, 1994

We appreciate your cooperation and assistance in resolving this matter of mutual concern.

Very truly yours,


Michael N. Scaffone
Executive Director

cc: Office of Environmental Quality Control
Wilson Okamoto & Associates, Inc.
Peggy Anderson, et al., McKinley Teachers Assn.
(with DOE letter)
Dennis Chun, Downtown Neighborhood Board
(with DOE letter)
Kenneth Hiraki, House of Representatives
(with DOE letter)
Paul Kadooka, Save McKinley Coalition
(with DOE letter)
Amy Kimura, McKinley High School PTA
(with DOE letter)
✓Joey Ching, Royal School PTA
(with DOE letter)
Anita Haisama, Honolulu District PTA
(with DOE letter)

Revised Kakaako Makai Area Plan

Chapters 13 and 14
LIST OF PREPARERS
REFERENCES

13. LIST OF PREPARERS

The following is a list of organizations and individuals assisting in the preparation of the Draft Supplemental EIS.

Hawaii Community Development Authority	Eric Masutomi Reed Kishinami Janet Bebb
Wilson Okamoto & Associates, Inc. (EIS Consultant)	Rodney Funakoshi Laura Mau Edwin Kagawa
Wilbur Smith Associates (Traffic Impact Assessment)	Bryant T. Brothers
Calvin Kim & Associates (Civil Engineering)	Michael Yamaguchi

14. REFERENCES

1. Austin, Tsutsumi & Associates, Inc. *Kakaako Traffic Study*. Honolulu, Hawaii. July 1991.
2. Austin, Tsutsumi & Associates, Inc. *Traffic Circulation and Parking Report for the Proposed Kewalo Basin Park and Facilities*. Honolulu, Hawaii. March 1993.
3. Austin, Tsutsumi & Associates, Inc. *Analysis of Proposed Revisions to the Kakaako Makai Plan*. Honolulu, Hawaii. November 1993.
4. Edward K. Noda and Associates, *Honolulu International Airport, Final Environmental Impact Statement*. Honolulu, Hawaii. April 1991.
5. ELS/Elbasani & Logan Architects. *Kakaako Makai Area Development Strategy Urban Design Report*. Honolulu, Hawaii. October 1993.
6. ELS/Elbasani & Logan Architects. *Kakaako Makai Area Development Strategy Summary Report*. Honolulu, Hawaii. October 1993.
7. GMP Associates. *Honolulu Desalination Plant Site Study Section 2 - Desalination Site Location and Evaluation Analysis. Draft Submittal*. Honolulu, Hawaii. September 7, 1993.
8. Hawaii Community Development Authority. *Kakaako Community Development District Makai Area Plan*. Honolulu, Hawaii. February 1990.
9. Hawaii Community Development Authority. *Kakaako Community Development District Makai Area Rules*. Honolulu, Hawaii. February 1990.
10. Hawaii Community Development Authority. *Kakaako Makai Area Plan, Final Environmental Impact Statement*. Honolulu, Hawaii. January 1990.
11. Hawaii Community Development Authority. *Kakaako Community Development District Final Supplemental Environmental Impact Statement*. Honolulu, Hawaii. May 1985.
12. Hawaii Community Development Authority. *Kakaako Community Development District Final Environmental Impact Statement*. Honolulu, Hawaii. June 1983.
13. Molinaro Associates, Inc. *Kakaako Makai Area Development Strategy Implementation Strategy Report*. Honolulu, Hawaii. October 1993.

Chapter 14
REFERENCES

14. Molinaro Associates, Inc. *Kakaako Makai Area Development Strategy Market Analysis, Financial Strategy, Pro Forma Analysis Report*. Honolulu, Hawaii. October 1993.
15. Office of State Planning. *Honolulu Waterfront Master Plan Final Report*. Honolulu, Hawaii. October 1989.
16. State of Hawaii, Department of Education. *Correspondence*. Honolulu, Hawaii. September 7, 1994.
17. State of Hawaii, Department of Health, Clean Air Branch. *Hawaii Air Quality Data, Jan. 1988 - Dec. 1990*. Honolulu, Hawaii.
18. U.S. Department of Commerce, Bureau of the Census. *1990 Census of Population and Housing*. Summary Tape File 1A. 1991.
19. Wilson Okamoto and Associates, Inc. *Hale Kewalo Rental Housing Mixed-Use Development, Final Environmental Impact Statement*. Honolulu, Hawaii. June 1993.

Appendix A

AIR QUALITY IMPACT REPORT

J. W. Morrow

HONOLULU WATERFRONT MASTER PLAN
TECHNICAL REPORT SERIES

TECHNICAL REPORT SERIES

This is one of a series of technical reports which have been prepared to provide basic supporting documentation for the Honolulu Waterfront Master Plan. The technical reports and corresponding authors are listed below.

TECHNICAL REPORT	AUTHOR
HARBORS PLANNING	Moffatt & Nichol, Engineers
MARKET ASSESSMENT AND ANALYSES OF PUBLIC REVENUES, COSTS AND BENEFITS	John Child & Company, Inc.
PUBLIC FINANCE	Dean Witter Capital Markets
TRAFFIC IMPACT REPORT	Pacific Planning & Engineering, Inc.
SOCIAL IMPACTS	Earthplan
OCEAN ENGINEERING CONSIDERATIONS	Edward K. Noda and Associates, Inc.
MARINE BIOLOGICAL RESOURCES, OPPORTUNITIES AND CONSTRAINTS	William A. Brewer & Associates
ALA MAKAI: THE SEASHORE TRAIL OF HONOLULU HARBOR AN INTERPRETIVE PLAN	Dr. Glenn Grant, Ms. Jane Silvermann, Dr. Ruth Kawena Johnson, and Mr. Tom Coffman
AIR QUALITY IMPACT REPORT	J. W. Morrow
ACOUSTIC STUDY	Darby & Associates
ELECTRICAL ENGINEERING REPORT	Ronald N.S. Ho & Associates, Inc.
PRELIMINARY GEOLOGICAL AND GEOTECHNICAL ENGINEERING RECONNAISSANCE REPORT	Geolabs - Hawaii
PRELIMINARY INVESTIGATION OF KEWALO INCINERATOR LANDFILL	Woodward-Clyde Consultants
PETROLEUM FACILITIES	Jason Lembeck & Associates
EVOLUTION OF THE HONOLULU WATERFRONT: A HISTORICAL PERSPECTIVE	Helber Hastert & Kimura, Planners
INFRASTRUCTURE STUDY	R.M. Towill Corporation
PARTICIPATION AND AWARENESS PROGRAM	Office of State Planning

AIR QUALITY IMPACT REPORT

Prepared By:
J. W. Morrow
563 Paulele Street
Kailua, Hawaii

Prepared For:
Helber, Hastert & Kimura, Planners and
R. M. Towill Corporation, A Joint Venture

February 1989



Office of State Planning
Office of the Governor

TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

1. INTRODUCTION.....	1
2. EXISTING CONDITIONS.....	1
2.1 Climate and Meteorology.....	1
2.2 Emission Sources.....	2
2.3 Air Quality Standards.....	3
2.4 Historical Air Monitoring Data.....	4
2.5 Computer Simulation Modeling.....	5
2.6 Air Sampling.....	6
2.7 Barbers Point Harbor.....	7
3. FUTURE CONDITIONS.....	7
3.1 Without Waterfront Development.....	7
3.2 With Waterfront Development.....	8
4. PROBABLE IMPACTS.....	9
5. MITIGATING MEASURES.....	10

REFERENCES

TABLES

FIGURES

AIR QUALITY IMPACT REPORT
HONOLULU WATERFRONT MASTER PLAN

Prepared for

R. M. Towill Corporation

J. W. MORROW
ENVIRONMENTAL MANAGEMENT CONSULTANT
KAILUA, HAWAII

LIST OF TABLES

TABLE	TITLE
1	Annual Wind Rose, Honolulu International Airport
2	Summary of State and Federal Ambient Air Quality Standards
3	Summary of Aerometric Data Collected at the Department of Health Building and Sand Island (TSP, SO ₂ , Ozone), 1978 - 1987
4	Summary of Aerometric Data Collected at the Department of Health Building (NO ₂ , CO), 1971 - 1987
5	Lead Monitoring Data, Honolulu, 1970 - 1987
6	AM/PM Peak Hours Carbon Monoxide Sampling Results, October, 1988
7	Air Monitoring Data, Barbers Point, 1971-87

LIST OF FIGURES

FIGURE	STUDY AREA	TITLE
1	Study Area	
2	January Windrose, Honolulu International Airport	
3	August Windrose, Honolulu International Airport	
4	Major Stationary Sources in the Waterfront Area: Honolulu Power Plant and Hawaiian Bitumuls Asphalt Plant	
5	Major Stationary Sources in the Waterfront Area: HCD Batch Plant and Sand Island Sewage Treatment Plant	
6	Major Stationary Sources in the Waterfront Area: Jet Fuel Storage Along Sand Island Access Road and the Harbor Edge	
7	Major Stationary Sources: Fuel Storage Tanks Along Nimitz Highway (Piers 29-31 and 36-37)	
8	Estimates of Maximum 1-Hour Carbon Monoxide Concentrations, Ward Avenue at Ala Moana Boulevard PM-Peak Hour (1985 - 2010)	
9	Estimates of Maximum 1-Hour Carbon Monoxide Concentrations, South Street at Ala Moana Boulevard PM-Peak Hour (1985 - 2010)	
10	Estimates of Maximum 1-Hour Carbon Monoxide Concentrations, Punchbowl Street at Ala Moana Boulevard PM-Peak Hour (1985 - 2010)	
11	Estimates of Maximum 1-Hour Carbon Monoxide Concentrations, Alakea Street at Nimitz Highway PM-Peak Hour (1985 - 2010)	
12	Estimates of Maximum 1-Hour Carbon Monoxide Concentrations, Bishop Street at Nimitz Highway PM-Peak Hour (1985 - 2010)	
13	Estimates of Maximum 1-Hour Carbon Monoxide Concentrations, Waiakamilo Road at Nimitz Highway PM-Peak Hour (1985 - 2010)	

14

Estimates of Maximum 1-Hour Carbon Monoxide Concentrations, Kalihi Street at Nimitz Highway PM-Peak Hour (1985 - 2010)

15

Estimates of Maximum 1-Hour Carbon Monoxide Concentrations, Sand Island Access Road at Nimitz Highway, PM-Peak Hour (1985 - 2010)

16

Estimates of Maximum 1-Hour Carbon Monoxide Concentrations, Lagoon Drive at Nimitz Highway PM-Peak Hour (1985 - 2010)

17

Carbon Monoxide Sampling Sites: Ward Avenue at Ala Moana Boulevard and Richards Street at Nimitz Highway

18

Carbon Monoxide Sampling Sites: Bishop Street at Nimitz Highway

19

Carbon Monoxide Sampling Sites: Sand Island Access Road and Lagoon Drive at Nimitz Highway

1. INTRODUCTION

The Honolulu Waterfront Development Area as defined for the purposes of this Master Planning effort extends approximately from the Ala Wai Boat Harbor in the east to the Honolulu International Airport in the west (see Figure 1). Within that area are a limited number of major stationary air pollution sources and many mobile sources, i.e., motor vehicles. It is the purpose of this report to examine existing air quality and the effect of future growth and development on that air quality.

2. EXISTING CONDITIONS

2.1 Climate and Meteorology. The National Climatic Data Center in its 1982 annual summary for Honolulu notes that:

"Hawaii's equable temperatures are associated with the small seasonal variation in the amount of energy received from the sun and the tempering effect of the surrounding ocean. The range of temperature averages only 7 degrees between the warmest months (August and September) and the coolest months (January and February) and about 12 degrees between day and night. Daily maximums run from the high 70's in winter to the mid-80's in summer, and daily minimums from the mid-60's to the low 70's. However, the Honolulu Airport area has recorded as high as 93 degrees and as low as 53" (1).

Historical rainfall data from the Honolulu International Airport indicate an annual average rainfall of 23 inches. Based on this annual average rainfall and in accordance with Thorndike's scheme for climatic classification, the area is considered subhumid grassland [2].

Meteorological records were reviewed from the Honolulu International Airport and Hickam Air Force Base (AFB). It is quite evident that northeast tradewinds predominate during much of the year (Table 1). A closer examination of the data, however, indicates that low velocities (less than 10 mph) occur frequently and that the "normal" northeasterly tradewinds tend to breakdown in the fall giving way to more light, variable wind conditions through the winter and on into early spring. It is during these times that Honolulu generally experiences elevated pollutant levels. This seasonal difference in wind conditions can be seen clearly in Figures 2 and 3.

Of particular interest from an air pollution standpoint were the stability wind roses prepared for the period January 1955 to December 1968 at Hickam Air Force Base [3]. These data indicated that stable conditions, i.e., Pasquill-Gifford stability categories E and F [4], occur about 28% of the time. It is under such conditions that the greatest potential for air pollutant buildup from groundlevel sources exists.

2.2 Emission Sources. As previously noted, the waterfront area has a variety of air pollution sources, both stationary and mobile. The primary stationary sources in the area include:

- HECO's Honolulu Power Plant (Figure 4)
- Hawaiian Bitumuls Asphalt Plant (Figure 4)
- HCO's Batch Plant (Figure 5)
- Sand Island Sewage Treatment Plant (Figure 5)
- Fuel Storage Tanks (Figures 6 and 7)

These sources are all presently in compliance with state and federal air pollution control regulations and are not causing violations of ambient air quality standards. HECO's Honolulu Power Plant, with its two, low sulfur fuel oil-fired boilers, is scheduled for shutdown in the 1994-95 timeframe, and there are no plans to replace it. The Sand Island STP has several combustion sources including a sludge incinerator, two steam boilers, a waste heat boiler, and three diesel engines for pump units.

Ninety percent of the petroleum fuels coming into the state pass through the waterfront fuel storage tanks. They hold gasoline, diesel, commercial jet fuel, residual oil and asphalt. All tanks holding volatile fuels, e.g., gasoline, are equipped with vapor control devices, primarily floating roofs. Fugitive volatile organic compound (VOC) emissions are thereby controlled.

Mobile sources in the waterfront include motor vehicle traffic along the Ala Moana Boulevard - Nimitz Highway corridor, ship and boat traffic, and aircraft activity due to the adjacent international airport. A recent study of the airport's impact on air quality revealed that motor vehicle traffic, not aircraft, were the primary contributors to groundlevel pollutant concentrations in the airport area [5]. While ship emissions are occasionally visible due to the low grade fuel oil burned, these emissions are not as frequent or as widespread as those from motor vehicles.

2.3 Air Quality Standards. A summary of State of Hawaii and national ambient air quality standards is presented in Table 2 [6, 7]. Note that Hawaii's standards are not divided into primary and secondary standards as are the federal standards.

Primary standards are intended to protect public health with an adequate margin of safety while secondary standards are intended to protect public welfare through the prevention of damage to soils, water, vegetation, man-made materials, animals, wildlife, visibility, climate, and economic values [8].

Some of Hawaii's standards are clearly more stringent than their federal counterparts but, like their federal counterparts, may be exceeded once per year. It should also be noted that in April, 1986, the Governor signed amendments to Chapter 59 (Ambient Air Quality Standards) making the state's standards for particulate matter and sulfur dioxide the same as national standards. In the case of particulate matter, however, this uniformity did not last long. On July 1, 1987, the EPA revised the federal particulate standard to apply only to particles 10 microns or less in diameter (PM-10) [9], leaving the state once again with standards different than the federal ones.

In the case of the automotive pollutants [carbon monoxide (CO), oxides of nitrogen (NOx), and photochemical oxidants (Ox)], there are only primary standards. Until 1983, there was also a hydrocarbons standard which was based on the precursor role hydrocarbons play in the formation of photochemical oxidants rather than any unique toxicological effect they had at ambient levels. The hydrocarbons standard was formally eliminated in January, 1983 [10].

The U.S. Environmental Protection Agency (EPA) is mandated by Congress to periodically review and re-evaluate the federal standards in light of new research findings [11]. The last review resulted in the relaxation of the oxidant standard from 160 to 240 micrograms/cubic meter (ug/m³) [12]. The carbon monoxide (CO), particulate matter, sulfur dioxide (SO₂), and nitrogen dioxide (NO₂) standards are currently under review, but final action has not been taken yet [13].

Finally, the State of Hawaii also has fugitive dust regulations for particulate matter (PM) emanating from construction activities [14]. There simply can be no visible emissions from fugitive dust sources.

2.4 HISTORICAL AIR MONITORING DATA. The State Department of Health maintains a network of air monitoring stations around the state to gather data on the following regulated pollutants:

- o total suspended particulates (TSP)
- o particulate matter - 10 microns (PM-10)
- o sulfur dioxide (SO2)
- o carbon monoxide (CO)
- o ozone (O3)
- o lead (Pb)

In the case of TSP and SO2, measurements are made on a 24-hour basis to correspond with the averaging period specified in state and federal standards. Samples are collected once every six days in accordance with U.S. Environmental Protection Agency (EPA) guidelines. Carbon monoxide and ozone, however, are measured on a continuous basis due to their short-term (1-hour) standards. Lead concentrations are determined from the TSP samples which are sent to an EPA laboratory for analysis. Note that the lead standard is a quarterly average.

The most extensive air monitoring has been conducted by the Department of Health at its own building in downtown Honolulu about one-half mile northeast of the waterfront area. Ozone has also been monitored for a number of years at a Sand Island location. A summary of these data is presented in Tables 3 and 4.

The monitoring results indicate general compliance with state and federal ambient air quality standards. Only carbon monoxide and photochemical oxidants (ozone) occasionally exceed their respective state standards. The State also has been having particulate samples analyzed for lead content, and as indicated in Table 5, airborne lead levels have declined as expected due to the federal program for gradual phaseout of leaded gasoline. Particulate lead accumulated over the years in roadside soils and plants, however, will remain indefinitely in the area and provide inhalation exposure whenever dust is re-entrained in the air as a result of scouring winds or mechanical disturbance due to vehicular motion.

2.5 Computer Simulation Modeling. Afternoon peak-hour traffic data for the following intersections were obtained from the traffic consultant [15] in order to estimate carbon monoxide levels:

- Ward Avenue at Ala Moana Boulevard
- South Street at Ala Moana Boulevard
- Punchbowl at Ala Moana Boulevard
- Alakea Street at Nimitz Highway
- Bishop Street at Nimitz Highway
- Waialakamilo Road at Nimitz Highway
- Kalihi Street at Nimitz Highway
- Sand Island Access Road at Nimitz Highway
- Lagoon Drive at Kamehameha/Nimitz Highways

Since the traffic data were for 1985, automotive emission factors for carbon monoxide (CO) were generated for that calendar year using the Mobile Source Emissions Model (MOBILE-3) [16]. To localize emission factors as much as possible, the August, 1988 age distribution for the City & County of Honolulu [17] was input in lieu of the national statistics normally used.

Analyses such as this generally involve estimation of concentrations of non-reactive pollutants. This is due to the complexity of modeling pollutants which undergo chemical reactions in the atmosphere and are subject to the effects of numerous physical and chemical factors which affect reaction rates and products. For projects involving motor vehicles as the principal air pollution source, carbon monoxide is normally selected for modeling because it has a relatively long half-life in the atmosphere (about 1 month) [18], and it comprises the largest fraction of automotive emissions.

In this instance, a microscale screening analysis was performed for the nine previously mentioned intersections. The updated version of an EPA guideline [19] model CALINE-4 [20] was employed with an array of receptors spaced at 5-meter intervals around the intersections. The intersection option of the model was used as well as an approach speeds ranging 5 - 18 mph.

Worst case meteorological conditions of 1 meter per second wind speed, an acute wind/road angle, and "D" stability (4), were all selected to maximize concentration estimates in the vicinity of the various intersections.

Estimates of maximum one-hour carbon monoxide (CO) concentrations were then computed. The results are summarized in Figures 8 - 16. They indicate exceedances of the State's 1-hour and 8-hour standards at all intersections and exceedances of the federal standards at five of the nine intersections.

Estimates of maximum 8-hour CO levels were also derived by use of a meteorological "persistence" factor of 0.6. This persistence factor originates from a number of EPA studies in which it was found that based on the persistence of adverse meteorological conditions a ratio of 8-hour maximum to 1-hour maximum CO levels could be derived (21). The factor normally fell in the range of 0.6 to 0.7. Analysis of local CO monitoring data has also confirmed the validity of the 0.6 value (22).

2.6 Air Sampling. A limited air sampling program was also conducted as part of this study. A.M. and P.M. peak hour CO levels were sampled at the following five intersections:

- Ward Avenue at Ala Moana Boulevard (Figure 17)
- Richards Street at Nimitz Highway (Figure 17)
- Bishop Street at Nimitz Highway (Figure 18)
- Sand Island Access Road at Nimitz Highway (Figure 19)
- Lagoon Drive at Nimitz/Kamehameha Highways (Figure 19)

The results of this sampling are presented in Table 6. One-hour CO concentrations ranged 3.9 to 8.8 milligrams per cubic meter (mg/m³) and thus were below both state and federal standards. Wind conditions during all sampling hours tended to be extremely variable thus contributing to relatively low pollutant levels. Onsite winds were of noticeably lower velocity than those recorded at the airport during the same hours. The fact that the sampled concentrations were lower than the modeled values is not at all surprising due to the steady-state assumptions of the model. In the model, wind speed and direction are assumed constant for the full 1-hour period.

2.7 Barbers Point Harbor. The Barbers Point Harbor, located some 15 miles west of the Honolulu Harbor, is adjacent to Oahu's major industrial area, Campbell Industrial Park. Its meteorology is similar to that at the airport with predominant northeasterly tradewinds during the summer months and more variable conditions during the winter season. It differs from the Honolulu waterfront in that it is sparsely populated, has significantly less traffic, and has a greater concentration of heavy industry.

The State Department of Health has monitored air quality at Barbers Point for many years. A summary of those monitoring data are presented in Table 7. The data suggest that despite the proximity of major sources, air quality continues to meet both federal and state ambient standards.

3. FUTURE CONDITIONS

3.1 Without Waterfront Development. Even without any special development plan, the activity of air pollution sources in the waterfront area is expected to grow. As reported in the traffic and harbor planning studies (23, 24), the numbers and level of activity of transportation-related air pollution sources, e.g., motor vehicles and ships, are expected to increase significantly. Stationary sources, on the other hand, are not anticipated to increase and, in fact, may decrease in the harbor area. As noted previously, at least one major source, the Honolulu Power Plant, is going to be shut down during the mid-1990's.

In an effort to evaluate the impact of growing traffic volumes, projections provided by the traffic consultant and the same methodology previously described were used to estimate worst case 1-hour carbon monoxide levels for the year 2010. The results have been combined with the "current conditions" results in Figures 8 - 11 for comparative purposes.

While exceedances of state and federal standards still appeared in close proximity to most intersections, predicted CO levels at the majority of receptor locations declined.

In the Barbers Point Harbor area, completion of landside facilities will result in increased cargo handling activities in the area; thus, there will be a concomitant increase in truck-generated emissions (83 trucks per day). While perhaps locally significant, they will be relatively minor on a regional

scale compared to the emissions from traffic generated by future Iwa residents. Currently unoccupied lands to the northwest, north, and northeast will soon house thousands of new people as the City implements its urbanization plan for Iwa.

The proximity of the industrial sources at Campbell Industrial Park and its continuing growth will continue to have a significant impact on air quality. Besides the existing sources, a large gas turbine, a coal-fired power plant, and refinery expansions are being planned. Offloading of coal at the harbor may also be a source of particulate emissions. Although existing records indicate that air quality standards are currently being met, this is an area that will have to be watched closely due to the extensive growth in both stationary and mobile sources of air pollution being planned.

3.2 With Waterfront Development. If waterfront development proceeds with the intent of making the area more people-oriented, there will likely be a general reduction in the number of stationary air pollution sources and an increase in mobile sources. An increase in people-oriented facilities may, for example, encourage eventual relocation of the HC&D and Hawaiian Bitumuls batch plants currently located on the Iwa end of Sand Island near Keehi Lagoon. One possible exception to this scenario would be creation of the proposed industrial park in central Sand Island which might attract new sources.

As reported by the traffic consultant [23], the existing road network will be overcapacity in 2010 even without waterfront development; thus, any additional traffic will necessitate new transportation facilities. A Sand Island Parkway has been proposed as one possible means of alleviating the congestion on the Ala Moana - Nimitz corridor. The localized air quality impact of that alternative was estimated for three key intersections identified by the traffic consultant. The results of that analysis are incorporated in figures 8, 12, and 15. They indicate a general reduction in CO levels around those intersections, although at a few receptors the level increased slightly. Where concentrations were over state standards they tended to stay over the standards even with the additional highway.

At this time there does not appear to be any additional major development plans for Barbers Point Harbor beyond that already funded and under construction; thus, the previous discussion under the "without waterfront development" scenario is equally applicable to the "with waterfront development" scenario.

4. PROBABLE IMPACTS

It is quite evident from the preceding analyses that with or without waterfront development, traffic-related emissions will contribute to elevated carbon monoxide levels all along the Ala Moana - Nimitz corridor. In close proximity to the intersections (5 - 15 meters), levels will exceed state and federal standards during peak hours and worst case meteorology. This is most likely to occur during the winter months when the prevailing trade winds break down into more frequent light and variable wind conditions. Also, as found during the field sampling, onsite winds tend to be of lower velocity than those reported at the airport due to local frictional effects, i.e., manmade structures which block air flow. Thus, analysis of airport data may underestimate the frequency of low wind speed conditions.

In general, waterfront development is likely have a beneficial effect on air quality with regard to existing stationary sources which are likely to relocate and new sources which will not locate in a people-oriented area. As noted previously, the one possible exception is the proposed industrial park on Sand Island where new sources may choose to locate.

The apparent reduction in ambient impact despite projected increases in traffic exemplifies the effect of the federal motor vehicle control program. In this instance, the projected rate of reduction in emissions per vehicle over the 1988 - 2010 period was greater than the projected rate of increase in traffic for the Ala Moana - Nimitz corridor over the same period; thus, a net decrease in cumulative emissions and ambient impact results.

Another way of examining this situation is by plotting projected annual vehicle miles travelled (VMT) along the Ala Moana - Nimitz corridor and comparing it with projected emissions of automotive pollutants during the same time period. This has been done in Figures 20 - 23. Not surprisingly, annual VMT shows a continuous increase over the 25-year period. The pollutants, however, show markedly different patterns because of their different federal emission standards and timetables for compliance with those standards. By 1999, CO emissions for compliance with those value, but then rise back up to 75% of the 1985 value by 2010. This is consistent with the modeling results which showed 2010 CO values slightly less than the 1985 levels. Non-methane hydrocarbons (NMHC) show a similar pattern dropping to 49% of the

1985 level by 1999 and rising back to 55% of that level by 2010. Nitrogen oxides (NOx) show a relatively smaller decrease by 1999, and climb back up to 94% of their 1985 level by 2010. In a sentence, it might be said that federal emission controls offset growth in traffic up to about 1999, after which emissions start climbing along with traffic volume.

Intensified use of the waterfront will also result in increases in electrical demand and solid waste generation both of which will result in offsite impacts at the locations where power is generated (Kahe/Wai'aleale) and where municipal solid waste is combusted (Waipahu/HPOWER).

5. MITIGATING MEASURES

Controlling mobile sources is one of the most difficult tasks in the air pollution control business. The multitude of privately-owned, moving sources in varying degrees of repair (or disrepair) spread emissions throughout an urban area. The federal approach, upon which the State of Hawaii has relied for control (25), is to mandate maximum allowable emissions on newly manufactured vehicles. As has been demonstrated above, this approach works up to a point after which new, more stringent emission standards must be imposed if effective control is to be maintained. At the present time, no new standards are being proposed, and the federal Clean Air Act has been held up in Congress for several years without formal reauthorization.

At the State and local level, mitigative measures range from the relatively easy (and not too effective) carpooling and bikeways to more severe measures such as placing a moratorium on any further growth or development which encourages private automobile use.

Honolulu's heavily used bus system already reduces regional emissions by providing an alternative to cars. If all the current bus passengers were traveling in cars, Honolulu's emissions would be significantly greater. Buses alone, however, are not the long-term solution because in large numbers they too become significant contributors to local pollutant levels. In a growing and densely populated area, development of an efficient mass transit system is necessary to further reduce the dependency on private automobile use. The City & County of Honolulu is in fact working on development of such a system.

Institution of an inspection/maintenance program for all in-use vehicles can contribute to reduced emissions by insuring that those vehicles are properly tuned and have not had their emission control devices removed or tampered with.

Any or all of the above measures will retard to some extent the rate of deterioration of air quality in the waterfront area. In the long term, however, as long as Honolulu's people depend primarily on their cars for transportation, the quality of the air will deteriorate along the lines shown in Figures 20 - 23. This, of course, is not a unique waterfront, city, or even state problem. It is a national one that probably won't be solved until a new, non-polluting powerplant is developed for automobiles.

REFERENCES

1. U.S. Department of Commerce, National Oceanographic and Atmospheric Administration, National Environmental Satellite, Data and Information Service, National Climatic Center. Local Climatological Data: Annual Summary with Comparative Data: 1982 Honolulu, Hawaii.
2. Thornwaite, C. W. Climates of North America According to a New Classification, Geog. Rev. 21: 633-655, 1931.
3. U.S. Air Force, Environmental Technical Applications Center. Report No. 7461: Stability Wind Roses, Hickam AFB, HI, OOOO-2400 LST by Boundary Layer Section, 4 Sep 74.
4. U. S. Environmental Protection Agency. Workbook of Atmospheric Dispersion Estimates, AP-26 (Sixth Edition), 1973.
5. Morrow, J. W. Air Quality Impact Report, Honolulu International Airport, prepared for KFC Airports, Inc. and the State of Hawaii Department of Transportation, Airports Division, November, 1987.
6. U. S. Government. Code of Federal Regulations, Title 40, Protection of Environment, Part 50, National Primary and Secondary Ambient Air Quality Standards.
7. State of Hawaii. Title 11, Administrative Rules, Chapter 59 Ambient Air Quality Standards, as amended, April, 1986.
8. Library of Congress, Congressional Research Service. A Legislative History of the Clean Air Amendments of 1970, Volume 1, p. 411, January, 1974.
9. U.S. Environmental Protection Agency. Revisions to National Ambient Air Quality Standards for Particulate Matter, Federal Register, Vol. 52, p. 2463, July 1, 1987.
10. U. S. Environmental Protection Agency. National Ambient Air Quality Standards for Hydrocarbons: Final Rulemaking, Federal Register, Volume 48, No. 3, p. 628, January, 1983.
11. U. S. Congress. Clean Air Act Amendments of 1977 (P.L. 95-95) Section 109, National Ambient Air Quality Standards, August, 1977.
12. U. S. Environmental Protection Agency. National Ambient Air Quality Standards for Photochemical Oxidants: Final Rulemaking, Federal Register, Volume 44, No. 28, p. 8202, February 8, 1979.
13. U. S. Environmental Protection Agency. Regulatory Agenda, Federal Register, Volume 50, No. 82, p. 17784, April 29, 1985.
14. State of Hawaii. Title 11, Administrative Rules, Chapter 60, Air Pollution Control.
15. Pacific Planning & Engineering, Inc. Personal Communications, Conrad Higashionna, September-October, 1988.
16. U. S. Environmental Protection Agency. User's Guide to MOBILE-3 (Mobile Source Emissions Model), EPA-460/3-84-002, June, 1984.
17. City & County of Honolulu, Department of Data Systems. Age Distribution of Registered Vehicles in the City & County of Honolulu (unpublished report), August, 1988.
18. Seinfeld, John H. Air Pollution: Physical and Chemical Fundamentals, p. 69, McGraw-Hill Book Company, 1975.
19. U.S. Environmental Protection Agency. Guideline on Air Quality Models (Revised), EPA-450/2-78-027R, July, 1986.
20. California Department of Transportation. CALINE4 - A Dispersion Model for Predicting Air Pollutant Concentrations Near Roadways (final Report), November, 1984.
21. U.S. Environmental Protection Agency. Guidelines for Air Quality Maintenance Planning and Analysis: Indirect Sources Volume 9 (Revised), EPA-450/4-78-001, September, 1978.
22. Morrow, J. W. Air Quality Impact Analysis: Kaka'ako Redevelopment District Plan, July, 1984.
23. Pacific Planning & Engineering, Inc. Draft Report: Honolulu Waterfront Master Plan, Traffic Study, November, 1988.
24. Moffat & Nichol, Engineers. Draft Report: Honolulu Waterfront Project, Special Study: Harbors Planning, November, 1988.
25. State of Hawaii, Department of Health. Air Pollution Control Implementation Plan, January 21, 1972.

TABLE 1

HONOLULU INTERNATIONAL AIRPORT
ANNUAL WIND ROSE

Direction	Wind Speed (Kts)										TOTAL
	0 - 3	4 - 7	8 - 12	13 - 16	17 - 20	21 - 24	25 - 29	30 - 34	35 - 39	40 - 44	
N	0.0149	0.0261	0.0075	0.0020	0.0002	0.0000	0.0000	0.0000	0.0506		
NNE	0.0114	0.0219	0.0106	0.0046	0.0005	0.0000	0.0000	0.0000	0.0190		
NE	0.0114	0.0449	0.0829	0.0853	0.0204	0.0018	0.0018	0.0018	0.2466		
ENE	0.0088	0.0637	0.1559	0.1209	0.0224	0.0014	0.0014	0.0014	0.3731		
E	0.0039	0.0179	0.0329	0.0210	0.0023	0.0001	0.0001	0.0001	0.0782		
ESE	0.0021	0.0056	0.0050	0.0015	0.0003	0.0001	0.0001	0.0001	0.0146		
SE	0.0021	0.0059	0.0091	0.0049	0.0006	0.0002	0.0002	0.0002	0.0228		
SSE	0.0023	0.0074	0.0123	0.0038	0.0008	0.0002	0.0002	0.0002	0.0268		
S	0.0025	0.0104	0.0127	0.0033	0.0005	0.0003	0.0003	0.0003	0.0296		
SSW	0.0011	0.0041	0.0053	0.0017	0.0003	0.0000	0.0000	0.0000	0.0125		
SW	0.0007	0.0031	0.0058	0.0022	0.0003	0.0001	0.0001	0.0001	0.0122		
WSW	0.0006	0.0017	0.0031	0.0022	0.0005	0.0001	0.0001	0.0001	0.0082		
W	0.0019	0.0030	0.0021	0.0009	0.0002	0.0001	0.0001	0.0001	0.0082		
WNW	0.0027	0.0051	0.0012	0.0003	0.0001	0.0000	0.0000	0.0000	0.0094		
NW	0.0084	0.0153	0.0031	0.0008	0.0003	0.0000	0.0000	0.0000	0.0279		
NNW	0.0067	0.0166	0.0041	0.0012	0.0002	0.0000	0.0000	0.0000	0.0308		
TOTAL:	0.0835	0.2527	0.3534	0.2567	0.0496	0.0043	0.0043	0.0043	1.0002		

SOURCE: Reference 3

T A B L E S

TABLE 3
SUMMARY OF AEROMETRIC DATA COLLECTED
AT THE DEPARTMENT OF HEALTH BUILDING
AND SAND ISLAND
1978 - 1987

TOTAL SUSPENDED PARTICULATES	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
(24-hr values, ug/m3)										
Period of sampling (mos.):	12	12	12	8	12	12	12	12	12	12
Number of samples:	60	8	61	35	55	56	60	59	57	53
Range of values:	14-53	22-62	23-103	23-75	11-42	14-58	11-48	10-48	11-61	14-59
Mean of values:	29	32	37	40	29	26	25	24	25	25
Number of times State AQS exceeded:	0	0	1	0	0	0	0	0	0	0
SULFUR DIOXIDE										
(24-hr values, ug/m3)										
Period of sampling (mos.):	12	12	12	8	12	12	12	12	12	12
Number of samples:	61	57	58	38	50	56	58	53	57	54
Range of values:	<5-44	<5-42	<5-60	<5-44	<5-38	<5-16	<5-45	<5-45	<5-6	<5-11
Mean of values:	18	22	18	19	11	<5	<5	<5	<5	<5
Number of times State AQS exceeded:	0	0	0	0	0	0	0	0	0	0
PHOTOCHEMICAL OXIDANTS										
(Daily 1-hr maxima, ug/m3)										
Period of sampling (mos.):	10	12	11	12	12	12	12	12	12	12
Number of samples:	284	337	295	314	335	348	296	341	348	342
Range of values:	10-84	10-80	10-84	10-104	0-151	0-123	0-104	8-198	10-88	4-84
Mean of values:	33	39	38	37	32	46	44	43	39	38
Number of times State AQS exceeded:	0	0	0	1	2	2	1	3	0	0

TABLE 2
SUMMARY OF STATE OF HAWAII AND FEDERAL
AMBIENT AIR QUALITY STANDARDS

POLLUTANT	SAMPLING PERIOD	FEDERAL STANDARDS		STATE STANDARDS
		PRIMARY	SECONDARY	
1. Total Suspended Particulate Matter (TSP)	Annual	--	--	60
	Geometric Mean	--	--	60
(micrograms per cubic meter)	Maximum Average in Any 24 Hours	--	--	150
	Annual	50	50	--
2. PM-10 (micrograms per cubic meter)	Maximum Average in Any 24 Hours	150	150	--
	Annual	80	--	80
3. Sulfur Dioxide (SO2) (micrograms per cubic meter)	Arithmetic Mean	80	--	80
	Maximum Average in Any 24 Hours	365	--	365
4. Nitrogen Dioxide (NO2) (micrograms per cubic meter)	Maximum Average in Any 3 Hours	1,300	1,300	1,300
	Annual	100	100	70
5. Carbon Monoxide (CO) (milligrams per cubic meter)	Maximum Average in Any 8 Hours	10	--	5
	Maximum Average in Any 1 Hour	40	--	10
6. Photochemical Oxidants (as O3) (micrograms per cubic meter)	Maximum Average in Any 1 Hour	240	--	100
	Maximum Average in Any Calendar Quarter	1.5	1.5	1.5
7. Lead (Pb) (micrograms per cubic meter)				

TABLE 5
LEAD MONITORING DATA
HONOLULU, OAHU
1970-87

YEAR	AVERAGE CONCENTRATION (micrograms/cubic meter)			
	1st QUARTER	2nd QUARTER	3rd QUARTER	4th QUARTER
1970	0.78	0.81	0.65	0.92
1971	1.65	0.63	0.65	1.05
1972	--	0.75	0.65	0.48
1973	0.52	0.52	0.72	0.55
1974	0.84	0.61	0.70	0.92
1975	0.65	0.81	0.59	1.05
1976	0.91	0.65	0.99	1.00
1977	0.89	0.59	0.48	0.80
1978	--	--	--	0.72
1979	0.39	0.25	0.26	0.42
1980	0.41	0.23	0.21	0.20
1981	0.25	--	--	--
1982	0.21	0.16	0.09	0.21
1983	n/a	n/a	n/a	n/a
1984	0.3	0.2	0.2	0.3
1985	0.1	0.03	0.02	0.1
1986	0.1	0.0	0.0	0.0
1987	0.0	0.0	0.0	0.0

Source: State of Hawaii
Department of Health

TABLE 4
SUMMARY OF AEROMETRIC DATA COLLECTED
AT THE DEPARTMENT OF HEALTH BUILDING

1971 - 1987

NITROGEN DIOXIDE	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980-87
(24-hr values)										
Period of sampling (mos.):	10	12	12	12	12	3	n.d.	n.d.	n.d.	n.d.
Number of samples:	83	113	99	90	91	22				
Range of values:	<20-159	<20-236	<20-95	<20-95	16-70	12-63				
Mean of values:	56	56	46	37	33	35				
Number of times State AQS exceeded:	1	2	0	0	0	0				

CARBON MONOXIDE	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
(Daily 1-hr maxima)										
Period of sampling (mos.):	12	8	n.d.	n.d.	n.d.	6	12	12	12	12
Number of samples:	365	208				169	318	342	348	345
Range of values:	0-20.7	0-17.3	Station moved to			0-8.6	0.6-10.9	0.0-10.4	0.2-13.5	0.3-11.1
Arithmetic mean of daily maximum values:	3.1	3.0		Kaimuki		2.4	2.4	1.5	2.2	1.7
Number of days State AQS exceeded:	19	10				0	1	1	3	1

TABLE 6
 AM/PM PEAK HOURS CARBON MONOXIDE SAMPLING RESULTS
 OCTOBER, 1988

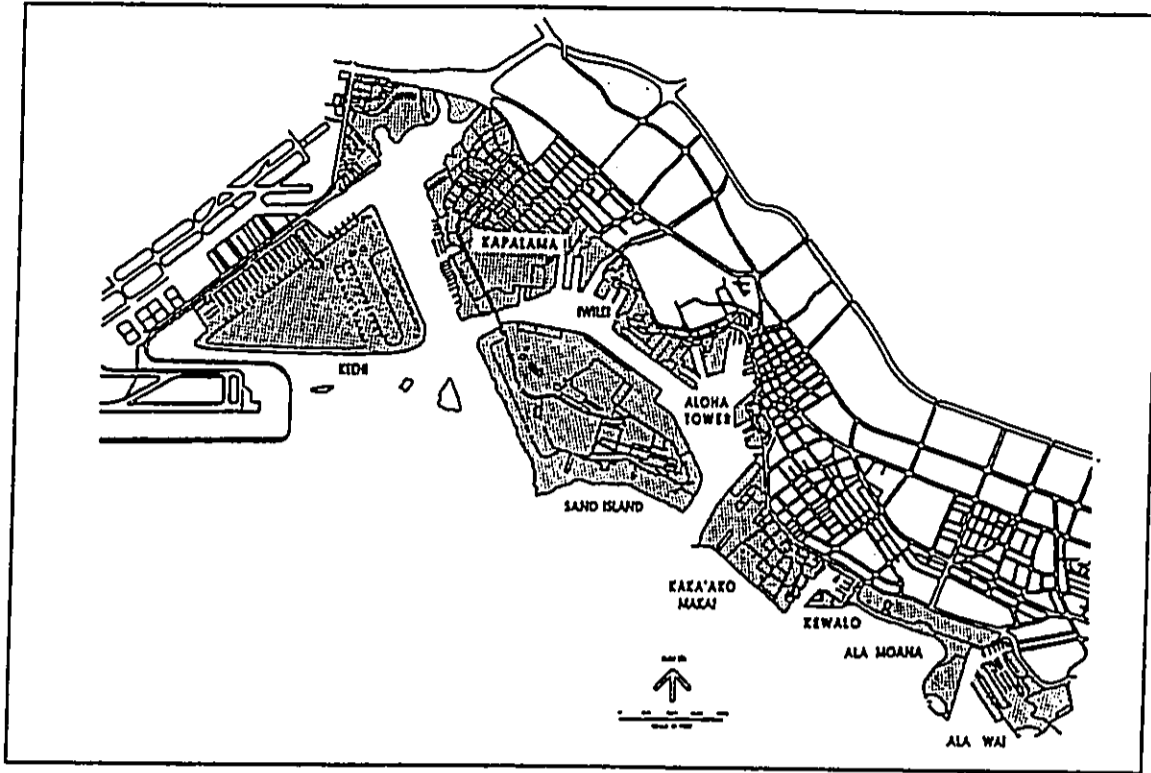
Date	Time	Location	CO Concentration (ug/m3)	Onsite Wind Direction (deg)	Onsite Wind Speed (m/sec)
26 Oct 88	0700-0800	Ward Avenue at	6.0	102	< 1.0
13 Oct 88	1600-1700	Ala Moana Boulevard	7.0	81	1.5
25 Oct 88	0700-0800	Richards Street at	4.8	106	< 1.0
17 Oct 88	1600-1700	Nimitz Highway	5.6	116	< 1.0
20 Oct 88	0700-0800	Sand Island Access	8.8	165	< 1.0
18 Oct 88	1600-1700	Road at Nimitz Hwy	3.9	125	< 1.0
24 Oct 88	0700-0800	Bishop Street at	5.6	320	< 1.0
19 Oct 88	1600-1700	Nimitz Highway	5.4	280	< 1.0
21 Oct 88	0700-0800	Lagoon Drive at	7.2	160	calm
20 Oct 88	1600-1700	Kam/Nimitz Highways	7.0	53	< 1.0

TABLE 7
 AIR MONITORING DATA
 CAMPBELL INDUSTRIAL PARK
 1971-85

YEAR	RANGE	TSP			SO ₂			NO ₂		
		MEAN	>AQS	RANGE	MEAN	>AQS	RANGE	MEAN	>AQS	RANGE
1971	18-471	125	54	<5-16	<5	0	<20-49	29	0	
1972	24-155	55	4	<5-7	<5	0	<20-49	21	0	
1973	14-129	50	1	<5-5	<5	0	<20-33	<20	0	
1974	23-132	47	1	<5-10	<5	0	<20-40	25	0	
1975	13-137	52	1	<5-11	<5	0	<5-25	11	0	
1976	12-101	40	1	<5-7	<5	0	<5-29	14	0	
1977	25-134	54	1	<5-18	<5	0	-----	-----	-----	
1978	22-127	48	1	<5-40	<5	0	-----	-----	-----	
1979	23-223	76	10	<5-27	<5	0	-----	-----	-----	
1980	29-158	53	2	<5-10	<5	0	-----	-----	-----	
1981	26-188	51	2	<5-40	<5	0	-----	-----	-----	
1982	15-63	41	0	<5-12	<5	0	-----	-----	-----	
1983	28-193	--	2	<5-95	--	1	-----	-----	-----	
1984	17-112	50	1	<5-45	<5	0	-----	-----	-----	
1985	24-138	57	3	<5-25	<5	0	-----	-----	-----	

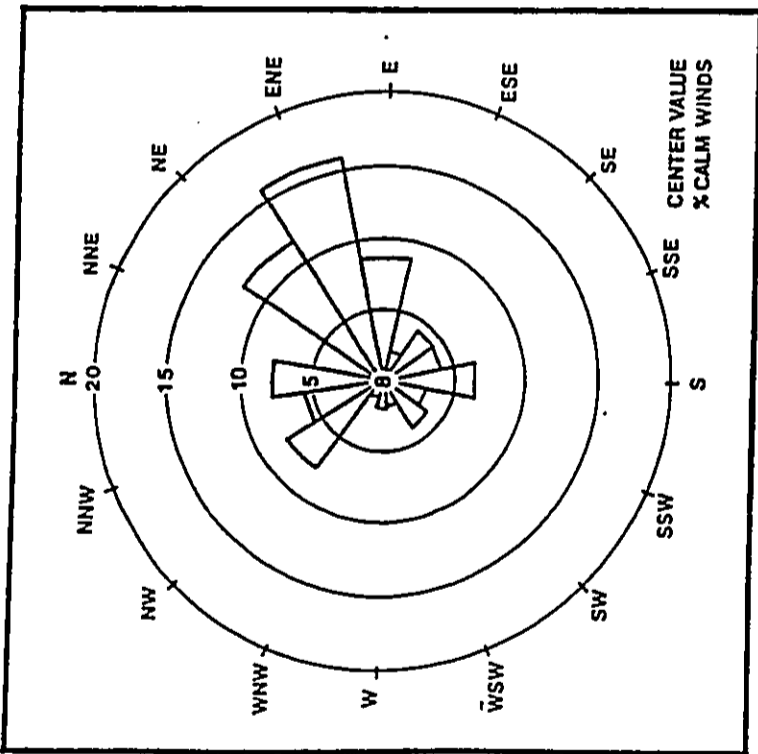
- NOTES:
1. TSP = total suspended particulates
 2. SO₂ = sulfur dioxide
 3. NO₂ = nitrogen dioxide
 4. >AQS = number of violations of state air quality standard
 5. All concentrations are in micrograms per cubic meter of air.
 6. Sampling station was moved from Harbers Point Lighthouse to the Chevron Refinery site due to salt spray from the ocean on 17 March 1972.
 7. The samplers were elevated to a rooftop on 7 August 1979.
 8. Source: State Department of Health

FIGURE 1
STUDY AREA



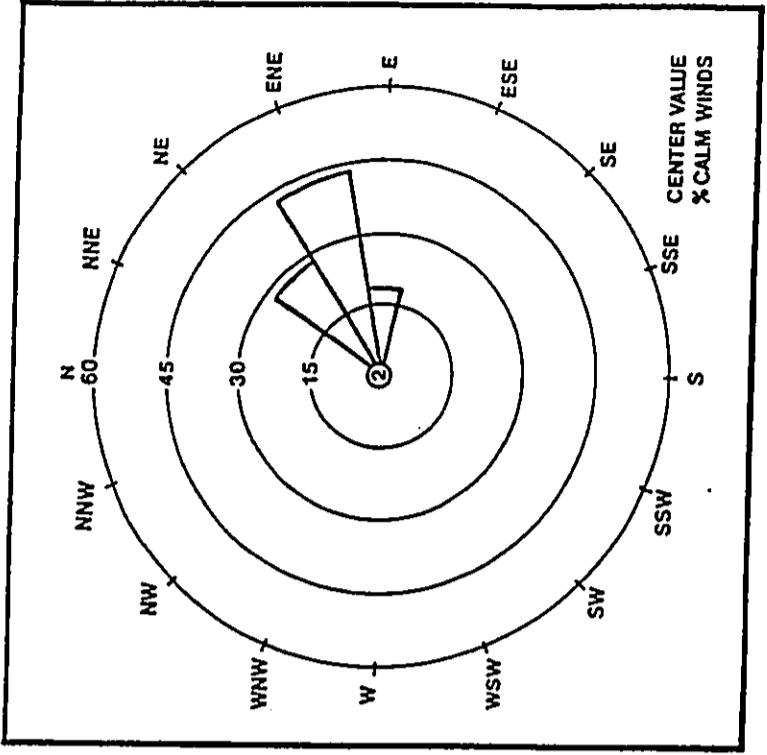
FIGURES

FIGURE 2
JANUARY WINDROSE
HONOLULU INTERNATIONAL AIRPORT



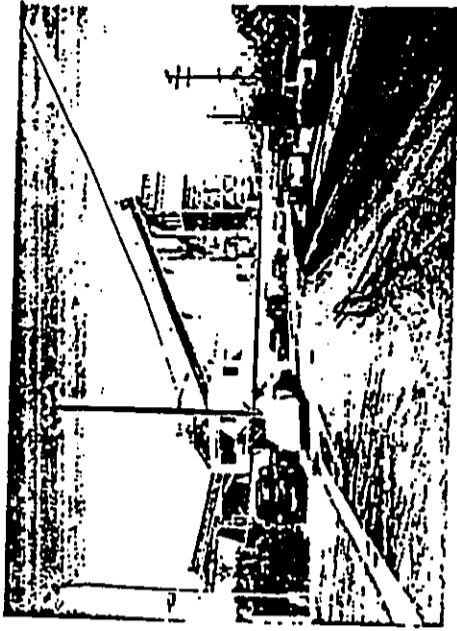
SOURCE: National Weather Service (1940-67)

FIGURE 3
AUGUST WINDROSE
HONOLULU INTERNATIONAL AIRPORT

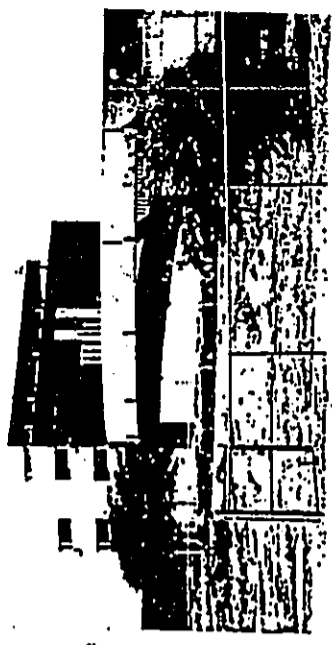


SOURCE: National Weather Service (1940-67)

FIGURE 5
MAJOR STATIONARY SOURCES
IN THE WATERFRONT AREA



HCE&D Batch Plant
Sand Island Road

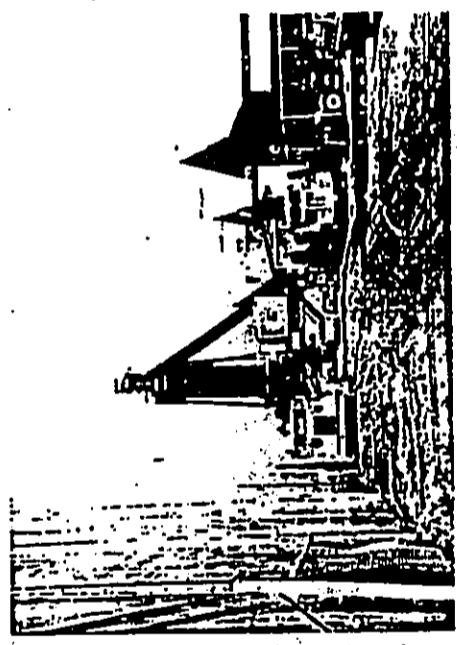


Sand Island Sewage
Treatment Plant

FIGURE 4
MAJOR STATIONARY SOURCES
IN THE WATERFRONT AREA



HECO Honolulu
Power Plant



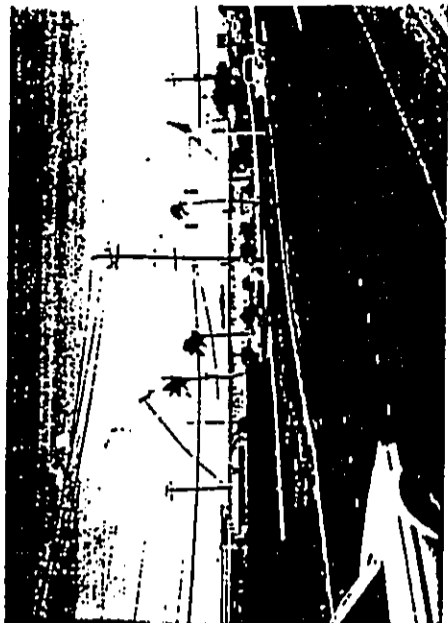
Hawaiian Bitumuls
Asphalt Plant
Sand Island Road

FIGURE 7

MAJOR STATIONARY SOURCES
IN THE WATERFRONT AREA



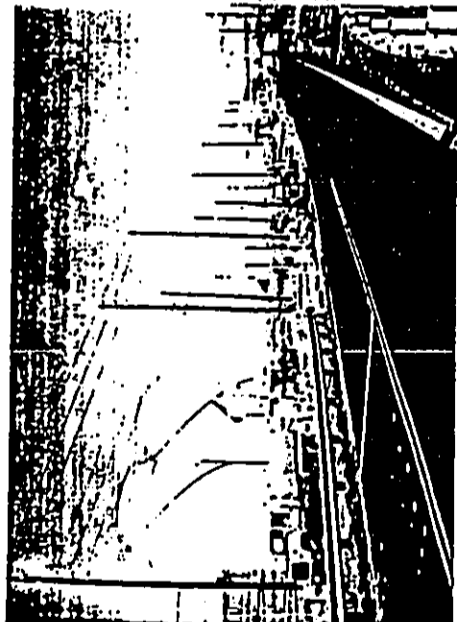
Fuel Storage
Along Nimitz
Highway
Piers 29 - 31



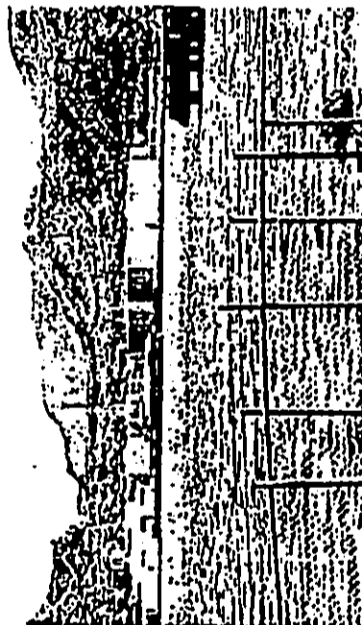
Fuel Storage Along
Nimitz Highway
Piers 36 - 37

FIGURE 6

MAJOR STATIONARY SOURCES
IN THE WATERFRONT AREA



Jet Fuel Storage
Sand Island Road



Fuel Storage on
the Water's Edge
View from Sand
Island



FIGURE 8
ESTIMATES OF MAXIMUM 1-HOUR
CARBON MONOXIDE CONCENTRATIONS
WARD AVENUE AT ALA MOANA BOULEVARD
PM PEAK-HOUR (1985 - 2010)

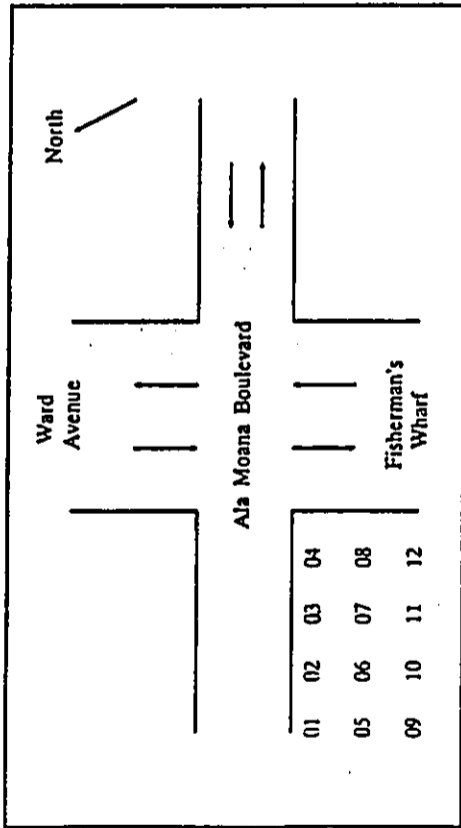
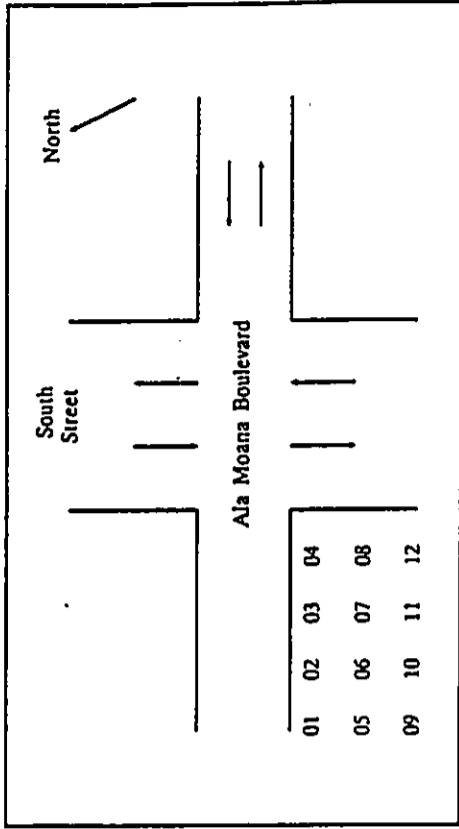


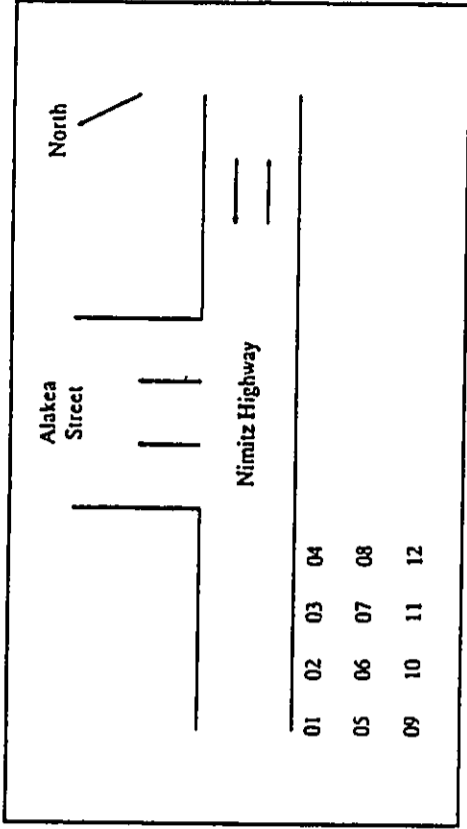
FIGURE 9
ESTIMATES OF MAXIMUM 1-HOUR
CARBON MONOXIDE CONCENTRATIONS
SOUTH STREET AT ALA MOANA BOULEVARD
PM PEAK-HOUR (1985 - 2010)



Receptor	Existing (1985)		2010	
	1-hr	8-hr	Without Project	With Project
01	15.7	9.4	11.9	7.1
02	14.1	8.5	10.1	6.1
03	12.2	7.3	8.2	4.9
04	12.0	7.2	7.8	4.7
05	12.1	7.3	8.7	5.2
06	10.8	6.5	7.4	4.4
07	10.3	6.2	6.7	4.0
08	9.3	6.4	7.0	4.2
09	9.8	5.9	6.8	4.1
10	9.1	5.5	6.0	3.6
11	9.0	5.4	5.9	3.6
12	9.2	5.5	6.0	3.6

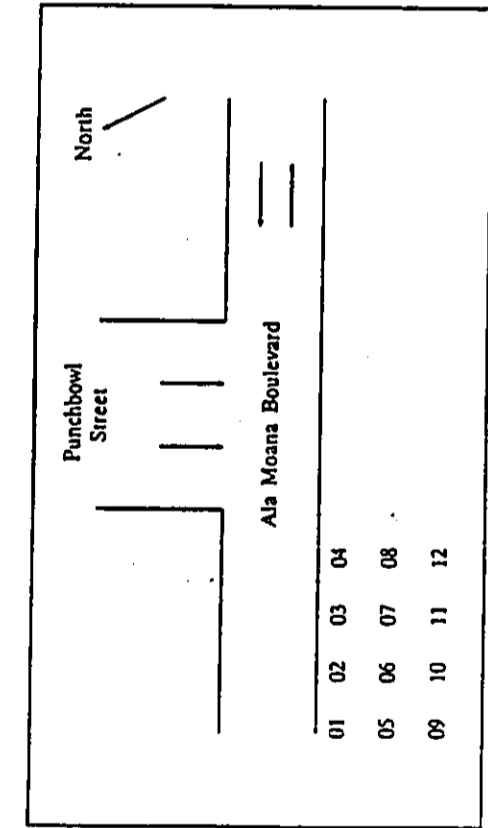
Receptor	Existing (1985)		2010	
	1-hr	8-hr	Without Project	With Project
01	12.8	7.7	8.3	5.0
02	12.8	7.7	8.3	5.0
03	12.7	7.6	8.1	4.9
04	12.0	7.2	7.6	4.6
05	10.1	6.1	6.6	4.0
06	10.4	6.2	6.7	4.0
07	10.1	6.1	6.5	3.9
08	9.9	6.0	6.3	3.8
09	8.7	5.2	5.7	3.4
10	8.7	5.2	5.6	3.4
11	8.5	5.1	5.5	3.3
12	8.5	5.1	5.4	3.2

FIGURE 10
ESTIMATES OF MAXIMUM 1-HOUR
CARBON MONOXIDE CONCENTRATIONS
PUNCHBOWL STREET AT ALA MOANA BOULEVARD
PM PEAK-HOUR (1985 - 2010)



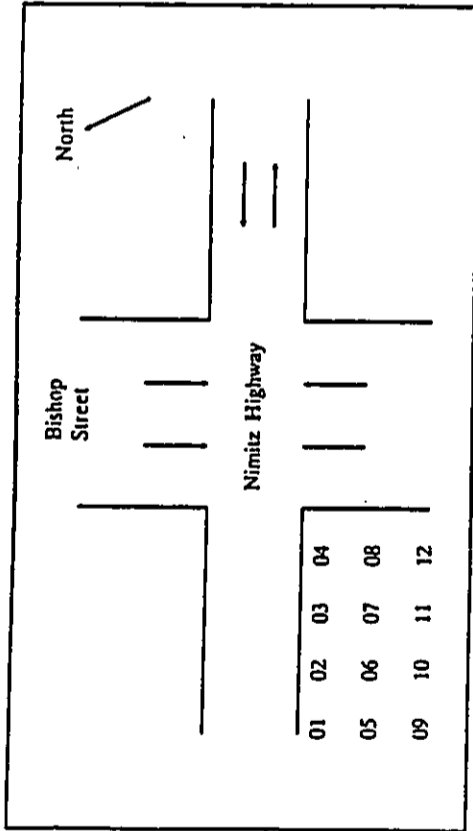
Receptor	Concentration (mg/m ³)	
	Existing (1985) 1-hr	Without Project 2010 8-hr
01	19.4	20.7
02	19.6	21.0
03	17.9	17.9
04	15.8	15.6
05	15.3	16.1
06	14.8	14.9
07	13.5	13.2
08	12.3	12.0
09	12.4	12.7
10	11.9	11.9
11	10.7	10.5
12	9.9	9.6

FIGURE 11
ESTIMATES OF MAXIMUM 1-HOUR
CARBON MONOXIDE CONCENTRATIONS
ALAKEA STREET AT NIMITZ HIGHWAY
PM PEAK-HOUR (1985 - 2010)



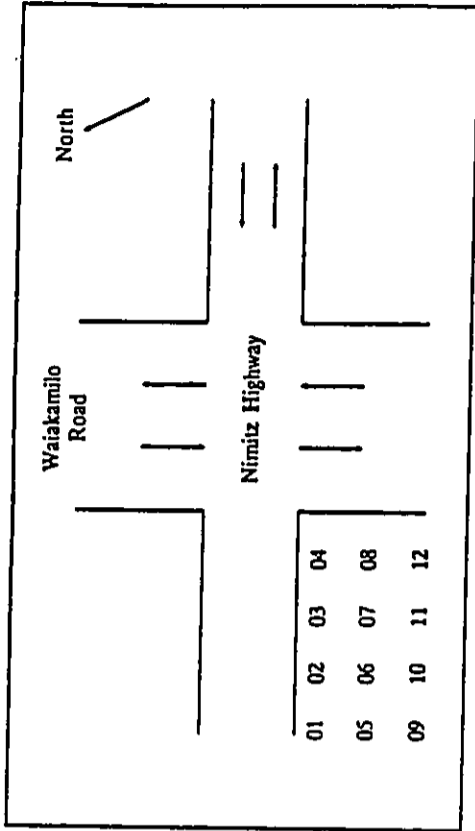
Receptor	Concentration (mg/m ³)	
	Existing (1985) 1-hr	Without Project 2010 8-hr
01	16.0	17.1
02	14.4	14.9
03	12.8	13.2
04	12.9	13.1
05	12.3	12.7
06	11.3	11.4
07	10.8	10.7
08	11.1	10.4
09	10.4	10.3
10	9.6	9.3
11	9.6	9.0
12	9.5	8.8

FIGURE 12
ESTIMATES OF MAXIMUM 1-HOUR
CARBON MONOXIDE CONCENTRATIONS
BISHOP STREET AT NIMITZ HIGHWAY
PM PEAK-HOUR (1985 - 2010)



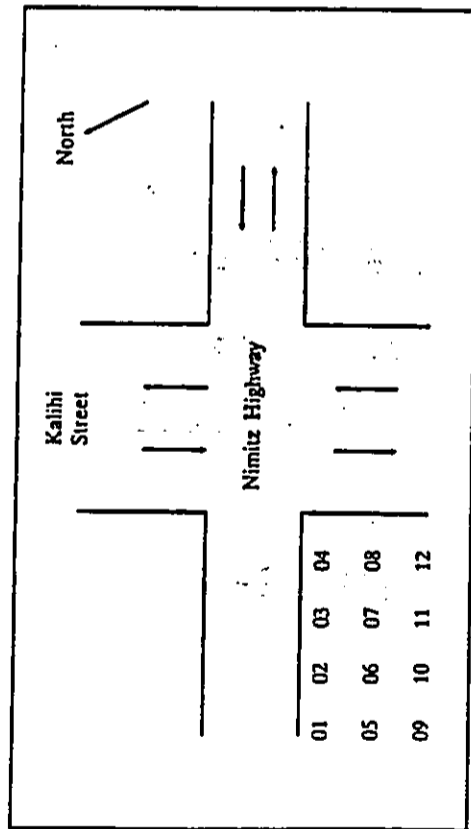
Receptor	Existing (1985)		2010	
	1-hr	8-hr	1-hr	8-hr
01	15.5	9.3	14.1	8.5
02	15.0	9.0	14.0	8.4
03	14.0	8.4	13.6	8.1
04	14.9	9.0	14.2	8.5
05	12.7	7.6	11.7	7.0
06	12.4	7.5	11.6	7.0
07	12.7	7.6	11.7	7.0
08	14.2	8.5	12.7	7.6
09	10.9	6.6	10.1	6.1
10	10.9	6.6	10.0	6.0
11	11.5	6.9	10.4	6.2
12	12.4	7.5	10.9	6.6

FIGURE 13
ESTIMATES OF MAXIMUM 1-HOUR
CARBON MONOXIDE CONCENTRATIONS
WAIKAMILO ROAD AT NIMITZ HIGHWAY
PM PEAK-HOUR (1985 - 2010)



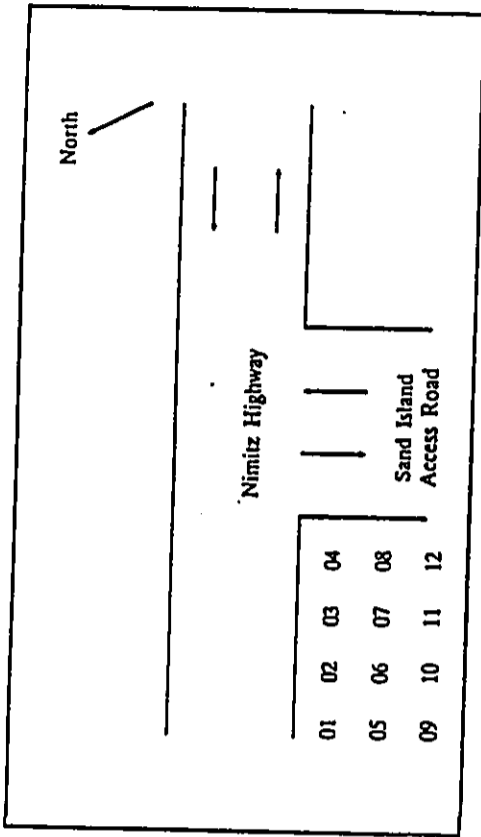
Receptor	Existing (1985)		2010	
	1-hr	8-hr	1-hr	8-hr
01	18.8	11.3	16.0	9.6
02	18.5	11.1	16.5	9.9
03	19.2	11.5	17.0	10.2
04	17.8	10.7	14.4	8.6
05	14.8	8.9	12.8	7.7
06	15.0	9.0	12.9	7.7
07	14.9	9.0	12.2	7.3
08	14.6	8.8	11.1	6.6
09	12.4	7.5	10.4	6.2
10	12.5	7.5	10.3	6.2
11	12.5	7.5	9.8	5.9
12	12.4	7.4	9.3	5.6

FIGURE 14
ESTIMATES OF MAXIMUM 1-HOUR
CARBON MONOXIDE CONCENTRATIONS
KALIHU STREET AT NIMITZ HIGHWAY
PM PEAK-HOUR (1985 - 2010)



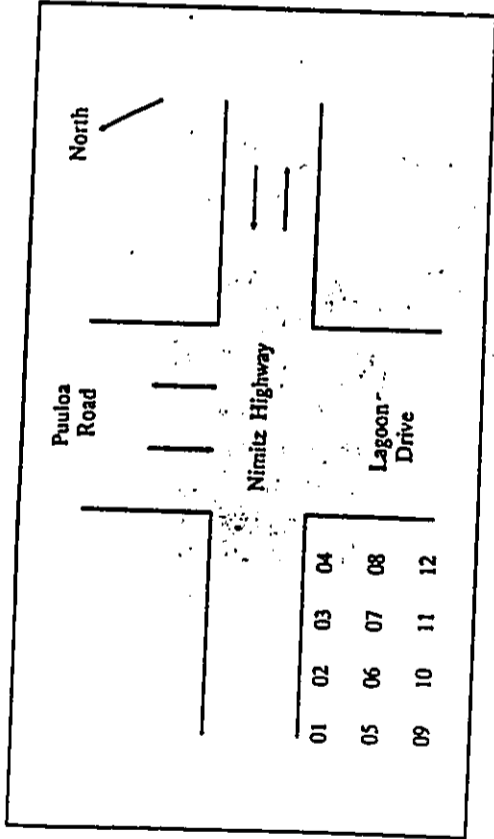
Receptor	Concentration (mg/m ³)			
	1985		2010	
	Existing	Without Project	Existing	Without Project
	1-hr	8-hr	1-hr	8-hr
01	17.8	10.7	15.4	9.2
02	18.4	11.0	16.2	9.7
03	18.4	11.0	15.5	9.3
04	18.2	10.9	14.0	8.4
05	14.9	9.0	12.5	7.5
06	15.5	9.3	12.7	7.6
07	15.7	9.4	12.1	7.3
08	16.6	10.0	11.9	7.1
09	13.1	7.9	10.5	6.3
10	13.6	8.1	10.4	6.2
11	13.9	8.3	10.0	6.0
12	14.9	9.0	10.3	6.2

FIGURE 15
ESTIMATES OF MAXIMUM 1-HOUR
CARBON MONOXIDE CONCENTRATIONS
SAND ISLAND ACCESS ROAD AT NIMITZ HIGHWAY
PM PEAK-HOUR (1985 - 2010)



Receptor	Concentration (mg/m ³)			
	1985		2010	
	Existing	Without Project	Existing	With Project
	1-hr	8-hr	1-hr	8-hr
01	25.0	15.0	17.9	10.7
02	26.9	16.1	19.5	11.7
03	30.3	18.2	21.7	13.0
04	38.5	23.1	26.2	15.7
05	24.9	14.9	17.2	10.3
06	28.4	17.0	19.3	11.6
07	34.1	20.5	22.2	13.3
08	43.2	25.9	26.7	16.0
09	24.5	14.7	16.4	9.8
10	27.4	16.4	17.0	10.7
11	32.3	19.4	20.2	12.2
12	38.6	23.2	23.3	14.0

FIGURE 16
 ESTIMATES OF MAXIMUM 1-HOUR
 CARBON MONOXIDE CONCENTRATIONS
 LAGOON DRIVE AT NIMITZ HIGHWAY
 PM PEAK-HOUR (1985 - 2010)



Receptor	Concentration (mg/m ³)	
	Existing (1985)	2010 Without Project
	1-hr	8-hr
01	21.4	12.9
02	22.7	13.6
03	22.3	13.4
04	23.3	14.0
05	18.7	11.2
06	19.6	11.7
07	20.2	12.1
08	22.2	13.3
09	17.0	10.2
10	17.8	10.7
11	18.8	11.3
12	21.0	12.6

FIGURE 17
 CARBON MONOXIDE SAMPLING SITES
 IN THE WATERFRONT AREA

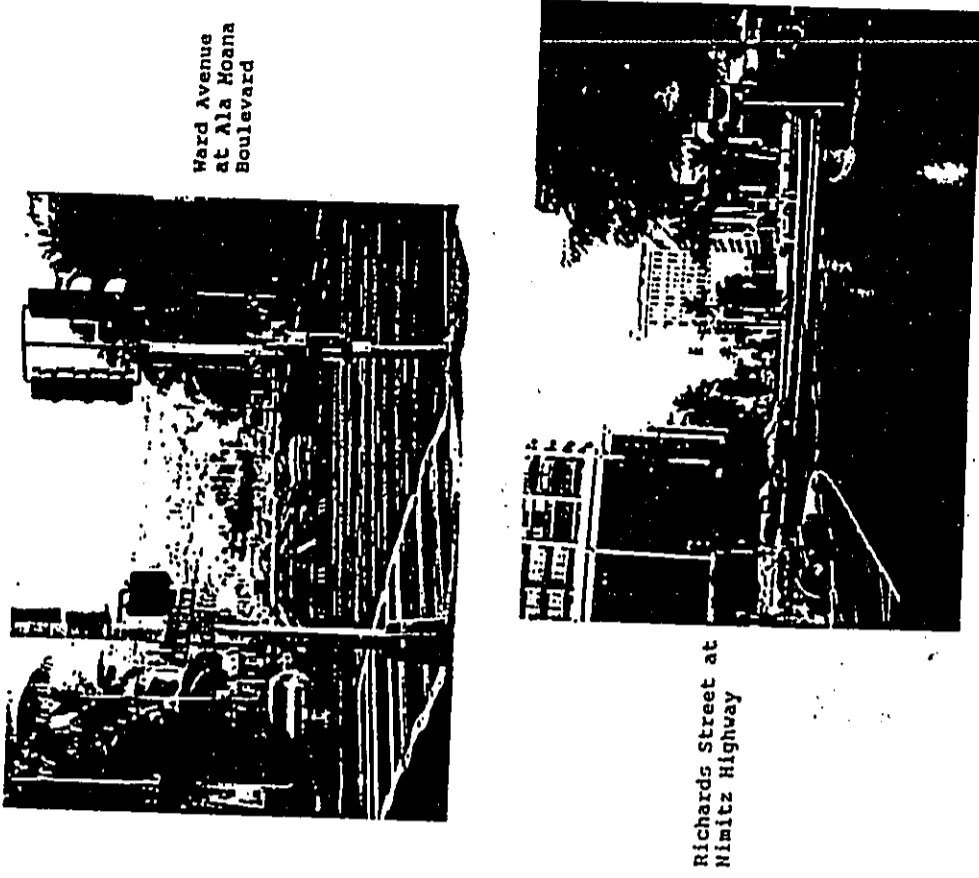
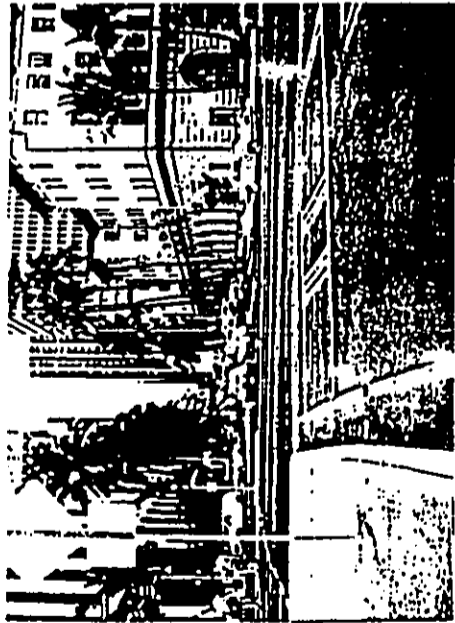


FIGURE 18

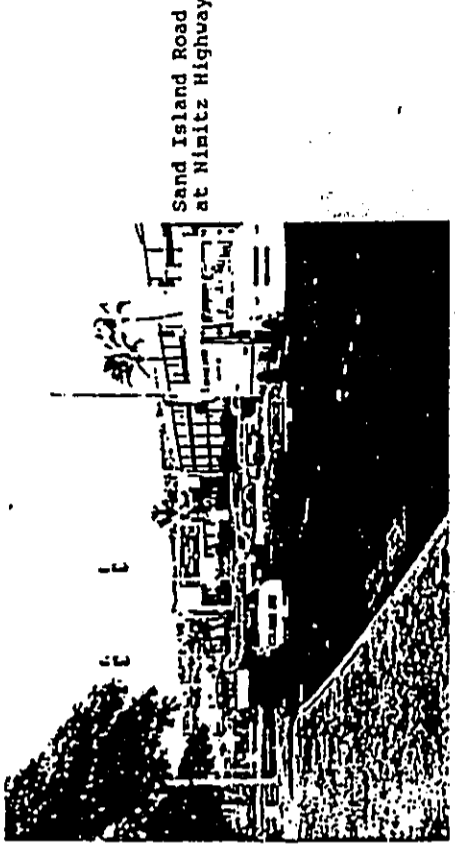
CARBON MONOXIDE SAMPLING SITES
IN THE WATERFRONT AREA



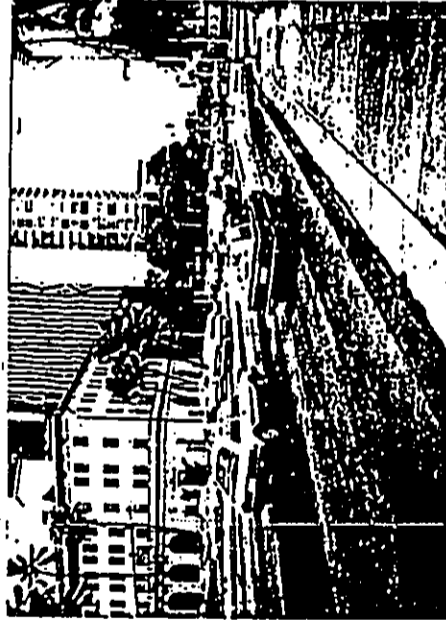
Bishop Street
at Nimitz
Highway

FIGURE 19

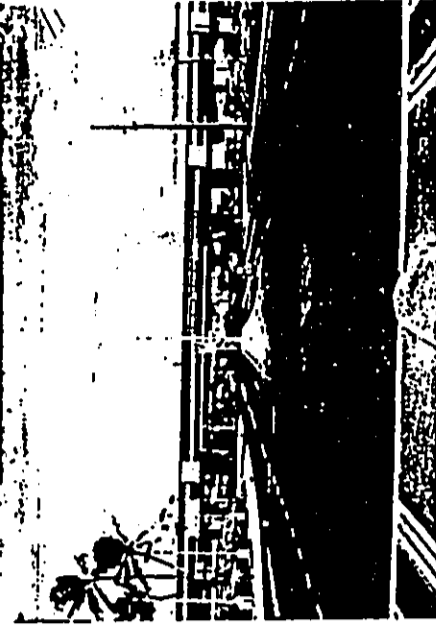
CARBON MONOXIDE SAMPLING SITES
IN THE WATERFRONT AREA



Sand Island Road
at Nimitz Highway



Nimitz Highway at
Bishop Street



Lagoon Drive at
Nimitz Highway

FIGURE 21

ESTIMATED CARBON MONOXIDE EMISSIONS
ALONG THE ALA MOANA - NIMITZ CORRIDOR
1985 - 2010

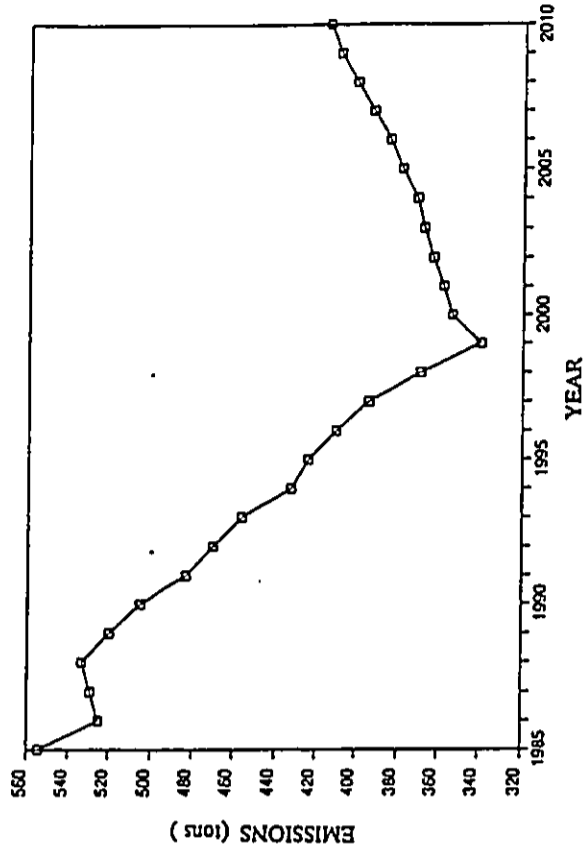


FIGURE 20

ESTIMATED VEHICLE MILES TRAVELED (VMT)
ALONG THE ALA MOANA - NIMITZ CORRIDOR
1985 - 2010

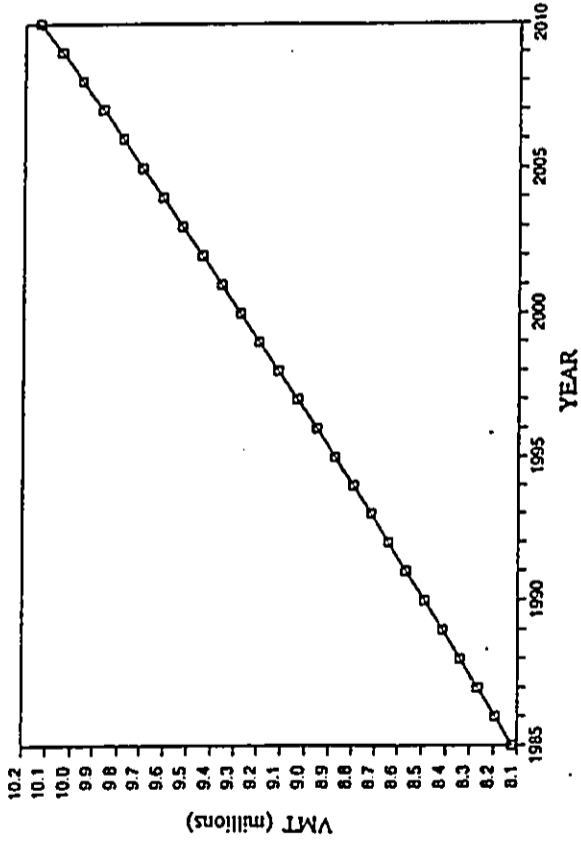


FIGURE 23
ESTIMATED NITROGEN OXIDES EMISSIONS
ALONG THE ALA MOANA - NIMITZ CORRIDOR
1985 - 2010

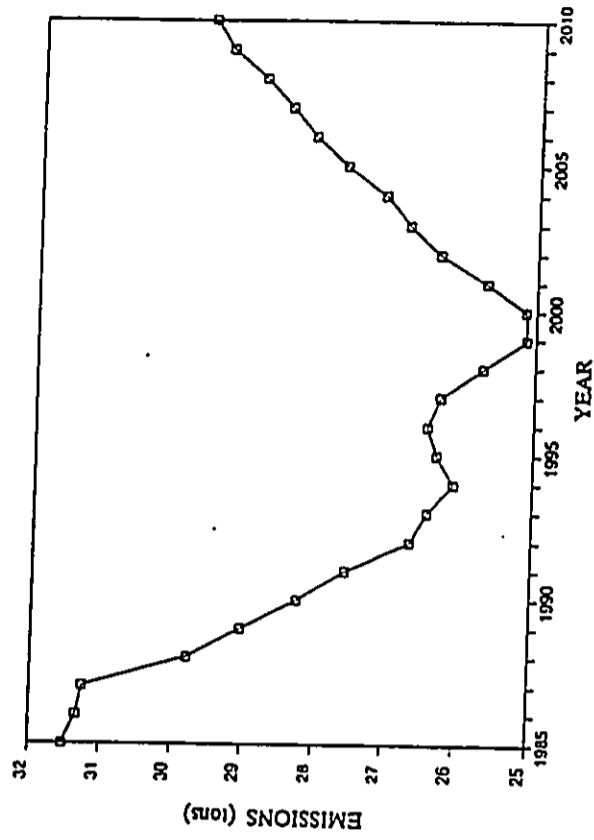
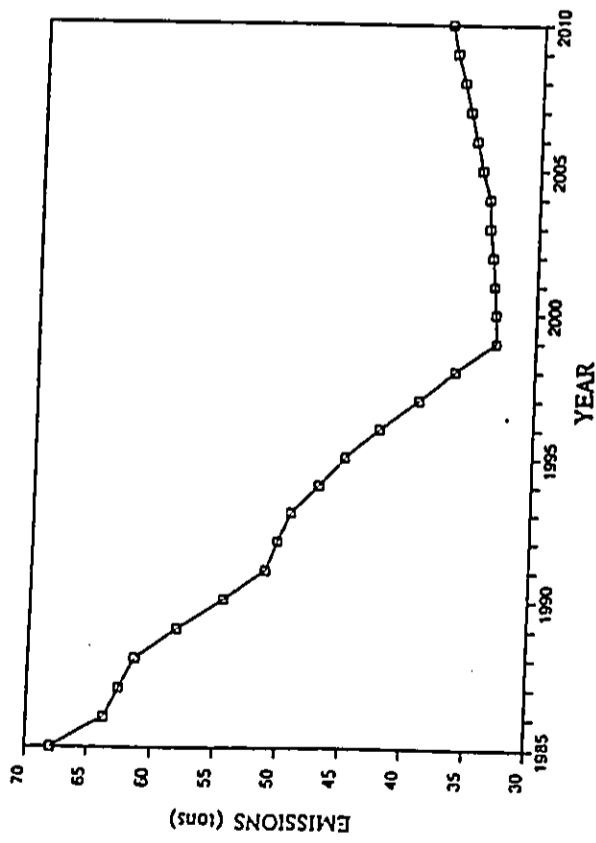


FIGURE 22.
ESTIMATED NON-METHANE HYDROCARBON EMISSIONS
ALONG THE ALA MOANA - NIMITZ CORRIDOR
1985 - 2010



Revised Kakaako Makai Area Plan

Appendix B

ACOUSTIC IMPACTS REPORT

Darby and Associates

ACOUSTIC STUDY
(EXCERPTS)

The enclosed report has been edited to include data and associated analyses specific to the makai area of the Kaka'ako Community Development District with the consent of Darby & Associates.

Prepared By:
Darby & Associates
Pali Palms Plaza
970 North Kalanooa Avenue, Suite A311
Kailua, Hawaii

Prepared For:
Helber, Hastert & Kimura, Planners and
R. M. Towill Corporation, A Joint Venture

February 1989



Office of State Planning
Office of the Governor

Acoustic Study
Honolulu Waterfront Master Plan
Table of Contents

	Page
Table of Contents (with list of Figures and Tables)	i
I. Existing Conditions	1
II. Future Conditions Without Project	19
III. Future Conditions With Project	19
IV. Probably Impacts and Proposed Mitigating Measures	24
V. Summary	S-1
References	
Appendix - Noise Descriptors	A-1

LIST OF FIGURES

NUMBER	TITLE
1	VARIATION OF TRAFFIC NOISE WITH HIGH-RISE ELEVATION
3	MAXIMUM, MINIMUM, AND HOURLY NOISE LEVELS MEASURED ON ALA MOANA BOULEVARD OVER 24 HOURS
4	HIA AIRCRAFT NOISE CONTOURS WITHIN KAKA'AKO AS DETERMINED IN REFERENCE 3 AND NOISE MEASUREMENT LOCATIONS
5	MAXIMUM, MINIMUM, AND HOURLY NOISE LEVELS MEASURED AT SITE "A"
6	MAXIMUM, MINIMUM, AND HOURLY NOISE LEVELS MEASURED AT SITE "B"
7	MAXIMUM, MINIMUM, AND HOURLY NOISE LEVELS MEASURED AT SITE "C"
8	DEPARTURE FLIGHT TRACKS DURING TRADES FROM HIA
9	ARRIVAL FLIGHT TRACKS DURING KONA FLIGHT PATTERNS TO HIA
10	HIA 1987 L _{dn} AIRCRAFT NOISE CONTOURS
11	PRELIMINARY HIA "1992" L _{dn} AIRCRAFT NOISE CONTOURS
12	PRELIMINARY HIA "1992" AND "2007" L _{dn} AIRCRAFT NOISE CONTOURS
14	LAND USE COMPATIBILITY WITH YEARLY DAY-NIGHT AVERAGE SOUND LEVEL AT A SITE FOR BUILDINGS AS COMMONLY CONSTRUCTED
15	CONSTRUCTION EQUIPMENT NOISE RANGES

LIST OF FIGURES (continued)

- S-1 PRELIMINARY HIA "1992" and "2007" L_{dn} AIRCRAFT NOISE CONTOURS
- S-2 LAND USE COMPATIBILITY WITH YEARLY DAY-NIGHT AVERAGE SOUND LEVEL AT A SITE FOR BUILDINGS AS COMMONLY CONSTRUCTED
- A-1 LAND USE COMPATIBILITY WITH YEARLY DAY-NIGHT AVERAGE SOUND LEVEL AT A SITE FOR BUILDINGS AS COMMONLY CONSTRUCTED
- A-2 RANGE OF EXTERIOR BACKGROUND AMBIENT NOISE LEVELS

LIST OF TABLES

<u>NUMBER</u>	<u>TITLE</u>
I	MEASURED AND PREDICTED TRAFFIC NOISE LEVELS ALONG ALA MOANA BOULEVARD ON AUGUST 30, 1988 BETWEEN 12:30 - 2:30 PM
II	SUMMARY OF MEASURED WORKPLACE SOUND LEVELS
III	RANGE OF INDUSTRIAL MACHINERY/EQUIPMENT SOUND LEVELS
IV	MEASURED SOUND LEVELS OF INDUSTRIAL EQUIPMENT
V	SUMMARY OF ACTIVITIES AND MEASURED NOISE LEVELS ON AUGUST 30, 1988 AT THE FORT ARM-STRONG CONTAINER HANDLING FACILITY
VI	AVERAGE PM PEAK-HOUR TWO DIRECTIONAL TRAFFIC ON NIMITZ HIGHWAY AND ALA MOANA BOULEVARD IN 1985 AND 2010 AND THE EXPECTED INCREASE IN TRAFFIC NOISE LEVEL
VII	ACTIVITY SENSITIVITY ANALYSIS
VIII	ACTIVITIES ASSOCIATED WITH COMMON LAND USE CATEGORIES
A-I	TYPICAL VALUES OF YEARLY DAY-NIGHT AVERAGE SOUND LEVEL FOR VARIOUS RESIDENTIAL NEIGHBORHOODS WHERE THERE IS NO WELL DEFINED SOURCES OF NOISE OTHER THAN USUAL TRANSPORTATION NOISE
A-II	COMPARISON OF EXISTING NOISE REGULATIONS
A-III	APPROXIMATE RELATIONSHIP OF NOISE REGULATIONS TO L _{dn}

I. EXISTING CONDITIONS

An evaluation of noise in the Waterfront area has been made involving noise from traffic, aircraft, and industrial/commercial complexes for existing conditions and the far future plans.

Special average noise indices are commonly used to deal with fluctuating noise from traffic and aircraft. For example, equivalent noise level over a one-hour sample of traffic noise provides a single number in decibels (dB) to express the complicated time-varying situation. Also day-night noise level (Ldn) is used to define a single number for traffic and aircraft noise averaged over 24 hours, including a 10 dB penalty for the noise sensitive period between 10:00 PM and 7:00 AM. See Appendix A for a more detailed discussion of noise indices.

A. Traffic Noise

Motor vehicular traffic noise is a function of: (a) the volume of traffic (e.g. vehicles per hour); (b) the operating speed; (c) the vehicle mix (usually characterized as automobiles including pickup trucks, vans, etc., medium trucks, and heavy trucks including buses); and (d) the sound propagation conditions, e.g. a direct noise path to a high-rise lanai vs. a path where sound grazes over ground covered with grass and foliage. Traffic noise levels are often expressed as an equivalent sound level over a one-hour period, e.g. L_{eq} (60 minutes). See Appendix A. It is stated in Reference 1 that when the L_{eq} is determined for the noisiest hour of a 24 hour period, and if certain conditions are met, then the noisiest L_{eq} (60 minutes) is approximately equal to the Day-Night Sound Level (L_{dn}). The Federal Highway Administration (FHWA) has developed a traffic noise level prediction model that has proved to be very reliable. (Reference 2) Using this model, it can be seen that if the traffic volume is doubled (e.g. from 2,000 to 4,000 vehicles/hour) and all other factors (e.g. speed, mix, etc.) are held constant, then the L_{eq} and L_{dn} will increase by 3 dB. However, if the speed is doubled (e.g. from 20 mph to 40 mph) for the same volume and mix, then the L_{eq} and L_{dn} will increase typically by about 10 dB.

The percent of heavy trucks in the traffic mix is a dominant factor in determining the total traffic noise level. For example, if there is a traffic volume of 2,500 vehicles per hour involving 2,387 autos, 50 medium trucks, and 63 heavy trucks (95.5%, 2%, and 2.5% respectively), it can be shown that the traffic noise level contribution by the autos

ACOUSTIC STUDY

HONOLULU WATERFRONT MASTER PLAN

(EXCERPTS SPECIFIC TO THE KAKA'AKO HAKAI AREA)

Prepared by

Darby & Associates
Pali Palms Plaza
970 North Kalaheo Avenue
Suite A311
Kailua, Hawaii 96734

February 28, 1989

is 33%, by the medium trucks is 10%, and by the heavy trucks is 57%. Thus, only 2.5% heavy trucks in the traffic flow typically would contribute 57% to the total traffic noise. If 53 additional trucks were introduced during the hour, then the percent of heavy trucks in the mix would rise to 5%, but the contribution to the total traffic noise would increase to 71%.

Another factor concerning the effect of heavy trucks on total traffic noise is that the engine exhaust outlet is usually elevated, typically to 8 or 9 feet. Automobiles and smaller trucks have an effective noise source located very near the ground. With heavy trucks, the dominant noise source is significantly elevated, and the effectiveness of natural or man-made noise barriers is reduced tremendously. Thus, trucks and bus noise often invades spaces not heavily impacted by noise from other vehicles. Also, the noises from heavy trucks contain much more low frequency sounds that propagate with much less attenuation as do the mid- and high-frequency sounds from autos and small trucks.

Since many high rises are involved in the Waterfront study area may involve high-rises, the following excerpt from Reference 3 is provided:

"Traffic noise levels generally increase with elevation of the high-rise unit due to increased field-of-view to streets and reflected building surface with elevation. Traffic noise sources probably tend to radiate more noise upward than horizontally, due to hard pavement surfaces below the vehicles and due to the use of vertical exhaust systems by some heavy vehicles (trucks and buses)."

"Figure 1 presents a two-dimensional prediction of traffic noise contributions from an adjacent view corridor street and from a distant view corridor street. Traffic noise predictions along one face of the high-rise unit are provided for the two streets which run parallel to the building face...."

"From Figure 1, it can be said that the lower floors (at 45 through 60 Ft elevation) would be the quietest, since shielding of both local and distant traffic noise will occur for these units. Above the 60 Ft elevation, shielding of local traffic noise would not occur, but shielding effects on distant traffic diminish entirely at 330 Ft elevation. Total traffic noise level from the two streets shown would vary from 56 Ldn at the lowest elevation to 65 Ldn at the highest elevation."

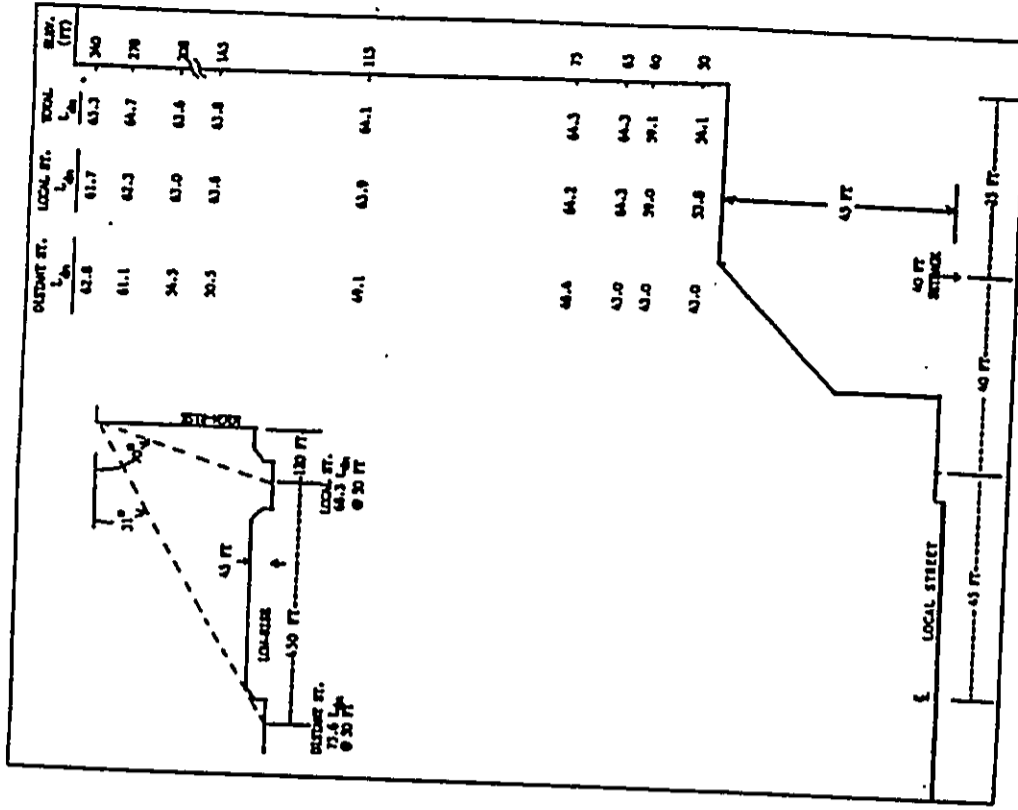


FIGURE 1
VARIATION OF TRAFFIC NOISE WITH HIGH-RISE ELEVATION

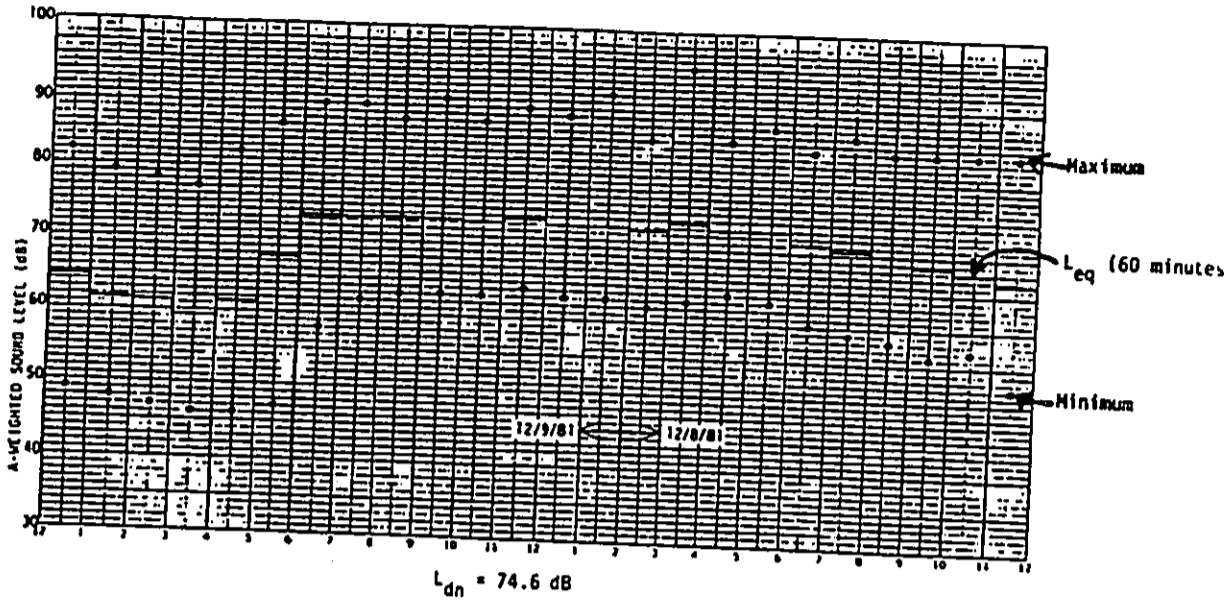


Figure 3 - Maximum, Minimum, and Hourly Noise Levels Measured on Ala Moana Boulevard over 24 hours.

An increase of 10 dB for a given noise is subjectively considered twice as noisy. Thus, it is seen that occupants on the lanais of units 10 floors and above in the hypothetical high-rise in Figure 1 can expect traffic to be more than twice as noisy as on the lanais of units at the 5th to 6th floors. Precise predictions of traffic noise levels in specific high-rises can be very complicated and depends on the specific geometry of the streets and other building within the field-of-view as well as upon the traffic parameters associated with each street.

Figure 3 shows maximum, minimum, and hourly traffic noise levels, L_{eq} (60 minutes), plotted over 24 hours for Ala Moana Boulevard (from Reference 3). It is seen that the hourly noise level is relatively constant between 6 AM and 6 PM because the hourly traffic volume fluctuations are not large enough to effect average traffic noise significantly. Also, when the hourly volumes are highest, e.g. at peak hours, the average operating speed probably decreases sufficiently to reduce traffic noise. In fact, the noisiest hour usually occurs before or after peak hours when vehicles can operate at, or near, posted speed.

Table I presents recent traffic noise level measurements and traffic data obtained for three locations along Ala Moana Boulevard. Also shown are traffic noise-level predictions using the FHWA noise model and it can be seen that the agreement is within one decibel. All three sites involve sound propagation across grassy surfaces which tended to reduce the traffic noise level compared to paved surfaces or to raised elevations, e.g. on high-rise lanais. Extremely large set-backs, e.g. greater than 250 feet, from Ala Moana Boulevard would be required to assure that 65 L_{dn} , the HUD acceptability threshold for residences, is not exceeded at the exterior of high-rise units. However, if the units are air conditioned allowing windows and doors to be closed, then HUD requirements can be met.

Traffic noise levels are reduced substantially in locations distant and shielded from the main thoroughfares. For example, Reference 3 provides 1984 noise measurements obtained at the three locations makai of Ala Moana Boulevard

shown in Figure 4. The results of the noise measurements are shown in Figures 5 thru 7. The L_{eq} values shown with each figure represent the total contributions from aircraft, traffic, and fixed machinery.

At Location "A" (parking lot of existing park), traffic noise was minimal and was approximately 55 L_{dn} . At Location "B" (50 FT from the centerline of Olomohani Street), traffic noise was approximately 59 L_{dn} due to the passage of tour buses and heavy trucks. At Location "C" (30 FT from the centerline of Ilalo Street), traffic noise was approximately 62 L_{dn} ; due to heavy truck and automobile traffic. The results indicate that existing traffic noise within the Makai Area is approximately 60 L_{dn} at 50 FT distance from the centerline of streets makai of Ala Moana Boulevard.

B. Aircraft Noise

Figures 8 and 9 show the aircraft departure tracks during trade winds, and aircraft arrival tracks during Kona flying patterns at Honolulu International Airport (HIA) impacting the study area (Reference 4). Figure 10 provides the most recent preliminary L_{dn} noise contours for 1987 (Reference 5). The noise contours were generated using the FAA's Integrated Noise Model (INM) computer program which takes into account the flight tracks, the frequency and time of operations, as well as the noise and flight profiles of each type of aircraft. The predicted noise levels take into account measured single event noise levels obtained over the years from fixed Remote Monitoring Stations (RMS's) in the HIA Noise Monitoring System (NMS). RMS's in the project area are located at the Aloha Tower and at Kewalo Basin.

Aircraft noise measurements were also obtained in Reference 3 at locations "A", "B", and "C" shown in Figure 4. The measurements occurred during trade winds conditions. At the "A" site, the aircraft noise contribution was approximately 60 L_{dn} and aircraft noise was the dominant noise source at that site. Military jet aircraft (F-4 and KC-135) were the loudest events recorded at 82 to 84 dB (L_{MAX}). At the "B" site, aircraft noise was approximately 60 L_{dn} with military jet aircraft recorded at 81 to 92 dB (L_{MAX}). Aircraft noise contributes approximately 48 to the total noise environment at location "B". At the location "C" site, aircraft noise was approximately 60 L_{dn} with military jet aircraft recorded at 81 to 85 dB (L_{MAX}). Aircraft noise contributed only 22 percent to the total noise environment due to the higher relative contributions from traffic and machinery (reefer vans) noise sources.

TABLE I - Measured and Predicted Traffic Noise Levels Along Ala Moana Boulevard on August 30, 1988 between 12:30 - 2:30 PM

LOCATION	DISTANCE TO ROAD CENTERLINE	ESTIMATED VEHICLES/HR*	ESTIMATED % HEAVY TRUCKS*	MEASURED L_{eq} (10 Min.)	PREDICTED L_{eq} (60 Min)**
Ala Moana Park (near Piikoi Street)	85'	3,574	2.7	66.6	67.3
Ala Moana Park (near Kewalo Basin)	125'	3,864	2.9	64.5	65.1
Near South Street	93'	4,434	3.2	67.4	67.8

* Hourly Traffic Volumes and % Heavy Trucks are based on a 10 minute count.

** Predicted noise levels assumed an average operating speed of 30 mph and took into account sound propagation across grass using the FHWA traffic prediction model.



Figure 5 - Maximum, Minimum, and Hourly Noise Levels Measured at Site "A"
(see Figure 9 for Measurement Location)

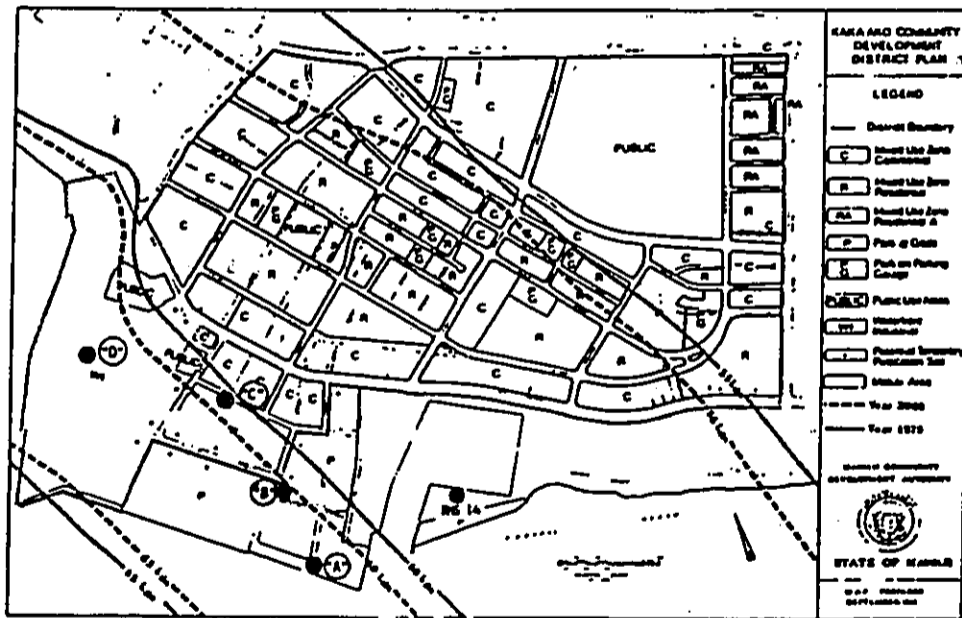


Figure 4 - HIA Aircraft Noise Contours Within Kaka'ako as Determined in Reference 3 and Noise Measurement Locations

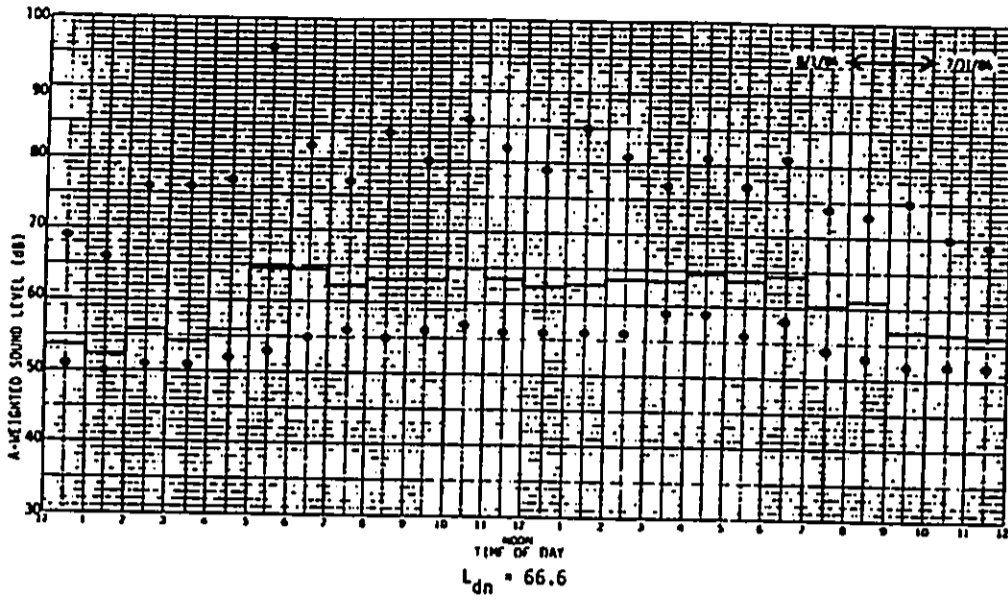


Figure 7 - Maximum, Minimum, and Hourly Noise Levels Measured at Site "C"
(see Figure 9 for Measurement Location)

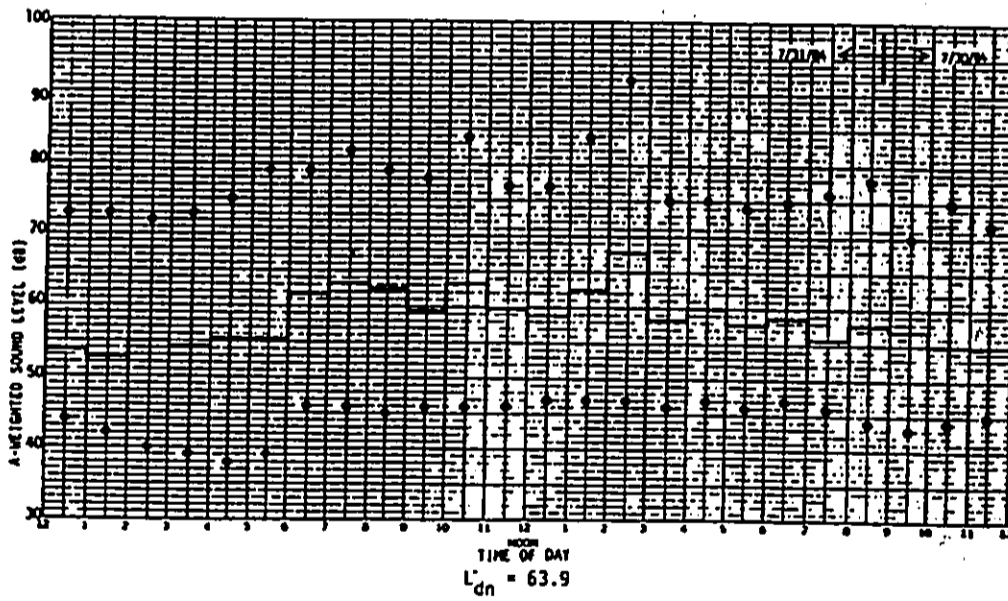


Figure 6 - Maximum, Minimum, and Hourly Noise Levels Measured at Site "B"
(see Figure 9 for Measurement Location)

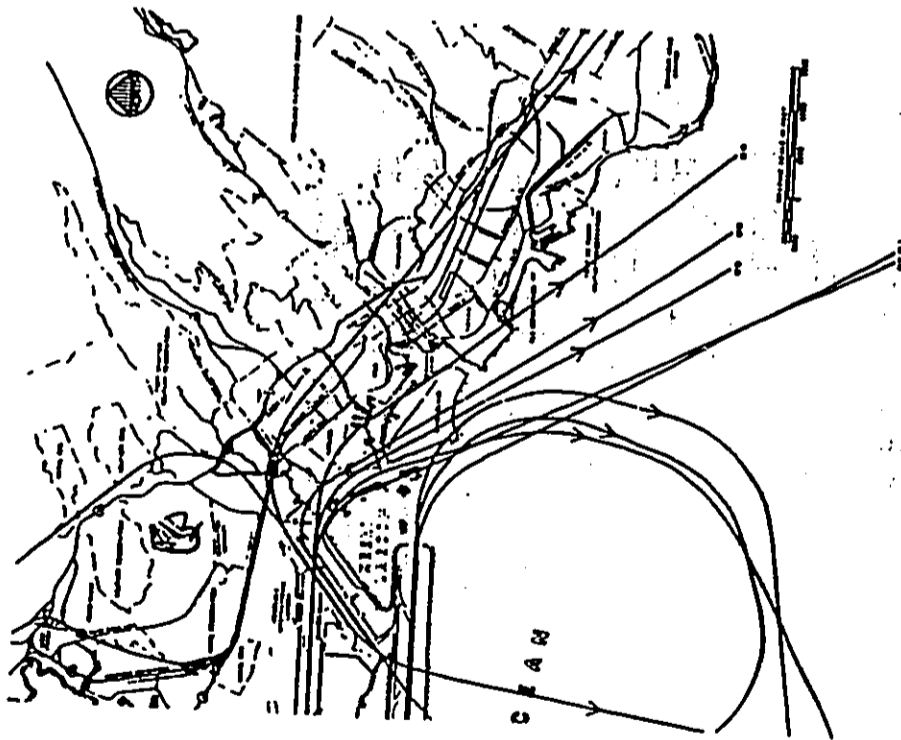


Figure 8 - Departure Flight Tracks During Trades from HIA

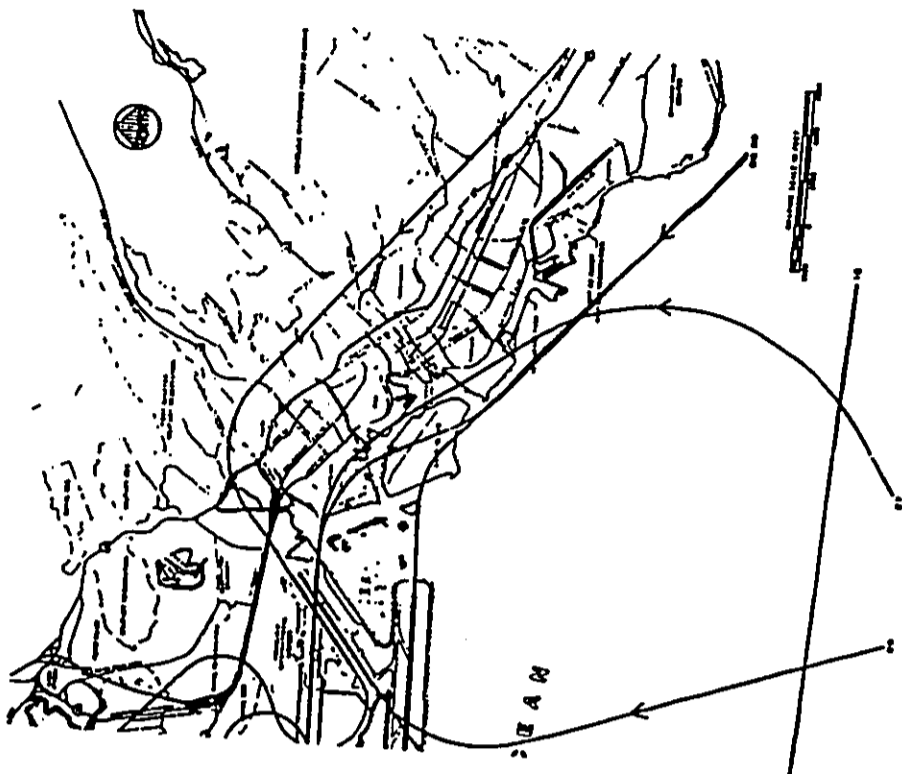


Figure 9 - Arrival Flight Tracks During Kone Flight Patterns to HIA

The L_{dn} noise contours in the study area caused by HIA can change when aircraft types and operations are modified. For example, the L_{dn} contours shown in Figure 4 obtained from the 1984 study (Reference 3) show less noise impact in the Kaka'ako Makai area than the more recently predicted L_{dn} contours for 1987 shown in Figure 10. The increase in L_{dn} values is believed to be attributed to overall greater activity and to the demise of Mid Pacific Airlines and the fact that jet aircraft are now handling more noise-sensitive night cargo operations including those previously carried on turbo-prop aircraft by Mid Pac.

C. Noise From Maritime, Industrial and Commercial Operations

The noise experienced from maritime, industrial, and commercial operations depends not only on the intensity of the source, but also on the sound propagation conditions determined largely by the elevation of the noise source, the presence of buildings, etc. causing shielding (or reflective sound buildup), the terrain, i.e. hard or soft, etc.

Table II from Reference 3 contains a summary of workplace noise levels measured in Kaka'ako, and are applicable to many conditions found in the project area. The following excerpt is also from Reference 3:

"Practically all workplace activities, which involve the use of powered tools or machinery, will generate noise levels in excess of 65 dB at the operator position... Tables III and IV present typical ranges of noise levels for various equipment which may be used in an individual workplace environment. The ultimate effect of noisy workplace spatial and temporal noise level distributions within a particular workplace depends upon a number of factors such as: the loudness, physical location, and frequency of operation of the noisy equipment; the interior architectural finishes and furnishings used in the workplace; and the extent to which partitions or enclosures are used to contain high level noise sources. The use of electronic paging systems will generally result in intermittent sound levels which are higher (by design) than the workplace noise levels.

"Hearing damage criteria for the workplace is approximately 85 dB, and it is possible that noise levels in the workplace environment may ultimately be at or below the 85 dB level. However, it is not likely that equipment of the industrial types shown in Table IV will be quieted to levels below 85 dB due to economic considerations. Therefore, it is

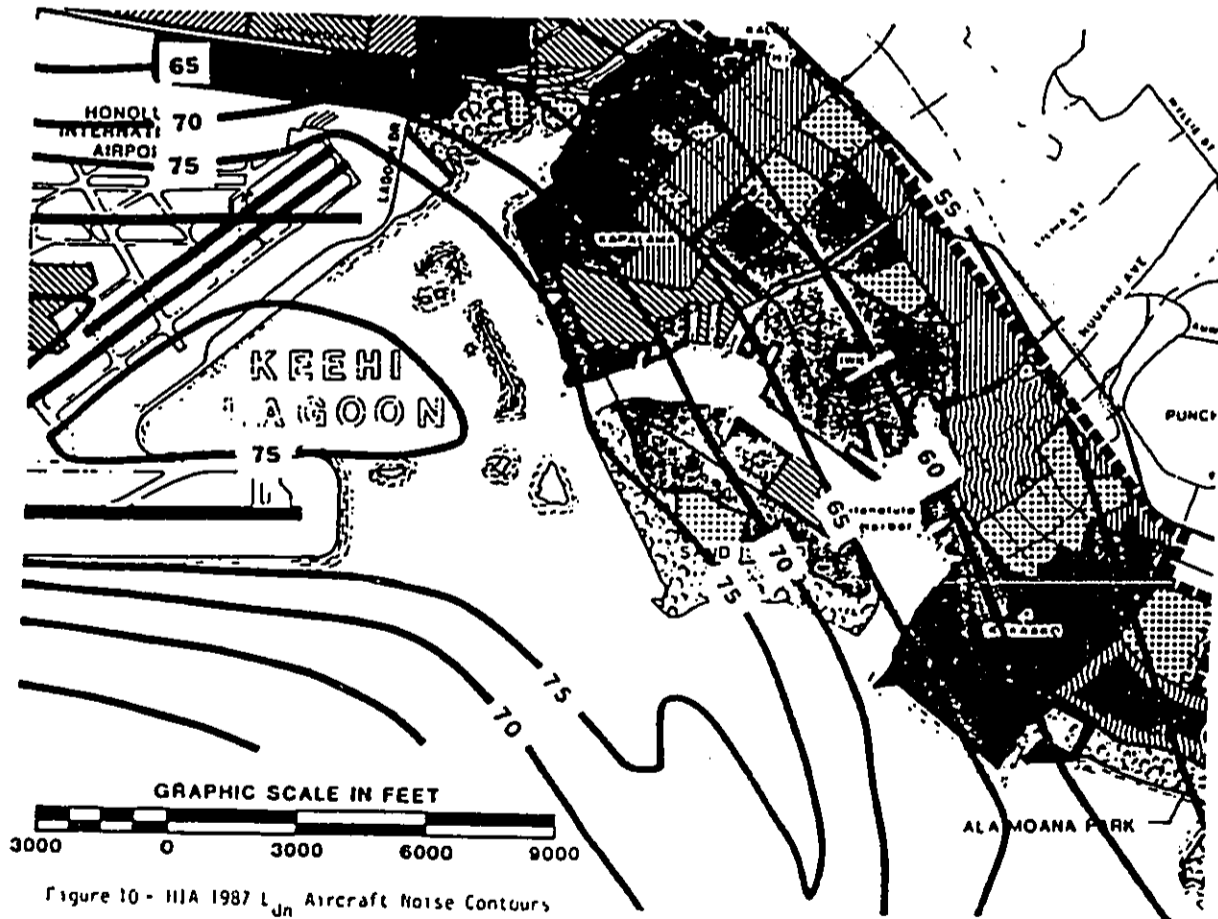


Figure 10 - HIA 1987 L_{dn} Aircraft Noise Contours

TABLE III

RANGE OF INDUSTRIAL MACHINERY/EQUIPMENT SOUND LEVELS*

	Sound Levels - dB							
	80	85	90	95	100	105	110	115
1. Pneumatic Power Tools (grinders, chippers, etc.)		
2. Air Blown-Down Devices (painting, cleaning, etc.)				
3. Air Compressors (reciprocating, centrifugal)			
4. Metal Forming (punch, shearing, etc.)				
5. Pumps (water, hydraulic, etc.)					
6. Industrial Trucks (LP gas)					
7. Saws
8. Laundry Equipment					
9. Electric Motors			
10. Blowers (forced, induced, fan, etc.)			

*Measured at operator positions.

TABLE II

SUMMARY OF MEASURED WORKPLACE SOUND LEVELS

Business Establishment (Measurement Location)	Background Ambient Noise Level	Transient Noise Sources
Auto Body Repair & Paint Shop (At Doorway)	71	Air Compressor: 78 dB Grinding: 85 dB Hammering: 75 dB
Tire Repair (Outside Entrance)	57	PA System: 80 dB Pneumatic Wrench: 75 dB Pneumatic Jack: 72 dB Hammering: 70 dB
Golf Club Manufacturing (At Doorway)	61	Grinding: 70 dB Spray Painting: 68 dB Hammering: 74 dB
Spray Paint Shop (At Doorway)	61	Air Gun: 74 dB
Upholstery Shop (At Doorway)	55	Stapler: 67 dB Sewing Machine: 63 dB
Auto Repair Shop Below Parking Deck (30 FT from Entrance)	62	Pneumatic Wrench: 74 dB Hammering: 72 dB
Auto Body Repair Shop (Outside and 6' from Entrance)	58	Hammering: 74 dB PA System: 72 dB Grinding: 68 dB
Warehouse (Outside on Sidewalk)	60	Container Loading: 75 dB

TABLE IV

MEASURED SOUND LEVELS OF INDUSTRIAL EQUIPMENT

Operation	Sound Level (dB)
Steam cleaning	109-114
Buffing and polishing	103-104
Use of bed planer	95-97
Use of compressed air for blowdown	102
Use of abrasive cut-off saw	104-108
Operation of paint spray booth	92
Use of large bandsaw	96-97
Operation of Motor Generator sets, Battery Shop	95-102
Use of portable pneumatic sander	96-98
Operation of abrasive cut-off wheels	92-96
Use of pneumatic wire brushes	94-98
Use of 4" belt sander	96-97
Use of saw	100-106
Use of pneumatic hoists	98
Use of surface planer	100
Use of table saws	96-98

reasonable to assume that workplace noise levels do and will continue to occur within a band of values, of approximately 65 to 85 dB with possible levels exceeding 85 dB for industrial operations.

Noise level measurements were made in August 30, 1988 at location "D" shown in Figure 4 at the Fort Armstrong container handling facility. Table V presents the measured data. During a 25 minute period, noise from trucks and forklifts with typical maximum dBA noise levels of 72 to 80 dBA were measured. The noise level exceeded 50% of the time (L50) was 68 dBA, while the level exceeded 10% of the time (L10) was 75 dBA.

II. FUTURE CONDITIONS WITHOUT PROJECT

Population in urban Honolulu is expected to increase by approximately 25% and employment by about 30% by the year 2010 even without the Waterfront Project. With this projected growth, estimated vehicle trips in the waterfront area would probably increase by 25%. Such increases imply greater levels of noise pollution which would be inevitable in areas of the urban core where major employment centers and services are located. Aircraft noise exposures in the area without the project will be identical to those estimated for the case with the project as discussed below.

III. FUTURE CONDITIONS WITH PROJECT

A. Traffic

If in the future, the projected increased traffic volumes can move at today's speeds, then it can be shown that hourly traffic noise levels should increase from 0.7 to 1.5 dB depending on the location along the traffic routes.

The actual increase in noise level will probably be less if congestion along the road causes the effective average operating speed of the vehicles to be reduced. Moreover, unlike aircraft noise, buildings will effectively block traffic noise to listeners at lower elevations. Thus, the makai regions behind structures on Ala Moana Boulevard should be muted from traffic noises.

The walkways and commercial complexes along the

Proposed canal as well as the parks and special uses in the Fort Armstrong area should be reasonably quiet except for noises from slower moving local traffic. It is shown that the elimination of fully-developed container handling facilities in the Fort Armstrong area will reduce the contribution of noise from heavy diesel trucks and buses on Ala Moana Boulevard from about 7½ to 5½ of the total traffic noise.

B. Aircraft

Figures 11 & 12 show aircraft noise Ldn contours labeled 1992 and 2007. These contours reflect future cases where 1992 contours show no significant changes in Kaka'ako Makai area despite an increase in operations. This is primarily because some quieter Stage 3 aircraft were assumed. The 2007 contours in Figure 12 reflect a case where the majority of the aircraft are Stage 3 and significant noise reductions are seen in most of the project area despite even greater operations than in 1992.

From Figure 12 one can estimate the degree of noise reduction that will occur when the quieter Stage 3 aircraft are essentially in full use. The figure shows circled letters denoting major features proposed for the ultimate Honolulu Waterfront Project. The amount of the predicted noise reduction varies from zero to more than 10 dB at the various locations within the planning area.

C. Industrial/Commercial Activities

Examples of industrial activities that cannot reasonably have acoustic enclosures are container handling facilities; ship and boat maintenance and repair operations; truck terminals; salvage, scrap and junk storage; concrete batch plants; and large saw mills. These as well as other activities will continue and in some cases, increase in the future.

Noise compatibility criteria provided by many Federal agencies generally assume that buildings are closed for heating or air conditioning. This condition makes these facilities both susceptible to noises from surrounding areas as well as not being quiet or compatible neighbors themselves.

Noise levels from industrial/commercial activities such as these will more than likely continue to increase as demand for such services and products increase with economic growth

TABLE V - Summary of Activities and Measured Noise Levels on August 30, 1988 at the Fort Armstrong Container Handling Facility

Activity	(approx. feet) Distance to Source	dBA Maximum Noise Level
Incoming & Outgoing Trucks	100'	70-78
Loading & Unloading by Forklift	150'	72-78
Reverse Beep Alarm from Forklift	150'	72-76
Heavy Forklift	100'	73-80
Aircraft Flyover	-	70-74

Note: o The noise level exceeded 10½ of the time (L10) for the period from 2:17 PM to 2:42 PM was 75 ± 3 dBA.

o See measurement location "D" on Figure 4.

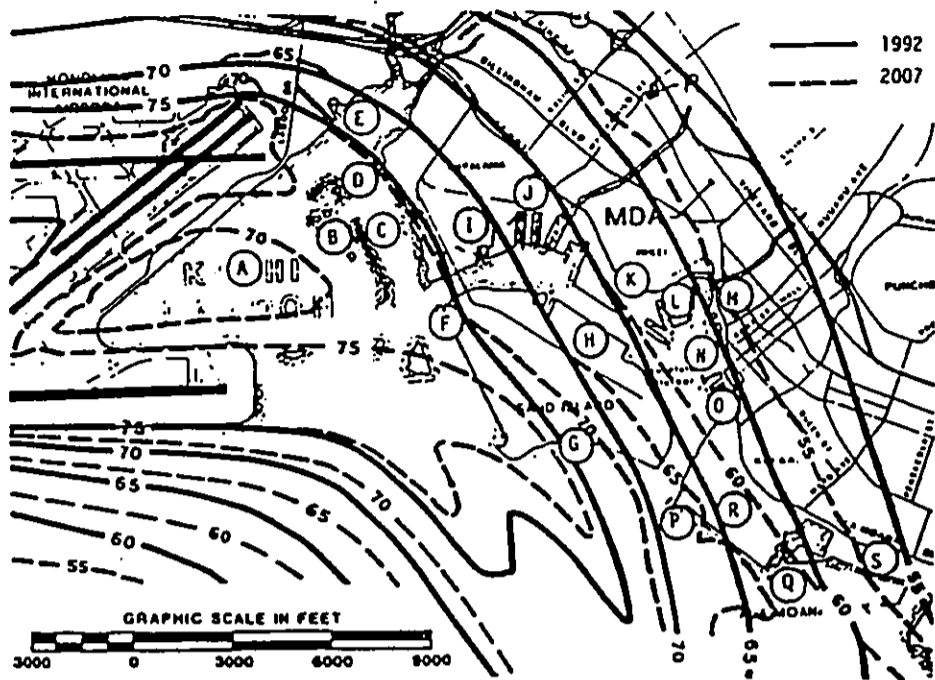


Figure 12 - Preliminary HIA "1992" and "2007" L_{dn} Aircraft Noise Contours

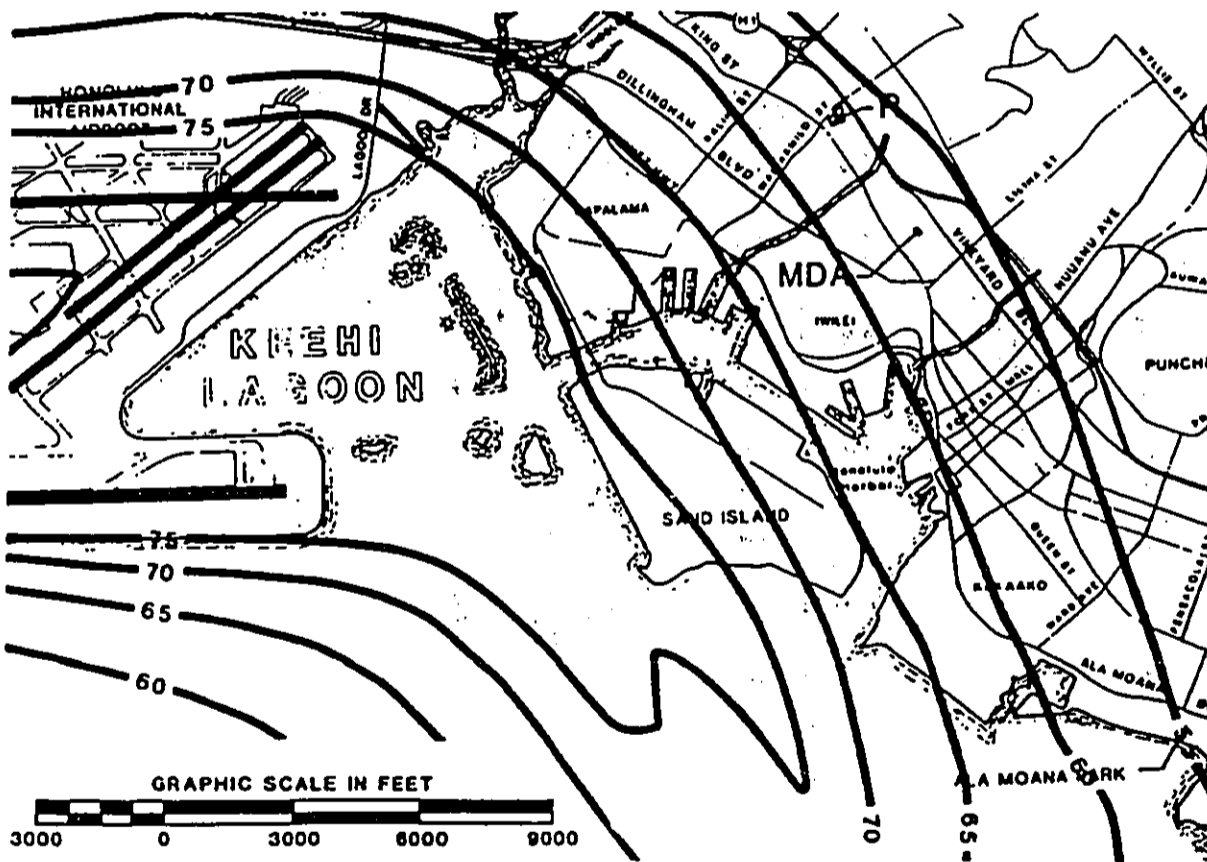


Figure 11 - Preliminary HIA "1992" L_{dn} Aircraft Noise Contours

AVERAGE DAILY TRAFFIC

STREET	1985 Vehicles/Hr.	2010 Vehicles/Hr.	Percent Increase	L_{eq} and L_{dn} Increase (dB)
Maikamille Street	5,400	6,300	17%	0.7
Bishop Street	5,400	6,600	22%	0.9
Alakea Street	5,400	6,700	24%	0.9
Punchbowl Street	5,400	6,700	30%	1.1
South Street	5,400	7,000	29%	1.1
Mard Avenue	5,400	7,000	29%	1.1

TABLE VI- Average PM Peak-Hour, Two Directional Traffic on Nimitz Highway and Ala Moana Boulevard in 1985 and 2010 and the Expected Increase in Traffic Noise Level.

Note: The traffic noise level increase assumes no change in vehicle speed or mix or vehicle types.

and diversification on the Honolulu Waterfront.

IV. PROBABLE IMPACTS AND MITIGATING MEASURES

A. Traffic

Noise from traffic on Ala Moana Boulevard and Nimitz Highway is not expected to increase significantly as can be seen in Table VI. The increase in the hourly noise level (L_{eq} (60 minutes)) or the day-night noise level (L_{dn}) ranges from 0.7 to 1.5 db depending on the location along the freeway. The actual increase in noise level will probably be less than shown in the table if congestion along the road causes the effective average operating speed of the vehicles to be reduced.

Assuming that there will be an ADT of 75,000 with 2.5% heavy trucks and buses, the worst case hourly noise levels [L_{eq} (60 minutes)] for 65 db would involve a noise corridor about 700 feet wide centered about the roadway and should represent the noise exposure that persons on lanais of high rises would experience if there is direct, line-of-sight to the traffic. During evenings when traffic volumes are assumed to decrease by about one-third, the L_{eq} 's would be about 5 db less.

Fortunately, unlike aircraft noise, buildings will effectively block traffic noise to listeners at lower elevations. Thus, the Makai regions behind structures on Ala Moana Boulevard should be muted from traffic noises. The walkways and commercial complexes along the proposed canal as well as the parks and special uses in the Fort Armstrong area should be reasonably quiet except for noises from slower-moving local traffic.

B. Aircraft

There should be significant reduction in aircraft noise impact within many portions of the study area when the older, noisy Stage 2 aircraft are phased out. Presently, task forces comprised of government and airline officials are working at the development of an economically feasible plan to determine the rate of phase-out for the older aircraft which comprised about 80% of the U.S. commercial fleet. Noise from military aircraft also contribute to the impact in portions of the project area. Changes in the type of military aircraft and operations also can affect the L_{eq} contours. Thus, predictions of HIA noise impact into the future can show a large variability.

Figures 11 and 12 show aircraft noise L_{dn} contours labeled 1992 and 2007 from Reference 5. These contours reflect future cases where the 1992 contours show no significant changes in Kaka'ako Makai area despite an increase in operations. This is primarily because some quieter Stage 3 aircraft were assumed. The 2007 contours in Figure 12 reflect a case where the majority of the

aircraft are Stage J and significant noise reductions are seen in most of the project area despite even greater operations than in 1992.

From Figure 12 one can estimate the degree of noise reduction that will occur when the quieter Stage 3 aircraft are essentially in full use. The figure shows circled letters denoting major features proposed for the ultimate Honolulu Waterfront Project. Following are comments pertaining to the specific features:

- N. and O. The Aloha Tower Complex, and the Dinner Cruise Area should have less than 5 Ldn reduction.
- P. and Q. The proposed land fill peninsula parks should have essentially no change.
- R. and S. The majority of the Kaka'ako Makai peninsula and Ala Moana Beach Park will experience a reduction of less than 5 Ldn.

C. Maritime, Industrial and Commercial Operations

Because of our favorable climate, many industrial activities here are open or are naturally ventilated, whereas the same businesses on the mainland would have to be closed for heating or cooling purposes. Examples of activities which may be enclosed and either air conditioned or mechanically ventilated for noise containment are: fabricating establishments, dance or music schools, light manufacturing, processing, and packaging establishments, publishing plants, repair establishments, laundries, etc. Closure may be required in order to comply with the local noise regulations cited in reference 7.

Simple walls of metal decking or single plywood panels often would provide adequate noise containment. The major cost is the installation and operation of the air conditioning or mechanical ventilation systems, not heavy sound retardant building elements, e.g. walls, windows, doors, etc.

Examples of industrial activities that cannot reasonably have acoustic enclosures are container handling facilities, ship and boat maintenance and repair operations, truck terminals, salvage, scrap and junk storage, concrete

batch plants, large saw mills, etc.

D. Noise Sensitive Land Uses

In order to be consistent with the noise compatibility criteria shown in Figure 14 which generally assumes that buildings are closed for heating or air conditioning, naturally ventilated residential units and other naturally ventilated noise-sensitive uses should not be planned where the day-night levels (Ldn) are greater than 60. Thus, taking aircraft noise into account, it can be seen from Figure 12 that essentially all such uses in the planning area should involve full closure of the structure with air conditioning or mechanical ventilation. Those interiors of structures in the Ldn 60 to 65 region would have adequate shielding from normal construction while those in the Ldn 65 to 70 region should have special considerations, e.g. use smaller windows and/or sound retardant glass; heavier roof systems, etc.

In industrial and commercial complexes a large variety of businesses are present involving a wide spectrum of activities. Decisions can be made on the need for soundproofing based on the sensitivity to noise that the activities have. For example, Table VII from Reference 7 provides an activity sensitivity analysis for different human activities and can be used as a guide to evaluate the compatibility of a proposed land use to the noise environment. The "maximum allowable steady-state noise level (dBA)" in the table refers to interior noise levels. Note that these values in Table VII are conservative and 5 dB could be added in many cases and would still be considered acceptable by many people.

If the activity is a naturally ventilated operation, then the maximum allowable exterior noise level would be typically 7 to 10 dBA greater than the perceptible interior noise level. If simple, single wood wall or metal decking walls are used with air conditioning or mechanical ventilation, then the exterior noise level could be typically 15 to 25 dBA greater than the acceptable interior level. As mentioned above, the land use compatibility criteria shown in Figure 14 was developed based on typical mainland conditions and assumes minimally that such enclosures exist in those uses involving buildings. Table VIII, also from reference 9, can be used to relate land use to the human activities in Table VII. Using the rationale in these tables, land use compatibility guidelines for special design districts in the Waterfront Area could be developed. For example, certain uses could be allowed if buildings are enclosed in predictably noisy areas (due to either transportation noises or neighboring industrial noises), e.g., offices, vocational

Figure 14

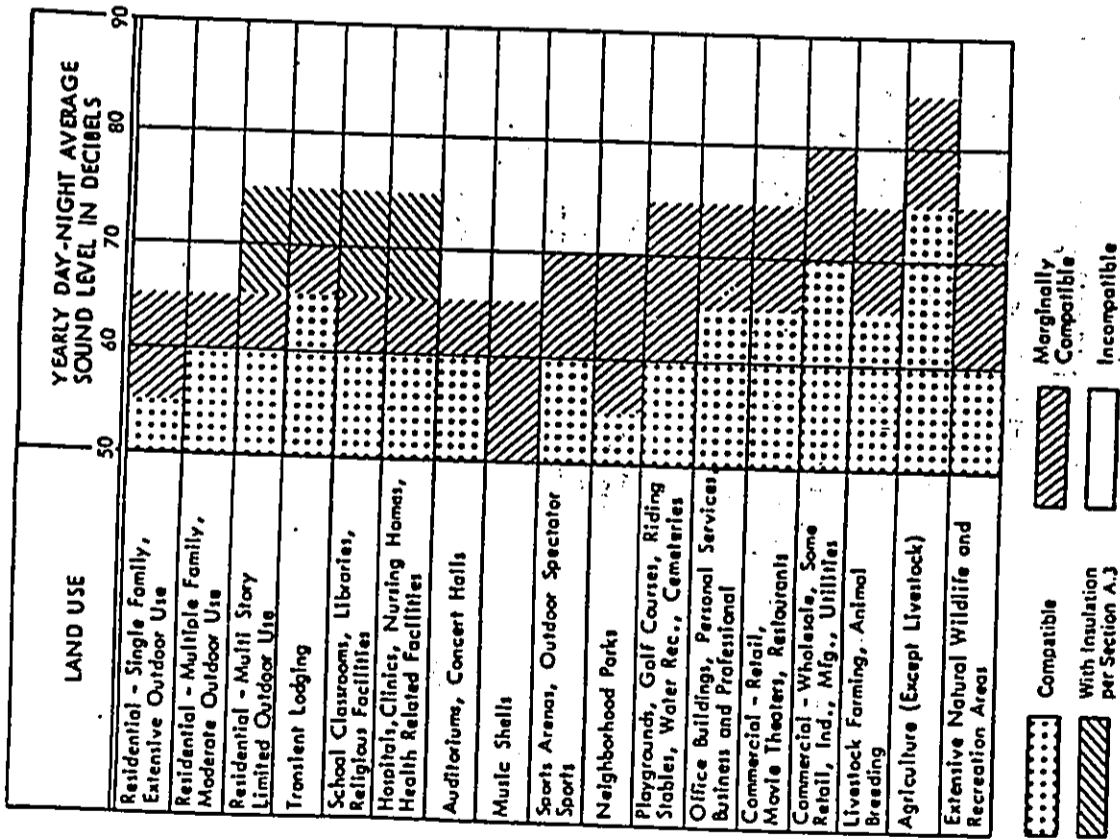


FIG. S-2 Land use compatibility with yearly day-night average sound level at a site for buildings as commonly constructed. [For information only; not a part of American National Standard for Sound Level Descriptors for Determination of Compatible Land Use S1.23-1980.]

TABLE VII

ACTIVITY SENSITIVITY ANALYSIS	ACTIVITY SENSITIVITY FACTORS										LAND-USE DEPENDENT SENSITIVITY FACTORS														
	Maximum allowable steady-state noise level (dBA)	Self-noise important to noise sensitivity	Associated normal information-carrying sound	Importance of speech or other carrying sound (dBA)	Frequency of speech communication	Schedule of activity (day, night)	Duration of activity	Frequency of activity	Suitability of application	Possibility of protecting activity	Possibility of protecting insulation	Importance of values	Maximum allowable steady-state noise level (dBA)	Self-noise important to noise sensitivity	Associated normal information-carrying sound	Importance of speech or other carrying sound (dBA)	Frequency of speech communication	Schedule of activity (day, night)	Duration of activity	Frequency of activity	Suitability of application	Possibility of protecting activity	Possibility of protecting insulation	Importance of values	
Intensive Conversation	50	No	M	60	M	M	M	M	M	M	M	M	50	No	M	60	M	M	M	M	M	M	M	M	M
Casual Conversation	50	No	M	60	M	M	M	M	M	M	M	M	50	No	M	60	M	M	M	M	M	M	M	M	M
Telephone Use	45	No	M	60	M	M	M	M	M	M	M	M	45	No	M	60	M	M	M	M	M	M	M	M	M
Sleeping	35	No	V	50	L	L	L	L	L	L	L	L	35	No	V	50	L	L	L	L	L	L	L	L	L
Eating	45	No	M	60	M	M	M	M	M	M	M	M	45	No	M	60	M	M	M	M	M	M	M	M	M
Reading	50	No	V	50	L	L	L	L	L	L	L	L	50	No	V	50	L	L	L	L	L	L	L	L	L
Meditation	50	No	V	50	L	L	L	L	L	L	L	L	50	No	V	50	L	L	L	L	L	L	L	L	L
Writing	50	No	V	50	L	L	L	L	L	L	L	L	50	No	V	50	L	L	L	L	L	L	L	L	L
Studying	50	No	V	50	L	L	L	L	L	L	L	L	50	No	V	50	L	L	L	L	L	L	L	L	L
Seminar, Group Discussion	50	No	M	60	M	M	M	M	M	M	M	M	50	No	M	60	M	M	M	M	M	M	M	M	M
Classroom, Lecture	50	No	M	60	M	M	M	M	M	M	M	M	50	No	M	60	M	M	M	M	M	M	M	M	M
Individual Creative Activity	50	No	V	50	L	L	L	L	L	L	L	L	50	No	V	50	L	L	L	L	L	L	L	L	L
Live Theater	35	No	M	60	M	M	M	M	M	M	M	M	35	No	M	60	M	M	M	M	M	M	M	M	M
Watching Film	50	No	M	60	M	M	M	M	M	M	M	M	50	No	M	60	M	M	M	M	M	M	M	M	M
Watching Television	50	No	M	60	M	M	M	M	M	M	M	M	50	No	M	60	M	M	M	M	M	M	M	M	M
Listening to Music	35	No	V	50	L	L	L	L	L	L	L	L	35	No	V	50	L	L	L	L	L	L	L	L	L

TABLE VII (continued)

ACTIVITY SENSITIVITY ANALYSIS	ACTIVITY SENSITIVITY FACTORS		LAND-USE DEPENDENT SENSITIVITY FACTORS															
	ACTIVITY SENSITIVITY FACTORS	ACTIVITIES	Pattern of activity	Self-sufficiency	Associated normal information	Carrying sound level (dBA)	Importance of speech or other information-carrying sound	Frequency of speech communication	Schedule of activity (day, night)	Duration of activity	Frequency of activity	Stability of application	Possibility of rescheduling	Possibility of relocating	Activity of relocating	Stability of structure	Importance of values	
H = High M = Medium L = Low V = Varies	HUMAN ACTIVITIES	Ceremony, Tradition	40	No	V	H	H	H	D,M	H	L	L	L	L	L	H	H	
		Public Events, Assemblies	55	No	H	H	H	H	D,M	H	L	L	L	L	L	L	H	
		Spectator Sports	50	No	V	L	H	H	D,M	H	L	L	L	L	L	L	H	
		Public Mass Recreation	55	No	V	H	H	H	D,M	H	L	L	L	L	L	L	H	
		Physical Recreation	45	No	V	H	H	H	D,M	H	L	L	L	L	L	L	H	
		Outdoor Activities	35	No	V	H	H	H	D,M	H	L	L	L	L	L	L	H	
		Urban Outdoor Activities	45	No	V	H	H	H	D,M	H	L	L	L	L	L	L	H	
		Extended Child Care	40	No	H	H	H	H	D,M	H	L	L	L	L	L	L	H	
		Driving	65	Yes	V	L	L	L	L	D,M	H	L	L	L	L	L	L	L
		Shopping	45	No	H	H	H	H	D,M	H	L	L	L	L	L	L	L	L
		Technical Manual Work	35	No	V	H	H	H	D,M	H	L	L	L	L	L	L	L	L
		Skilled Manual Work	40	Yes	V	H	H	H	D,M	H	L	L	L	L	L	L	L	L
		Manual Work	50	Yes	V	H	H	H	D,M	H	L	L	L	L	L	L	L	L
Equipment Operation	V	Yes	V	L	L	L	L	D,M	H	L	L	L	L	L	L	L		
Repetitive Work	50	Yes	H	H	H	H	D,M	H	L	L	L	L	L	L	L	L		
Noise-Sensitive Equipment	V	Yes	V	V	V	V	D,M	H	L	L	L	L	L	L	L	L		

TABLE VIII

ACTIVITIES ASSOCIATED WITH COMMON LAND USE CATEGORIES

LAND USE CATEGORY	SLUCI CODE	HUMAN ACTIVITIES																			
		Administrative/Construction	Child Care/Education	Child Care/Education	Child Care/Education	Child Care/Education	Child Care/Education	Child Care/Education	Child Care/Education	Child Care/Education	Child Care/Education	Child Care/Education	Child Care/Education	Child Care/Education	Child Care/Education	Child Care/Education	Child Care/Education	Child Care/Education	Child Care/Education	Child Care/Education	Child Care/Education
Residential - Single Family, Duplex	11a	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Residential - Mobile Homes	14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Residential - Multiple Family, Apartments, etc.	11c, 12, 13, 19	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Transient Lodging	15	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
School classrooms, Libraries, Churches	21	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Hospitals, Nursing Homes	211	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Auditorium, Concert Halls, Music Halls	212	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Sports Arena, Outdoor Spectator Sports	213	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Playgrounds, Neighborhood Parks	214, 215	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Golf Courses, Riding Stables, Motor Rac., Fanatics	216, 217, 218	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Office Buildings, Personnel, Business and Professional	31, 32, 33, 34, 35	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Commercial - Retail, Service, Theaters, Restaurants	36, 37, 38, 39	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Commercial - Wholesale, Loan, Retail, Ind., Md., Mail	41, 42, 43, 44, 45, 46	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Manufacturing, Communications (Voice Functions)	51, 52	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Livestock Farming, Animal Breeding	61, 62, 63, 64	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Agriculture (except Livestock), Mining, Fishing	71, 72, 73, 74, 75, 76	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Public Right-of-Way	81	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Extensive Natural Recreation Areas	91, 92, 93, 94, 95	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

M: Activity critical to normal function of land use.
 H: Activity important to normal function of land use.
 L: Activity of secondary importance - land use generally able to function satisfactorily if activity cannot be performed.
 Standard Land Use Coding Manual.
 2- represents a SLUCI category narrower or broader than, but generally inclusive of, the category described.
 2- does not include.
 2- is located on a plan to assist local planners in establishing a similar table for their particular community and land use classification system.

schools, retail and eating establishments, light fabricating and processing operations, etc.

Noise sensitive land uses where no enclosures can practically exist are parks, marinas, golf courses, amphitheaters, etc. These uses should not be encouraged unless there is a great public need and alternative, quieter space is not available. Such is the case for marinas and recreational uses in Ke'ehi Lagoon, and possibly an amphitheater in the Kaka'ako Makai area after quieter Stage 3 aircraft are implemented.

The amphitheater proposed for the Kaka'ako Waterfront park is to be located on 6 to 8 acres and would accommodate between 10,000 to 12,000 people. There would be approximately 5,000 fixed seats, with grass seating built into the slopes of the existing landfill. The location and design of the amphitheater would minimize potential noise impacts on surrounding properties by directing sound towards the ocean as much as possible. Modern design and construction techniques would equip a facility suitable for a variety of performances. Two acoustical issues associated with this complex are (a) noise from aircraft overflight interference with performances, and (b) sounds from the amphitheater possibly causing annoyance and activity interference to residents in the area.

Typical flight tracks for trade wind departures from Honolulu International Airport (HIA) are shown in figure 8. Trade wind departures represent about 95% of the annual departures from HIA. Currently there are about 21 scheduled departures during the evening between 7:00 PM and 11:00 PM when concerts may occur. Six of the departures are interisland jet aircraft from runway 08L and typically would cause a maximum noise level of about 79 dBA in the area. Fifteen departures would be transoceanic air carriers from the reef runway causing about 70 dBA maximum levels. Military light tactical jet aircraft takeoffs with afterburners could cause maximum levels in excess of 90 dBA.

Figure 9 shows typical flight tracks into HIA during Kona flight patterns which represent about 5% of the annual arrivals for HIA. Currently there are about 30 scheduled arrivals of commercial jet aircraft between 7:00 PM and 11:00 PM which could impact concerts during Kona weather. Typical maximum noise levels of 74 to 78 dBA would occur for 747 aircraft on the nearest flight track. Military aircraft landing on the same flight track can cause 90 dBA maximum levels.

From the above, it can be seen that loud music passages generally would not be masked by commercial jet activity, but more subdued passages could be disturbed. Military aircraft operations would often be detectable even during loud passages.

In the future when more quiet Stage 3 aircraft are implemented into the interisland fleet, maximum noise levels should be reduced substantially during trade wind departures, perhaps typically by 7 to 10 dBA. However, there probably will be more departures during a given period of time. During Kona flight patterns, there probably will be approximately the same maximum noise levels since approach noise levels are not substantially decreased in Stage 3 aircraft. Also, somewhat more aircraft landings are predictable in the future during concert times.

It is difficult to predict annoyance to potential nearby residents due to sounds from performances in the proposed amphitheater. This is primarily because the actual sound sources are loud speaker systems which belong to the entertainment groups and are considered a part of their artistic expression. If sponsors of events at the proposed shall were required to use the house sound system and a resident sound engineer, the control of intrusive noise to neighbors could be accomplished. However, recently there was U.S. Supreme Court action concerning New York City's effort to control sound levels at a bandshell in Central Park and not violate the performers' freedom of expression (Ward vs. Rock Against Racism, USSupct No. 88-226). Another complication is the trend to use large sub-bass amplifiers and speakers which produce essentially omni-directional sound that cannot be effectively directed away from residential areas.

Another important factor is the ambient or background noise level that normally exists at residences in the amphitheater environs. If a quiet ambient noise condition usually exists, then people get accustomed to enjoying outdoor areas and lanais in the evening (such is the case predicted for residential units in the Kaka'ako Waterfront area shielded from traffic noise on Ala Moana Boulevard by buildings). If buildings have lanais overlooking the boulevard, many people would tend not to utilize them because of uncomfortably high motor vehicular traffic noise.

In consideration of the above factors, it does not seem prudent to plan for residential units in the Kaka'ako Makai area if an amphitheater is to be located there. One exception to this statement is that, conceivably, a row of

continuous high-rise office buildings surrounding three sides of the amphitheater could act as an effective noise barrier to lower rise residential units located on the mauka, east and west sides of the "barrier".

E. Construction Noise

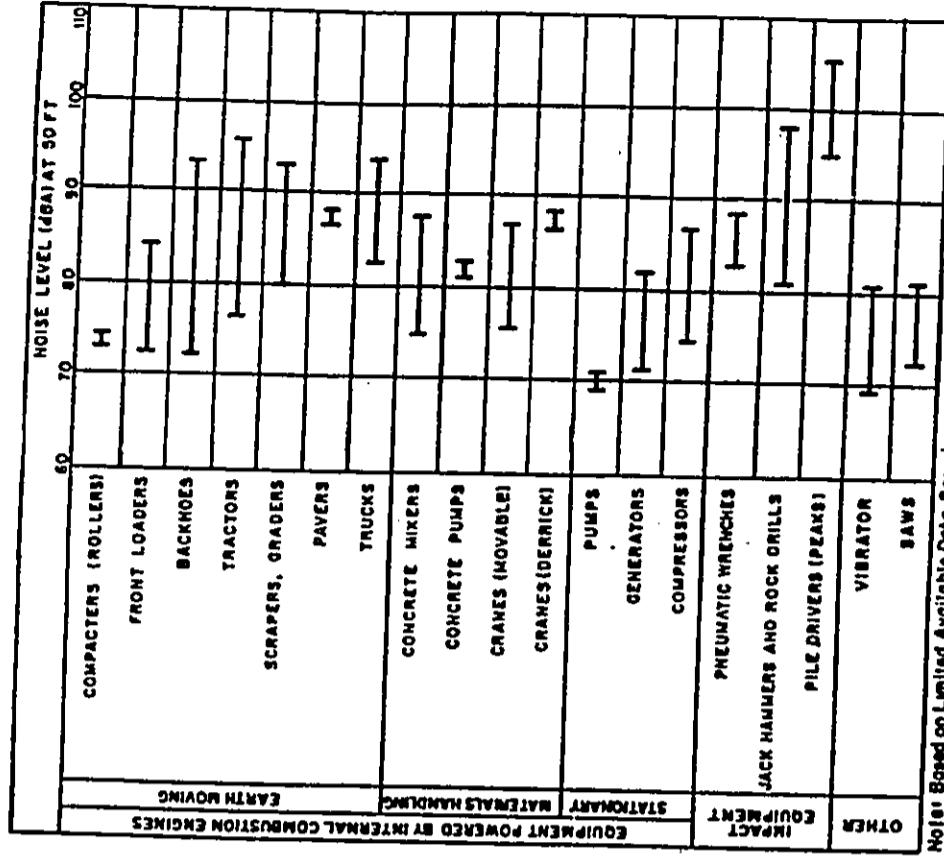
Development of the project area will involve grubbing, grading, and the construction of infrastructure and buildings as well as dredging and filling of waterways and lagoons. The various construction phases of a development project may generate significant amounts of noise; the actual amounts are dependent upon the methods employed during each stage of the process. Typical construction equipment noise ranges in dB(A) are shown in Figure 15. Pile drivers and rock drills as well as earthmoving equipment such as bulldozers and diesel powered trucks will probably be the loudest equipment used during construction. Since it is anticipated that noise generated during construction will exceed allowable limits in reference 7, a permit will be obtained from the Department of Health. DOH may grant permits to operate vehicles, construction equipment, power tools, etc. which emit noise levels in excess of the allowable limits. Required permit conditions for construction activities are:

"No permit shall allow construction activities creating excessive noise...before 7:00 a.m. and after 6:00 p.m. of the same day."

"No permit shall allow construction activities which emit noise in excess of ninety-five db(A)...except between 9:00 a.m. and 5:30 p.m. of the same day."

"No permit shall allow construction activities which exceed the allowable noise levels on Sundays and on... (certain) holidays. Activities exceeding ninety-five dB(A) shall (also) be prohibited on Saturdays."

In addition, construction equipment and on-site vehicles or devices requiring an exhaust of gas or air must be equipped with mufflers. Also, construction vehicles using trafficways will satisfy the noise level requirements defined in reference 9.



Note: Based on Limited Available Data Samples

FIG. 15 CONSTRUCTION EQUIPMENT NOISE RANGES.

can show a large variability.

V. SUMMARY

An evaluation of noise in the Waterfront area has been made involving noise from traffic, aircraft, and industrial/commercial complexes for existing conditions and the far future plans.

Noise from traffic on the main artery through the area, Ala Moana Boulevard/Wimitz Highway, is shown to cause maximum hourly noise levels of 65 dB to persons on lanais in high-rises at distances of 250 to 350 feet from the roadway. During evenings, when traffic volumes decrease by about one-third, the average hourly noise levels would be about 5 dB less. If in the future, the projected increased traffic volumes can move at today's speeds, then it can be shown that hourly traffic noise levels should increase from 0.7 to 1.5 dB depending on the location along the trafficways. The actual increase in noise level will probably be less if congestion along the road causes the effective average operating speed of the vehicles to be reduced. Fortunately, unlike aircraft noise, buildings will effectively block traffic noise to listeners at lower elevations. Thus, the makai regions behind structures on Ala Moana Boulevard should be muted from traffic noises. The walkways and commercial complexes along the proposed canal as well as the parks and special uses in the Fort Armstrong area should be reasonably quiet except for noises from slower moving local traffic.

It is shown that the elimination of fully-developed container handling facilities in the Fort Armstrong area will reduce the contribution of noise from heavy diesel trucks and buses on Ala Moana Boulevard from about 71 $\frac{1}{2}$ to 57 $\frac{1}{2}$ of the total traffic noise.

The Ldn aircraft noise contours in the study area caused by HIA can change when aircraft types and operations are modified. There should be significant reduction in aircraft noise impact within many portions of the study area when the older, noisy Stage 2 aircraft are phased out. Presently, task forces comprised of government and airline officials are working at the development of an economically feasible plan to determine the rate of phase-out for the older aircraft which comprised about 80% of the U.S. commercial fleet. Noise from military aircraft also contribute to the impact in portions of the project area. Changes in the type of military aircraft and operations also can affect the Ldn contours. Thus, predictions of HIA noise impact into the future

Figure S-1 shows aircraft noise Ldn contours labeled 1992 and 2007. These contours reflect future cases where the 1992 contours show no significant changes in Kaka'ako Makai area despite an increase in operations. This is primarily because some quieter Stage 3 aircraft were assumed. The 2007 contours in Figure S-1 reflect a case where the majority of the aircraft are Stage 3 and significant noise reductions are seen in most of the project area despite even greater operations than in 1992.

From Figure S-1 one can estimate the degree of noise reduction that will occur when the quieter Stage 3 aircraft are essentially in full use. The figure shows circled letters denoting major features proposed for the ultimate Honolulu Waterfront Project. The amount of the predicted noise reduction varies from zero to more than 10 dB at the various locations within the planning area, and are discussed in more detail in the report.

The noise experienced from maritime, industrial, and commercial operations depends not only on the intensity of the source, but also on the sound propagation conditions determined largely by the elevation of the noise source, the presence of buildings, etc. causing shielding (or reflective sound buildup), the terrain, i.e. hard or soft, etc. The report provides noise level measurements obtained in typical work places and of various industrial equipment.

Because of our favorable climate, many industrial activities here are open or are naturally ventilated, whereas the same businesses on the mainland would have to be closed for heating or cooling purposes. Examples of activities which may be enclosed and either air conditioned or mechanically ventilated for noise containment are: fabricating establishments, dance or music schools, light manufacturing, repairing establishments, laundries, etc. Simple walls of metal decking or single plywood panels often would provide adequate noise containment. The major cost is the installation and operation of the air conditioning or mechanical ventilation systems, not heavy sound retardant building elements, e.g. walls, windows, doors, etc.

Example of industrial activities that can not reasonably have acoustic enclosures are container handling facilities; ship and boat maintenance and repair operations; truck term-

inals; salvage, scrap and junk storage; concrete batch plants; large saw mills; etc.

In order to be consistent with the noise compatibility criteria shown in Figure S-2, which generally assumes that buildings are closed for heating or air conditioning, naturally ventilated residential units and other naturally ventilated noise-sensitive uses should not be planned where the day-night noise levels (L_{dn}) are greater than L_{dn} 60. Thus, taking aircraft noise into account, it can be seen from Figure S-1 that essentially all such uses in the planning area should involve full closure of the structure with air conditioning or mechanical ventilation. Those interiors of structures in the L_{dn} 60 and greater region would have adequate shielding from normal construction while those in the L_{dn} 65 and greater region should have special considerations, e.g. use smaller windows and/or sound retardant glass; heavier roof systems, etc.

In industrial and commercial complexes, a large variety of businesses are present involving a wide spectrum of activities. Decisions can be made on the need for soundproofing based on the sensitivity to noise that the activities have. The report provides information on activity sensitivity and other considerations that can be used as a guide to evaluate the land use compatibility. Using this rationale, land use compatibility guidelines for special design districts in the Waterfront Area could be developed. For example, certain uses could be allowed if buildings are enclosed in a predictably noisy area (due to either transportation noises or neighboring industrial noises), e.g., offices, vocational schools, retail and eating establishments, light fabricating and processing operations, etc.

Noise sensitive land uses where no enclosures can practically exist are parks, marinas, golf courses, amphitheaters, etc. These uses should not be encouraged in areas with greater noise exposure than shown in Figure S-2 unless there is a great public need, and alternative, quieter space is not available. Such is the case for an amphitheater in the Kaka'ako Makai area after quieter Stage 3 aircraft are implemented.

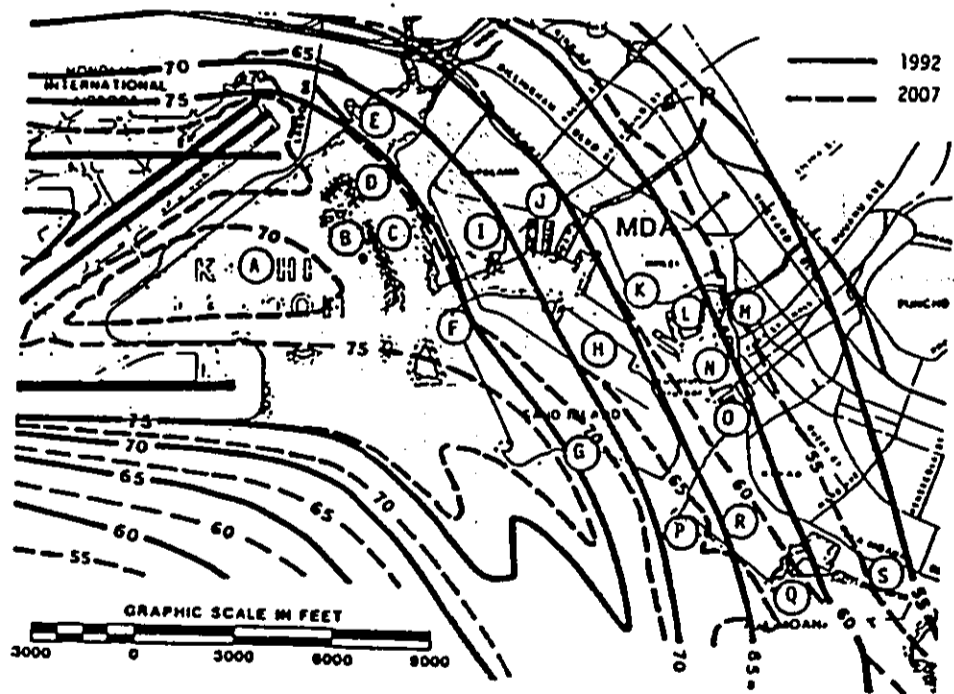


Figure S-1- Preliminary HIA "1992" and "2007" L_{dn} Aircraft Noise Contours

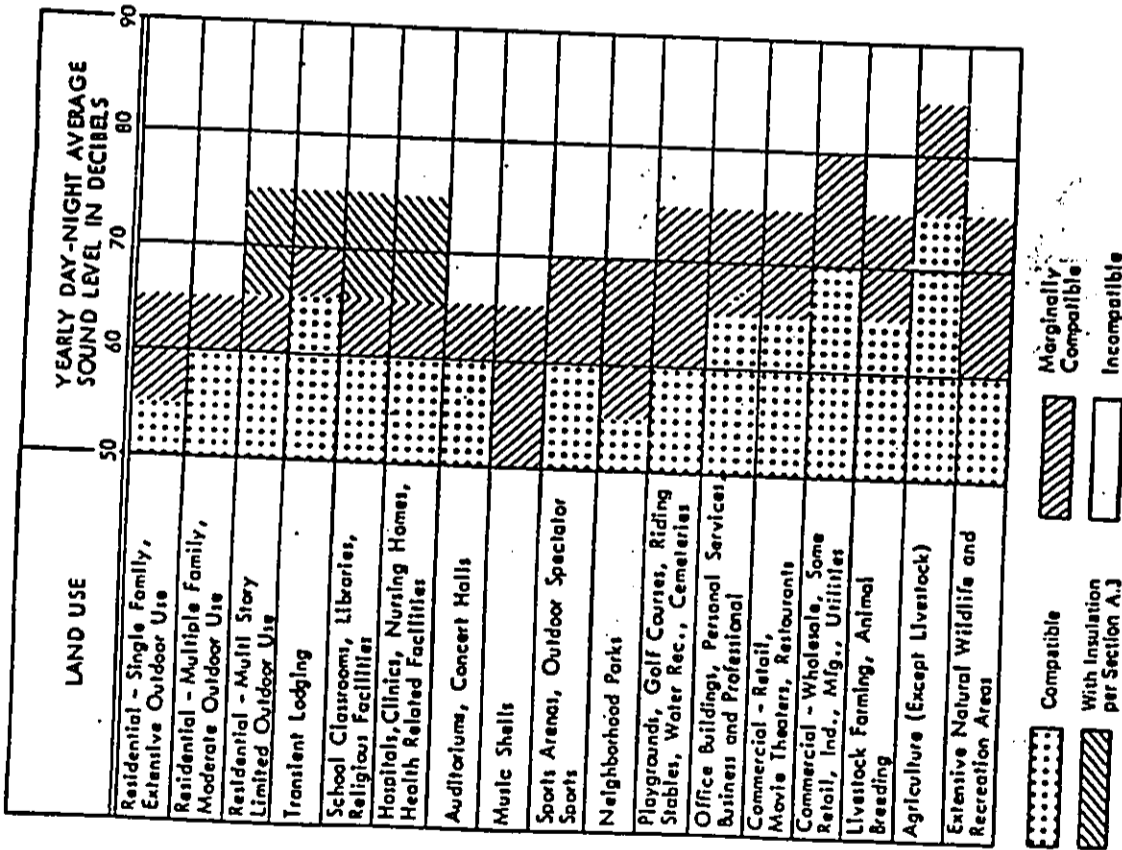


FIG. S-2. Land use compatibility with yearly day-night average sound level at a site for buildings as commonly constructed. [For information only; not a part of American National Standard for Sound Level Descriptors for Determination of Compatible Land Use S3.23-1980]

REFERENCES:

1. "HUD Environmental Criteria and Standards, 24 CFR Part 51", Federal Register, Volume 44, No. 135, July 12, 1979; amended 49 FR 880, January 6, 1984.
2. "FHWA Highway Traffic Noise Prediction Model", HWA-RD-77-108; U.S. Department of Transportation, December 1978.
3. "Kaka'ako Supplemental Environmental Impact Statement - Acoustic Study", Ebiisu, Darby-Ebiisu & Associates, Inc., August 20, 1984.
4. "Honolulu International Airport Master Plan Update and Noise Compatibility Program". Inventory of Existing Noise Mitigation Programs and Noise Map Information, State of Hawaii, Department of Transportation, Airports Division, prepared by KFC Airport, Inc., March 1987.
5. "Preliminary 1/3-oct Noise Contours for Current HIA Master Plan and Noise Compatibility Program", FAA, Part 150, Study by E.K. Noda & Associates, 1988.
6. "Naval Air Station Barbera Point Air Installation Compatibility Use Zones (AICUZ) Study", Department of the Navy, July 19, 1988.
7. Chapter 43 of Title 11, Administrative Rules, Community Noise Control for Oahu, State of Hawaii, Department of Health, November 6, 1981.
8. "Aircraft Noise Impact Planning Guidelines for Local Agencies", Department of Housing and Urban Development, prepared by Wilsey and Ham, November 1972.
9. Chapter 42 of Title 11, Administrative Rules, Vehicular Noise Control for Oahu, State of Hawaii, Department of Health, November 6, 1981.

**APPENDIX A
NOISE DESCRIPTORS AND THE RELATIONSHIP OF NOISE
LEVELS TO LAND USE COMPATIBILITY**

The Day-Night Sound level, or L_{dn} , is a commonly accepted noise descriptor for the determination of land use compatibility. The Day-Night Sound Level is a 24-hour average sound level in which nighttime noise levels occurring between 10:00 PM and 7:00 AM are increased (or penalized) by 10 dB before calculation of the 24-hour average. Figure A-1, extracted from Reference A-1, provides land use compatibility determination for various levels of exterior noise as measured by the L_{dn} descriptor. It should be noted from Figure A-1 that L_{dn} values of 60, 65, and 70 are considered unconditionally compatible for apartment, commercial, and industrial land uses, respectively. A general consensus among federal agencies has developed whereby residential housing is considered acceptable where exterior noise does not exceed 65 L_{dn} (see References A-2 through A-5). EPA's original recommendation of 55 L_{dn} or less for residential housing is now recognized as a desirable long-term goal as cited in Reference A-6.

Table A-1 (extracted from Reference A-7) describes the typical variation of L_{dn} for various kinds of neighborhoods. Levels of 60 L_{dn} or greater are typical along city streets with daily traffic volumes exceeding 2,500 vehicles. 65 to 70 L_{dn} are typical values for city business districts where traffic is a dominant noise source. Figure A-2 presents typical L_{dn} values obtained on Oahu (Reference A-8).

TABLE A-1

Typical Values of Yearly Day-Night Average Sound Level
for Various Residential Neighborhood Where There is
No Well Defined Sources of Noise Other Than Usual
Transportation Noise

Description	L_{dn} - dB
Rural (Undeveloped)	35
Rural (Partially developed)	40

A-1

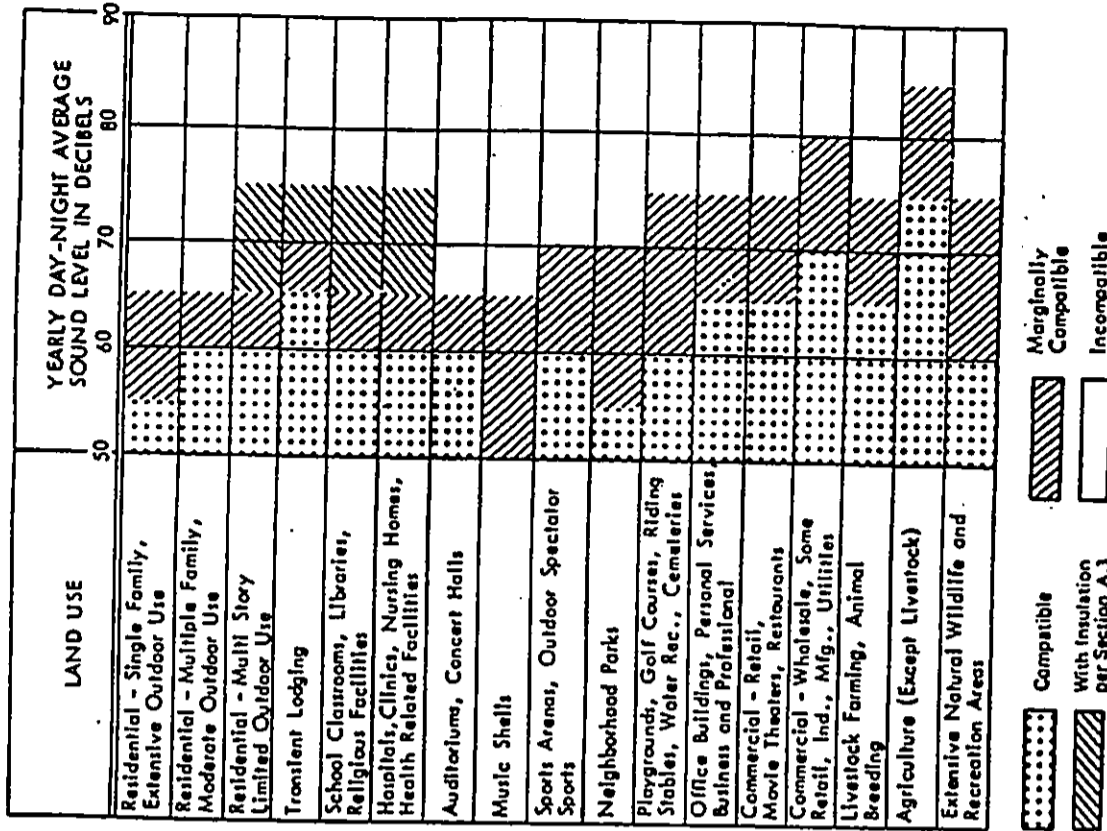
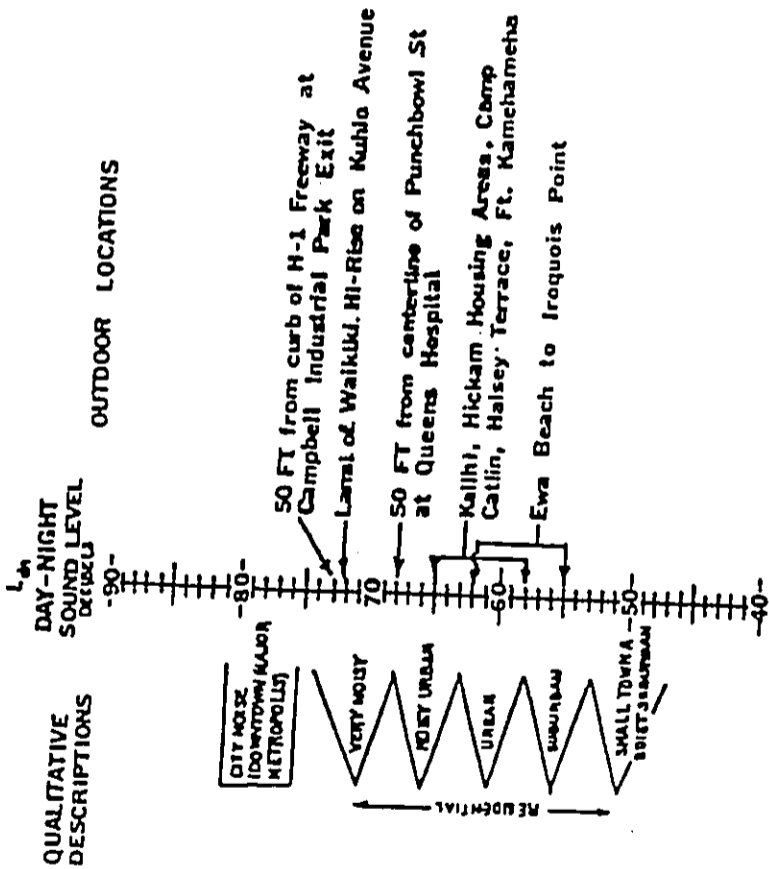


FIG. A-1 Land use compatibility with yearly day-night average sound level at a site for buildings as commonly constructed. [For information only; not a part of American National Standard for Sound Level Descriptors for Determination of Compatible Land Use S3.23-1980.]

A-2

FIGURE A-2
RANGE OF EXTERIOR BACKGROUND AMBIENT NOISE LEVELS



A-3

Description (continued)	L _{dn} - dB
Quiet Suburban	45
Normal Suburban	50
Urban	55
Noisy Urban	60
Vary Noisy Urban	65

On Oahu, State and County noise regulations exist, and may be enforced whenever noise emissions exceed specified levels and cause complaints from neighboring properties. State Department of Health (DOH) and City and County of Honolulu Land Use Ordinance (LZO) noise regulations are expressed in maximum allowable noise limits rather than L_{dn} (Reference Development Plan (KCDPP)). The Kaka'ako Community similar to the DOH regulations (Reference A-11). They are all summarized in Table A-II for many cases of interest. Values shown in Table A-II represent short-term noise levels rather than 24-hour averages. Although they are not directly comparable to noise criteria expressed in L_{dn}, Table A-III has been constructed in order to make the following general comparisons of the various noise regulations:

- State DOH noise limits for residential district are approximately equal to 55 L_{dn}, or 10 L_{dn} units below existing federal standards (65 L_{dn}), and equal to EPA's long-term goal for residences.
- State DOH and KCDPP noise limits for apartment districts are approximately equal to 60 L_{dn}, or 5 L_{dn} units below existing federal standards.
- LZO noise limits for residential/apartment uses are approximately equal to 59 L_{dn}, or 6 L_{dn} units below existing federal standards. It is noted that the LZO regulations consider "night-time" as between 6 PM to 8 AM, and therefore may be more restrictive.
- For industrial or non-dwelling areas, DOH noise limits equate to 76 L_{dn} and LZO limits equate to 69 L_{dn}. No explicit federal standards exist for these land uses, although existing state and local regulations are generally consistent with

A-4

TABLE A-III
APPROXIMATE RELATIONSHIP OF NOISE REGULATIONS TO L_{dn}

Noise Regulations	Zoning District	Approximate L _{dn} at Lot or Property Boundary
State Dept. of Health	Residential	55 L _{dn}
State Dept. of Health	Apartment/Business	60 L _{dn}
State Dept. of Health	Industrial	76 L _{dn}
Honolulu LUO	Any district where residences or apartments permitted.	59 L _{dn}
Honolulu LUO	Any district where residences or apartments are not permitted.	69 L _{dn}
KCOOP	MUZ-RA, MUZ-R, MUZ-C	60 L _{dn}
KCOOP	MUZ-WI	70 L _{dn}

TABLE A-II
COMPARISON OF EXISTING NOISE REGULATIONS

Noise Regulation	Daytime/Nighttime Allowable Noise Level	Zoning District	Measurement Location
State Dept. of Health	60/50 dB (A-weighted) ¹	Apartment/Commercial	Lot or common property boundary.
State Dept. of Health	55/45 dB (A-weighted) ¹	Residential	Lot or common property boundary.
State Dept. of Health	70/70 dB (A-weighted) ¹	Industrial/Agricultural	Lot or common property boundary.
Honolulu LUO	See below for picture band limits	Apartment or Residential	At or beyond lot boundary.
Honolulu LUO	See below for picture band limits	Any district where apartment or residences are not permitted.	At or beyond district boundary line for 1-2 and 1-3 lot zoning or at or beyond lot boundary for 1-1 lot zoning.
KCOOP	60/50 dB (A-weighted) ¹	MUZ-RA, MUZ-R, & MUZ-C	Lot or common property boundary.
KCOOP	70/60 dB (A-weighted) ¹	MUZ-WI	Lot or common property boundary.

Notes: 1. Levels not to be exceeded for more than 10% of the time within any 20-minute period.

63 or Below	133	OCTAVE BAND CENTER FREQUENCY (Hz)	2000	4000	8000
72/69 dB	67/64 dB	320	500	1000	2000
70/70 dB	74/76 dB	500	1000	2000	4000
70/70 dB	74/76 dB	32/49 dB	46/63 dB	60/77 dB	74/91 dB
70/70 dB	74/76 dB	66/86 dB	89/109 dB	113/133 dB	137/157 dB



other criteria established for land use planning purposes. Compliance with LJO noise regulations (expressed as octave band noise limits) help in that objectionable pure tones or concentrated bands of noise are not generated.

- e. KCDDP noise limits for waterfront industrial districts are approximately 70 Ldn, or 6 Ldp units below DOH, and 1 Ldn unit above LJO regulations for industrial districts.

State and local noise regulations have been enforced, and have been used to effect court injunctions and remedial measures. The KCDDP noise limits are also enforceable whenever complaints regarding excessive noise are generated.

It should be noted that noise resulting from motor vehicles are regulated separately by existing DOH regulations (Reference A-12) whenever public roadways are used.

Following is a brief description of the acoustic terminology and symbols. All sound levels used in this report are A-weighted sound levels, unless otherwise noted.

EXCERPTS FROM EPA'S ACOUSTIC TERMINOLOGY GUIDE

Descriptor Symbol Usage

The recommended symbols for the commonly used acoustic descriptors based on A-weighting are contained in Table I. As most acoustic criteria and standards used by EPA are derived from the A-weighted sound level, almost all descriptor symbol usage guidance is contained in Table I.

Since acoustic measurements include weighting networks other than "A" and measurements other than pressure, an expansion of Table I was developed (Table II). The group adopted the ANSI descriptor-symbol scheme which is structured into three stages. The first stage indicates that the descriptor is a level (i.e., based upon the logarithm of a ratio), the second stage indicates the type of quantity (power, pressure, or sound exposure), and the third stage indicates the weighting network (A, B, C, D, E, ...). If no weighting network is specified, "A" weighting is understood. Exceptions are the A-weighted sound level and the A-weighted peak level which require that the "A" be specified. For convenience in those situations in which an A-weighted descriptor is being compared to that of another weighting, the alternative column in Table II permits the inclusion of the "A". For example, a report on blast noise might wish to contrast the L_{dn} with the L_{dn}(A).

Although not included in the tables, it is also recommended that "L_{eq}" and "L_{eq}(A)" be used as symbols for perceived noise levels and effective perceived noise level, respectively.

It is recommended that in their initial use within a report, such terms be written in full, rather than abbreviated. An example of preferred usage is as follows:

The A-weighted sound level (LA) was measured before and after the installation of acoustical treatment. The measured LA values were 85 and 75 dB respectively.

Descriptor Nomenclature

With regard to energy averaging over time, the term "average" should be discouraged in favor of the

term "equivalent". Hence, L_{eq} is designated the "equivalent sound level". For L_{dn}, L_{dn} and L_{dn}(A) should not be listed since the concept of "day, night, or day" night averaging is by definition understood. Therefore, the designations are "day sound level", "night sound level", and "day-night sound level", respectively.

The peak sound level is the logarithmic ratio of peak sound pressure to a reference pressure and not the maximum root mean square pressure. While the latter is the maximum sound pressure level, it is often incorrectly labeled peak. In that sound level meters have "fast" settings, this distinction is most important. "Background ambient" should be used in lieu of "background", "ambient", "residual", or "indigenous" to describe the level characteristics of the general background noise due to the contribution of many unidentifiable noise sources near and far.

With regard to units, it is recommended that the unit decibel (abbreviated dB) be used without modification. Hence, dBA, PndB, and EPNdB are not to be used.

Examples of the preferred usage are: the Perceived Noise Level (PNL) as found to be 75 dB, L_{pn} = 75 dB, and the Acoustical Society of America, and the policies of ANSI and the National Bureau of Standards, all of which disallow any modification of dB except for prefixes indicating its multiples or submultiples (e.g., dBc).

Noise Impact

In discussing noise impact, it is recommended that "Level Weighted Population" (LWP) replace "Equivalent Noise Impact" (ENI). The term "Relative Change of Impact" (RCI) shall be used for comparing the relative differences in LWP between two alternatives.

Further, when appropriate, "Noise Impact Index" (NII) and "Population Weighted Loss of Hearing" (PLH) shall be used consistent with CHABA Working Group 49 Report Guidelines for Preparing Environmental Impact Statements (1977).

TABLE I: A-Weighted Recommended Descriptor List

Term	Symbol
1. A-Weighted Sound Level	L _A
2. Maximum A-Weighted Sound Level	L _{max}
3. Peak A-Weighted Sound Level	L _{pk}
4. Level Exceeded as of the time	L _A (T)
5. Equivalent Sound Level	L _{eq}
6. Equivalent Sound Level over Time (T) (1)	L _{eq} (T)
7. Day Sound Level	L _d
8. Night Sound Level	L _n
9. Day-Night Sound Level	L _{dn}
10. Yearly Day-Night Sound Level	L _{dn} (y)
11. Sound Exposure Level	L _{sc}

(1) Unless otherwise specified, time is in hours (e.g., the hourly equivalent level is L_{eq}(1)). Time may be specified in non-quantitative terms (e.g., could be specified as L_{eq}(WASH) to mean the washing cycle noise for a washing machine.)

TABLE II: Recommended Descriptor List

ITEM	A-WEIGHTING	ALTERNATIVE(1) A-WEIGHTING	OTHER WEIGHTING	UNWEIGHTED
1. Sound (Pressure) Level	L_A	L_{pA}	L_B, L_{pB}	L_p
2. Sound Power Level	L_{WA}		L_{WB}	L_p
3. Max. Sound Level	L_{max}	L_{max}	L_{max}	L_{peak}
4. Peak Sound (Pressure) Level	L_{pA}		L_{pA}	L_{pA}
5. Level Exceeded as of the time	L_x	L_x	L_x	L_x
6. Equivalent Sound Level	L_{eq}	L_{Aeq}	L_{Aeq}	L_{peq}
7. Equivalent Sound Level Over Time(T)	$L_{eq}(T)$	$L_{Aeq}(T)$	$L_{Aeq}(T)$	$L_{peq}(T)$
8. Day Sound Level	L_d	L_{Ad}	L_{Ad}	L_{pd}
9. Night Sound Level	L_n	L_{An}	L_{An}	L_{pn}
10. Day-Night Sound Level	L_{dn}	L_{Adn}	L_{Adn}	L_{pdn}
11. Yearly Day-Night Sound Level	$L_{dn}(y)$	$L_{Adn}(y)$	$L_{Adn}(y)$	$L_{pdn}(y)$
12. Sound Exposure Level	L_S	L_{SA}	L_{SA}	L_{Sp}
13. Energy Average value over (non-time domain) set of observations	$L_{eq}(e)$	$L_{Aeq}(e)$	$L_{Aeq}(e)$	$L_{peq}(e)$
14. Level exceeded as of the total set of (non-time domain) observations	$L_x(e)$	$L_{Ax}(e)$	$L_{Ax}(e)$	$L_{px}(e)$
15. Average L_E value	L_x	L_{Ax}	L_{Ax}	L_{px}

- (1) "Alternative" symbols may be used to assure clarity or consistency.
- (2) Only A-weighting shown. Applies also to C,D,E..... weighting.
- (3) The term "pressure" is used only for the unweighted level.
- (4) Unless otherwise specified, time is in hours (e.g., the hourly equivalent level is $L_{eq}(1)$). Time may be specified in non-quantitative terms (e.g., could be specified as $L_{eq}(wash)$ to mean the washing cycle noise for a washing machine).

REFERENCES

- A-1. Sound Levels Descriptors for Determination of Compatible Land Use, American National Standards, ANSI S3.23-1980, May 30, 1980.
- A-2. FED Environmental Criteria and Standards, 24 CFR Part 51, Federal Register, Volume 46, No. 135, July 12, 1979; amended 49 FR 880, January 6, 1984.
- A-3. Guidelines for Considering Noise in Land Use Planning and Control, Federal Interagency Committee on Urban Noise, June 1980.
- A-4. Noise Control and Compatibility Planning for Airports, Federal Aviation Administration, August 5, 1983.
- A-5. Environmental Protection-Planning in the Noise Environment, Departments of the Air Force, the Army, and the Navy, June 15, 1978.
- A-6. Towards a National Strategy for Noise Control, U.S. Environmental Protection Agency, April 1977.
- A-7. Guidelines for Preparing Environmental Impact Statements on Noise, Report of Working Group 79, (CHABA), National Research Council, National Academy of Science, 1977.
- A-8. Kakalako Supplemental Environmental Impact Statement - Acoustic Study, Ebisu, Darby-Ebisu & Associates, Inc., August 20, 1984.
- A-9. Chapter 43 of Title 11, Administrative Rules, Community Noise Control for Oahu, State of Hawaii, Department of Health, November 6, 1981.
- A-10. Section 3.100, Noise Regulations, Land Use Ordinance, City and County of Honolulu, October 22, 1986.
- A-11. Kakalako Community Development District Plan, Hawaii Community Development Authority, November 2, 1981, with revisions.
- A-12. Chapter 42 of Title 11, Administrative Rules, Vehicular Noise Control for Oahu, State of Hawaii, Department of Health, November 6, 1981.

Revised Kakaako Makai Area Plan

Appendix C

TRANSPORTATION STUDY

Wilbur Smith Associates

KAKAAKO MAKAI AREA PLAN

TRANSPORTATION STUDY

Prepared for
Wilson Okamoto & Associates

by



October 1994



TABLE OF CONTENTS

CHAPTER

1. INTRODUCTION	1-1
Makai Area Plan Revisions	1-1
Study Purpose and Scope	1-2
2. EXISTING CONDITIONS	2-1
Methodology for Data Collection	2-1
Methodology for Analyzing Traffic Conditions	2-2
Roadway System	2-2
Traffic Conditions	2-3
Traffic Volumes	2-3
Intersection Traffic Conditions	2-4
Public Transportation	2-4
Bicycles	2-5
3. CONDITIONS WITHOUT PLAN REVISION (NO PROJECT) YEAR 2010 WITH EXISTING PLAN	3-1
Land Use Assumptions and Trip Generation	3-1
Planned Roadway System	3-2
Peak Hour Traffic Volumes	3-2
Intersection Traffic Conditions	3-2
Mitigation Actions	3-3
4. CONDITIONS WITH PROPOSED REVISIONS - YEAR 2015	4-1
Project Description	4-1
Land Uses	4-1
Transportation Plan	4-2
Phasing Assumptions for 2015	4-2
Assumptions and Methodology	4-3
Trip Generation Inputs	4-3
Trip Distribution	4-3
Trip Assignment	4-4
Background Traffic Growth	4-4
Vehicle Trips Generated by the Revised Makai Area Plan	4-4
Peak Hour Traffic Volumes	4-5
Traffic Conditions at Key Intersections	4-6
Public Transit	4-7
Bicycles	4-7
Buildout Requirements	4-7

5. MITIGATION ACTIONS	5-1
Ala Moana - Ward Extension Couplet	5-1
Ward Avenue - Ala Moana Boulevard Intersection	5-2
Punchbowl Street - Ala Moana Boulevard Intersection	5-2
Cooke - Koula Streets One-Way Couplet	5-3
New Traffic Signals	5-4
 APPENDIX A	
Methodology for Analyzing Traffic Conditions	A-1

ILLUSTRATIONS

Figure		Follows
1-1	Roadway System - Revised Kaka'ako Makai Area Plan	1-1
2-1	AM Peak Hour Existing Traffic	2-4
2-2	PM Peak Hour Existing Traffic	2-4
3-1	PM Peak Hour Traffic - Year 2010 with No Project	3-2
4-1	AM Peak Hour Traffic - Year 2015 with Project	4-5
4-2	PM Peak Hour Traffic - Year 2015 with Project	4-5
4-3	Year 2015 with Project Intersection Lane Configuration and Level of Service	4-6
5-1	Year 2015 with Project and Mitigation Actions Intersection Lane Configuration and Level of Service	5-2
A-1	Level of Service Diagram	A-1

TABULATIONS

Table		
2-1	Existing Level-of-Service at Study Intersections	2-4
3-1	Vehicle Trip Generation for the Makai Side of Development Area Existing Plan ("No Project")	3-1
3-2	Year 2010 with Existing Plan ("No Project") Level of Service at Study Intersections	3-3
4-1	Year 2015 Vehicle Trips for the Proposed Plan	4-4
4-2	Comparison of Vehicle Trip Generation for the Makai Side of Development Area - Existing Plan ("No Project") Versus Revised Plan ("Project")	4-5
4-3	Year 2015 with Project Level of Service at Study Intersections	4-6
5-1	Year 2015 with Project and Mitigation Actions Level of Service at Study Intersections	5-2
A-1	Level-of-Service Criteria for Unsignalized Intersections	A-2
A-2	Level-of-Service Criteria for Unsignalized All-Way Stop Intersections ..	A-2



1. INTRODUCTION

The Hawaii Community Development Authority (HCDA) proposes to revise its current plan for the makai portion of the Kakaako Community Development District. The present makai portion of the Kakaako District generally encompasses those areas located makai of Ala Moana Boulevard between the Aloha Tower area and the Kewalo Basin areas. The mauka portion of the District includes the area bounded by Punchbowl Street, King Street, Piikoi Street, and Ala Moana Boulevard.

The Kakaako Makai Area Plan, and the companion Mauka Area Plan, set forth the development objectives and directions to guide redevelopment of these areas. The companion Makai Area Rules, and Mauka Area Rules, support implementation of the Plans by regulating the use, zoning, and development of these areas. The plans encompass land uses, transportation, open space, urban design, infrastructure, historic resources, and phasing.

MAKAI AREA PLAN REVISIONS

The HCDA proposes to revise its development strategy for the Makai Area in response to changing economic conditions and a reassessment of land uses and urban design for the area. HCDA seeks to create a stronger mauka-makai linkage, contribute to a more lively urban environment, and improve vehicular and pedestrian flow through the area.

The proposed revisions to the Makai Area Plan would affect both the configuration of the area transportation system and the travel demands placed upon it. (Figure 1-1 depicts the proposed street system.) The key plan revisions, relative to the transportation system, include the following items.

Land Uses

- The commercial zoned areas, exclusive of the waterfront commercial areas, would be changed to "mixed use zones," which would then permit residential development within the Makai Area.
- The amphitheater would be reduced in size, from 13,300 to 500 seats.
- The planned large superblocks would be replaced by smaller blocks more conducive to incremental development.
- A central promenade would be provided to extend open space and pedestrian linkages to better connect the makai and mauka areas.

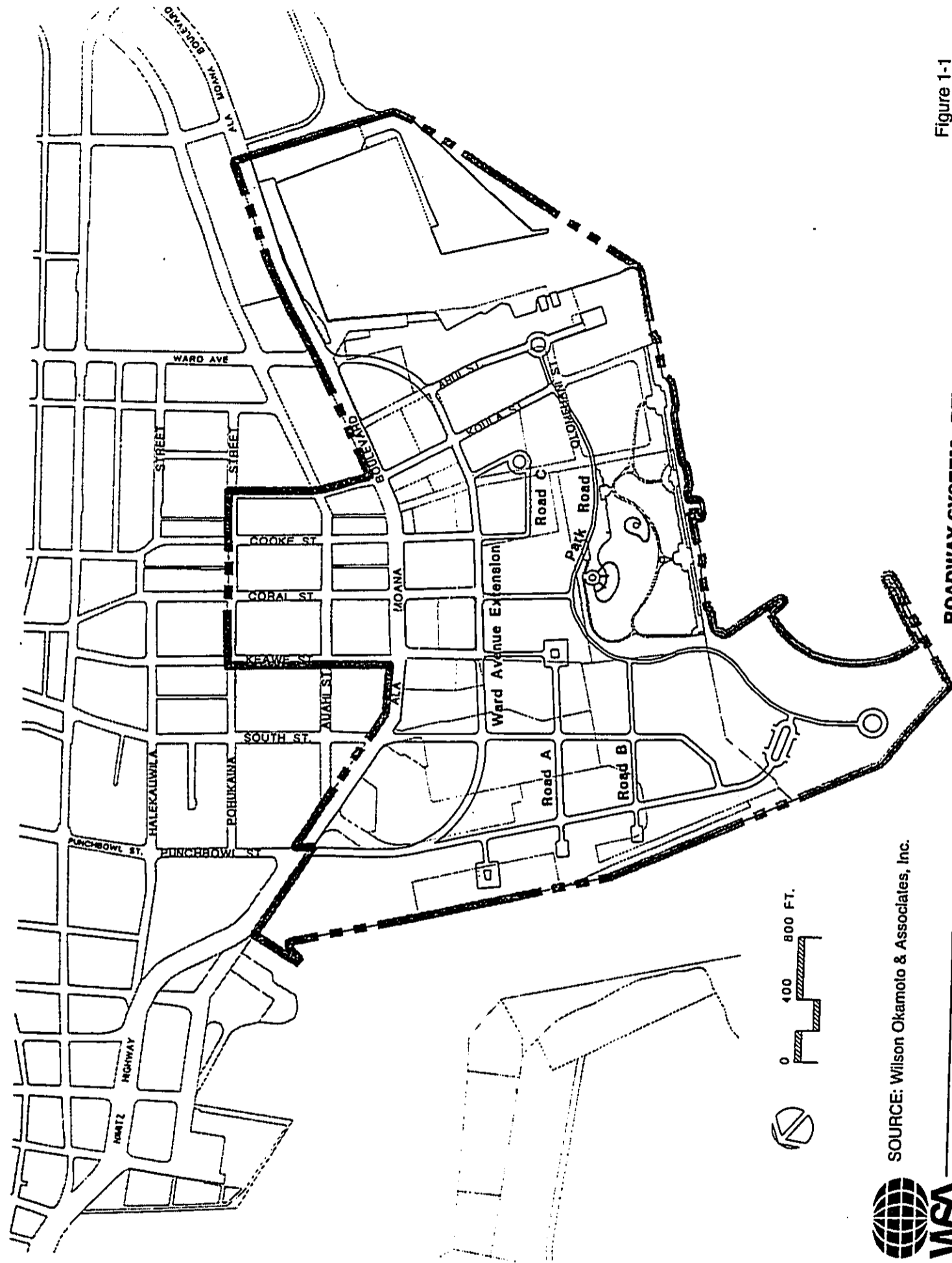


Figure 1-1
ROADWAY SYSTEM - REVISED KAKAAKO MAKAI AREA PLAN

SOURCE: Wilson Okamoto & Associates, Inc.
WISA WILBUR SMITH ASSOCIATES

Transportation System

- Ala Moana Boulevard and the planned Ward Avenue extension would be modified to provide a one-way street couplet between Punchbowl Street and Ward Avenue in order to improve east-west traffic flow.
- Cooke and Koula Streets would be modified to provide a one-way street couplet between Ward Avenue Extension (Ilalo Street) and Pohukaina Street to improve north-south traffic flow.
- The smaller blocks would provide a more traditional grid network of streets, with more local streets than the current plan.
- The planned inland waterway systems would be deleted from the Makai Area Plan due to economic constraints.

Other

- The six-block area bounded by Ala Moana Boulevard, Keawe Street, Pohukaina Street and Koula Street would be transferred from the Mauka Area Plan to the Makai Area Plan.

Both the existing and the revised Makai Area Plans would allow a maximum building floor area of 7.53 million square feet within the current Makai Area Plan blocks makai of Ala Moana Boulevard.

STUDY PURPOSE AND SCOPE

This report provides an assessment of the transportation-related effects of the proposed revisions to the Kakaako Makai Area Plan. The report summarizes the study findings regarding estimated travel demands, the effects on area traffic circulation, the sufficiency of the planned streets, and the effects on public transit access and bicycle facilities.

This assessment is prepared for input to the Supplemental Environmental Impact Statement (EIS) for the Makai Area Plan. The focus of this Supplemental EIS is on the proposed revisions to the current Makai Area Plan. As such, this transportation study encompasses the following:

- An assessment of existing conditions;
- An analysis of future conditions (Year 2010) with the current Makai Area Plan ("No Project" alternative); and
- An analysis of future conditions (Year 2015) with the proposed revisions to the Makai Area Plan (Project alternative).

Information and forecasts for the "No Project" Alternative were obtained from the Supplemental Final EIS prepared for the current Makai Area Plan.¹ The transportation assessment in the 1990 study used 2010 as the forecast year, at which time some 3.3 million square feet of new building floor area, equivalent to 44 percent of the maximum allowable development, was anticipated within the makai area. The 1990 study included only an analysis of the afternoon peak hour traffic conditions, and the 2010 land use information available for the existing plan was insufficient to permit development of the morning peak hour forecasts as part of this study.

The assessment of conditions with the revised Makai Area Plan uses 2015 as the forecast year. The 2015 year represents the anticipated level of development comparable to that used for 2010 with the previous plan, since development within the Makai Area is proceeding at a much slower pace than reflected in the 1990 studies. The primary effect of the difference in forecast years is the addition of five additional years of growth in "through traffic" on area streets. This adds about eight percent more traffic for the 2015 analysis year.

Full buildout of the Makai Area Plan would likely extend well beyond the 2010/2015 years used for the analysis of roadway traffic conditions. These years were used to represent the 20-year planning horizon typically used for transportation analyses. An assessment is also included of the number of vehicle trips with maximum buildout, if that level of development was to occur.

The transportation analyses focuses on traffic conditions and effects within and adjacent to the Makai Area. This focus is appropriate due to the following:

1. Estimated vehicle trips for the revised plan are lower than those for the existing plan, and thus should result in less regional traffic impacts than with the present adopted plan; and
2. The change in the roadway plan is a principal feature of the Makai Area Plan, which would alter roadway capacities and circulation patterns for travel within or through the Makai Area.

¹ *Kakaako Makai Area Plan, Final Supplemental Environmental Impact Statement*, prepared by HCDA, January 1990.



2. EXISTING CONDITIONS

The Kakaako Makai Area is still largely occupied by harbor-related and light industrial uses. The portion bordering Kewalo Basin is occupied by small boat activities, which include tourist cruise boats, charter fishing boats, small boat repairs, and fish processing. The Fort Armstrong area is used for container ships and passenger cruise ship activities. Major food distributors and warehouses are located makai of Ilalo Street. Public agencies occupy a major part of the area. These include the U.S. Immigration and Naturalization service, State Plan Quarantine Station, City Board of Water Supply yard, and City Wastewater Division facilities.

The 10-story Bank of America Ala Moana Building¹ is the major office use in the area. The principal retail uses are the automobile dealerships along both sides of Ala Moana Boulevard between Coral and Ahui Streets.

This chapter describes the existing roadway facilities serving this area, as well as traffic volumes and conditions on these facilities. Public transit and bicycle are also discussed.

METHODOLOGY FOR DATA COLLECTION

Roadways within the Makai Area were inspected and traffic controls inventoried by Wilbur Smith Associates (WSA) traffic engineers. This included information such as number and width of traffic lanes, locations of on-street parking, and traffic signal timing.

Existing peak hour traffic volumes were developed from manual intersection turning movements counts made by WSA and Austin, Tsutsumi & Associates, Inc (ATA). The WSA counts were made at the key intersections along Ala Moana Boulevard, Ilalo Street, and Pohukaina Street within the Makai Area. The WSA counts were made on May 9 to 11, 1994. ATA counts were used for the Ala Moana Boulevard intersections with Punchbowl and South Streets, with these counts updated to reflect the WSA counts.

The traffic turning movement volumes were counted and recorded every 15 minutes during the morning and afternoon peak commute traffic periods. The count data was analyzed to determine the peak hour-hour periods, which are used to evaluate intersection conditions.

Information describing the existing public transit (TheBus) service was obtained from public bus schedules.

¹ Former Gold Bond Building.

METHODOLOGY FOR ANALYZING TRAFFIC CONDITIONS

The study analysis addresses traffic conditions during the weekday peak commute hours since these should represent the highest traffic volumes that occur on a frequent basis. The study analyzes those key intersections that would be most directly affected by the proposed revisions in the Makai Area Plan, which include:

- ▶ Ala Moana Boulevard intersections between Ward Avenue and Punchbowl Street;
- ▶ Ilalo Street/Ward Avenue Extension intersections; and
- ▶ Pohukaina Street intersections with Cooke and Koula Streets.

The intersection analyses were performed using procedures outline in the 1985 HCM,² which are based on a concept referred to as Level-of-Service (LOS). The level-of-service concept and methodology are described in Appendix A. In general, this method describes traffic conditions on a letter basis from A to F, which signify excellent to unacceptable conditions. LOS D is considered acceptable as a design basis for peak hour conditions. LOS F generally indicates the need for mitigative actions. The volume-to-capacity (V/C) ratio is also provided to indicate the portions of the theoretical capacity of the intersections being used by the existing or estimated traffic volumes. A V/C ratio of over 1.00 indicates that additional roadway capacity may be needed to accommodate the existing or estimated traffic volumes at an intersection.

ROADWAY SYSTEM

Ala Moana Boulevard is the major east-west roadway providing access to and serving travel through the Makai Area. Mauka-makai access to the area is primarily provided by Punchbowl Street, South Street, and Ward Avenue, and to a lesser extent by Cooke Street.

Ala Moana Boulevard — This State highway, and the connecting Nimitz Highway, serves as a major east-west artery from the Waikiki area, through the central Honolulu area to the Airport and Pearl Harbor areas. Within the Makai Area, this major street has three through lanes in each direction plus provides separate left-turn lanes at most intersections. Traffic signal controls are located at each cross street except for Ahui and Ohe Streets, which are restricted to right-turns in or out of these streets. Parking is prohibited along this street.

Punchbowl and South Streets — These two streets function as a one-way street couplet that connects the ewa end of Kakaaka to the H-1 Freeway, the Pali Highway, and to the other major east-west streets paralleling Ala Moana Boulevard. Punchbowl Street provides three makai direction lanes below Halekauwila Street, with parking permitted along both curbs. This street now ends with two left-turn and one right-turn lane at Ala Moana Boulevard.

² *Highway Capacity Manual, Special Report 209*, Transportation Research Board, 1985.

South Street is a two-way street makai of Pohukaina Street, with one-way mauka-bound operation beginning mauka of this street. The two-way segment provides two travel lanes in each direction. Parking is permitted mauka of Ala Moana Boulevard, while the segment makai of Ala Moana Boulevard provides access to the Fort Armstrong area port operations.

Ward Avenue — This major street connects the Diamondhead end of the Makai Area to H-1 Freeway Kokohead-direction ramps, as well as to the major east-west streets. The street has two through lanes in each direction, plus left-turn lanes in section makai of Kapiolani Boulevard. On-street parking is provided between Ala Moana Boulevard and Queen Street.

Cooke Street — This secondary street connects the makai area to Kapiolani Boulevard and King Street. The street has been widened to four lanes between Ala Moana Boulevard and Kapiolani Boulevard, although on-street parking is currently permitted in the curb lanes along most blocks. Four-way STOP sign controls are used at the Pohukaina Street and Halekauwila Street intersections, while traffic signal controls are used at Queen Street.

Other Makai Area Streets — The other secondary and minor streets are two-way, two-lane streets. Most of these streets provide a 20- to 28-foot-wide pavement with parking allowed along the unsurfaced shoulders areas. Several segments have been improved to include sidewalks and curb/gutter sections.

TRAFFIC CONDITIONS

The roadway and traffic data collected in the field surveys was used to analyze existing traffic conditions at the key intersections in the Kakaako Makai Area.

Traffic Volumes

Ala Moana Boulevard is the most heavily-travelled roadway within the Makai Area. Recent 24-hour machine counts of traffic volumes made by the State Department of Transportation (DOT) and City and County of Honolulu Department of Transportation services (DTS) indicate the weekday traffic volumes are as follows:

Ala Moana Boulevard:	60,000 vehicles per day
Ward Avenue:	18,000
Punchbowl Street:	13,000
South Street:	10,000
Cooke Street:	6,000
Pohukaina Street:	6,000 vehicles per day

Weekday volumes on other streets within the Makai Area generally range between 2,000 and 4,000 vehicles per day.

The morning and afternoon peak hour volumes, as determined through the field counts, are depicted in Figures 2-1 and 2-2. The highest peak hour volumes occur along Ala Moana Boulevard with two-way volumes up to 5,200 vehicles during both the morning and afternoon peak hours.

Intersection Traffic Conditions

The existing service levels calculated for the key traffic signal-controlled and STOP sign-controlled intersections within the Makai Area are summarized in Table 2-1. In general, the intersections operate at acceptable levels in the morning period and congested conditions primarily occur in the afternoon period at several locations along Ala Moana Boulevard. Conditions during both periods are worsened by the close spacing between signal-controlled intersections along Ala Moana Boulevard, which limits the extent that the signal timing can be coordinated to minimize the number of stops along this segment of the roadway.

In the morning peak hour, the intersection most constraining traffic flow is Ala Moana Boulevard at Ward Avenue, and to a lesser extent the intersections with Cooke Street and with South Street. The LOS E conditions at Ward Avenue result from the large volumes of ewabound through traffic and kokoheadbound left-turn traffic, plus the need to provide separate signal phases to the mauka and makai approaches.

In the afternoon peak hour, the Ward Avenue intersection is also the primary constraint on traffic flow along Ala Moana Boulevard. Existing volumes approximate the theoretical capacity of this intersection and result in lengthy delays (LOS F). The South Street intersection with Ala Moana Boulevard functions at LOS D, while the other area intersections operate at very good service levels.

All of the STOP sign-controlled intersections operate at very acceptable service levels.

PUBLIC TRANSPORTATION

A number of TheBus trunk routes provide public transit access to the Makai Area. Most of these routes operate along Ala Moana Boulevard, although several of the routes also operate along Ward Avenue or Punchbowl Street. The routes, and key service features, are as follows:

Waikiki-Leeward Area Routes — Routes 19 (Waikiki-Airport) 20 (Waikiki-Pearlridge), and 47 (Waikiki-Waipahu) provide service along Ala Moana Boulevard through the Makai Area, with these routes using Alakea (westbound) and Punchbowl (eastbound) Streets to travel into Downtown Honolulu. These routes operate seven days a week with service generally beginning about 6:00 AM and extending to 7:00 PM for Route 20 and to after midnight for Routes 19 and 47. Combined, these routes provide about 6 buses per hour in each direction during peak periods, and 3 to 4 buses per hour during the midday.

KAKAAKO MAKAI AREA PLAN EIS

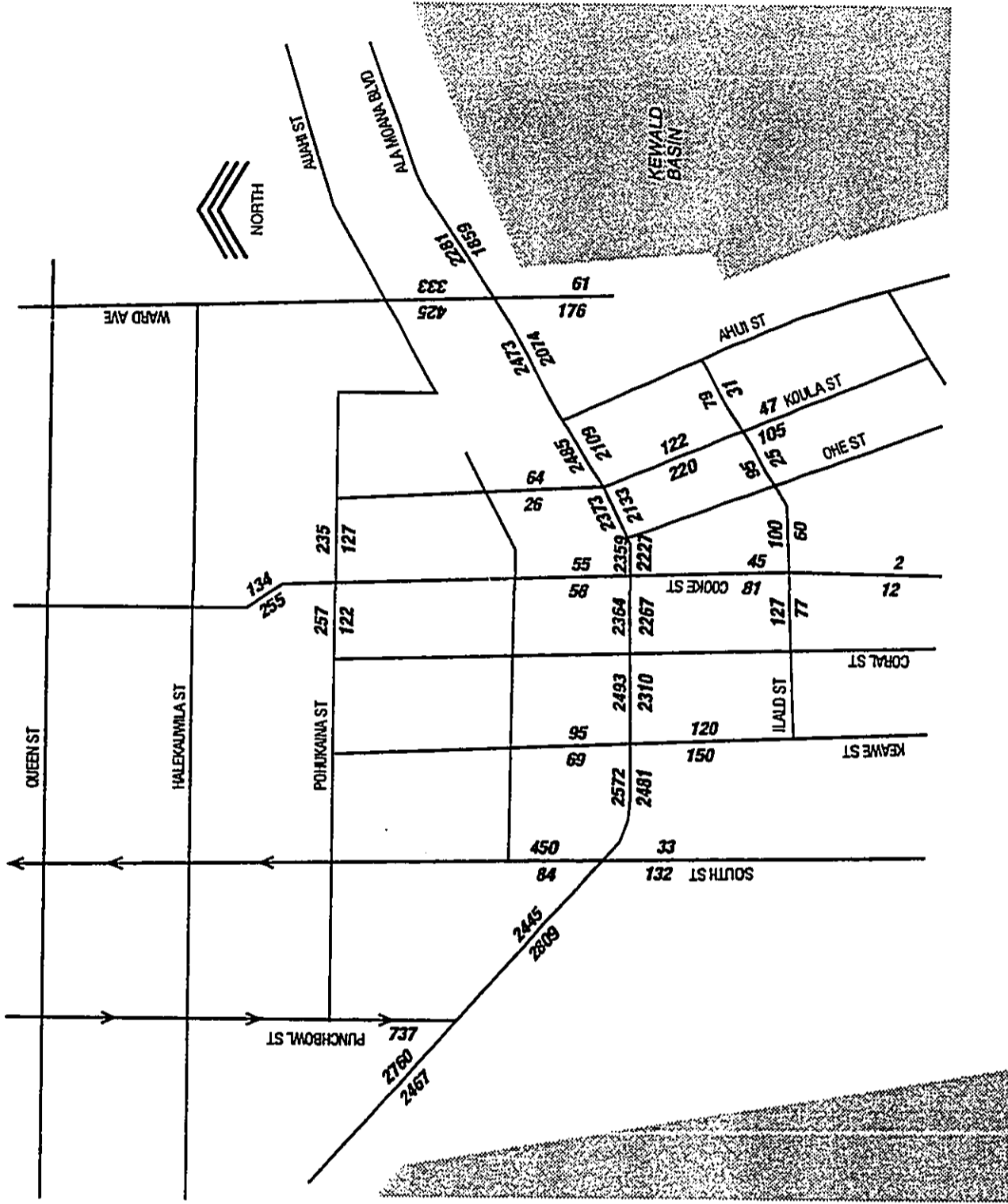


Figure 2-1
AM PEAK HOUR EXISTING TRAFFIC

BASEMAP/6/2004P



KAKAOKO MAKAI AREA PLAN EIS

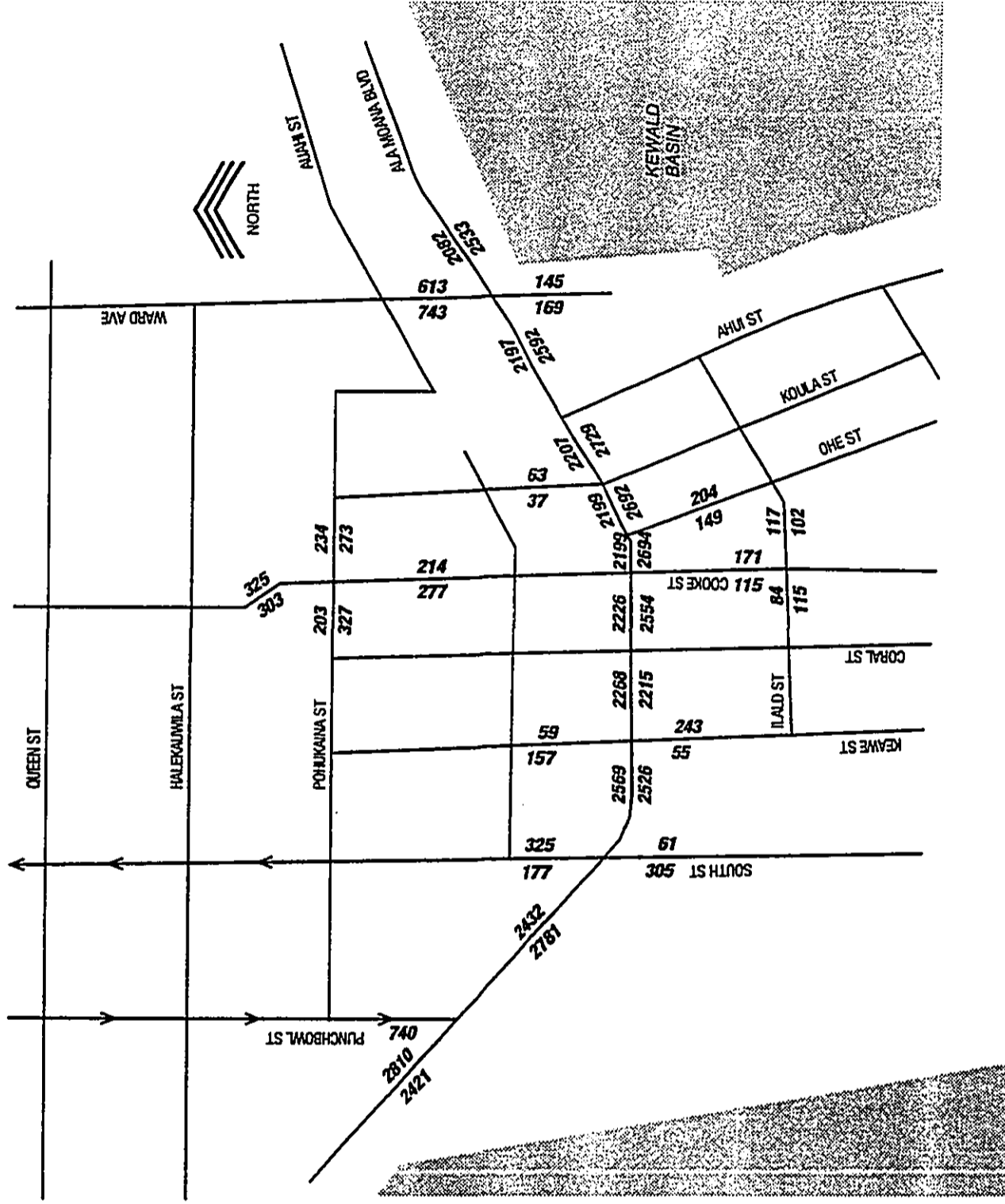


Figure 2-2
PM PEAK HOUR EXISTING TRAFFIC
BASEMAP62094P



WILBUR SMITH ASSOCIATES



WILBUR SMITH ASSOCIATES

KAKAAKO MAKAI AREA PLAN EIS

Table 2-1
EXISTING LEVEL-OF-SERVICE AT STUDY INTERSECTIONS
 Kakaako Makai Area Plan EIS

Study Intersection	AM Peak Hour			PM Peak Hour		
	V/C	Delay	LOS	V/C	Delay	LOS
1. Punchbowl St./Ala Moana Blvd.	0.85	19.6	C	0.84	17.5	C
2. South St./Ala Moana Blvd.	0.86	30.9	D	0.90	32.4	D
3. Keawe St./Ala Moana Blvd.	0.70	13.8	B	0.84	23.8	C
4. Cooke St./Ala Moana Blvd.	0.88	33.0	D	0.84	18.5	C
5. Koula St./Ala Moana Blvd.	0.69	9.9	B	0.82	12.5	B
6. Ward Ave./Ala Moana Blvd.	0.91	48.6	E	0.97	79.4	F
7. Cooke St./Ilalo St.	✓	11.8	C	✓	2.0	A
8. Koula St./Ilalo St.	✓	2.1	A	✓	1.8	A
9. Koula St./Pohukaina St.						
10. Kapiolani Blvd./Ward Ave.						

V/C = Ratio of volume to theoretical intersection capacity.
 Delay = Average delay per vehicle in seconds.
 LOS = Level-of-Service
 ✓ = STOP Sign controlled intersection. V/C does not apply.

Wilbur Smith Associates; June 1994

Windward Oahu-Ala Moana Center Routes — Routes 55 (Kaneohe-Circle Island), 56 (Kailua/Kaneohe), and 57 (Kailua-Waimanalo-Sea Life Park) are suburban trunk routes that provide service along Ala Moana Boulevard from Ala Moana Center to Downtown Honolulu, and then to suburban areas in Windward Oahu. These routes provide service each day beginning about 6:00 AM and extending to the late evening (9:00 PM to midnight). Average service frequency on each route is 30 minutes between buses.

Route 6 to Pauoa-Woodlawn — This route provides service between Manoa Valley, Ala Moana Center, Downtown Honolulu and Pauoa. It travels on Ala Moana Boulevard on the kokohead side of Ward Avenue, on Ward Avenue to Queen Street, and on Queen Street to/from the Downtown area. Service is provided from about 5:00 AM until about 11:00 PM, with service frequencies ranging from 20 to 40 minutes between buses.

Route 8 Walkiki-Ala Moana — Route 8 service provides one bus to Ward Avenue every 30 minutes. The buses travel ewabound on Ala Moana Boulevard, turn onto Ward Avenue, and use Auahi Street and Ala Moana Boulevard to travel in the Diamondhead-bound direction to Ala Moana Center.

Buses on each of these routes typically carry less than seated loads (typically 20 to 30 riders per bus) on the portion of the route between Ala Moana Center and Downtown Honolulu, although other portions of these routes may frequently experience seated or standing loads during peak periods.

BICYCLES

Ala Moana Boulevard, Ward Avenue, South Street, and Punchbowl Street are designated as bicycle routes. There are no marked bicycle lanes or bicycle paths along these streets.



3. CONDITIONS WITHOUT PLAN REVISION NO PROJECT YEAR 2010 WITH EXISTING PLAN

Without adoption of the revised plan now under consideration, development in the Kakaako Makai Area would continue in conformance with the present Makai Area Plan and Rules;¹ and subsequent amendments. The existing plan and development guidelines were the subject of an earlier environmental assessment,² which included an analysis of the transportation impacts.

The traffic analysis incorporated into the environmental impact document for the current plan was based on year 2010 conditions. Year 2010 represented a 20-year forecast period at the time of that analysis. The year 2010 forecasts are also used to represent the "No Project" alternative in this study, although 2015 is used herein to represent the "With Project" conditions. The 2010 land uses with the existing plan represent a level of development comparable to that now envisioned for year 2015 with the revised plans. The 2010 forecasts differ from the 2015 forecasts in that the 2015 traffic volumes include an additional five years of increases to the volume of through traffic.

LAND USE ASSUMPTIONS AND TRIP GENERATION

The present Makai Area Plan permits ultimate development of 7.53 million square feet of building area makai of Ala Moana Boulevard. This building area is limited to commercial and public uses; no residential uses are permitted under the current plan.

For the 2010 forecast year, the previous analysis anticipated development makai of Ala Moana Boulevard to include 2,763,400 square feet of primary office space and 566,600 square feet of commercial retail space plus a 14 acre beach park and adjacent area, a performing arts complex with amphitheater, a marina research center and a cruise ship berthing area. These uses were to be organized around a series of large "superblock" areas.

The traffic forecasts and analyses for the existing Makai Area Plan addressed only the afternoon (PM) peak hour period. In general, the PM peak hour represents the higher traffic volumes and more congested roadway conditions within this area. The estimated PM peak hour trip generation for this existing Makai Area Plan is 3,932 inbound trips and 7,410 outbound trips, as summarized in Table 3-1.

¹ *Makai Area Plan and Makai Area Rules, Kakaako Community Development District, Hawaii Community Development Authority, February 1990.*

² *Kakaako Makai Area Plan Final Supplemental Environmental Impact Statement, Hawaii Community Development Authority, January 1990.*



Table 3-1

VEHICLE TRIP GENERATION FOR THE MAKAI SIDE OF DEVELOPMENT AREA
EXISTING PLAN ("NO PROJECT")
Kakaako Makai Area Plan Transportation Study

Land Use	Units	Rate	PM Peak Hour Trips
Primary Office Space	2,763.4 ksf	1.71	4,725
Primary Retail Space	301.5 ksf	8.70	2,623
Retail 100 to 150 KSF	0-0 ksf	---	---
Retail <30 KSF	265.1 KSF	12.19	3,232
Performing Arts Theatre	13,300 seats	0.02	266
Entertainment & Beach Park	33 acres	3.37	111
Marine Research	8 acres	17.25	138
Cruise Ship Berthing	2 ships	123.5	247
Project Trip Totals			11,342

Wilbur Smith Associates; June 1994

PLANNED ROADWAY SYSTEM

In order to meet the transportation demand created by the Kakaako Makai Area Plan, the plan also included modifications and extensions to the existing circulation network. The key feature of the planned roadway system is an extension of Ward Avenue makai to Ilalo Street, then following and widening the Ilalo Street alignment, and then further extending west to Punchbowl Street. Punchbowl Street is to be extended makai of the new Ward Avenue extension, and there is to be a new eastbound connection between Punchbowl and South Street.

Cooke and Ohe Streets are to form a one-way street couplet makai of Ala Moana Boulevard. Koula and Coral Streets are to be abandoned to create larger block sizes. The portion of Keawe Street mauka of Ala Moana Boulevard is to be eventually abandoned. Pohukaina Street is to be extended across Ward Avenue to connect to Auahi Street, with this new through street to function as the eastbound element of a one-way street couplet, with Queen Street as the westbound element.

PEAK HOUR TRAFFIC VOLUMES

Estimated year 2010 PM peak hour traffic with the existing Kakaako Makai Area Plan is shown in Figure 3-1. These volumes are taken directly from the circulation section of the 1990 Kakaako Makai Area Plan Final Supplement Environmental Impact Statement. As can be seen in Figure 3-1, future year PM peak hour year traffic on Ala Moana Boulevard ranges from 8,500 to 9,300. PM peak hour traffic on the Punchbowl Street/South Street couplet is 1,500 to 1,600 in each direction. Ward Avenue mauka of Ala Moana Boulevard is estimated to have 2,400 vehicles during the peak hour while traffic on the Ward Avenue Extension ranges from 1,300 to 2,200 vehicles.

INTERSECTION TRAFFIC CONDITIONS

The following paragraphs summarize area traffic condition in year 2010 as presented in the 1990 report, and as updated for this study. The updated analysis uses the same forecast 2010 traffic volumes as the 1990 study, but uses more detailed "operations" analysis procedures to assess intersection conditions.

Previous Level-of-Service Analysis

To determine the impacts created by this Plan, the previous study included an intersection level-of-service analysis for nine study area intersections. This original analysis used a methodology that yielded "planning level" results which identify an intersection as under, near, or over capacity. The intersection original analysis also assumed some unidentified improvements at several Ala Moana Boulevard intersections.

The planning level analysis indicated that the Ala Moana intersections at Ward Avenue, South Street and Punchbowl Street operated at near capacity conditions during the PM peak hour. While the Ward Avenue Extension intersections at Punchbowl, Keawe, Cooke, Ohe and Ahui Streets operated at under capacity conditions.

KAKAIAKO MAKAI AREA PLAN EIS

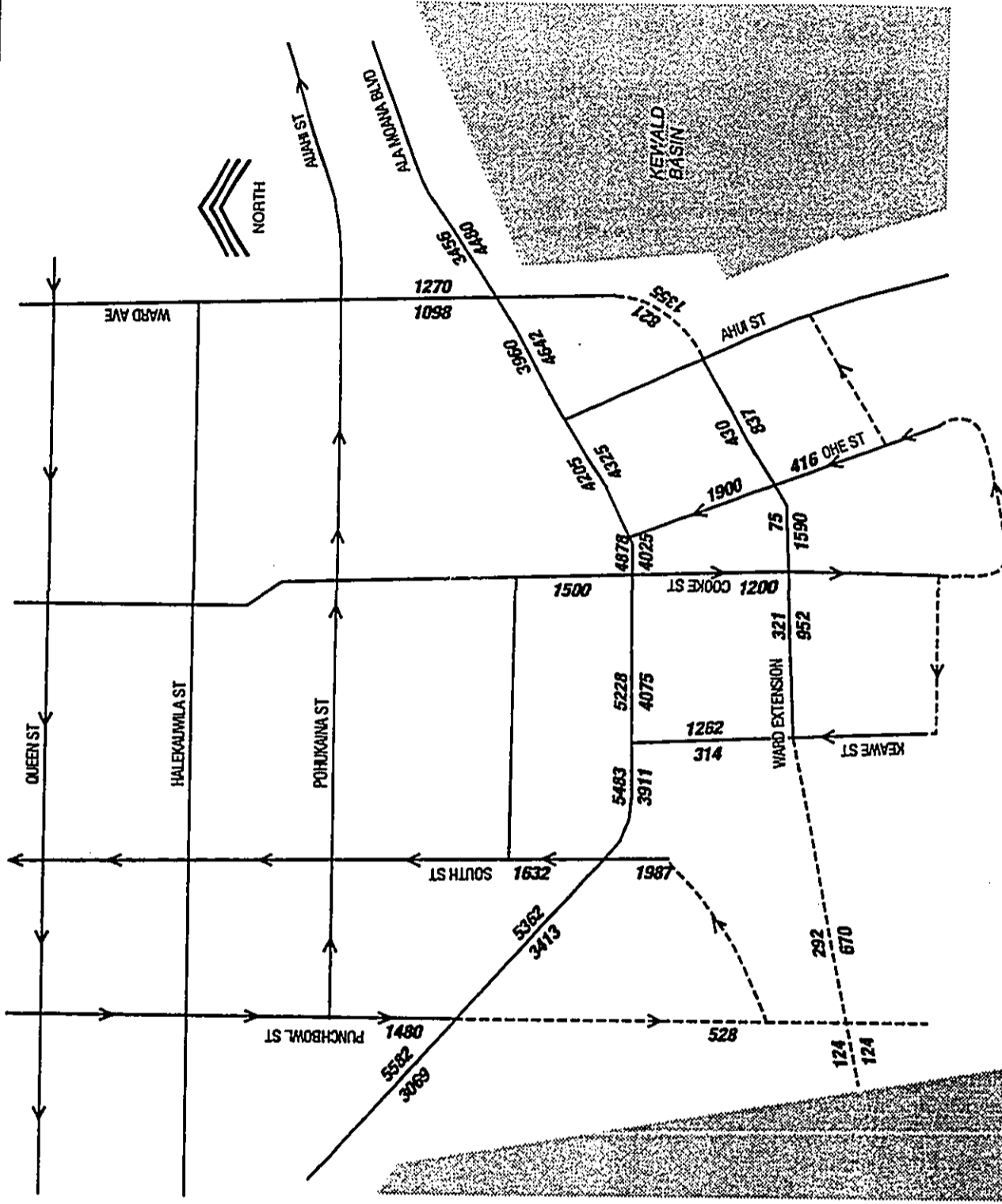


Figure 3-1
PM PEAK HOUR TRAFFIC
YEAR 2010 WITH NO PROJECT
BASEMAP-62084P



WILBUR SMITH ASSOCIATES

Updated Level-of-Service Analysis

For the revised Kakaako Makai Area Plan EIS, a more detailed, operations level-of-service analysis methodology is used to assess operating conditions at the study area intersections. The set of previously analyzed intersections is also somewhat different than those analyzed in the present study. This is largely due to revisions in the proposed circulation network.

In this update, six Ala Moana Boulevard Intersections and two Ward Avenue Extension intersections are analyzed. Table 3-2 shows the results of this updated analysis for the existing Kakaako Makai Area Plan. The six Ala Moana intersections would operate at unstable LOS conditions with v/c ratios in excess of 1.35 in year 2010. The two Ward Avenue Extension intersections at Ohe and Cooke Streets would operate at near capacity conditions.

MITIGATION ACTIONS

In the 1990 EIS, several general mitigation measures were recommended to ameliorate the impacts created by the existing Kakaako Makai Area Plan. These mitigations include the proposed Sand Island Bypass and tunnel as recommended by the Honolulu Waterfront Master Plan. Or, if this Sand Island Bypass project is not constructed, widenings of other regional transportation corridors such as the H-1 Freeway or King and Beretania Streets are recommended. Ancillary mitigations such as the placement of a bike lane and construction of intersection improvements on Ala Moana lane and construction of intersection improvements on Ala Moana Boulevard are also recommended in addition to pedestrian related improvements such as pedestrian overpasses of Ala Moana Boulevard.



Table 3-2

YEAR 2010 WITH EXISTING PLAN (NO PROJECT) LEVEL-OF-SERVICE AT STUDY INTERSECTIONS
 Kakaako Makai Area Plan EIS

Study Intersection	AM Peak Hour			PM Peak Hour		
	V/C	Delay ⁽¹⁾	LOS	V/C	Delay ⁽¹⁾	LOS
1. Punchbowl St./Ala Moana Blvd.	1.30*	556	F	1.30*	556	F
2. South St./Ala Moana Blvd.	1.47*	547	F	1.47*	547	F
3. Keawe St./Ala Moana Blvd.	1.52*	720	F	1.52*	720	F
4. Cooke St./Ala Moana Blvd.	1.23*	489	F	1.23*	489	F
5. Ohe St./Ala Moana Blvd.	1.57*	276	F	1.57*	276	F
6. Ward Ave./Ala Moana Blvd.	1.47*	390	F	1.47*	390	F
7. Cooke St./Ward Extension	0.97	34	D	0.97	34	D
8. Ohe St./Ward Extension	0.99	42	E	0.99	42	E

Not Available

V/C = Ratio of volume to theoretical intersection capacity.
 Delay = Average delay per vehicle in seconds.
 LOS = Level-of-Service
 * = Analysis results do not reflect unidentified improvements assumed along Ala Moana Boulevard in the 1990 traffic study.

Wilbur Smith Associates; June 1994



4. CONDITIONS WITH PROPOSED REVISIONS - YEAR 2015

The revised Makai Area Plan limits development to the same level of building area as the existing plan, but broadens allowable uses to include residential units. Because of an overall slower economic environment, the redevelopment of the area is expected to extend over a longer time period. The level of new development envisioned by 2010 in the earlier environmental studies is now anticipated to occur around 2015.

The revised plan envisions substantial changes in the roadway network, both from the existing system and the current planned system of streets. The revised circulation system would be implemented as redevelopment occurs.

This chapter summarizes the assessment of the proposed plan revisions upon traffic circulation within the area, as well as upon public transportation and bicycles. Where area-wide comparisons are made between the existing plan and the proposed revised plan, the comparison includes only those blocks makai of Ala Moana Boulevard and does not include the six blocks mauka of Ala Moana Boulevard that are proposed for transfer to the Makai Area Plan.

PROJECT DESCRIPTION

The proposed revisions to the Makai Area Plan relate principally to the reallocation of land uses while keeping the same level of development, and the modification of the roadway circulation system and urban design concepts.

Land Uses

The revised land use plan continues the concept of the Makai Area as a "people-oriented gathering place," and most of the proposed revisions reinforce this concept. Key revisions are:

1. Commercial designations are replaced with Mixed-Use to allow residential development, with 2,000 to 3,000 residential units potentially being developed in the area and a comparable reduction in commercial floor area.
2. More park space is provided.
3. The "superblock" development pattern is replaced with a grid system of smaller blocks.
4. The waterway system is deleted.
5. A central plaza and promenade is included to enhance the pedestrian environment and linkage of mauka and makai areas.

Transportation Plan

The revised transportation plan proposes changes to both the configuration and operations of the roadway system within the Makai Area. The roadway system, depicted in Figure 1-1, includes the following key features:

1. Ala Moana Boulevard and the Ward Avenue Extension would provide a one-way couplet between Punchbowl Street and Ward Avenue in order to facilitate traffic flow through the area. Ala Moana Boulevard and Ward Avenue Extension would provide three through lanes in the ewabound and Diamond Headbound directions, respectively, plus turn lanes at intersections. On-street parking would be provided.
2. A Cooke-Koula Street one-way couplet would extend between Ward Avenue Extension and Pohukaina Street. Each street would have two through lanes, curb parking, and turn lanes at key intersections.
3. Ohe Street would be abandoned.
4. The grid pattern with smaller blocks would result in portions of Ahui, Coral, and Keawe Streets remaining open for traffic use. These streets would provide one through lane in each direction, curb parking, and turn lanes at key intersections.

The proposed revisions would not modify public transportation and bicycle facilities, except that the Diamond Head direction bus routes and bicycle route on Ala Moana Boulevard would be relocated onto the Ward Avenue Extension.

Phasing Assumptions for 2015

Development of the Kakaako Makai Area is expected to extend beyond the Year 2015 used for the analysis of transportation impacts. The study analyses assume the following developments and transportation system modifications would occur by 2015:

- Most of the blocks located between the Ala Moana Boulevard and Ward Avenue Extension one-way couplet would be redeveloped.
- The blocks makai of Ward Avenue between Keawe Street and Kewalo Basin would be redeveloped.
- Redevelopment would occur on one or more of the six Makai Area blocks located mauka of Ala Moana Boulevard.
- The Ala Moana Boulevard/Ward Avenue Extension and Cooke/Koula Streets one-way couplets would be completed.

ASSUMPTIONS AND METHODOLOGY

The future travel volumes with the revised plan were estimated using the standard procedure of trip generation, trip distribution, and traffic assignment. Estimates of background traffic growth were prepared independently of the forecast for the existing plan ("No Project") that are described in Chapter 3.

Trip Generation Inputs

The numbers of vehicle trips generated by the land uses in the Revised Makai Area Plan were estimated by use of standard trip rate factors compiled by the ITE. The trip rates and assumptions vary from those used for the existing plan in several aspects:

- The estimated peak hour vehicle trips for the revised plan are based on trip rates from the current *Fifth Edition of Trip Generation*,¹ whereas the existing plan forecasts from the 1990 study reflect the earlier Fourth Edition. There are slight variations in trip rates.
- For the revised plan, the retail commercial uses were grouped into three categories:
 - i. Primary retail for the Kewalo Basin area;
 - ii. Retail centers of 100,000 to 150,000 square feet for larger retail concentration; and
 - iii. Retail less than 30,000 square feet for smaller street front uses.

In the 1990 study, retail uses were grouped into two categories reflective of small scale automobile-oriented neighborhood shopping areas which traditionally generate higher traffic volumes relative to uses envisioned to be more "downtown" in character for the revised plan.

- The large-scale, mixed-use character of the overall Makai Area would result in many of the trips being internal to the area and, in large part, made by walking. This would be most evident in trips between the retail uses and the office or residential uses. The estimated trips to/from the retail/service uses (excluding Kewalo Basin commercial) were reduced by about 20 percent to reflect the walk-in activity for these street front retail uses. By comparison, the 1990 study reduced all trips by 10 percent to reflect travel within the Makai area.

Trip Distribution

Trip distribution addresses the general direction of vehicle trips in travelling to/from locations external to the Makai Area. The distribution was developed from the Year 2010 forecasts made by the OMPO transportation model. For the external trips:

¹ *Trip Generation, Fifth Edition*, Institute of Transportation Engineers, 1991.

- ▶ 32% enter/exit from Downtown Honolulu or Nimitz Highway corridor;
- ▶ 24% enter/exit from areas Diamondhead; and
- ▶ 44% enter/exit from areas mauka, including trips to/from the H-1 Freeway and parallel major streets.

Trip Assignment

Trip assignment is the process of determining the routing of vehicle trips on the roadway network. Trips were assigned via the most direct route between the external and internal trip ends.

Background Traffic Growth

The background traffic volumes for Year 2015, before adding the Makai Area vehicle trips, were developed using information available from previous traffic forecasts. The basic procedure was as follows:

1. The traffic increases from development of the Kakaako Mauka Area, as well as future through traffic, were obtained from the 1991 *Kakaako Traffic Study*.² That study used a forecast year of 2010.
2. The 2010 traffic forecasts at the ewa end of the study area were compared against and adjusted to reflect the traffic forecasts based on the increased Downtown development levels, as identified in 2010 forecasts along Ala Moana Boulevard without the rapid transit project.³
3. The resultant 2010 traffic forecasts, without Makai Area development, were increased to 2015 by using an average annual growth rate of 1.4 percent. This growth rate was identified in the 1991 *Kakaako Traffic Study*.⁴

VEHICLE TRIPS GENERATED BY THE REVISED MAKAI AREA PLAN

Development of the Makai Area, based on the revised plan, would result in an estimated net increase of 4,525 and 6,878 vehicle trips during the morning and afternoon peak hours, respectively. The composition of these vehicle trips, both as to the Makai Area land use category generating the trips and as to travel direction, is summarized in Table 4-1. These vehicle trips include those generated by new development anticipated within the six-block area mauka of Ala Moana Boulevard, which is to be transferred to the Makai Area. These "mauka" blocks are assumed to include new uses totalling 24,360 sq. ft. of retail space, 214,000 sq. ft. of office space, and about 128 residential units by 2015.

² *Kakaako Traffic Study*, prepared for Hawaii Community Development Authority by Austin, Tsutsumi & Associates, Inc., July 1991.

³ *Transportation Impacts Results Report*, prepared for Honolulu Rapid Transit Program, July 1992.

⁴ Op cit.



WILBUR SMITH ASSOCIATES

KAKAAKO MAKAI AREA PLAN TRANSPORTATION STUDY

Table 4-1

YEAR 2015 VEHICLE TRIPS FOR THE PROPOSED PLAN⁽¹⁾
Kakaako Makai Area Plan Transportation Study

Land Use	Units	AM Peak Hour				PM Peak Hour			
		Trip Rates ⁽²⁾		Number of Trips		Trip Rates ⁽²⁾		Number of Trips	
		Enter	Exit	Enter	Exit	Enter	Exit	Enter	Exit
Primary Office Space	2,213.791 ksf	1.38	0.24	3,055	531	0.33	1.15	731	2,546
Primary Retail Space	495.00 ksf	0.58	0.34	287	168	1.98	1.98	980	980
Retail 100 to 150 KSF	235.00 ksf	1.02	0.60	240	141	3.28	3.28	771	771
Retail <30KSF	96.36 ksf	2.00	1.18	193	114	5.90	5.90	569	569
Residential	740.00 DU	0.06	0.28	44	207	0.29	0.14	170	104
Children's Museum	36.00 ksf	0.83	0.14	30	5	1.00	1.00	35	36
Performing Arts Theatre	2,000 seats	0.01	0.01	20	10	0.02	0.02	40	40
Amphitheatre	500 seats	0.01	0.01	5	3	0.02	0.02	10	10
Park and Beach	8 acres	2.00	0.87	16	7	1.18	2.19	9	17
Revised Plan Totals				3,890	1,186			3,316	5,073
Minus Internal Walk Trips ⁽³⁾				(180)	(106)			(580)	(580)
Minus Existing Trips by Displaced Uses	529.90 ksf	0.36	0.14	(191)	(74)	0.23	0.42	(122)	(223)
Total Net Increases				3,519	1,006			2,614	4,264

(1) Includes vehicle trips for six existing Mauka Area blocks to be transferred to Makai Area.
 (2) Assumes approximately 20% of retail vehicle trips replaced by walk trips.
 (3) Source: Trip Generation, Fifth Edition; ITE, 1991

Wilbur Smith Associates; June 1994

The revised Makai Area Plan is estimated to generate substantially fewer vehicle trips than the existing adopted plan at the Year 2010/2015 level of development. For the afternoon peak hour, the revised plan is estimated to generate 6,658 vehicle trips to/from locations, external to the Makai Area, while the previous estimates for the existing plan was 10,010 vehicle trips to locations external to the Makai Area. This comparison, which includes only those blocks makai of Ala Moana Boulevard, is summarized in Table 4-2.

The inclusion of residential uses and an off-setting reduction of office floor area (about 800,000 sq. ft.) is one major source of the reduction of peak hour vehicle trips. For a given amount of floor area, office uses typically generate three to four times as many trips during the peak traffic hours. This change accounts for a reduction of approximately 1,100 vehicle trips for the afternoon peak hour. This change in uses also shifts the directional mix of the traffic since most office traffic would be exiting in the afternoon, while most residential traffic would be entering.

The use of lower trip ratios for the retail uses account for a decrease of about 1,500 vehicle trips in the afternoon peak hour. The lower trip rates are more reflective of significant visitor activity at the Kewalo waterfront commercial areas, and of retail and service establishments more oriented to serving area employees and residents in the remainder of the Makai Area.

Other differences in trip generation reflect changes in the type and size of public uses in the Makai Area.

PEAK HOUR TRAFFIC VOLUMES

The resultant Year 2015 traffic volumes along area roadways are depicted in Figures 4-1 and 4-2 for the morning and afternoon peak hours, respectively. The traffic volumes reflect the cumulative effect of Makai Area traffic, traffic to new developments in areas adjacent to the Makai Area, and increases in through traffic.

The forecasts indicate that the increases would result in proportionally larger increases in the afternoon peak hour, as compared to the morning peak hour. This would result from the combined effect of both Makai Area development, and growth in the adjacent areas.

The highest eastbound traffic volumes would occur along the Punchbowl/Ward Street Extension makai of Ala Moana Boulevard, with about 5,800 vehicles in the afternoon peak hour. This results from the combination of the makai-direction Punchbowl Street traffic with eastbound traffic exiting the Downtown Honolulu area.

The highest westbound traffic volumes occur along Ala Moana Boulevard just ewa of Punchbowl Street. This again results from the addition of the large volume of one-way makai direction Punchbowl traffic.

Overall, peak hour volumes along the Ala Moana Boulevard-Ward Avenue Extension corridor would be similar with either the existing or revised plan. Two-way volumes with the revised plan generally range from about 7,700 to 10,500 vehicles, versus 7,900 to 10,500 vehicles with the existing plan. The primary difference would be the traffic split between Ala Moana Boulevard and Ward Avenue



Table 4-2

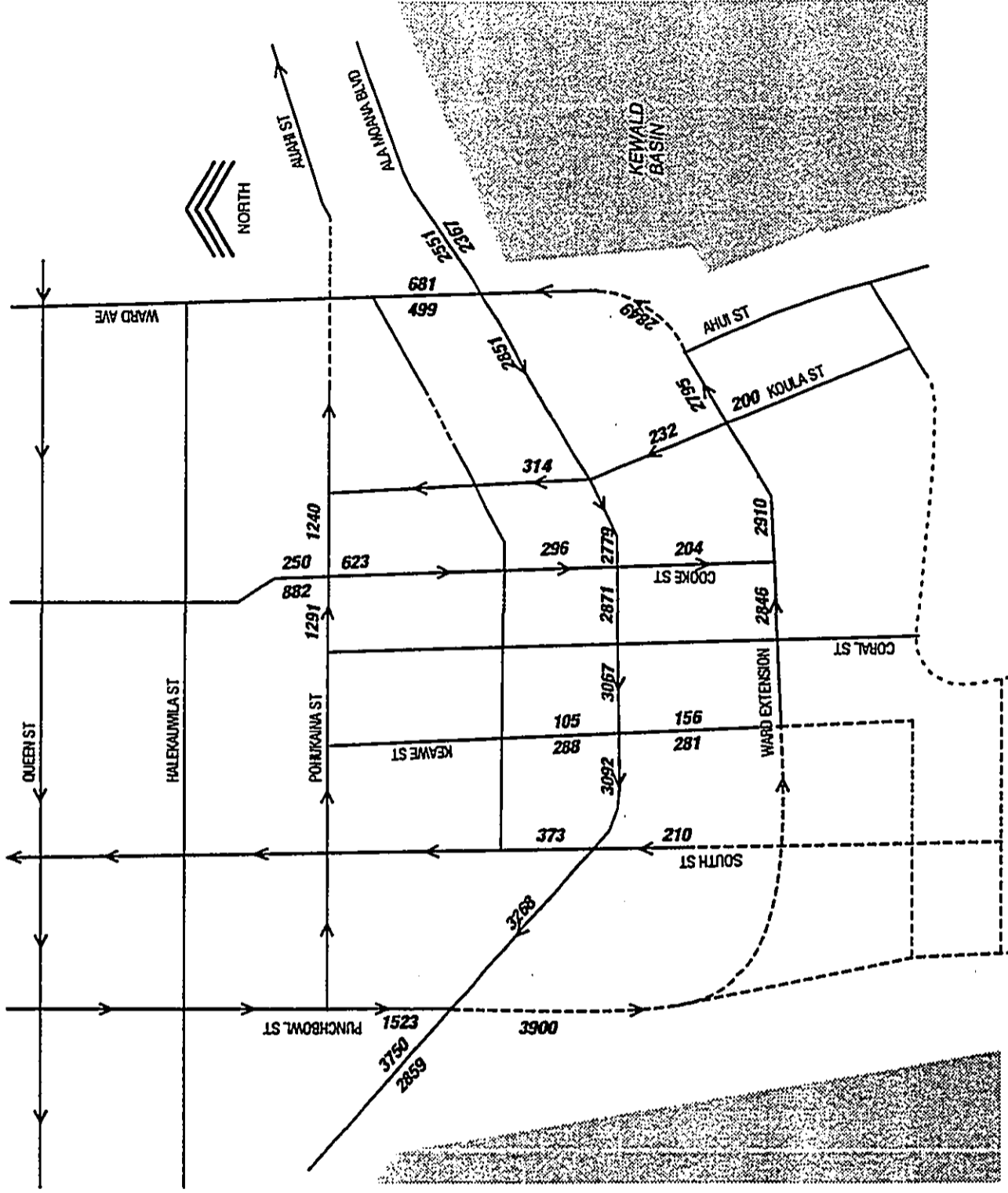
COMPARISON OF VEHICLE TRIP GENERATION FOR THE MAKAI SIDE OF DEVELOPMENT AREA*
EXISTING PLAN ("NO PROJECT") VERSUS REVISED PLAN ("PROJECT")
 Kakaako Makai Area Plan Transportation Study

Land Use	Existing Plan ("No Project")			Proposed Revised Plan ("Project")		
	Units	Trip Rate	PM Peak Hour Trips	Units	Trip Rate	PM Peak Hour Trips
Primary Office Space	2,763.4 ksf	1.71	4,725	1998.951 ksf	1.43	2,958
Primary Retail Space	301.5 ksf	8.7	2,623	495 ksf	3.96	1,960
Retail 100 to 150 KSF	-0- ksf	---	---	235 ksf	6.56	1,542
Retail <30KSF	265.1 ksf	12.19	3,232	72 ksf	11.8	850
Residential	---	---	---	640 DU	0.37	237
Children's Museum	---	---	---	36 ksf	0.02	72
Performing Arts Theatres	---	---	---	2,000 seats	0.04	80
Ampitheatre	13,300 seats	0.02	266	500 seats	0.04	20
Entertainment & Beach Park	8 acres	3.37	27	8 acres	3.37	27
Marine Research	8 acres	17.25	138	---	---	---
Minus Internal Trips	---	---	(1,001)	---	---	(1,008)
Project External Trip Totals			10,010			6,658

* Includes only blocks makai of Ala Moana Boulevard

Wilbur Smith Associates; October 1994

KAKAOKO MAKAI AREA PLAN EIS



WILBUR SMITH ASSOCIATES

Figure 4-1
**AM PEAK HOUR TRAFFIC
 YEAR 2015 WITH PROJECT**
 BASEMAP-10/13/94P

KAKAIAKO MAKAI AREA PLAN EIS

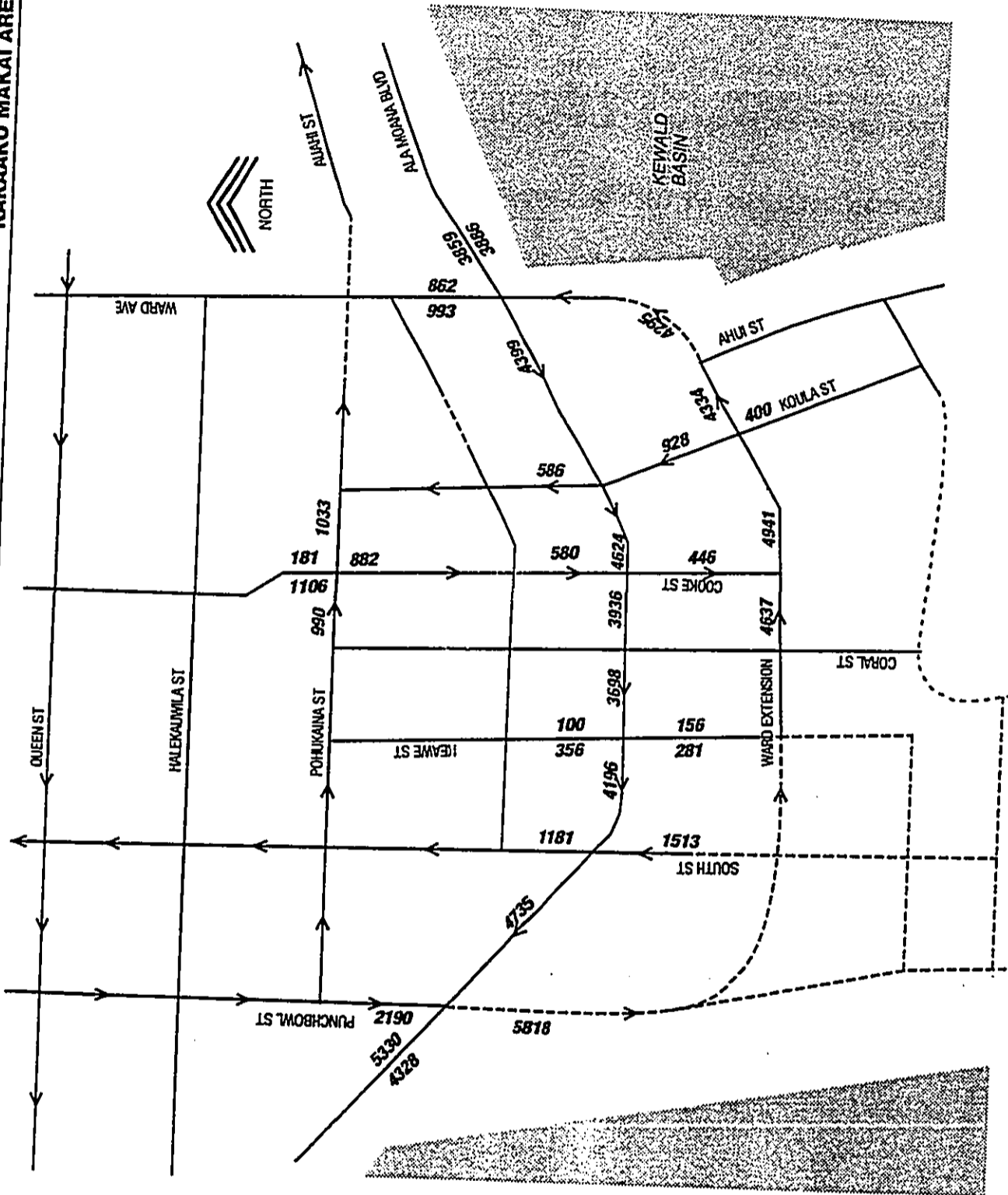


Figure 4-2
PM PEAK HOUR TRAFFIC
YEAR 2015 WITH PROJECT
BASEMAP-10/13/94P



Extension, which would be split somewhat evenly with the revised plan (one-way couplet) versus most traffic using Ala Moana Boulevard with the existing plan.

The revised plan would generally result in lower traffic volumes on most mauka-makai streets, as compared to the existing plan. This would primarily result from the availability of more through street connections/smaller blocks with the revised plan.

TRAFFIC CONDITIONS AT KEY INTERSECTIONS

The 2015 analyses of traffic conditions at key intersections reflect the following roadway plans:

- ▶ Three through lanes, plus turn lanes, on the Ala Moana-Ward Avenue Extension couplet;
- ▶ Two through lanes plus turn lanes, on the Cooke-Koula Street couplet;
- ▶ Existing numbers of lanes on Punchbowl, South, and Ward Avenue; and
- ▶ Two through lanes, plus turn lanes, on other streets.

The street system, location of key intersections, and the number of lanes assumed at the key intersections are depicted in Figure 4-3.

Conditions at the key intersections were analyzed for the Year 2015 using the *Operations Methodology* procedures. The results are depicted in Figure 4-3 and listed in Table 4-3. The key findings are summarized below:

- In the morning peak hour, the key intersections operate at acceptable service levels except for the intersections at each end of the east-west one-way couplet (Ala Moana Boulevard at Punchbowl Street and at Ward Avenue). Estimated volumes at each intersection slightly exceed the theoretical capacity, with each operating at LOS F.
- The Ala Moana Boulevard-Punchbowl Street would be the key traffic constraint in the afternoon peak hour, with estimated volumes exceeding planned capacity by 43 percent and with extremely long vehicle delays.
- The Keawe Street intersection with Ala Moana Boulevard is indicated as having forecast traffic volumes well in excess of available capacity (47 percent over). However, this reflects the assumption that Keawe Street would continue to have a single lane in each direction since no redevelopment (and street widening) is anticipated adjacent to the intersection. Separate turn lanes could be provided on the mauka side by removing parking and restriping the street, and on the makai side by a slight widening within the existing right-of-way. These modifications would improve the volume-to-capacity ratio to close to 1.00 and greatly reduce the estimated vehicle delay.
- The Ala Moana Boulevard-Ward Avenue intersection would accommodate volumes 22 percent above planned capacity in the afternoon.

Mitigation actions would be appropriate to address conditions at each of the above intersections.

KAKAOKO MAKAI AREA PLAN EIS

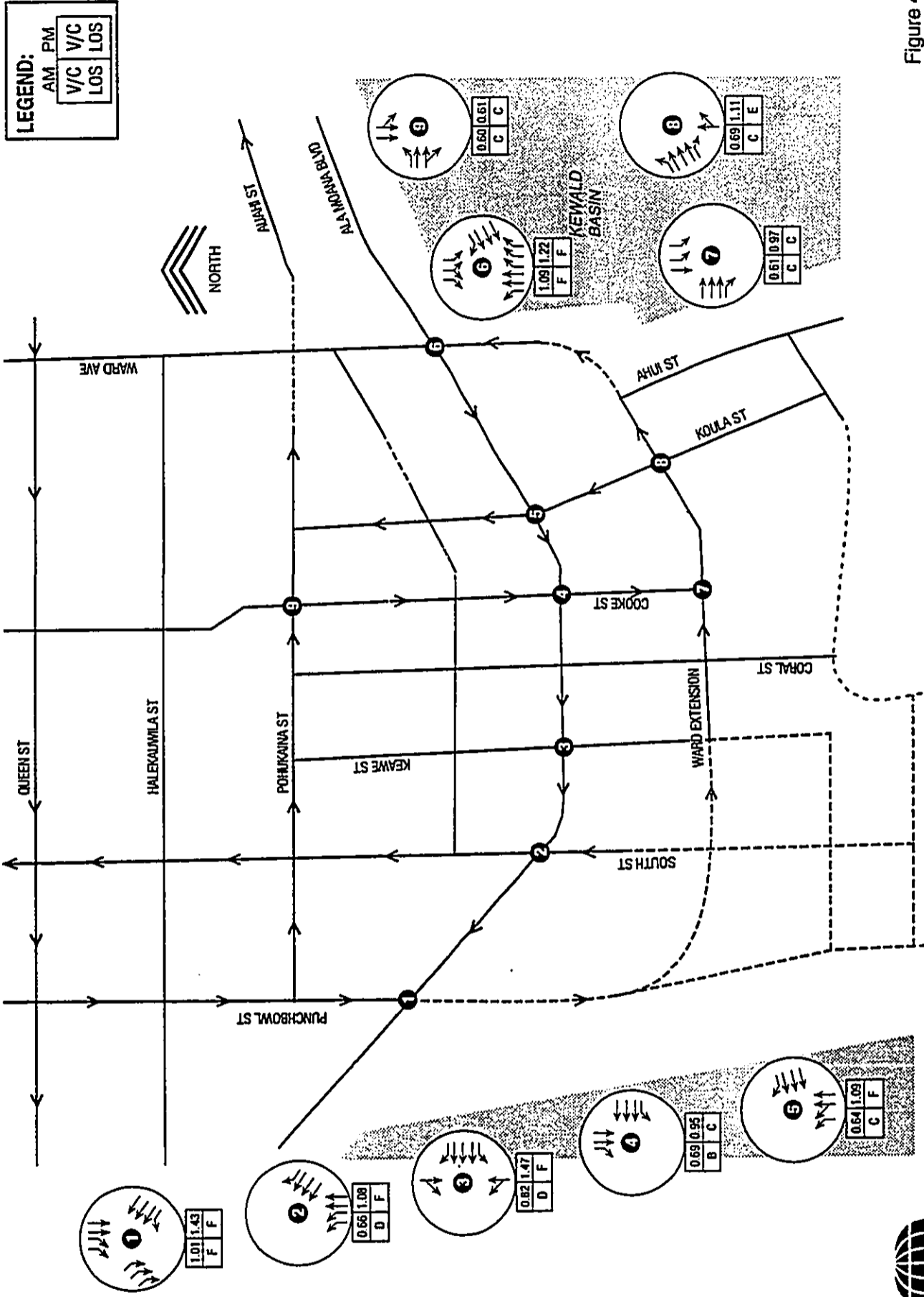


Figure 4-3
YEAR 2015 WITH PROJECT
INTERSECTION LANE CONFIGURATION AND LEVEL OF SERVICE
 BASEMAP-10/13/14P





Table 4-3
YEAR 2015 WITH PROJECT
LEVEL-OF-SERVICE AT STUDY INTERSECTIONS
Kakaako Makai Area Plan EIS

Study Intersection	AM Peak Hour			PM Peak Hour		
	V/C	Delay ⁽¹⁾	LOS	V/C	Delay ⁽¹⁾	LOS
1. Punchbowl St./Ala Moana Blvd.	1.01	129	F	1.43	510	F
2. South St./Ala Moana Blvd.	0.66	22	C	1.08	50	E
3. Keawe St./Ala Moana Blvd.	0.82	22	C	1.47	350	F
4. Cooke St./Ala Moana Blvd.	0.69	8	B	0.95	25	C
5. Koula St./Ala Moana Blvd.	0.64	18	C	1.09	62	F
6. Ward Extension/Ala Moana Blvd.	1.09	73	F	1.22	59	E
7. Cooke St./Ward Extension	0.61	16	C	0.97	25	C
8. Koula St./Ward Extension	0.65	14	B	1.05	33	D
9. Cooke St./Pohukaina St.	0.60	15	C	0.61	19	C

V/C = Ratio of volume to theoretical intersection capacity.
 Delay = Average delay per vehicle in seconds.
 LOS = Level-of-Service

Wilbur Smith Associates; June 1994

PUBLIC TRANSIT

The new development within the Makai Area would be expected to add about 2,200 passenger boardings and alightings to TheBus routes serving this area. This estimate reflects the continuation of the current service levels, and the average ridership ratios reported for the Kakaako-Ala Moana area in the 1991 bus survey.⁵ Addition of rapid transit through the area could increase these usage levels.

TheBus routes along Ala Moana Boulevard may likely be able to accommodate such increased levels of transit ridership without adding capacity specifically for this area. The peak loads for the routes serving this area occur on other portions these routes, with ample unused capacity available along Kakaako segment. This reflects continuation of the current route/system configuration.

The modifications to the street system would also have several effects upon transit users:

- The Ala Moana Boulevard bus routes would be split between the one-way couplet, with the ewa direction buses continuing to use Ala Moana Boulevard, while the Diamondhead direction buses would be shifted to Ward Avenue Extension. This would be less convenient to those riders working or living mauka of this segment of Ala Moana Boulevard, but may be more convenient to those located makai of the Ward Avenue Extension.
- The wider sidewalk and landscape areas available along the Ala Moana-Ward couplet would provide larger waiting areas at bus stops, and facilitate provision of more amenities at bus stops.
- The smaller block sizes and street grid may improve pedestrian access to/from the bus stops.

BICYCLES

Ala Moana Boulevard, Ward Avenue, South Street, and Punchbowl Street would be classified as bicycle lanes under either the existing plan or the revised plan. The revised Makai Area Plan also includes Coral Street as a bicycle route, Ahui Street with a bicycle lane, and a bicycle path through the park.

BUILDOUT REQUIREMENTS

The data shown for 2015 represents about 60 percent buildout of the maximum allowable level of development within the Makai Area. With full buildout, 4,500 PM peak hour trips would be generated from the portion of the project Makai of Ala Moana Boulevard. A description of the adequacy of this buildout scenario on the planned local streets is provided below.

⁵ *Honolulu TheBus Comprehensive Operations Analysis*, prepared for The Honolulu Public Transit Authority by Barton-Aschman Associates, Inc., August 1993.

- Punchbowl Street south of Ward Extension (two-direction)
 - ▶ 1,000 PM peak hour trips
 - ▶ Two lanes of travel should be adequate
- South Street north of Ward Extension (one-way)
 - ▶ 3,000 PM peak hour trips
 - ▶ The planned two lanes provided will be at or over capacity. Three lanes should be provided between the Ward Avenue Extension and Ala Moana Boulevard.
- South Street south of Ward Extension (two-direction)
 - ▶ 1,050 PM peak hour trips
 - ▶ Two lanes of travel should be adequate
- Keawe Street north of Ward Extension (two-direction)
 - ▶ 550 PM peak hour trips
 - ▶ Two lanes of travel should be adequate
- Keawe Street south of Ward Extension (two-direction)
 - ▶ 450 PM peak hour trips
 - ▶ Two lanes of travel should be adequate
- Coral Street north of Ward Extension (two-direction)
 - ▶ 1,200 PM peak Hour Trips
 - ▶ Two lanes provided will be near capacity and may require restriction of parking and provision of turn lanes.
- Coral Street south of Ward Extension (two-direction)
 - ▶ 400 PM peak hour trips
 - ▶ Two lanes of travel should be adequate



5. MITIGATION ACTIONS

The proposed revisions to the Kakaako Makai Area Plan are in large part intended as mitigation actions to the existing and future roadway congestion in the Ala Moana Boulevard corridor. The mitigative effects would occur principally in two ways:

- 1. Increased Roadway Capacity** — The development of an Ala Moana Boulevard-Ward Avenue Extension one-way couplet would reduce traffic conflicts, increase east-west capacity, and enhance traffic flow along the section between Punchbowl Street and Ward Avenue. The Cooke-Koula Streets one-way couplet would further contribute to improved conditions at the intersections of these two streets with Ala Moana Boulevard and Ward Avenue Extension.
- 2. Reduced Vehicle Trips** — The permitting of residential uses within the existing commercial use-only area would likely reduce vehicle travel through several mechanisms:
 - i. The residential uses would generate much lower numbers of vehicle trips than the development of an equivalent floor area of commercial use;
 - ii. Many residents would work and shop within the area, thus reducing the number of regional trips to/from the area; and
 - iii. Many of the resident trips within the area, or to adjacent employment and shopping areas, may be made by walking or public transit.

However, the traffic analyses indicate that the proposed Makai Area Plan roadways, per the revised plan, may not provide sufficient capacity to accommodate the traffic volumes anticipated for the 2015 forecast year. Further possible mitigative actions are described in the following sections.

ALA MOANA—WARD EXTENSION COUPLET

With three through lanes in each direction, the 2015 peak hour traffic at many of the intersections along the proposed one-way couplet would either approximate or exceed the planned capacities. Conditions at several of the intersections could be improved to acceptable levels by widening the approaches on the cross streets. However, the provision of four through lanes, plus turn lanes, on the Ala Moana Boulevard and Ward Avenue Extension one-way couplet would be the most effective approach to improving overall traffic conditions through this section, based on the Year 2015 traffic forecasts.

The proposed plan calls for three through lanes plus on-street parking on each side of this one-way couplet. This could be implemented initially, with parking later to be removed when needed to provide a fourth through lane. This approach would require some future street widening at those locations where separate turn lanes are necessary, if these turn lanes are initially provided by restricting on-street parking along the curb lane at these intersections.

WARD AVENUE—ALA MOANA BOULEVARD INTERSECTION

Acceptable conditions could be provided at this intersection by providing four westbound through lanes from the two-way section of Ala Moana Boulevard onto the one-way couplet, but with only three lanes from the couplet onto eastbound two-way segment of Ala Moana Boulevard. Only three eastbound lanes are desirable since the roadway provides only three lanes in each direction east of Ward Avenue. The fourth westbound lane would be provided by conversion of the existing westbound left-turn lane to use as a through lane.

This would require an additional (fourth) makaibound lane on Ward Avenue to provide two left-turn and two-right-turn lanes (Figure 5-1). The additional lane may require removal of on-street parking along the Diamondhead side next to Ward Warehouse, and/or widening of Ward Avenue.

With this configuration, the intersection would provide LOS B and C conditions in the morning and afternoon peak hours, respectively, with forecast traffic using 88 percent or less of planned capacity (Table 5-1).

PUNCHBOWL STREET—ALA MOANA BOULEVARD INTERSECTION

This intersection would be the key constraint to traffic flow in the Makai Area, particularly during the afternoon peak hour.

The basic mitigative actions, which could be implemented with limited property impacts, would be as follows:

1. Modify eastbound approach of Ala Moana Boulevard to provide four through lanes entering the one-way segment. This could be accomplished by widening the street, or by reducing lane widths.
2. Modify makaibound Punchbowl Street to increase the number of through lanes to three (from two). This could be accomplished with parking restrictions and restriping.

These proposed modifications to the plan, depicted in Figure 5-1, would improve morning conditions to acceptable levels, but result in afternoon conditions at LOS F with volumes 25 percent above intersection capacity. Although these proposed modifications would not improve conditions to acceptable levels (LOS D and volume-to-capacity (V/C) ratio of less than 1.00), the conditions with the revised plan (With Project) would be better than those with the existing plan (No Project in Chapter 3).

Two additional roadway modifications were evaluated to further improve conditions at the intersection:

1. Modify Punchbowl Street to provide four makaibound through lanes. This would reduce the V/C ratio to 1.08 (8% over capacity), and would require the widening of Punchbowl Street between Pohukaina Street and Ala Moana Boulevard.

KAKAOKO MAKAI AREA PLAN EIS

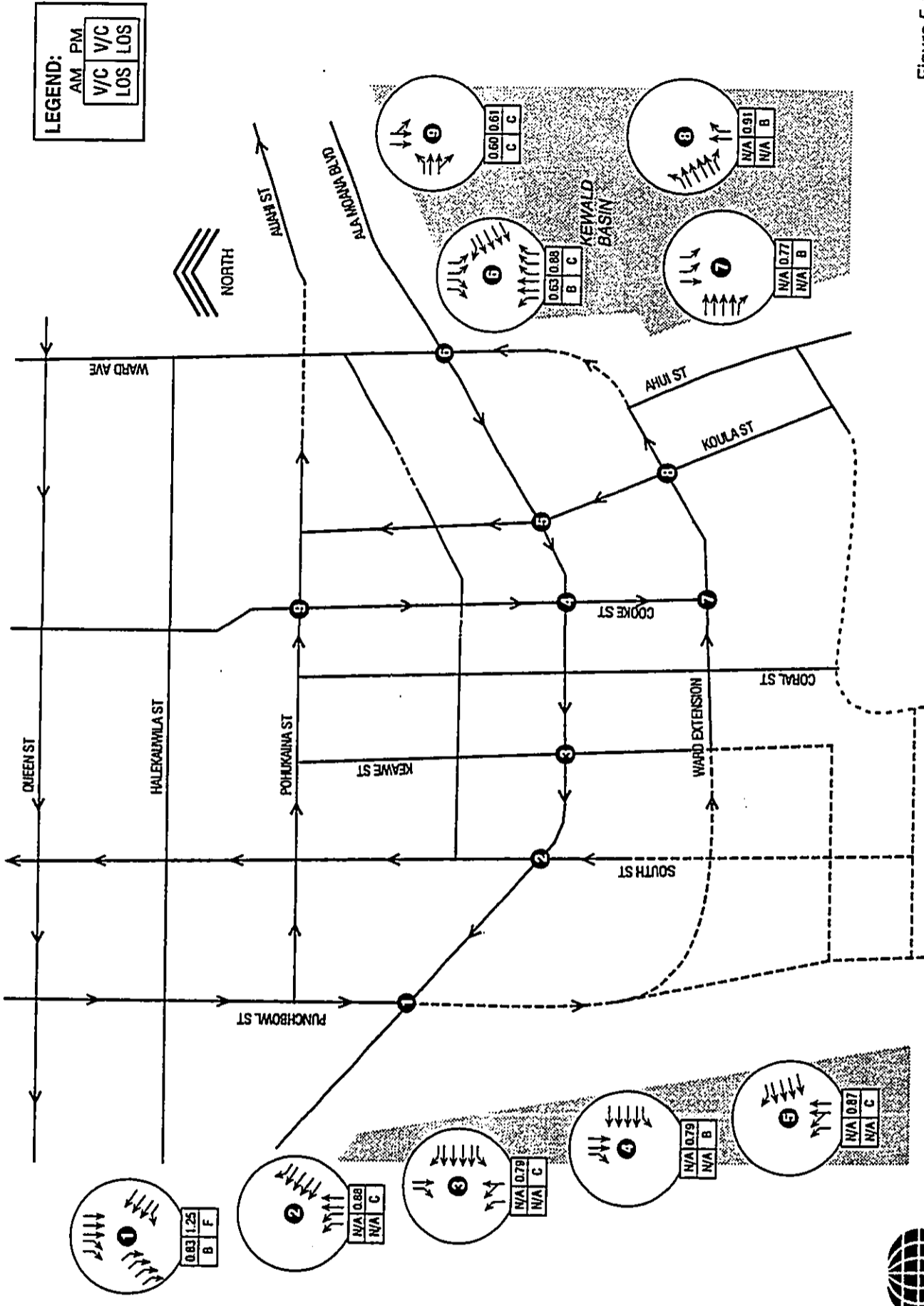


Figure 5-1
 YEAR 2015 WITH PROJECT AND MITIGATION ACTIONS
 INTERSECTION LANE CONFIGURATION AND LEVEL OF SERVICE



WILBUR SMITH ASSOCIATES

BASEMAP-10/13/94P



Table 5-1

YEAR 2015 WITH PROJECT AND MITIGATION ACTIONS
LEVEL-OF-SERVICE AT STUDY INTERSECTIONS
Kakaako Makai Area Plan EIS

Study Intersection	Planned Lanes						With Mitigation					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	V/C	Delay ⁽¹⁾	LOS	V/C	Delay ⁽¹⁾	LOS	V/C	Delay ⁽¹⁾	LOS	V/C	Delay ⁽¹⁾	LOS
1. Punchbowl St./Ala Moana Blvd.	1.06	173	F	1.51	999+	F	0.83	14	B	1.25	104	F
2. South St./Ala Moana Blvd.	0.70	33	D	1.14	76	F	*		*	0.88	23	C
3. Keawe St./Ala Moana Blvd.	0.87	32	D	1.56	437	F	*		*	0.79	17	C
4. Cooke St./Ala Moana Blvd.	0.73	9	B	1.00	41	E	*		*	0.79	9	B
5. Koula St./Ala Moana Blvd.	0.67	22	C	1.15	96	F	*		*	0.87	17	C
6. Ward Extension/Ala Moana Blvd.	1.15	97	F	1.28	90	F	0.63	12	B	0.88	18.6	C
7. Cooke St./Ward Extension	0.64	18	C	1.03	48	E	*		*	0.77	10	B
8. Koula St./Ward Extension	0.69	16	C	1.11	53	E	*		*	0.91	14	B

V/C = Ratio of volume to theoretical intersection capacity.
 Delay = Average delay per vehicle in seconds.
 LOS = Level-of-Service
 * = No analysis since conditions acceptable without mitigation action.

Wilbur Smith Associates; June 1994

2. Modify Ala Moana Boulevard to continue four westbound through lanes beyond the Punchbowl Street intersection, probably to Alakea Street. This would reduce the V/C ratio to 0.99 and the level-of-service to LOS D (26 seconds average delay). The continuation of four westbound lanes to Alakea Street would likely require reduction of lane widths and widening of this section of Ala Moana Boulevard, and could require additional right-of-way. Implementation of the section between Richards and Alakea Streets could be dependent upon the eventual redevelopment of the HECO power station property to secure adequate width for a pedestrian walkway along the makai side.

Because of the implementation issues, the eventual future configuration of the Ala Moana Boulevard - Punchbowl Street intersection may remain an unresolved issue.

COOKE—KOULA STREETS ONE-WAY COUPLET

The proposed one-way couplet, with two through lanes plus turn lanes at key intersections, would provide sufficient capacity to accommodate Year 2015 traffic forecasts. However, the mauka-makai couplet and planned street system could adversely affect circulation in the area.

Koula Street is proposed to extend mauka only to Pohukaina Street. The existing Mauka Area Plan indicates that Pohukaina Street is to be converted to a one-way eastbound street as part of a future one-way couplet, with Queen Street as the westbound street. With these future couplets, mauka direction traffic on Koula Street cannot reach the two-way section of Cooke Street to continue in the maukabound direction. The maukabound traffic must either:

- ▶ Turn eastbound on Pohukaina Street and use Ward Avenue; or
- ▶ Turn westbound on Ala Moana Boulevard or Auahi Street and use South Street.

Both of these patterns would add traffic to streets which have congested problem locations mauka of Pohukaina Street. More effective use of Koula Street, with a connection to the two-way portion of Cooke Street, could be realized through one of the following:

1. Use Auahi Street as the mauka end of the Cooke-Koula Streets couplet so traffic can travel from Kouka Street to Cooke Street via Auahi Street;
2. Extend Koula Street mauka to Halekauwila Street, which would require right-of-way; or
3. Use Halekauwila Street as the eastbound street of the Queen Street couplet, and retain two-way traffic flow on Pohukaina Street.

NEW TRAFFIC SIGNALS

For Year 2015 travel volumes, new traffic signals would likely be required at the following intersections:

- ▶ Ward Avenue Extension intersections with South, Keawe, Coral, Cooke and Koula Streets; and
- ▶ Cooke Street at Pohukaina Street.



APPENDIX A

METHODOLOGY FOR ANALYZING TRAFFIC CONDITIONS

The Transportation Research Board (TRB), a division of the National Science Foundation, has developed standardized methods for use in evaluating the effectiveness and quality of service for roadways and streets. Different methodologies are available for analyzing traffic signal-controlled intersections and unsignalized intersections, both of which were used in evaluating present and future conditions for this study.

The TRB evaluation methods use a concept known as level-of-service (LOS). This concept describes facility operations on a letter basis from A to F, which signify excellent to unacceptable conditions, respectively. The methods generally compare traffic volumes on a facility to the facility's theoretical capacity. Capacity is estimated based on the facility's physical characteristics (e.g. number of lanes), traffic conditions (e.g. types of vehicles), and type of traffic controls. The comparisons are frequently referred to as the volume-to-capacity (V/C) ratio. The methodologies are described in the *1985 Highway Capacity Manual (1985 HCM)*.¹

Traffic Signal-Controlled Intersections

Traffic conditions at traffic signal-controlled intersections were evaluated using the *Operations Analysis* methodology described in the 1985 HCM. Using this method, the level-of-service is based on the average delay time per vehicle passing through the intersection. The delay time, calculated in seconds, is the result of the phasing and timing of the traffic signal as well as the intersection's physical layout and the composition of the traffic. Average delay time and level-of-service are determined for the entire intersection, for each roadway approach, and for each traffic movement or lane group. A description of the characteristics and criteria associated with LOS A through LOS F is provided in Figure A-1.

The methodology also calculates a ratio of actual or estimated peak hour traffic volumes to the theoretical capacity of the intersection. This indicates the proportion of available capacity being used by traffic volumes and where there is unused capacity available for future traffic increases. This volume-to-capacity ratio (V/C) reflects the physical characteristics of the intersection and the traffic characteristics, and is somewhat independent of the efficiency of the traffic signal phasing/timing.

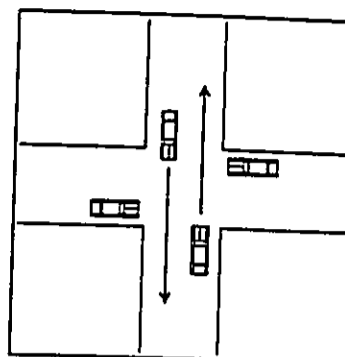
¹ Highway Capacity Manual, Special Report 209, Transportation Research Board, 1985.

The **OPERATIONS LEVEL METHODOLOGY**, which is described in the Transportation Research Board's *Highway Capacity Manual*, defines Level of Service (LOS) for signalized intersections in terms of delay. Technically, delay is the amount of time an average vehicle must wait at an intersection before being able to pass through the intersection. For signalized intersections, the relationship between LOS and delay is based on the average stopped delay per vehicle for a fifteen minute period.

LEVEL OF SERVICE 'A' - Delay 0.0 to 5.0 seconds

Describes operations with very low delay, i.e., less than 5 seconds per vehicle. This occurs when signal progression is extremely favorable. Most vehicles arrive during the green phase and are not required to stop at all.

Corresponding V/C ratios usually range from 0.00 to 0.60.

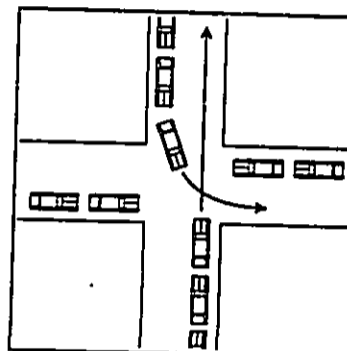


LOS 'A'

LEVEL OF SERVICE 'B' - Delay 5.1 to 15.0 seconds

Describes operations with delay in the range of 5 to 15 seconds per vehicle generally characterized by good signal progression and/or short cycle lengths. More vehicles are required to stop than for LOS 'A' causing higher levels of average delay.

Corresponding V/C ratios usually range from 0.61 to 0.70.

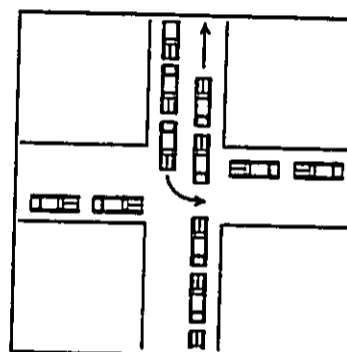


LOS 'C'

LEVEL OF SERVICE 'C' - Delay 15.1 to 25.0 seconds

Describes operations with delay in the range of 15 to 25 seconds per vehicle. Occasionally, vehicles may be required to wait more than one red signal phase. The number of vehicles stopping at this level is significant although many still pass through the intersection without stopping.

Corresponding V/C ratios usually range from 0.71 to 0.80.



LOS 'D'

LEVEL OF SERVICE 'D' - Delay 25.1 to 40.0 seconds

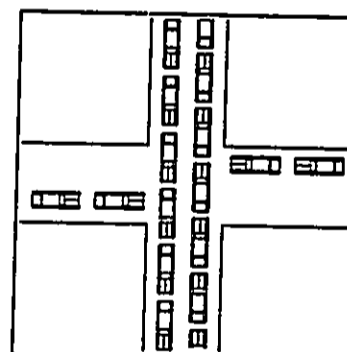
Describes operations with delay in the range of 25 to 40 seconds per vehicle. At LOS 'D', the influence of congestion becomes more noticeable. Many vehicles stop, and the proportion of vehicles not stopping declines. The number of vehicles failing to clear the signal during the first green phase is noticeable.

Corresponding V/C ratios usually range from 0.81 to 0.90.

LEVEL OF SERVICE 'E' - Delay 40.1 to 60.0 seconds

Describes operations with delay in the range of 40 to 60 seconds per vehicle. These high delay values generally indicate poor signal progression, long cycle lengths and high V/C ratios. Vehicles frequently fail to clear the intersection during the first green phase.

Corresponding V/C ratios usually range from 0.91 to 1.00.



LOS 'F'

LEVEL OF SERVICE 'F' - Delay 60.1 seconds plus

Describes operations with delay in excess of 60 seconds per vehicle. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection.

Corresponding V/C ratios of over 1.00 are usually associated.

SOURCE: Transportation Research Board, "Operations Level Methodology-Signalized Intersections", *Highway Capacity Manual*, Special Report 209, 1985.

LOS-HCS-5/1/84-CRL



WILBUR SMITH ASSOCIATES

Figure A-1
LEVEL OF SERVICE DIAGRAM

Unsignalized Intersections

At intersections with STOP sign controls, the level-of-service was calculated using the 1985 HCM procedures for intersections with two-way STOP sign control (STOP or YIELD signs on minor streets) and the 1991 *Circular 373*² procedures for those intersections with STOP signs on all approaches (three- or four-way STOP sign control). In both methodologies, six levels-of-service, A through F, are used to describe traffic conditions.

For three-leg ("T") and four-leg intersections with STOP or YIELD controls on the minor street approaches, the standard procedure provides a comparative measure of delay for those movements which must yield to conflicting movements at the intersection. The movements which must yield include:

- ▶ Left-turn out of the side street;
- ▶ Right-turn out of the side street; and
- ▶ Left-turn into the side street.

Through vehicles on the major streets are not required to yield to other movements at T- and two-way controlled intersections. The general indicator of intersection delay is determined by calculating the one-hour capacity for each key movement, based on conflicting traffic volumes, and then comparing the number of vehicles making that maneuver to the calculated capacity. The unused or "reserve" capacity for the movement is then used to identify a level-of-service for that movement. Unlike signalized analysis, an overall intersection level-of-service is not calculated but rather a level-of-service is calculated for each lane group.

The level-of-service criteria for unsignalized intersections with minor street STOP controls is defined in Table A-1.

For intersections with STOP or YIELD controls on all approaches, the *Circular 373* methodology was used to assess level-of-service. This methodology is also based on analyzing each intersection approach independently, but then provides an average overall level-of-service for each intersection. Flow rates and approach capacities are calculated for each approach and volume-to-capacity ratios and delays are determined. Individual approach levels-of-service are based on volume-to-capacity ratios. A weighted average of approach delays is used in arriving at an overall intersection delay and level-of-service. Table A-2 shows the level-of-service criteria for four-way STOP controlled intersections.

² *Interim Materials on Unsignalized Intersection Capacity, Circular 373, Transportation Research Board, July 1991.*



Table A-1

LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS
Kakaako Makai Area Plan Transportation Study

LOS	Reserve Capacity (pcph)	Expected Delay
A	400 or More	Little or no delays
B	300 - 399	Short traffic delays
C	200 - 299	Average traffic delays
D	100 - 199	Long traffic delays
E	-0 - 99	Very long traffic delays
F	Negative Value	Exceeds capacity with extreme traffic delays

LOS = Level-of-Service
pcph = passenger cars per hour
Source: *Highway Capacity Manual*, Chapter 10

Table A-2

LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED ALL-WAY STOP INTERSECTIONS
Kakaako Makai Area Plan Transportation Study

LOS	Average Stopped Delays (seconds/vehicle)
A	<5
B	5 - 10
C	10 - 20
D	20 - 30
E	30 - 45
F	>45

Source: Transportation Research Board, *Circular 373: Interim Materials on Unsignalized Intersection Capacity*, July, 1991, Page 19.