

PLANNING DEPARTMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

RECEIVED

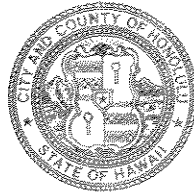
'96 JUL -5 P1:52

CHERYL D. SOON
CHIEF PLANNING OFFICER

CAROLL TAKAHASHI
DEPUTY CHIEF PLANNING OFFICER

OFF. OF ENVIRONMENTAL
QUALITY CONTROL

TH



JEREMY HARRIS
MAYOR

July 1, 1996

Honorable Gary Gill, Director
Office of Environmental Quality Control
State of Hawaii
Central Pacific Plaza
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Dear Mr. Gill:

Acceptance Notice for the
Final Environmental Impact Statement (EIS)
for the Manana and Pearl City Junction Development,
Pearl City, Oahu, Hawaii, TMKs: 9-7-24: 06 Portion;
9-7-24: 41; and 9-7-23: 01

We are notifying you of our acceptance of the Final EIS for the Manana and Pearl City Junction Development. Pursuant to Section 11-200-23(e), Title 11, Chapter 200 (Environmental Impact Statement Rules) of the Hawaii Administrative Rules this acceptance notice should be published in the July 23, 1996, Environmental Notice.

We have attached our Acceptance Report and a copy of the Final EIS for the subject project. Should you have any questions, please contact Tim Hata of our staff at 527-6070.

Sincerely,

Handwritten signature of Cheryl D. Soon in cursive.

CHERYL D. SOON
Chief Planning Officer

CDS:js

Attachments

cc: DHCD
PKF Hawaii, Mr. Robin Yoshimura
PBR Hawaii, Mr. David Hulse

1996 - Oahu - FEIS -
Manana Pearl City Junction - PLANNER

**MANANA AND PEARL CITY
JUNCTION DEVELOPMENT**

FINAL ENVIRONMENTAL IMPACT STATEMENT

Prepared for:

**City and County of Honolulu
Department of Housing and Community Development**

Prepared by:

**PKF HAWAII
PBR HAWAII**

Honolulu, Hawaii

May 1996

REVISED

COMMENTS LETTER HISTORY REGARDING EISPN AND DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR MANANA/PCJ DEVELOPMENT **

**Comment Letters Regarding the Environmental Impact Statement Preparation Notice are Available for Review in the Draft EIS

Checklist of Responses, Effective: April 23, 1996

AGENCY	EISPN MAIL DATE	DATE COMMENTS RECEIVED	COMMENTS (Y/N)	RECEIVED DATE	AGENCY/ORG DEIS COMMENTS	DHCD RESPONSE DATE
				RESPONSE DATE		
STATE						
Office of Environmental Quality Control	10/23/95	10/1/95	Yes	11/17/95	3/25/96	4/23/96
Dept. of Accounting and General Svcs.	10/23/95	11/14/95	No	11/21/95	3/8/96	3/21/96
Dept. of Agriculture	10/23/95					
Dept. of Business, Econ. Dev. and Tourism	10/23/95					
Dept. of Business, Econ. Dev. and Tourism (LUC)					2/14/96	3/19/96
Dept. of Business, Econ. Dev. & Tourism (Energy)	10/23/95	10/30/95	No	11/7/95	2/15/96	3/19/96
Dept. of Defense	10/23/95	11/15/95	No	11/22/95	4/16/96	5/14/96
Dept. of Education	10/23/95	11/8/95	Yes	11/27/95	2/20/96	6/12/96
Dept. of Hawaiian Homes Lands	10/23/95	11/13/95	Yes	11/27/95	2/8/96	3/21/96
Dept. of Health (Environmental)	10/23/95					
Dept. of Health	10/23/95				1/31/96	4/23/96
Dept. of Land & Natural Resources (Preservation)	10/23/95	11/24/95	Yes	12/7/96	3/25/96	4/8/96
Dept. of Land & Natural Resources	10/23/95	12/22/95	No	1/17/96	3/15/96	4/16/96
Office of State Planning	10/23/95	10/30/96	Yes	11/17/95		
Dept. of Transportation	10/23/95	10/26/95	Yes	11/8/95		
Office of Hawaiian Affairs	10/23/95					
Housing and Finance and Development Corp					3/4/96	3/22/96
Office of State Planning					2/12/96	3/19/96
University of Hawaii - Environmental Center					3/26/96	4/24/96
University of Hawaii - Water Resources					2/8/96	3/21/96
FEDERAL						
US Army Corps of Engineers	10/23/95	11/3 & 12/11/95	Yes	11/17/95 & 3/19/96	2/14/96	3/19/96
Dept. of Agriculture	10/23/95				3/11/96	3/21/96
Dept. of Commerce	10/23/95					
Dept. of Federal Aviation Authority	10/23/95	12/21/95	No	12/29/95		
Dept. of the Interior Fish and Wildlife	10/23/95				4/6/96	4/24/96
Dept. of the Interior US Geological Survey	10/23/95	10/26/95	No	11/7/95	2/9/96	3/21/96
National Park Service	10/23/95					
Naval Fac. Eng. Command	10/23/95	1/25/96	INFO ONLY		2/25/96	3/21/96
Navy (Commander)	11/17/95	2/12/96	No		2/12 & 4/10/96	4/23/96
ELECTED OFFICIALS						
Congressman Abercrombie	10/23/95					
State Senator Kawamoto	10/23/95				3/19/96	4/23/96
State Representative Takai	10/23/95					
State Representative Takumi	10/23/95					
State Representative Yonamine	10/23/95					
Councilmember Hannemann	10/23/95	11/24/95	Yes	12/14/95		
PCNB Chair Souza	10/23/95	11/20/96	Yes	12/5/95	3/25/96	4/19/96
PCCA President Kubo	10/23/95				3/21/96	4/23/96
MANANA C/A - Gonsalves	-	11/13/95	Yes	12/5/95		
NON-GOVERNMENTAL AGENCIES						
American Lung Association	10/23/95					
Hawaiian Electric Company	10/23/95	11/15/95	Defer	11/27/95	3/4/96	3/21/96
Oahu Metropolitan Planning Authority	11/24/95	INFO ONLY				
Sherry Aquino					3/23/96	4/17/96
Pearl Highlands Center Associates					2/5/96	3/22/96
CITY						
Building Department	10/23/95	11/13/95	Yes	11/21/95	4/1/96	5/9/96
Board of Water Supply	10/23/95	11/28/95	Yes	12/7/95	1/22/1996	3/19/1996
Dept. of Land Utilization	10/23/95				3/21/96	4/11/96
Dept. of Parks and Recreation	10/23/95	11/13/95	No	12/5/95	3/25/96	4/12/96
Dept. of Public Works	10/23/95	11/16/95	No	11/22/95	2/20/96	4/18/96
Dept. of Transportation Services	10/23/95	11/30/95	Yes	12/29/95	3/28/96	5/8/96
Dept. of Wastewater Management	10/23/95	30-Nov	Yes	12/14/95	2/22/96	3/19/96
Dept. of Finance	10/23/95					
Honolulu Public Transit Authority	11/17/95	11/22/95	No	12/5/95	1/23/96	3/19/96
Dept. Planning.	10/23/95	11/1/95	Yes	11/17/95	3/20/96	5/9/96
		11/27/95	Yes	12/28/95		
Honolulu Fire Department	10/23/95	11/15/95	Yes	11/21/95	2/20/96	3/19/96
Honolulu Police Department	10/23/95	10/30/95	No	11/7/95		



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

MICHAEL B. WILSON, PRESIDENT
BOARD OF LAND AND NATURAL RESOURCES

DEPARTMENT OF LAND AND NATURAL RESOURCES
ADVISORY COUNCIL
ADVISORY COUNCIL ON
PLANNING
ADVISORY COUNCIL ON
CULTURAL RESOURCES
ADVISORY COUNCIL ON
ENVIRONMENTAL AFFAIRS
ADVISORY COUNCIL ON
HISTORIC PRESERVATION
ADVISORY COUNCIL ON
LAND MANAGEMENT
ADVISORY COUNCIL ON
WATER RESOURCES
ADVISORY COUNCIL ON
WILDLIFE AND LAND DEVELOPMENT

March 25, 1996

Mr. Randy Wong
Housing Development Administrator
Department of Housing and Community Development
City and County of Honolulu
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

36 APR -2 A12-5A LOG NO: 16486
DOC NO: 9603T020

STATE HISTORIC PRESERVATION DIVISION

Dear Mr. Wong:

SUBJECT: Draft Environmental Impact Statement (DEIS), Manana and Pearl City
Junction Development
Manana, Ewa, O'ahu
TMK: 9-7-24:06.DOC: 9-7-24:41: 9-7-23:1

Thank you for the opportunity to review this DEIS. The DEIS reproduces our earlier "no effect" determination (LOG NO: 15813) for re-development of these parcels. We have no further comments.

Aloha

[Signature]
DON HIBBARD, Administrator
State Historic Preservation Division

TD:smf

RECEIVED
96 JUN 18 17:43
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 533-4227 • FAX: (808) 537-8448



ROLAND LIBBY, JR.
DIRECTOR
ROBERT AGAR, JR.
DEPUTY DIRECTOR

April 8, 1996

Mr. Don Hibbard, Administrator
State Department of Land
and Natural Resources
State Historic Preservation Division
33 South King Street, 6th Floor
Honolulu, Hawaii 96813

Dear Mr. Hibbard:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

Thank you for your letter dated March 25, 1996, sent in response to our January 1996 DEIS on the above properties. We note that the State Historic Preservation Division has no comments to offer at this time. Your letter will be reproduced in the Final EIS.

Please write or call Ray Sakai, Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to share later.

We will continue to keep you informed of any significant changes occurring in the project and look forward to your future review of our forthcoming Final EIS.

Thank you once again for your cooperation in this matter.

Sincerely,

[Signature]
ROLAND D. LIBBY, JR.
Director

cc: Cheryl Soon, Chief Planning Officer
Robin Yoshimura, POF-Hawaii
David Heise, PSR Hawaii
Gail Kaito, DHCD Planning Division



DEPARTMENT OF THE NAVY

COMMANDER
NAVAL BASE PEARL HARBOR
PEARL HARBOR, HAWAII 96820

MEMO REF ID

5090P

Ser N4(23)/ 6068

10 Apr 96

Mr. Randy Mong
Department of Housing and Community
Development
City and County of Honolulu
650 South King Street, Fifth Floor
Honolulu, HI 96813

Dear Mr. Mong:

Subj: DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS), MANANA AND PEARL CITY
JUNCTION DEVELOPMENT OF JANUARY 1996

Thank you for the opportunity to review the Draft EIS, Manana and Pearl City
Junction Development of January 1996. The following comments are provided for
your use and consideration in preparing the Final EIS:

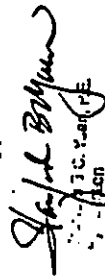
a. Page 25, Section 4.9. The opening paragraph incorrectly describes the
purpose of an Environmental Baseline Survey (EBS). Recommend revising the
first sentence to read: "The Navy has prepared an Environmental Baseline
Survey (EBS) to document the environmental condition of the property and
identify uncontaminated real property available for reuse. The EBS will
provide a systematic review of the parcels and provides a manner in which
consultations and coordination with the public and regulatory agencies can be
accomplished."

b. Page 35, Paragraph 5.8.1. The paragraph reports that the existing 285
foot potable water system is adequate to service the developments and
recognizes that service from the Navy system will be discontinued. The latter
statement is correct, but it should be noted that although the existing system
may be large enough, it is old and its condition is deteriorating rapidly.

c. Appendix D, page 12, last paragraph. The property was not
"confiscated." It was the subject of a declaration of taking for which fair
market value was paid to the former owners (The Trustees Under the Will and
Estate of Bernice P. Bishop and Oahu Railway and Land Company). Also, since
Oahu Sugar did not own any of its cane fields, the second statement is of
dubious validity.

The Navy's point of contact is Mr. Stanford Yuen at 474-0439.

Sincerely,


J. C. Yuen
JCY

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
630 SOULIANG STREET, 2ND FLOOR, HONOLULU, HAWAII 96813
PHONE: (808) 521-2277 FAX: (808) 527-3488



ROLAND LIBBY, JR.
DIRECTOR
PLANNING DIVISION

Ms. Stanford B.C. Yuen, Deputy Engineer
April 23, 1996
Page 2

Your salient reminder is appreciated and will be included in subsequent RFPs for development of either property as well as elaborated in the FEIS.

c. Appendix D, Page 12, last Paragraph: Your comments about the Archeological report are duly noted.

Please write or call Ray Sakai, Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to share later.

Thank you once again for your cooperation in this matter.

Sincerely,

ROLAND D. LIBBY, JR.
Director

cc: David Hulise, PBR Hawaii
Gail Kaito, DHCD Planning Division
Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKF-Hawaii

April 23, 1996

Mr. Stanford B.C. Yuen, Deputy Engineer
Department of the Navy
Facilities Engineering Office
Commander, Naval Base Pearl Harbor
Box 110, Code M4
Pearl Harbor, Hawaii 96860-5020

Dear Mr. Yuen:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

Thank you for your letter dated April 10, 1996, in response to our January 1996 DEIS on the above properties, which supersedes your February 12, 1996 "no comment" response to our Draft Environmental Assessment Preparation Notice.

The Final Environmental Impact Statement (FEIS) will reproduce your January 25, 1996 letter stating that the Navy intends to convey ownership to the Manana parcel to the City by December 1996 and your April 10 and February 12, 1996 comments.

We appreciate this opportunity to address your April 10, 1996 comments:

- a. Page 25, Section 4.9: The first sentence will be revised to reflect your comments as listed.
- b. Page 35, Paragraph 5.8.1: Prospective developers/proposers have been reminded in the Request for Proposals (RFP) issued in December 1995 and January 1996 for Pearl City Junction and Manana Properties, respectively, that the U.S. Navy's private water system will be unavailable to the private developers. And that users are responsible for developing new connections to the City's existing Board of Water Supply water system (12" main on Waimano Home Road with 12" connection on Luehu Street; 8" main on Kawahama Highway with 8" connection on Kuala Street and Hale Ola Subdivision).



DEPARTMENT OF THE NAVY
PACIFIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
HONOLULU, HI
PEARL HARBOR, HAWAII 96860-5020

5090P
Ser 2317 356

25 JAN 1995

Mr. Randy Wong
Department of Housing and Community Development
City and County of Honolulu
650 South King Street, Fifth Floor
Honolulu, HI 96813

Dear Mr. Wong:

Thank you for the opportunity to review the Draft Environmental Assessment (EA) for Manana and Pearl City Junction Development. The following comment is provided for your use and consideration in preparing the Final EA:

a. Section 1.0, First Paragraph, page 3. Recommend that the paragraph be revised as follows:

"Pursuant to a Memorandum of Understanding with the United States Navy dated August 1993, the Pearl City Junction parcel was conveyed to the City in June 1994 and it is anticipated that ownership of the Manana parcel will be conveyed to the City by December 1996."

If you should have any questions, the Navy's point of contact is Mr. Mel Ramos (Code 2314R), Pacific Division, Naval Facilities Engineering Command at 471-9338 or by facsimile transmission at 474-4890.

Sincerely,

Ralph T. Kaneshiro

RALPH T. KANESHIRO
Director
Environmental Planning Division
Acting

Copy to:
Commander
Naval Base
Box 110
Pearl Harbor, HI 96860-5020

26 JAN 29 P2:17
DEPT OF THE NAVY
& COMM DEVELOPMENT



DEPARTMENT OF THE NAVY
COMMANDER
NAVAL BASE PEARL HARBOR
BOX 110
PEARL HARBOR, HAWAII 96860-5020

5090P
Ser 14(23)/5912
12 Feb 96

Mr. Ronald Libby
Department of Housing and Community Development
City and County of Honolulu
650 South King Street, Fifth Floor
Honolulu, HI 96813

Dear Mr. Libby:

Subj: DRAFT ENVIRONMENTAL ASSESSMENT PREPARATION NOTICE,
MANANA AND PEARL CITY JUNCTION DEVELOPMENT OF
SEPTEMBER 1995

Thank you for the opportunity to review the Draft

Environmental Assessment Preparation Notice, Manana and Pearl City Junction Development of September 1995.

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 B.C. Yuen

Stanford B.C. Yuen, P.E.
By direction

26 FEB 15 P2:19

DEPT OF THE NAVY
& COMM DEVELOPMENT



DEPARTMENT OF THE ARMY
PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS
FT. SHAFTER, HAWAII 96849-5449

MAIL ROOM
ATTENTION

February 14, 1996

Planning and Operations Division

Mr. Randy Wong
Housing Development Administrator
City and County of Honolulu
Department of Housing and Community Development
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Wong:

36 FEB 15 P4:17

DEPT OF HOUSING
& COMMUNITY DEVELOPMENT

Civilian Housing

Dear Mr. Wong:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement for the Manana and Pearl City Junction Development Project, Oahu (TMK 9-7-24; por. 6, 41; and, 9-7-23: 1). We do not have any further comments to offer beyond those provided in our previous letters dated November 3, 1985 and December 11, 1985.

Sincerely,

Paul Mizus, P.E.
Acting Chief, Planning
and Operations Division

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
850 SOUTH KING STREET 5TH FLOOR • HONOLULU HAWAII 96813
PHONE (808) 523-5237 • FAX (808) 527-5238



JEFFREY MARRIS
MAYOR

ROLAND LIBBY, JR.
SPELLMAN
ROBERT AGNES, JR.
HONOLULU MUSEUM

March 19, 1996

Mr. Paul Mizus, P.E.
Acting Chief
Planning and Operations Division
Department of the Army
Pacific Ocean Division, Corps of Engineers
Ft. Shafter, Hawaii 96858-5440

Dear Mr. Mizus:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement

Thank you for your letter dated February 12, 1996, in response to our January 1996 Draft Environmental Impact Statement (DEIS) on the above properties. We note that the Army Corps of Engineers has no comments to offer beyond those provided in your November 3 and December 11, 1995 letters, at this time. All letters will be reproduced in the Final EIS.

Please write or call Ray Sabai, Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to share later.

We will continue to keep you informed of any significant changes occurring in the project and look forward to your future review of our forthcoming Final Environmental Impact Statement.

Thank you once again for your cooperation in this matter.

Sincerely,

ROLAND D. LIBBY, JR.
Director

cc: Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKF-Hawaii
David Hulke, PBR Hawaii
Gail Kailo, DHCD Planning Division



DEPARTMENT OF THE ARMY
PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS
FT. SHAFTER, HAWAII 96824-4400

November 3, 1995



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96824-4400

December 11, 1995

REPLY TO
ATTENTION BY

Operations Branch

Planning and Operations Division

Subject: Manana/Pearl City Junction Environmental Assessment,
File Number MP96-038 (formerly F096-026)

Mr. Randy Wong, Administrator
Department of Housing and Community Development
City and County of Honolulu
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Mr. Roland D. Libby, JR.
Director
Department of Housing and
Community Development
City and County of Honolulu
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Wong:

Thank you for the opportunity to review and comment on the Environmental Assessment (EA) for the Manana and Pearl City Junction Development Project, Oahu (THMs 9-7-24; par. 6; 9-7-24; 41; and, 9-7-23; 1). 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. Based on the information provided, a portion of the project may impact waters of the U.S. including wetlands; therefore, a DA permit may be required. Please contact our Regulatory Section at 438-6258 for further information and refer to file number F098-026.

b. The flood hazard information provided on page 19 of the EA is correct.

Sincerely,

Paul Mizue, P.E.
Acting Chief, Planning
and Operations Division

Dear Mr. Libby:

A site visit was conducted at the Pearl City Junction property on December 1, 1995, by Corps personnel. It was determined that the proposed construction activities at the site will not impact waters of the United States, including wetlands.

If you have any further questions, please contact Mr. Alan Everson of the Regulatory Section at 438-3259, extension 11. File number MP96-038 has been assigned to this project, please reference this number in future correspondence.

Sincerely,

Kathleen A. Dudgey
Environmental Engineer

35 DEC 14 A9:04
DEPT. OF THE ARMY
COMM. DEVELOPMENT

3/16-09-12
1/2-1/CFPD
RECEIVED
[Redacted]



STATE OF HAWAII
DEPARTMENT OF EDUCATION
P. O. BOX 2009
HONOLULU, HAWAII 96810

OFFICE OF THE SUPERINTENDENT

February 20, 1996

Ms. Cheryl Soon
City and County of Honolulu
Planning Department
650 South King Street, 8th Floor
Honolulu, Hawaii 96813

Dear Ms. Soon:

SUBJECT: Draft Environmental Impact Statement
Maunaloa and Pearl City Development

We have reviewed the subject draft environmental impact statement and have no additional comment to make at this time. Our response dated November 8, 1995 regarding the proposed development is still relevant.

Should there be any questions, please call the Facilities Branch at 733-4862.

Sincerely,

Herman M. Aizawa
Herman M. Aizawa, Ph.D.
Superintendent

HMA:hy

cc: A. Euge, OBS
A. Needa, LDO
R. Sakai, HCD, CAC
R. Yoshimura, PKP Hawaii

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 8TH FLOOR - HONOLULU, HAWAII 96813
PHONE: (808) 531-4417 • FAX: (808) 531-5490



OFFICE OF THE DIRECTOR

June 12, 1996

ROLAND D. LIBBY, JR.
DIRECTOR
ROBERT ABRAHAM, JR.
DEPUTY DIRECTOR

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

Dear Dr. Aizawa:

Subject: Maunaloa/Pearl City Junction (PCJ)
Draft Environmental Impact Statement

Thank you for your letter dated February 20, 1996 (copy attached), in response to our January 1996 Draft Environmental Impact Statement (DEIS) on the above properties. We note that the State of Hawaii, Department of Education has no comments to offer beyond those provided in your November 8, 1995, letter and our November 27, 1995, reply (copies attached), at this time. All letters will be reproduced in the Final EIS document.

Please write or call Ray Sabai, Project Officer, at 577-5321 or 523-4264 if you have any questions or additional comments to share later.

Thank you once again for your cooperation in this matter.

Sincerely,

Ray Sabai
RAY SABAI, JR.
Director

Attachments

cc: Gail Kaito, DHCD Planning Division
Cheryl Soon, Chief Planning Officer
Tom Witten, PBR Hawaii
Robin Yoshimura, PKP-Hawaii

Benjamin J. Coytano
Director



STATE OF HAWAII
DEPARTMENT OF EDUCATION
1555 KALANOA'OLE DRIVE
HONOLULU, HAWAII 96813

OFFICE OF THE SUPERINTENDENT

November 8, 1995

35 NOV 14 P4:36
DEPT OF HOUSING
& COMM DEVELOPMENT

Mr. Ray Sakai, Project Officer
Department of Housing
and Community Development
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Sakai:

SUBJECT: Environmental Assessment
Manana and Pearl City Junction Development
TIME: 9-7-241.06 nori. 9-7-24: 41. 2-7-231. 01

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

1. Both Pearl City Highlands Elementary and Pearl City Elementary Schools are located close to the proposed development and may be impacted by noise, dust, and traffic during construction. The Department of Education (DOE) requests that appropriate mitigating measures be implemented to minimize negative impacts on the schools.
2. If dust and noise problems are beyond the standards set by the Department of Health, the department will require the developer to install air-conditioning at no cost to the DOE for the classrooms being impacted by this development.

Should there be any questions, please call the Facilities Branch at 733-4862.

Sincerely,

Herman M. Aizawa
Herman M. Aizawa, Ph.D.
Superintendent

HMA:by

cc: A. Suga
A. Maeda

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

630 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 525-4237 • FAX: (808) 527-4286



REGULAR MAIL
NOV 27 1995

ROLAND B. LAMPTER, JR.
DIRECTOR
HONOLULU, HAWAII

Herman M. Aizawa, Ph.D.
November 27, 1995
Page 2

Thank you very much for your cooperation in this matter.

Sincerely,

THOMAS D. LIBBY, JR.
Acting Director

cc: Robin Yoshimura, PKF-Hawaii
Tom Witten, PER Hawaii

November 27, 1995

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

Dear Dr. Aizawa:

Subject: Manana/Pearl City Junction Environmental Assessment

We appreciate your timely response and review of our September 1995 Environmental Assessment Preparation Notice on said properties.

Your concerns about minimizing negative construction impacts on the Pearl City Highlands Elementary and Pearl City Elementary Schools have been duly noted and will be conveyed to the developers in the Request for Proposal(s) by requiring builders to be responsible for "dust control" during construction and for coordinating their activities with the subject schools, and restoring any verified damage claims. Thank you for forwarding the names and telephone numbers of the contacts at both schools for our dissemination to the selected developer(s).

We also note your recommendation for the installation of air conditions but at this preliminary planning stage, the City is unable to advance a commitment for the developer. However, as stated above, we will convey this recommendation to the selected developer for discussion with the affected schools.

We also provided your comments to our consultants for their study and possible inclusion in the Draft Environmental Impact Statement (DEIS).

We look forward to your staff's review of the forthcoming DEIS. If you should have any questions or additional comments and suggestions, please direct them to Mr. Ray Sabal, Project Officer, at 527-5321 or 523-4264.

FINAL ENVIRONMENTAL IMPACT STATEMENT

**MANANA AND PEARL CITY
JUNCTION DEVELOPMENT**

**This Environmental Document is Submitted
Pursuant to Chapter 343, HRS**

**Prepared for:
City and County of Honolulu
Department of Housing and Community Development**

**Prepared by:
PKF HAWAII
PBR HAWAII**

Submitted By:



**WM. FRANK BRANDT, PRESIDENT
PBR HAWAII
Honolulu, Hawaii**

May 1996

**Final Environmental Impact Statement
May, 1996**

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EXECUTIVE SUMMARY

PURPOSE

This Final Environmental Impact Statement ("FEIS") has been prepared in support of the proposed Manana and Pearl City Junction Development, a 122-acre master planned development (Manana is 108.7 acres and Pearl City Junction is 13.8 acres) at Pearl City, Oahu. The project area includes lands owned and/or controlled by The City and County of Honolulu in accordance with a Memorandum of Understanding with the U.S. Navy which will transfer ownership of the property to the City over a phased three year acquisition schedule.

This document presents the Manana and Pearl City Junction Development and describes the improvements proposed to accommodate the needs of the project. It also describes the existing natural and human environment of the project site and surrounding area; the potential impacts that might result from the proposed project and mitigation measures to minimize these potential adverse impacts. Comments and responses addressing applicable concerns that were received from review of the Draft Environmental Impact Statement are also provided.

The Manana and Pearl City Junction Development reflects a mixed use concept that will replace the existing military warehouses with an "in-fill" project comprised of a mix of commercial retail and office uses, public service facilities, a Community Park/Youth Center, Family Entertainment Center, Medical Facilities, light industrial building sites, and public facilities planned for the Honolulu Public Transit Authority (HPTA) and Board of Water Supply facilities. Moanalua Road would be extended to provide a central "spine road" traversing through the central core of the subject property.

In support of the development, infrastructure facilities that will be constructed include access and circulation roadways; pedestrian paths, drainage improvements, distribution lines for potable water, collection lines for wastewater, and communication/utility systems.

PROJECT NEED

Need for the proposed Manana Conceptual Master Plan was determined through the use of a community based planning process comprised of the "Pearl City Planning Task Force" (PCPTC) which defined the purpose of the project as follows:

"To develop the Manana Property and Pearl City Junction in a manner which addresses the needs of the City and Community while maintaining fiscal responsibility."

To identify the specific needs of the City, an internal survey of each department was conducted. Market needs were identified through the preparation of a Market Assessment and Fiscal Impact Assessment (Appendix A), and the community needs were expressed by members of the PCPTC, Neighborhood Board, other community groups, and through input from representatives of the City Council.

PROPOSED ACTION

The City's Department of Housing and Community Development (DHCD) will propose amendments to the Primary Urban Center Development Plan and Public Facilities Map, and zoning amendments to reflect the land uses proposed by the plan. As the property is located within the State Land Use Commission's Urban District, no action will be required from the State Land Use Commission to permit development of the proposed project.

SIGNIFICANT BENEFICIAL AND ADVERSE IMPACTS

The proposed Manana and Pearl City Junction Development, improvements will impact the physical resources of the project area and adjoining areas in a beneficial manner to the surrounding community. Many of the environmental impacts presently associated with military warehousing will be largely mitigated by the proposed improvements. Proposed facility improvements call for installation of new potable water, wastewater, drainage, transportation, and electrical/communication infrastructure. New public facilities will likely include the HPTA, Board of Water Supply and a Community Park/Youth Center. The need for the project is evidenced by the existing and projected demand for the proposed land uses in the Pearl City area.

Potential environmental impacts may occur primarily during construction related to noise, soil erosion, increased construction machinery exhaust emissions, and temporary disruption of traffic.

After project development, no significant impacts are anticipated regarding water quality, drainage, flora and fauna, or archaeological resources. There may be impacts associated with traffic, but these are planned to be mitigated with the project related improvements and other off-site improvements which are planned by the State and County. Visually, the property will be altered from the existing warehouse uses to a landscaped urban planned development. Replacement of the existing uses with urban landforms should result in a generally positive impact.

PROPOSED MITIGATIVE MEASURES

If implemented with appropriate mitigative measures, project development will maintain or enhance existing environmental qualities associated with the property. The design of all major infrastructure and public facility improvements will incorporate methods to ensure that the environmental resources of the region will not be damaged.

Drainage/Flood Control/Water Quality/Soil Erosion - Drainage control measures will be addressed through improvements which will utilize on-site retention basins with outlet structures designed to control the quantities of off-site surface flows. To protect water quality and mitigate potential soil erosion, measures will be implemented, such as the grassing of graded areas, watering to reduce fugitive dust emissions, and dust screens during and after construction. Implementation of the recommended soil erosion control measures and grading plan will require careful attention to establish new plant materials and ground cover. As applicable, developers of the various parcels will be notified to work with surrounding landowners and the Department of Education to identify appropriate dust mitigation measures prior to construction.

Flora and Fauna - No endangered flora and fauna exist on the project area and no mitigative measures are planned. However, the proposed urban landscaping will increase the diversity of both plant and animal communities compared to the existing condition.

Archaeological Resources - No known archaeological resources requiring preservation exist on the subject property. If construction discovers any artifacts or human remains, the contractor will halt work and notify the State of Hawaii Historic Preservation Division in accordance with applicable laws.

Noise - The project is not expected to generate any significant long-term noise that cannot be mitigated. During construction, contractors will secure State Department of Health Community Noise Permits and equipment will be used in accordance with accepted standards during daylight

hours to mitigate potential noise impacts. Noise associated with the bus facility and increased traffic will be mitigated with landscaped buffers, walls, and topographic variations as applicable.

Air Quality - The primary air quality impact(s) will result from use of construction equipment, fugitive dust, and emissions from vehicular traffic. However, since development is planned over a 5-year period, impacts from construction equipment and fugitive dust will occur only on a short-term basis within each of the relatively small development areas. Because the length of the development period will limit the land area exposed to wind erosion, fugitive dust emissions should be reduced. Watering during construction and possible use of dust barriers will largely mitigate dust emissions. Emissions from vehicular traffic may be mitigated by the development of transportation improvements at busy intersections neighboring the project sites.

Traffic - The main roadway improvements proposed for the project consist of the spine road traversing the central portion of the property connecting Acacia Road with Moanalua Road. State funded off-site improvements are also planned to mitigate traffic on Kamehameha Highway and Waimano Home Road. With implementation of the proposed transportation improvements, all of the major intersections planned for the project should operate under their designated capacity.

Visual - The City's Land Use Ordinance controls the height, density, building setbacks, landscaping, and type of land uses permitted on all properties throughout Oahu. In addition to these controls, the site design has incorporated through urban design, view corridors primarily along the central spine roadway corridor to preserve mauka/makai views for motorists and pedestrians. Landscaping of varying heights, widths and massing will be extensively required and utilized to integrate the built environments with surrounding land uses while creating an attractive urban setting.

Public Services and Utilities - All new infrastructure will be developed in accordance with project requirements. Treated wastewater effluent disposal may be integrated as irrigation water for mauka sugar cane lands and other appropriate landscaped areas. Electrical and communications improvements necessary to support the requirements of this project will be served from existing and proposed utility systems. Existing overhead utility distribution lines will be placed underground within the Project Area and new structures will be design to ensure that radio transmission associated with the Pearl City Police Station will not be impacted.

ALTERNATIVES CONSIDERED

In compliance with the provisions of Title 11, Department of Health, Chapter 200, Environmental Impact Statement Rules, Section 11-200-17(f), the "known feasible" alternatives to the proposed project are limited to those that would allow the objectives of the project to be met, while minimizing potential adverse environmental impacts. These alternatives were extensively presented, discussed and evaluated by the Pearl City Task Force at numerous public informational meetings and further publicized through coverage of the plan by the news media.

COMPATIBILITY WITH LAND USE PLANS AND POLICIES

As a warehouse facility previously used by the U.S. military, implementation of the proposed Manana and Pearl City Junction Development will now require amendments to essentially all of the City's major land use control ordinances. The property is designated as "Urban" by the State Land Use Commission, which will not require additional approvals.

1.0 INTRODUCTION

This Final Environmental Impact Statement (FEIS) has been prepared for the Manana and Pearl City Junction Development in compliance with the provisions of Hawaii Revised Statutes (HRS) Chapter 343 and Title 11, Department of Health, Chapter 200, Environmental Impact Statement Rules.

As required by the Rules, this FEIS describes the following elements of the proposed project:

- 1) the technical, social, economic and environmental characteristics of the project;
- 2) the affected environment;
- 3) a summary of major impacts and alternatives considered that would meet project objectives;
- 4) the mitigation measures proposed;
- 5) Significance of environmental impacts;
- 6) determination; and,
- 7) identification of agencies to be consulted.

1.1 Project Summary

Project Name: Manana and Pearl City Junction Development

Applicant: City and County of Honolulu Department of Housing and Community Development

Area:

<u>Tax Map Key</u>	<u>Approximate Acres</u>
9-7-24:06 por	108.18
9-7-24:41	0.50
9-7-23:01	13.80

Existing Use: The majority of the subject parcels currently consist of vacant warehouse type buildings constructed by the United States Navy for storage of various materials. The Navy Defense Reutilization and Marketing Office and Navy Exchange distribution warehouse comprise the majority of occupied buildings. Some buildings are presently leased to private individuals for short-term storage purposes. The existing warehouses, chain link fencing, and minor access roadways were constructed primarily during and after World War II.

Proposed Use: Commercial, Light Industrial, Entertainment, Medical Facilities, Public Facilities, Park, and Miscellaneous Open Space

State Land Use District: Urban

Primary Urban Center Development Plan Land Use Map: Military

City and County of Honolulu Zoning: F-1, Military and Federal

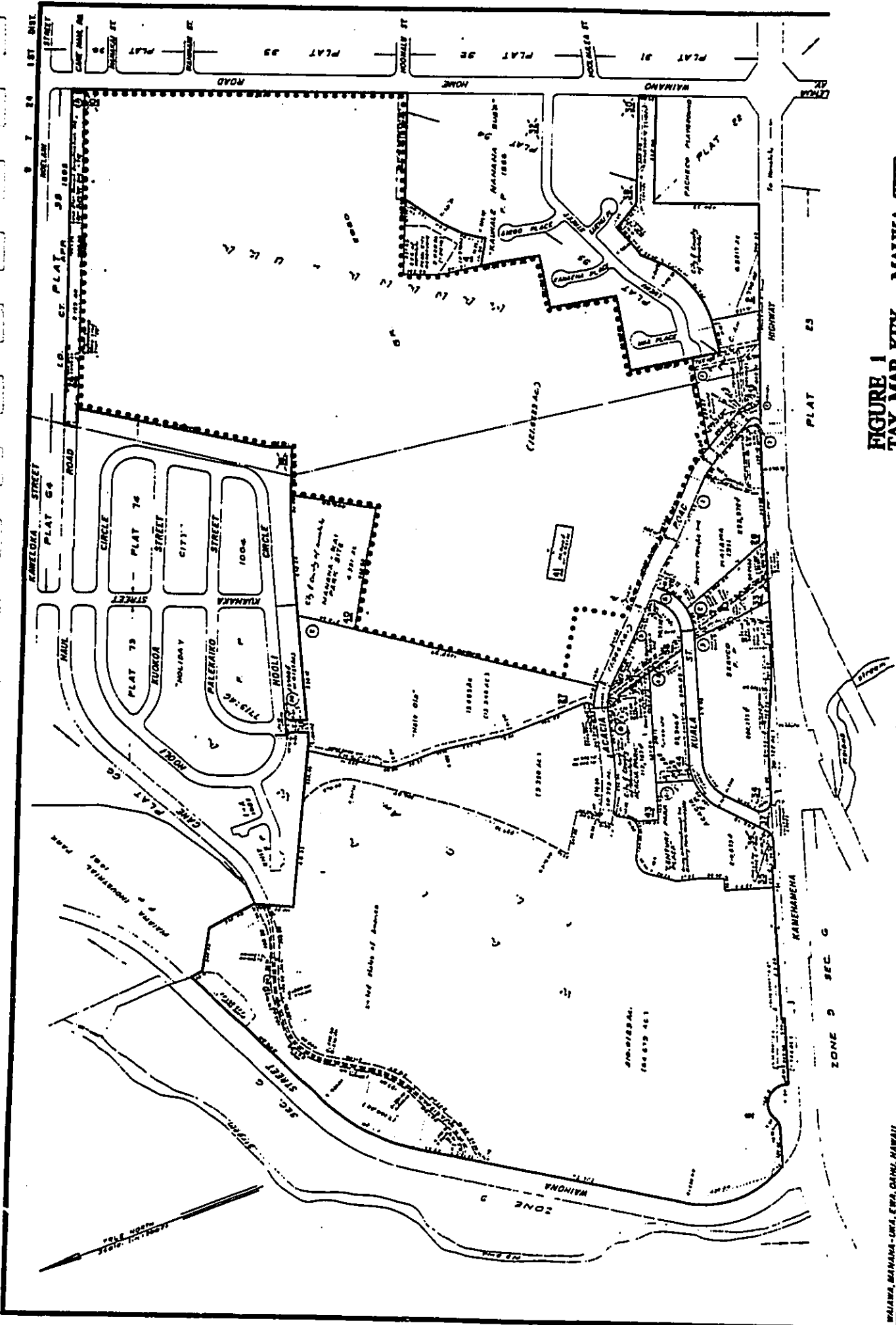


FIGURE 1
TAX MAP KEY - MAUKA SITE
MANANA/PCJ DEVELOPMENT
 CITY & COUNTY OF HONOLULU
 ISLAND OF OAHU



DEPARTMENT OF REAL ESTATE TAX MAPS BRANCH TAX MAP	
SHEET NO. 9 OF 24	DATE: 11/19/95
FOR PROPERTY ALIENATION PURPOSES SHEET NO. 9 OF 24	

MANANA, MANANA - OHA, EWA, OAHU, HAWAII

DATE: 11/19/95
 DRAWN BY: [illegible]
 CHECKED BY: [illegible]
 APPROVED BY: [illegible]

Action Requested: Amendment to the Primary Urban Center Development Plan
Land Use Map and Public Facilities Map, and Change of Zone

Approving Agency: Planning Department, City and County of Honolulu

Agencies Consulted: All City Agencies and Applicable Federal, State, and Non-Governmental Agencies as identified in Section 12.0

1.2 Chapter 343, HRS

In accordance with the State of Hawaii's Environmental Impact Statement Law, Chapter 343, HRS, eight conditions applicable to new development trigger the environmental review process. Two of the eight conditions, the use of County lands and/or funds and amendment to the Primary Urban Center Development Plan, are the "triggers" applicable to the proposed project authorizing compliance with Chapter 343, HRS.

According to Department of Health Rules (Section 11-200-6) and Chapter 343, HRS, preparation of an Environmental Assessment and/or an Environmental Impact Statement, is required under the following circumstances.

- o Use of state or county lands
- o Use of lands within the State Conservation District
- o Use within the shoreline area
- o Any use within any historic site
- o Any use within the Waikiki-Diamond Head area of Oahu
- o Any amendment to existing county general plans
- o Use of State or County funds
- o Construction or modification of helicopter facilities

Because the proposed Master Land Use Plan for the Manana and Pearl City Junction Development is not presently consistent with the Primary Urban Center Development Plan and City funds may be required, Chapter 343, HRS is triggered and preparation of an Environmental Assessment or Environmental Impact Statement is required.

According to the Department of Health Rules which govern Chapter 343, HRS implementation, if "significant environmental effects" are not identified by an Environmental Assessment, preparation of a full Environmental Impact Statement is exempted, and a "negative declaration" of significant environmental effects is issued. Otherwise, a Notice of Preparation is issued and processing of a full Environmental Impact Statement is required. The Environmental Assessment and Notice of Preparation was published by the Office of Environmental Quality Control (OEQC) on October 23, 1995.

In accordance with Subchapter 4, Section 11-200-4, Hawaii Administrative Rules, "the mayor, or an authorized representative, of the respective county whenever an action proposed only the use of county lands or county funds" shall be the final authority to accept a statement. Consequently, the Mayor of the City and County of Honolulu has designated the City's Planning Department as the accepting Authority for the Manana and Pearl City Junction Environmental Impact Statement.

1.3 Location

The site consists of two parcels totaling approximately 108.68 acres of land mauka of Kamehameha Highway in the vicinity of the Waimano Home Road/Kamehameha Highway intersection (see Figure 1) and a 13.8 acre parcel makai of Kamehameha Highway owned by the City known as "Pearl City Junction" (Figure 2).

1.4 Ownership and Present Uses of the Property

Ordinance 91-220, adopted by the City Council on September 11, 1991, authorized the acquisition of the 108.68-acre Manana site for \$94 million and the 13.75-acre Pearl City Junction (PCJ) site for \$15 million from the U.S. Navy. The City took title to the PCJ site on July 29, 1994 and possession became effective, December 12, 1994. At the same time, the City also took possession of Parcel A (approximately 29 acres) of the Manana site. Under a Memorandum of Understanding dated August, 9, 1993 between the City and the Navy, the City will take possession of the remaining Parcels B and C, no earlier than June 1996, unless a 6-month extension option is exercised by the Navy who will then vacate the parcels no later than December 1996. Consequently, the subject properties are either owned in fee by the City and County of Honolulu (The City) or subject to the Memorandum of Understanding with the United States Navy.

To identify the appropriate uses for the property, the Department of Housing and Community Development (the City's lead agency for the project), authorized PKF-Hawaii to prepare a Market Assessment and Fiscal Analysis applicable to the property. Based on the findings of these studies, a Conceptual Master Land Use Plan and preparation of environmental documents in compliance with Chapter 343, HRS, were prepared by PBR Hawaii and PKF Hawaii. In accordance with Chapter 343, HRS, the Department of Housing and Community Development is the proposing agency for the project.

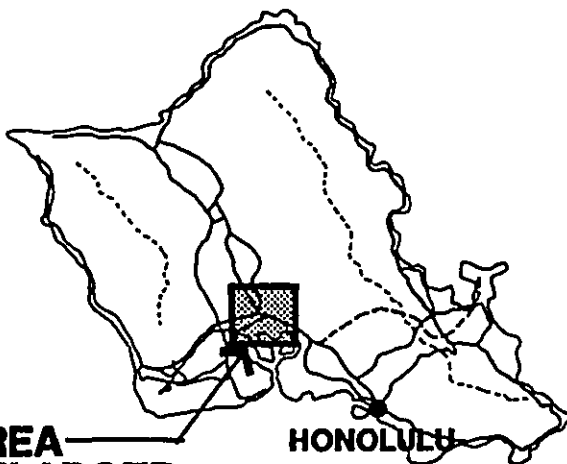
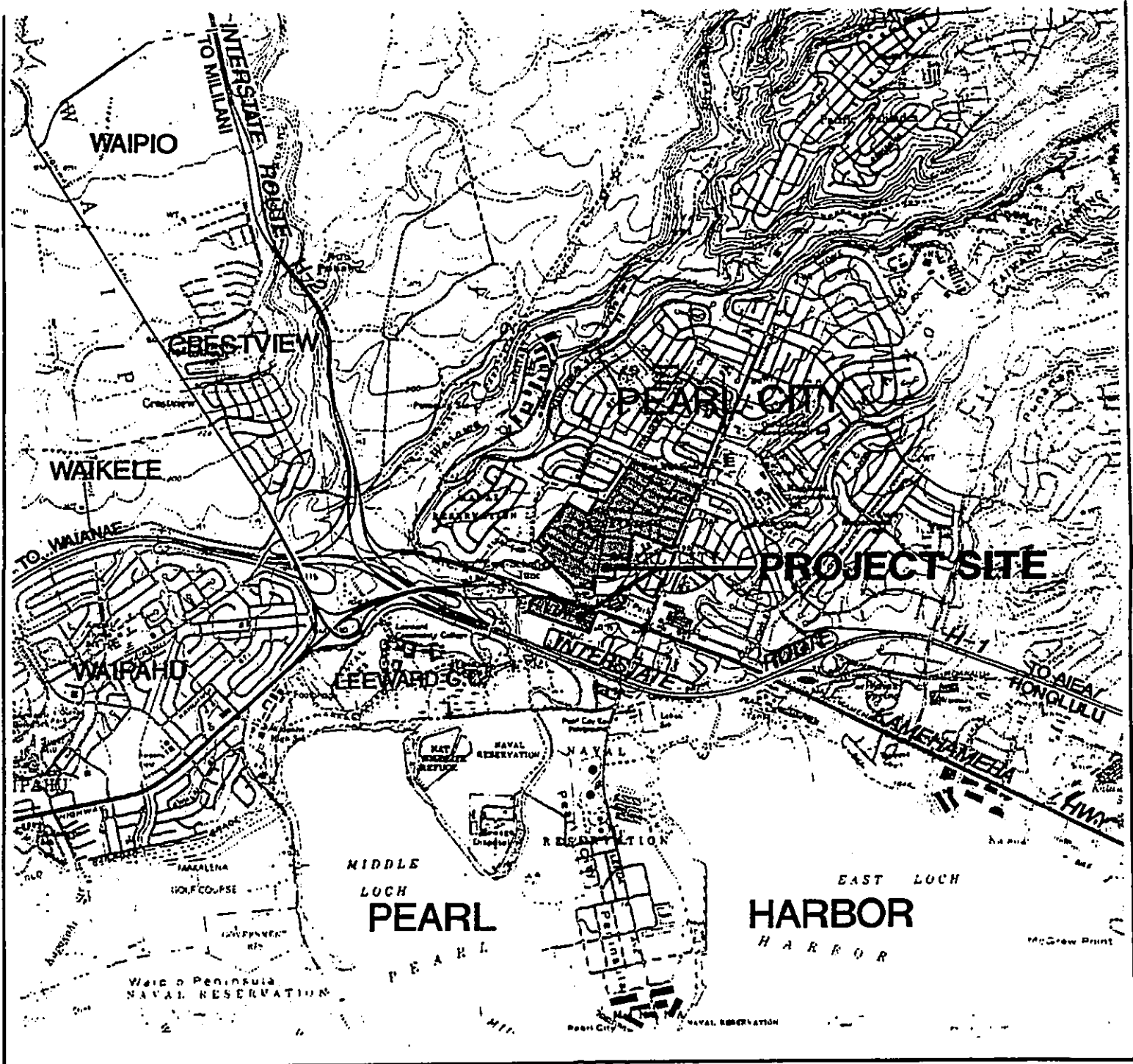
The mailing address and primary contact person for the proposing agency is:

Mr. Ray Sakai, Project Officer
Department of Housing and Community Development
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

1.5 Description of the Property

The site is flat to gently sloping with the exception of a small portion to the south side adjacent to Acacia Road. For the most part, views from the site are primarily toward Pearl Harbor. The sloping area near Acacia Road, because of topographic variation, represents the best view potential. Existing views from single-family residential areas above the site to the horizon and shoreline have been considered during the preparation of the project Master Land Use Plan.

The mauka parcel of approximately 109 acres is zoned F-1, Military and Federal, and is currently developed with 38 military warehouses and 10 open storage areas. The parcel makai of Kamehameha Highway (known as Pearl City Junction), also zoned F-1, is currently developed with former military warehouses, and is used for warehousing by the City. All warehouses range from 20,000 to 50,000 square feet. Their use was largely discontinued during the past ten years. Only short term leasing of warehouse space is currently conducted



AREA ENLARGED ABOVE

HONOLULU
NO SCALE

FIGURE 3
LOCATION/PROJECT BOUNDARY MAP
MANANA/PCJ DEVELOPMENT
CITY & COUNTY OF HONOLULU ISLAND OF OAHU

NORTH LINEAL SCALE (FEET)

PKF HAWAII PBR HAWAII

DATE: 11/16/86

within those structures in better condition. Other improvements on the property include internal roadways, fencing, and administrative buildings.

1.6 Surrounding Land Uses

The project site is surrounded by well-established residential and commercial urban areas with a high level of existing services. Surrounding residential land uses include single-family residential neighborhoods, low to mid-rise apartments, and a two-tower highrise apartment complex. Commercial uses are primarily retail and service oriented.

Public facilities included in the vicinity of the project site include the Pearl City Civic Center Annex, Pearl City branch library, a police sub-station, a large park (Pacheco Playground), Pearl City Elementary School, the Pearl City Post Office, and Manana Kai Park, a 4-acre park located on the northeast corner of the site. Additionally, a large area of undeveloped land to the south of the makai parcel is owned by the University of Hawaii.

Surrounding land uses adjacent to the subject property are Residential (R-5) to the north and west, Low-Density Apartment (A-1) to the east and west, and Community Business (B-2) to the south. A small portion of the PCJ site is leased for storage purposes. The adjacent land area makai of the Pearl City Junction parcel is owned by the University of Hawaii and designated AG-1, Restricted Agriculture.

2.0 DESCRIPTION OF THE PROJECT

2.1 Introduction and Background

On January 25, 1995, the City Council adopted Resolution 94-327 which established a 23-member planning task force (the "Pearl City Planning Task Force") comprised of federal, state and city representatives and residents of the Pearl City and surrounding communities, to study and recommend future development plan land use options for the Manana and PCJ sites. This community-based planning effort was initiated by the Pearl City Neighborhood Board who approved the action at its October 27, 1994 meeting. Former Councilmember Boyd Andrade introduced the measure which was subsequently adopted by full Council.

The adopted resolution provided for a 180-day period ending July 25, 1995, in which the Pearl City Planning Task Force ("PCPTF") was to conduct its study and submit its recommendations to the Mayor and City Council.

During the months from January 1995 to July 1995, eight task force meetings and four community meetings were conducted specifically addressing the Manana/PCJ Development. Meeting times and dates were publicized through paid advertisement in the local area newspaper, the Leeward Current, the Ka Leo Lalo newsletter, community banners, press advisories and canvassing efforts by members of the PCPTF and the staff of the Department of Housing and Community Development. Community representatives also served as liaisons between their respective community associations and groups to disseminate information obtained at task force and community meetings.

The PCPTF schedule ran concurrent with the planning timetable of the Department of Housing and Community Development and its consultants, PKF-Hawaii and PBR Hawaii, to allow for a free exchange of information and discussion on significant planning issues.

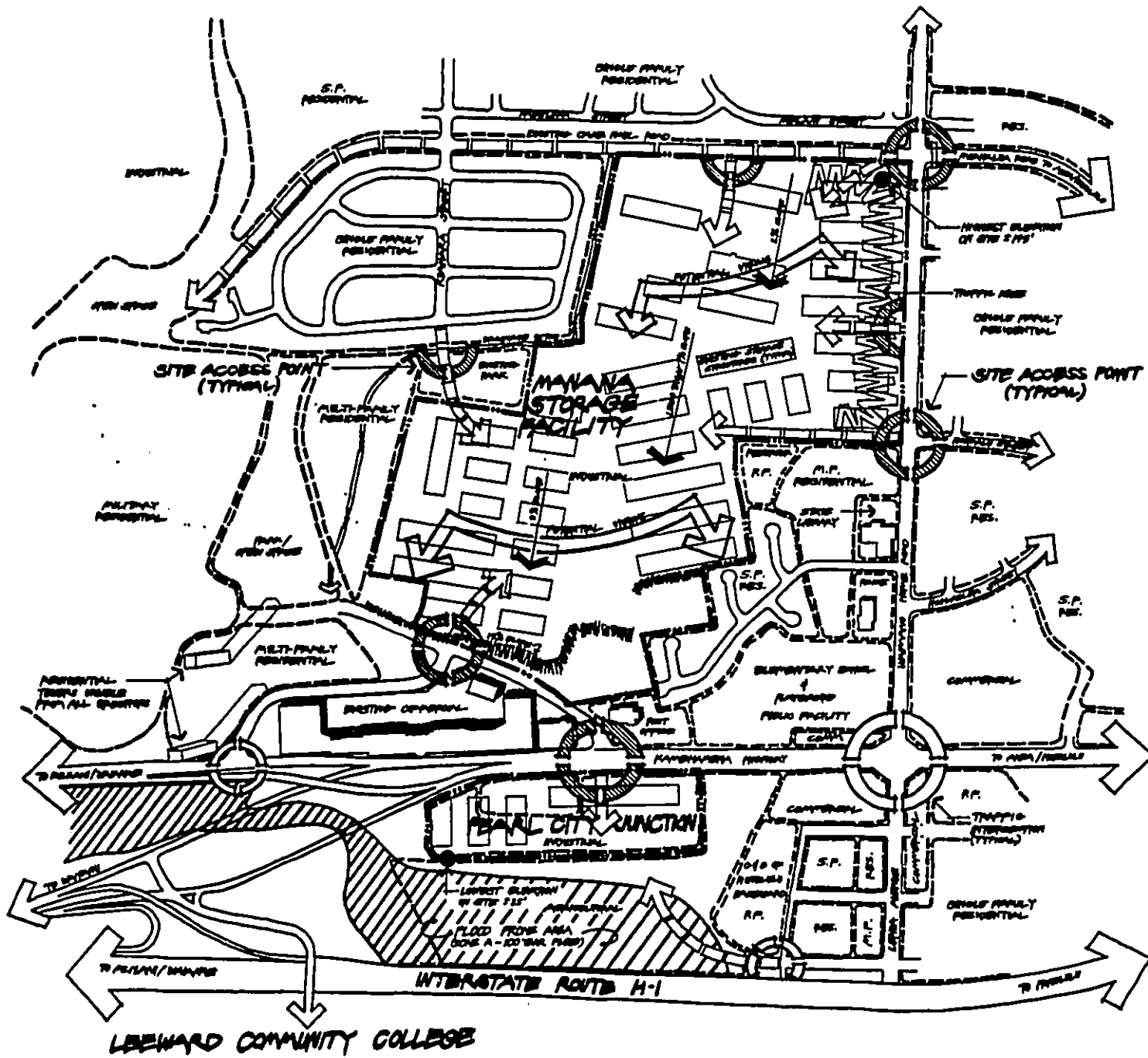


FIGURE 4
SITE ANALYSIS MAP
MANANA/PCJ DEVELOPMENT

CITY & COUNTY OF HONOLULU
 ISLAND OF OAHU
 NORTH
 LINEAL SCALE (FEET)

PCF HAWAII
 PBR HAWAII
 DATE: 11/16/93

The final report of the Pearl City Planning Task Force was submitted to the City Council on August 30, 1995 by Councilmember Mufi Hannemann. On September 20, 1995, the City Council adopted Resolution 95-301 accepting the recommendations and report of the PCPTF. A copy of Resolution 95-301 and the final report of the PCPTF is provided in Appendix I.

The conceptual land use plan for the Manana/PCJ Development, proposed by the Department of Housing and Community Development for annual review, is based on the recommendations resulting from the community-based planning efforts of the PCPTF.

2.2 Goals and Objectives

Since the military warehouses were originally developed in the early 1940's, the growth of the Pearl City community has entirely surrounded the property with residential and commercial land uses.

Overlooking Pearl Harbor, the site offers excellent visual and development opportunities to establish a clearly defined community core or center for Pearl City. The site's close proximity to Oahu's major airport, surface transportation and military harbor facilities, as well as the shifting of Oahu's future population towards Central Oahu and Ewa, suggests that the site could be much more intensively and efficiently utilized as a master planned community with mixed-use development.

To ensure that future development of the subject property appropriately addressed the urban expansion needs of the Pearl City area, the City and County of Honolulu entered into the aforementioned Memorandum of Understanding agreement with the U.S. Navy to acquire the fee interest in the property for a total purchase price of \$109 million.

Development Objectives

As part of the community-based planning process initiated by Council Resolution 94-327, the City Administration established three Development Objectives to serve as the basis for the conceptual land use plan as:

To develop the Manana Property in a manner which addresses the needs of the City and Community while maintaining fiscal responsibility.

- The Project must be developed in a fiscally responsible manner.
- At the same time, the Project should address the impacts on its neighboring community and provide social benefits to the community.
- Lastly, the Project should meet the needs of various departments of the City and County of Honolulu (i.e. City Bus Facility, Public Works Facilities, Board of Water Supply, etc.).

Vision Statement

In this context, the PCPTF formulated a vision statement which broadened the development criteria of the City's Development Objectives to better evaluate the acceptability of each land use component. The "Vision Statement" adopted by the PCPTF read as follows:

"The Manana property provides an opportunity for the residents of Pearl City and its surrounding communities to improve their quality of life and establish a positive, unique and long-term identity for the area that they can be proud of. The Pearl City Task Force strives to meet the current and future needs of this neighborhood while also incorporating the requisites of the City and County of Honolulu."

The community-based land use recommendations of the Pearl City Planning Task Force include:

- a public safety component;
- a component that focuses on the needs of the youth of the area;
- an economic development component that does not diminish the growth and health of existing businesses;
- City facilities to serve the general public;
- a component that focuses on the needs of the elderly and aging;
- an education component to support population growth from the newly developed area.

The development of the site should seek to:

- address the transportation impacts of the immediate and surrounding area;
- aesthetically meld into the existing community
- mitigate the impact of the new development;
- be environmentally safe;
- provide jobs;
- be socially beneficial to the community with the addition of open space and recreational areas.

In the PCPTF's final report submitted and accepted by the City Council on September 20, 1995, the conceptual land use plan for the Manana/PCJ Development recommended by the PCPTF was based on a "Business Park" concept which provided for a mix of commercial and light industrial uses as the primary land use component. The PCPTF's conceptual land use plan is depicted on Figure 5 and key elements of the plan are further discussed in the following section.

2.3 Key Elements of the Plan

The land use concept includes a mix of commercial retail and office uses, public service facilities, open spaces with recreational improvements, all within walking distance of one another and from residential areas adjoining the property. In support of the development, infrastructure facilities to be expanded or improved include access and circulation roadways; bike routes and pedestrian paths, drainage system and water and waste water systems. Residential land uses were discounted due to potentially increased levels of traffic, lack of adequate infrastructure, high land costs, and need for new public services and facilities such as schools. Consequently, the land uses proposed have been selected by the PCPTF and determined to be economically feasible by the Market and Fiscal Impact Assessments (Appendix A) and accepted by the PCPTF are depicted on Figure 5 and described as follows:

A brief description of the major land use elements of the Master Land Use Plan are presented on the following page:

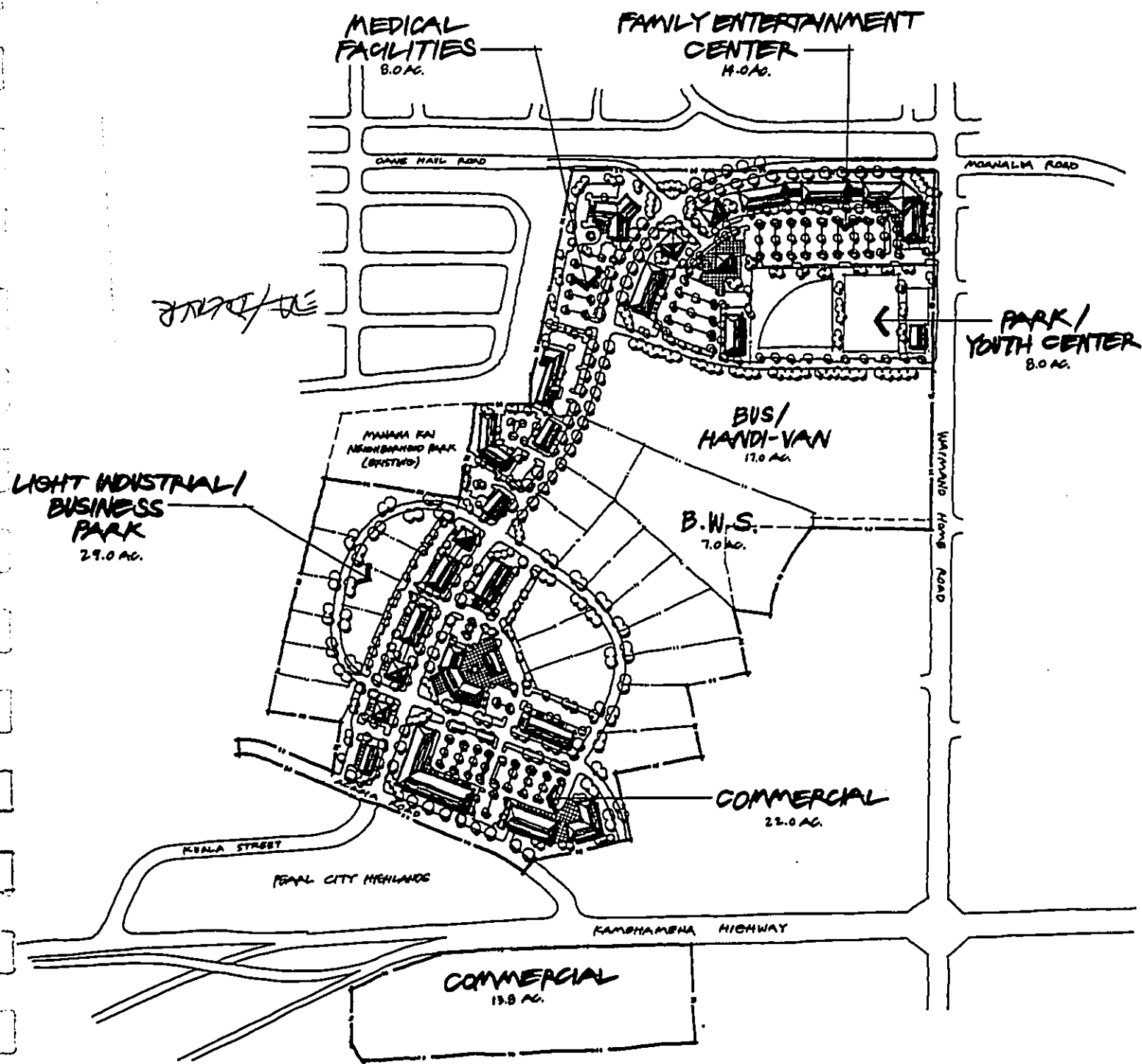


FIGURE 5
CONCEPTUAL MASTER PLAN
MANANA/PCJ DEVELOPMENT

CITY & COUNTY OF HONOLULU ISLAND OF OAHU

NORTH LINEAL SCALE (FEET)

PCF HAWAII PBR HAWAII

DATE: 11/16/90

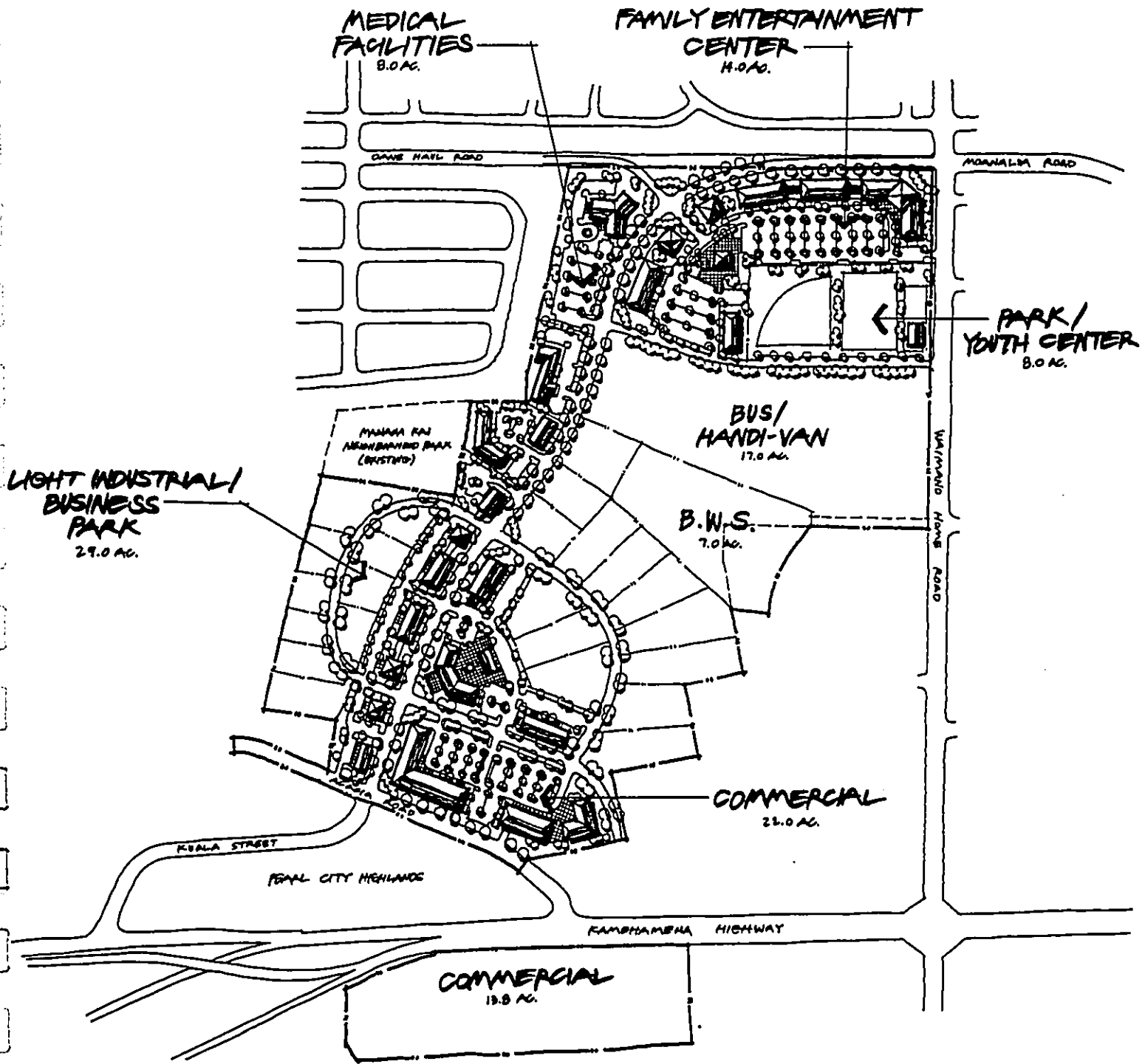


FIGURE 5
CONCEPTUAL MASTER PLAN
MANANA/PCJ DEVELOPMENT

CITY & COUNTY OF HONOLULU

ISLAND OF OAHU

NORTH LINEAL SCALE (FEET)



DATE: 11/16/90

Land Use Summary

The input from the PCPTF and results from the preliminary market analysis prepared for this project, shows that a wide range of uses are in demand. Therefore, based on the needs expressed by the community and the economic feasibility of potential land uses, the following land use program was adopted as depicted on Figure 5 and described as follows:

<u>Land Use Program</u>	<u>Approx. Acres*</u>
Commercial (Pearl City Junction)	13.8
Light Industrial/Business Park	29.0
Commercial Retail/Office	22.0
Family Entertainment Center	14.0
Medical Facilities	8.0
HPTA	17.0
Board of Water Supply (adjacent to 2 existing acres)	5.0
Community Park/Youth Center	8.0
Moanalua Road Extension and Miscellaneous Open Space	<u>7.0</u>
Total:	123.8 acres

*The acreages shown here are approximate and are for general planning purposes only.

2.3.1 Public Facilities

Several public facility areas are planned for the Manana parcel to provide the City with needed maintenance facilities and a park/youth center for use by the surrounding community. Specifically, the proposed public facilities consist of bus and HPTA storage/maintenance facilities, a Board of Water Supply (BWS) maintenance yard, and a community proposed park/youth center. The primary support infrastructure will consist of the proposed Moanalua Extension. Separate compliance with Chapter 343, HRS will be required for the bus and BWS facilities at the appropriate time in the development process.

2.3.1.1 Honolulu Public Transit Authority (HPTA)

The 17-acre HPTA Facility is immediately adjacent to the Community Park and Family Entertainment Center and will have access on both Waimano Home Road via an existing roadway easement across from Hoomalu Street and the Moanalua Road Extension. This facility is planned to house an expanded bus fleet to service the Central, Ewa and West Oahu areas. The HPTA facility would provide for the expanded facility needs of the HPTA system that services this region. Located within the central portion of the Manana property, and not contiguous to any existing residential uses, this site provided the greatest opportunity to buffer and mitigate potential noise or visual impacts of the facility. Provisions for landscaping and building orientation would be included within the planning and design of the HPTA Facility to minimize visual impacts, mitigate noise, and light concerns relating to the operation of the facility.

2.3.1.2 Board of Water Supply

The Board of Water Supply currently has a 2 acre baseyard facility that would be expanded by 5 acres to create a 7 acre facility adjacent to the HPTA Facility. The baseyard would be internalized with access provided via an existing roadway easement from Waimano Home Road, across from Hoomalu Street.

2.3.1.3 Park/Youth Center

In addition to the Manana Kai Neighborhood Park, an 8-acre Park/Youth Center is envisioned (Figure 5). A youth center, proposed by the community, could provide a place for youth to gather and fraternize in a safe supervised environment. In addition, a Youth Center could be developed within the park area in support of youth activities and to provide a multi-use community facility for the community.

With access provided from the Moanalua Road Extension over the "Spine Road" via the Family Entertainment Center, and possible direct access to Waimano Home Road, the approximately 8-acre Community Park may include facilities for active sports field uses including baseball and a multi-use field area for soccer and other athletic activities.

The park master planning and development will be directed by the City and County Department of Parks and Recreation and may include community garden plots, meeting facilities, day-care facilities, plant nurseries, and recreation facilities. Programs could include a full range of classes, counseling services, parent-infant care classes, and other programs to serve the community.

2.3.1.4 Moanalua Road Extension ("Spine Road")

To provide the needed vehicular access into the Manana parcel, an extension of Moanalua Road is proposed to intersect with Acacia Road and Waimano Home Road. In addition to access for the Manana parcel, this extension will relieve some of the existing and future congestion at the Waimano Home Road/Kamehameha Highway intersection.

2.3.2 Pearl City Junction Commercial

Located on the makai side of Kamehameha Highway, this separate parcel of approximately 13.8 acres known as "Pearl City Junction" (PCJ) will likely be developed as commercial complex (specific use to be determined by the developer). As a parcel physically separate from Manana, the Pearl City Junction site is best suited for business activities that require ample parking and easy access to major transportation corridors.

2.3.3 Commercial Retail/Office

Located mauka of Acacia Road from the Pearl Highlands Center, this expanded commercial area of approximately 22 acres would provide for a broad range of

commercial uses to support Pearl City and surrounding communities. Integral to the mixed-use concept is the location of employment centers proximate to surrounding residential areas. For example, employment will be afforded by the medical campus, the public facilities, several commercial clusters, and the business park. Consequently, support commercial/retail businesses and office space will be necessary in the area.

This component of the Manana and Pearl City Junction Development would also supplement retail activity at the Pearl Highlands Center to create a critical mass of retail and office space drawing customers from a wider geographic area. These commercial facilities would be oriented primarily toward the "Spine Road" with adequate landscaping to create a commercial town center/business district as the focal point of the project.

2.3.4 Light Industrial/Business Park

Similar to the positive locational attributes for retail commercial uses, the project is ideally situated to provide for the future light industrial and office space needs of the region. Located proximate to significant military facilities, and at the crossroads of Central Oahu and Ewa, the project can support a wide-range of office needs in addition to professional medical services.

To provide for an appropriate mix of business and light industrial uses, the Light Industrial/ Business Park would be developed on approximately 29 acres. Provisions for landscape setbacks and treatments along the roadway corridors are desired with additional landscape buffers where the industrial uses abut surrounding residential neighborhoods.

Consistent with the Task Force's Vision Statement, the Master Land Use Plan should include "... an economic development component that provides jobs and which does not diminish the growth and health of existing businesses...".

Possible activities within the Light Industrial/Business Park include:

- Wholesaling & Distribution
- Warehousing and Storage
- Motion Picture, Television and sound production studio
- Research and Development Facilities
- Light Manufacturing, Processing and Packaging
- Data Processing and Storage

2.3.5 Family Entertainment Center

The Family Entertainment Center, is characterized by a cluster of uses oriented toward providing a diverse mix of entertainment facilities for the entire family. Located at the intersection of Moanalua Road Extension and Waimano Home Road, the approximately 14-acre Family Entertainment Center provides for a broad range of commercial activities related to youth and family leisure activities. The plan envisions a multi-themed entertainment complex featuring indoor and outdoor recreation facilities that may include the following types of uses:

- Movie Theaters
- Simulation/Virtual Reality Rides and Games
- Teen Night Club
- Dance and Music Studios
- Food and Beverage Facilities
- Specialty Shopping
- Interactive Sports Activities
- Bowling Alley
- Ice Skating/Rollerblading Facility
- Golf Center, Driving Range, Putting Greens, Miniature Golf

Adjacent to the Family Entertainment Center, a community park is planned that could accommodate a youth center. The relationship of the park/youth center to the family entertainment center was considered as a desired land use relationship, providing a multitude of activities to address youth and family leisure needs of Pearl City area residents.

2.3.6 Medical Facilities

To accommodate a variety of medical related facilities, approximately 8 acres are provided for these types of uses. As a land use component that could focus on the needs of the elderly and aging, the following types of facilities may be provided:

- Long Term and Intermediate Care Facilities
- Rehabilitation Facilities
- Medical Clinics and Physicians Offices
- Vocational Schools
- Assisted-living Facilities
- Day Care and Pre-School Facilities
- Veterinary Establishments

By providing a wide diversity of medical education facilities, hospitals, group living facilities, and medical offices, this component could locate many essential elements of the medical profession into one central campus. In doing so, the medical campus provides vitality to the community while creating a focus for social and cultural life.

2.3.7 Infrastructure Development

All internal roadways, drainage, water, wastewater, electrical, and communication infrastructure will likely be funded by private developers or with City funds as applicable. Off-site infrastructure improvements required for the Manana and Pearl City Junction Development may be funded or arranged either by the City, individual developers, or through joint venture arrangements with the City.

Preliminary off-site and major on-site infrastructure improvement costs will be determined as proposals are received and the plan is finalized. Estimates will include the removal of all existing structures in an environmentally appropriate manner.

A preliminary assessment of required infrastructure improvements and procedures to be implemented during the removal of existing warehouse facilities has not identified any significant impacts that can not be mitigated. An engineering report

describing proposed infrastructure, drainage, traffic, and electrical/communication improvements is provided in Appendix H.

2.3.7.1 Wastewater

Presently, wastewater is collected from several warehouse buildings, however, most do not have potable water facilities or the need to connect to the wastewater collection system. Those wastewater facilities that do exist, all gravity flow toward the main collector line located within the Kamehameha Highway corridor. A new collector line will be necessary to accommodate the proposed land uses.

2.3.7.2 Potable Water

Similar to the wastewater system, potable water lines have been installed on an as needed basis. Consequently, these lines are not properly sized or located to accommodate the proposed development and new potable water distribution facility improvements will be required.

2.3.7.3 Drainage Facilities

No significant drainage improvements presently exist on the subject property. Catch basins, drainage swales, and other facilities convey surface runoff into the City's existing system.

2.3.7.4 Traffic and Roadways

Access into the Manana parcel is provided from Acacia Road and Waimano Home Road. Internally, the roadway system of the Manana parcel constructed by the U.S. Navy, primarily consists of access driveways and parking areas associated with the various uses for each of the individual warehouse structures. The Pearl City Junction parcel is accessed directly from the Honolulu bound lane of Kamehameha Highway. There are essentially no internal roads within the Pearl City Junction parcel.

2.3.7.5 Other Utilities

Electrical and communication infrastructure will be improved in accordance with project requirements. Presently, these existing facilities provide relatively little capacity for the proposed land uses. Building on the Manana parcel will be sited and designed to ensure that radio transmissions from the Pearl City Police Station are not impacted.

2.4 Market Demand

A preliminary market analysis and full appraisal of the property was prepared when the Memorandum of Understanding was negotiated between the City and Navy. To evaluate the economically feasible land use elements of the proposed Manana and Pearl City Development, a thorough updated market study and extensive evaluation of neighborhood concerns and attitudes was undertaken. Community needs were identified through numerous meetings with the Pearl City Task Force which are documented in Appendix I.

During this period of plan development, the preliminary findings of the market study found that there is an existing and projected demand for urban-related community based land uses. Consequently, based on the projected demand for the proposed land uses, projected increases in population, and desires expressed by the community, demand for the project's land use components should be strong.

The market study and summary of the Pearl City Task Force are provided in Appendix A and I respectively. The following summarizes the identified market demand for each of the proposed land uses.

2.4.1 Medical Facilities

While the feasibility for development of new medical facilities is dependent upon current and future market demand and supply of such facilities, development of new hospitals and medical facilities is largely regulated by the State of Hawaii. For example, in order to develop new acute or long-term care facilities, a Certificate of Need (CON) must be granted by the State of Hawaii Department of Health.

Based on Department of Health projections, Oahu presently has sufficient acute care bed capacity to accommodate demand through the year 2010. For long-term care, however, the analysis shows that Oahu will have a deficit of approximately 500 beds in 1995, growing to 1,300 beds by 2010. A separate State Health Planning and Development Agency (SHPDA) study reported that at the end of 1993 there were 257 acute care beds on Oahu being utilized by patients who should have been using long-term care facilities, but could not be accommodated because of the shortage of long-term care beds. According to this analysis, market support for additional long-term care beds currently exists on Oahu.

Another type of development that is related to health care, but not regulated by the CON process, includes medical office facilities. For planning purposes, an absorption period of four years has been used in analyzing the medical office component. The medical office building sub-market in the area is experiencing lower occupancy than the market as a whole. For example, the 44,000 square foot Aiea Medical Building and Pali Momi Medical Center consistently experiences vacancy rates near zero percent. As a specialized sub-market, the medical office building component is less affected by the current over supply of office space than typical office buildings. Consequently, the medical office sub-market also appears to be a viable component of the conceptual Master Land Use Plan.

2.4.2 Commercial

The Pearl City Junction property is an attractive commercial/retail site because of its excellent visibility from the H-1 freeway and frontage along Kamehameha Highway. Similarly, at the Manana development property, the proposed commercial land uses will also have good frontage and access provided by the proposed extension of Moanalua Road, providing much more direct access to and from H-1 than is currently available.

Based on projected population growth on Oahu, expected additions to the supply of retail space, and the Manana and Pearl City Junction overall suitability for retail development, the Market Assessment (Appendix A) estimated that retail components

of the conceptual plan can be expected to capture between 20 percent and 40 percent of Oahu's additional retail space requirements during the next ten years. This translates into absorption of raw land for commercial purposes ranging between three and six acres per year. Full absorption of the commercial retail component of the plan can be expected within eight years.

The absorption period for the 13.8-acre Pearl City Junction parcel has been estimated to be one year, representing significantly faster absorption than for other components of the Master Land Use Plan. This is due primarily to the site's physical attributes, such as attractiveness, visibility, and access.

2.4.2.1 Retail

The demand for retail space on Oahu is driven primarily by population increases and increases in per capita retail spending. For example, retail spending on Oahu totaled \$4.3 billion, or \$5,000 per person, in 1992. Sales at retail facilities in Hawaii with three or more stores have averaged \$180 per square foot over the past several years.

Retail space within the State of Hawaii, presently totals approximately 17.1 million square feet. Most of this retail space, some 9.7 million square feet, is located in facilities with fewer than 200,000 square feet. Due to the large number of individual facilities involved, accurate statistics are only available for the larger shopping centers with more than 200,000 square feet of leasable space which totals approximately 6.8 million leasable square feet. In recent years, Oahu has been considered an "under retailled" market, meaning that the market could support additional retail development.

In the past few years, a number of national retailers, perhaps recognizing that the Oahu market was "under retailled", have developed new stores on the island. This so-called "retail revolution" on Oahu, peaked in 1993 with the openings of the Waialeale Center and Pearl Highlands Center in the vicinity of the project sites. These projects added over 1.1 million square feet of leasable square footage to the existing retail market.

2.4.2.2 Office

Presently, there is over 12.5 million square feet of office space on Oahu, of which 10.0 million square feet is located in downtown Honolulu, the Kapiolani Boulevard corridor, and Waikiki. The remainder of the space located in several suburban markets (including the Manana and Pearl City Junction properties) have a total of 2.5 million square feet of space. The island-wide vacancy rate for office space is approximately 12.7 percent, while the downtown vacancy rate is higher at 16.8 percent.

During the late 1980s and early 1990s, downtown Honolulu's office market was one of the tightest in the nation, with downtown vacancy rates typically around three percent at a time when many mainland markets were experiencing vacancy rates in the 15 percent to 20 percent range. Since that time however, a decline in the economy and new office building development has contributed to the present high downtown vacancy rates. The downtown

market is expected to remain soft in the next few years, as the First Hawaiian Center scheduled to open in late 1996, will introduce another 418,000 square feet of leasable space to the market.

In the Pearl City suburban market area, vacancy rates of 9.5 percent are being experienced. In addition, the Market Assessment indicates that demand for additional space cannot be accommodated by current vacancies or planned additions to supply.

The market area currently contains approximately three percent of the island's inventory of available space. Capturing three percent of the market area's current share of the total market, would translate into future demand for an additional 67,000 square feet of space. Consequently, although market support for office space development at the Manana property appears to exist, it is expected to be a relatively small component, since office space in the suburban markets will continue to serve primarily the needs of the surrounding community. Absorption of commercial office space is expected to occur concurrently with the projected eight year absorption period projected for the retail commercial component.

2.4.3 Light Industrial/Business Park

Oahu presently has 32,835,000 square feet of industrial space, which includes land used for manufacturing as well as warehousing. Until recently, space was tight on the island with users often forced to occupy sites that did not adequately serve their needs. Therefore, as the island's population and economy have grown, industrial land located close to Honolulu's urban core has been converted to other uses. Between 1985 and 1995, the vacancy rate for industrial property on Oahu ranged between 1.4 percent and 7.1 percent, averaging 3.5 percent. The highest vacancy rates were in 1994 and 1995, at 7.0 percent and 7.1 percent, respectively.

Based on projections of future industrial employment and the historical relationship between industrial employment and occupied industrial space, Oahu is expected to require new industrial space over the next ten years. Due to the Manana property's location and improved access to the site provided by the planned extension of Moanalua Road, industrial space at Manana can be expected to capture 20 percent to 40 percent of the future annual demand for industrial space. Absorption can be expected to range between four and nine acres per year. Accordingly, the 29 acres proposed for in the light industrial/business park component of the Master Land Use Plan, can be expected to be fully absorbed within eight years.

2.4.4 Family Entertainment Center

Although many commercial developments currently have an entertainment component, there are currently no facilities on Oahu geared exclusively toward entertainment and commercial recreation, although multi-screen movie theaters were added to Kahala Mall, Pearlridge Center and Restaurant Row years after the centers were originally built. Similarly, other recreational uses such as miniature golf have been retrofitted into projects separate from other recreational facilities. Examples of this trend include Jungle River Mini Golf in Aiea and Hilton Hawaiian Village Mini Golf in Waikiki.

The family entertainment center envisioned for the project, would house a variety of recreational uses, providing multiple entertainment experiences to customers in one location. Examples of elements of such a family entertainment center could include:

- Movie Theaters
- Golf Driving Range
- Miniature Golf
- Batting Cages
- Video Games/Redemption Games
- Simulation Rides
- Playroom (Discovery Zone type facility)
- Family Restaurants

While the various components of such a family entertainment center currently exist in various separate locations around Oahu, bringing these uses to a single entertainment destination will allow for multiple activities during one visit. From a customer's perspective such an entertainment destination would be preferable to a facility offering a single entertainment experience, because opportunities to partake in more than one recreational activity are numerous. For this reason it is believed that market support exists for a facility providing space for currently existing, but geographically separated recreational businesses. Due to the unique character of such a development, it is believed that the 14-acre family entertainment center would absorb separately from the other commercially-zoned land in the subject property. As such, full absorption can be expected to take five years.

2.5 Development Timetable

Construction phasing of the proposed land uses will likely respond to market demand and logical extensions of required infrastructure. Preliminary market indicators project a final buildout requiring approximately 5 to 10 years.

Final determination of land use types, densities, development timetable, and projected costs will be identified during the entitlement review process and as market conditions evolve in the future.

2.6 Approximate Infrastructure Costs

Preliminary construction cost estimates prepared during the early planning stages for the project estimated the total development cost of infrastructure at approximately \$14,200,000 dollars. On-site improvements were at \$8,200,000, off-site at \$2,700,000, and land condemnation/purchase with roadway improvements at \$2,000,000. A 10 percent contingency at \$1,300,000 was also included in the estimate.

3.0 EXISTING LAND USE ENTITLEMENTS, REQUIRED APPROVALS AND PERMITS

3.1 State of Hawaii

Land use regulation by the State of Hawaii is controlled primarily by the State Land Use Commission which classifies all land as Urban, Agricultural, Rural, or Conservation District lands. According to Chapter 205, Hawaii Revised Statutes (HRS), land use decisions within Urban District lands are generally left to the counties to control in accordance with local

General Plans and zoning ordinances. Both the Manana and Pearl City Junction parcels are located within the State Land Use Commission's "Urban" district. As such, land uses are controlled by the City's General Plan, Development Plan and Land Use Ordinances. No action from the State Land Use Commission is required to implement the proposed Manana and Pearl City Junction Development.

3.2 Existing City and County of Honolulu Land Use Entitlements

3.2.1 Primary Urban Center Development Plan Land Use Map

According to the City's Primary Urban Center Development Plan Land Use Map, both the Manana and Pearl City Junction parcels are presently designated as "Military". This designation is in keeping with the previous military ownership and warehousing land uses already established when the Development Plan Land Use Maps were prepared.

3.2.2 Primary Urban Center Development Plan Public Facilities Map

The Primary Urban Center Development Plan Public Facilities Map is utilized by the City to adequately plan for future public expenditures and capital improvements. For the Manana and Pearl City Junction parcels, each are designated as Government Building (GB). In addition to the GB designation for Manana, a "P" or Park symbol has been added to the map designating development of a community park within six years.

3.2.3 Zoning (Land Use Ordinance)

All military land on Oahu is designated as F-1 Military by the Land Use Ordinance and zoning maps. This classification transfers most land use control to military authorities. However, if military land ownership is transferred to City ownership, the F-1 designation automatically reverts to the Preservation zoning classification.

3.3 Other Required Permits

The following is an approximate list of major approvals and permits required for the implementation of the Master Land Use Plan. From the earliest stages of the planning process, the City has worked with all affected City agencies to obtain their comments and necessary approvals of plans and specifications.

<u>Permit or Approval</u>	<u>Authority</u>
Environmental Impact Statement (EIS)	Planning Department
PUC Development Plan Amendment	City Council/Mayor
PUC Public Facilities Map Amendment	City Council/Mayor
Change of Zoning	City Council/Mayor
Subdivision Approval	DLU/Public Works
Building/Grading Permit	BD/Public Works
NPDES	State Department of Health
Archaeology Report Review	State Historic Preservation Division
Noise Permit(s)	State Department of Health
Hazardous Materials Review	State Department of Health

4.0 ASSESSMENT OF THE EXISTING NATURAL ENVIRONMENT, POTENTIAL IMPACTS AND MITIGATIVE MEASURES

In general, the subject property is not located in an environmentally sensitive zone such as floodplain, tsunami zone, erosion prone area, geologically hazardous land, estuary, potable groundwater recharge area, coastal water, or area of sensitive flora and fauna habitat.

The primary environmental characteristics of concern to the community are the impacts typically associated with new urban development on lands adjacent to existing residential development. During construction, mitigation measures will be necessary to reduce air and noise impacts. New structures will be designed to be compatible with the surrounding residential community.

4.1 Climate

The average annual rainfall of the area is less than 30 inches. Monthly rainfall measured at the nearest rain gauge station, which is in Waipahu, generally ranges between 2 to 5 inches. Average monthly temperature ranges from 60 to 90 degrees Fahrenheit¹.

4.2 Physical Characteristics

The Manana and Pearl City Junction parcels, are located just inland of the Pearl City Peninsula on the Pearl Harbor Plain. The majority of the soil in this area was developed from alluvium deposited on the coral reefs that formed when sea level was higher than the present level. Elevations for the mauka parcel range from 50 to 135 feet above sea level. The topography has generally gentle slopes that reach up to 7 percent in the northern portions of the mauka parcel.

No significant geological or topographical physical features are present on the property. During construction of the warehouse storage facilities and supporting infrastructure, the original topography, vegetation, and soils were significantly modified or removed by the former landowners, the U.S. Navy.

4.3 Soils

There have been three soil suitability studies prepared for Hawaii whose principal focus has been on describing the physical attributes of soils for development and the relative agricultural productivity. These three soil suitability studies are: the Detailed Land Classification, the Soil Conservation Service Soil Survey, and the Agricultural Lands of Importance to the State of Hawaii. Although the subject property has been significantly altered by previous development, the following description of original soils is being provided as baseline information that may be of value for engineering and construction purposes.

¹ University of Hawaii, Department of Geography, *Atlas of Hawaii*, Second Edition, Honolulu: University of Hawaii Press, 1983

4.3.1 Detailed Land Classification

The *Detailed Land Classification* (1965 through 1972) series was produced by the Land Study Bureau (LSB) of the University of Hawaii for each island. This series of reports were produced with the intention of developing a land inventory and productivity evaluation based on statewide "standards" of crop yields and levels of management.

The LSB land classification is a synthesis of the information found in the 1955 Soil Survey for the Territory of Hawaii as well as several other sources for data on geology, topography, climate, water resources and crops. The LSB classification system groups lands into homogeneous units called Land Types, describes their condition and environment, delineates the areas on aerial photo base maps, rates the lands on their overall quality (productivity) in relation to other land, and appraises their performance under selected alternative agricultural crops. The productivity evaluations were based on statewide standards of crop yields and levels of management at the time the classification was made.

As shown on Figure 6, the subject property is designated as urban by the Land Study Bureau and is not classified for agricultural purposes. As such, there is relatively little or no agricultural value associated with the project.

4.3.2 Soil Conservation Service Soil Survey

The Soil Conservation Service Report of 1972² series for each island was prepared by the U.S. Department of Agriculture Soil Conservation Service (SCS) and the University of Hawaii Agricultural Experiment Station. These reports are patterned after a soil classification procedure adapted for nationwide, uniform application. Soil types are ranked according to their suitability for most kinds of crops and characteristics applicable to development.

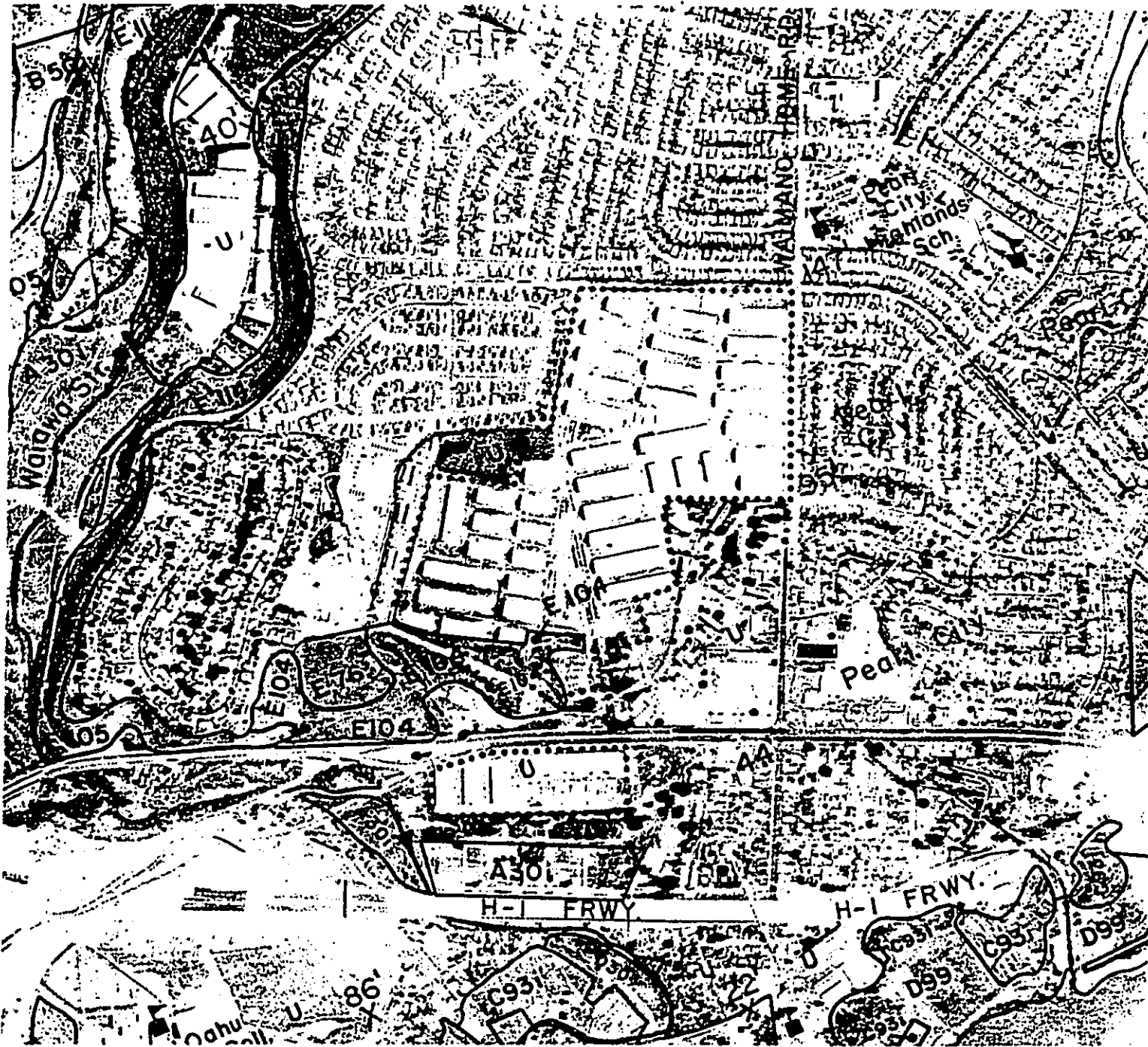
As shown on Figure 7, the original soils characteristic of the subject property are of the Kawaihapai, Lahaina, Molokai, and Waipahu Series. Specifically, the soils are classified Kawaihapai clay loam, 0 to 2 percent slopes (KIA); Lahaina silty clay, 3 to 7 percent slopes (LaB); Molokai silty clay loam, 3 to 7 percent slopes (MuB); and Waipahu silty clay, 2 to 6 percent slopes (WzB). The majority of the site is on MuB type soil.

Although the following soil descriptions are useful in determining the fundamental characteristics of soils, the extensive disruption of the soil column, mixing, compaction, and pavement of the soils has likely altered the drainage and permeability characteristics herein described.

KIA The KIA soil is found on areas of relatively smooth slopes, but also includes small areas where the slope is 3 to 7 percent. The texture is silty clay. The soil is neutral in reaction throughout the profile. Permeability is moderate,

²

U.S. Department of Agriculture, Soil Conservation Service and University of Hawaii, *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai*, State of Hawaii, August 1972



LEGEND

E104 ROCKY; VARIABLE DEPTH; 0-35% SLOPE;
WELL DRAINED

U URBAN USAGE

..... PROJECT AREA BOUNDARY

Source: Land Study Bureau, University of Hawaii-State of Hawaii, Dec. 1972.

FIGURE 6
DETAILED LAND CLASSIFICATIONS
MANANA/PCJ DEVELOPMENT
CITY & COUNTY OF HONOLULU
ISLAND OF OAHU

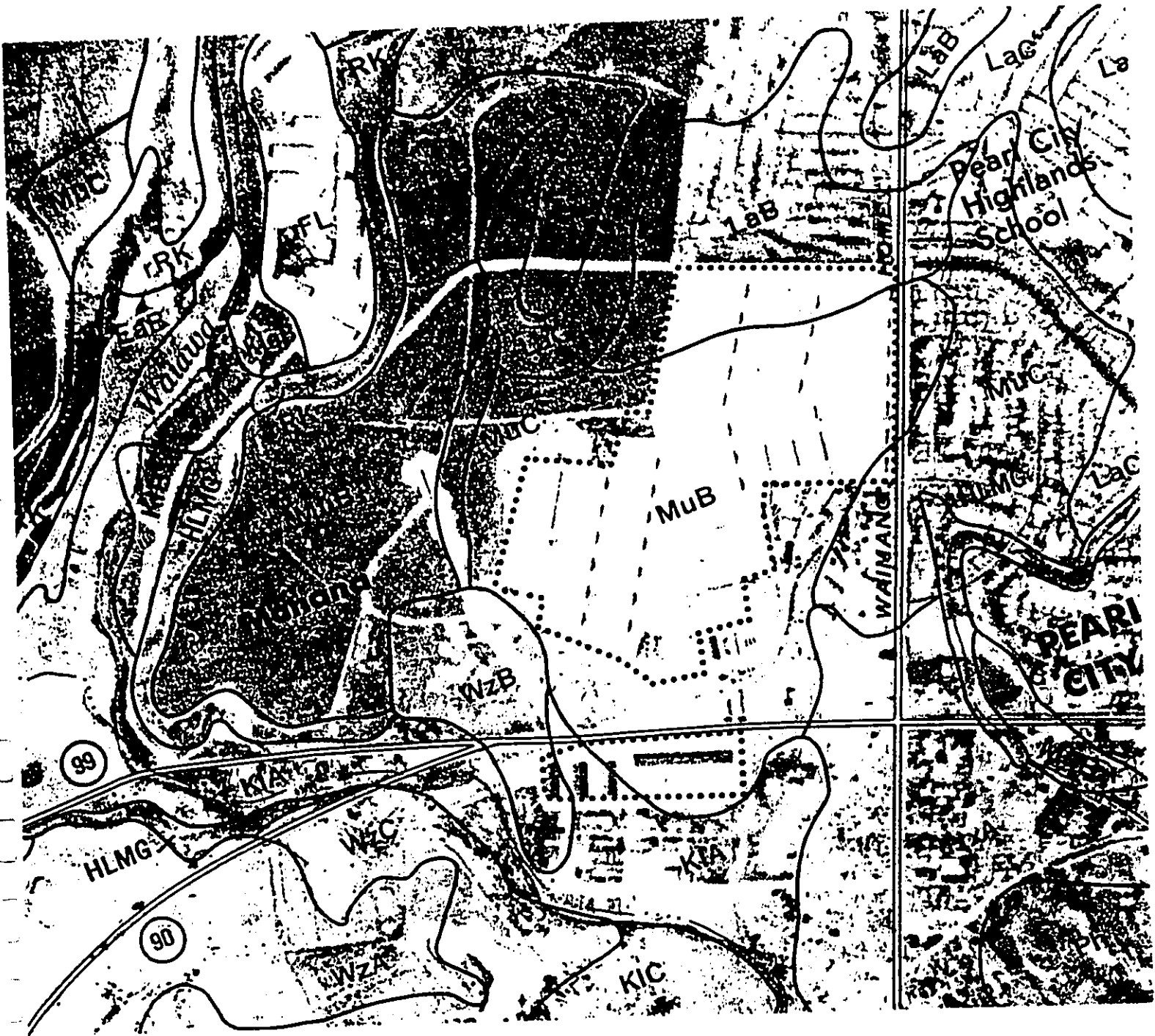
NORTH

LINEAL SCALE (FEET)

PCF
HAWAII

PBR
HAWAII

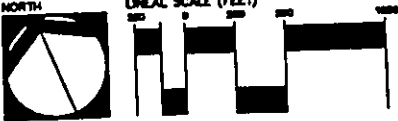


DATE: 11/14/80



LEGEND

- K1A** KAWAIHAPAI CLAY LOAM, 0-2% SLOPES
- LdB** LAHAINA SILTY CLAY, 3-7% SLOPES
- MuB** MOLOKAI SILTY CLAY LOAM, 3-7% SLOPES
- MuC** MOLOKAI SILTY CLAY LOAM, 7-15% SLOPES
- WzB** WAIPAHA SILTY CLAY, 2-6% SLOPES
- PROJECT AREA BOUNDARY

Source: U.S. Dept. of Agriculture, Soil Conservation Service & University of Hawaii, Aug. 1972.

FIGURE 7
SOIL SURVEY
MANANA/PCJ DEVELOPMENT
 CITY & COUNTY OF HONOLULU
 ISLAND OF OAHU
 NORTH LINEAL SCALE (FEET)



 DATE: 11/18/75

runoff is slow, and the erosion hazard is no more than slight. The available water capacity is about 1.8 inches per foot in the surface layer and about 1.6 inches per foot in the subsoil.

- LaB LaB soil is generally located within upland areas with slight slope. Cobblestones are common on the surface in a few places. Near the coastal plains, the profile contains fragments of coral, stones, gravel, or sand. These soils are medium acid in the surface layer and slightly acid to medium acid in the subsoil. Permeability is moderate, runoff is slow, and the erosion hazard is slight. The available water capacity is about 1.3 inches per foot in the surface layer and about 1.4 inches per foot in the subsoil.
- MuB Runoff is slow to medium and erosion hazard is slight to moderate. Areas included were a few small parcels that are eroded to soft, weathered rock. Also included were small areas of dark reddish-brown silty clay loam that overlie fine-textured, gravelly alluvium and small areas of dark reddish-brown silty clay soils that have a mottled subsoil.
- WzB Runoff is slow and the erosion hazard is slight. The soil developed in old alluvium derived from basic igneous rock and are found on the marine terraces of Oahu. This soil generally is used for sugarcane and homesites.

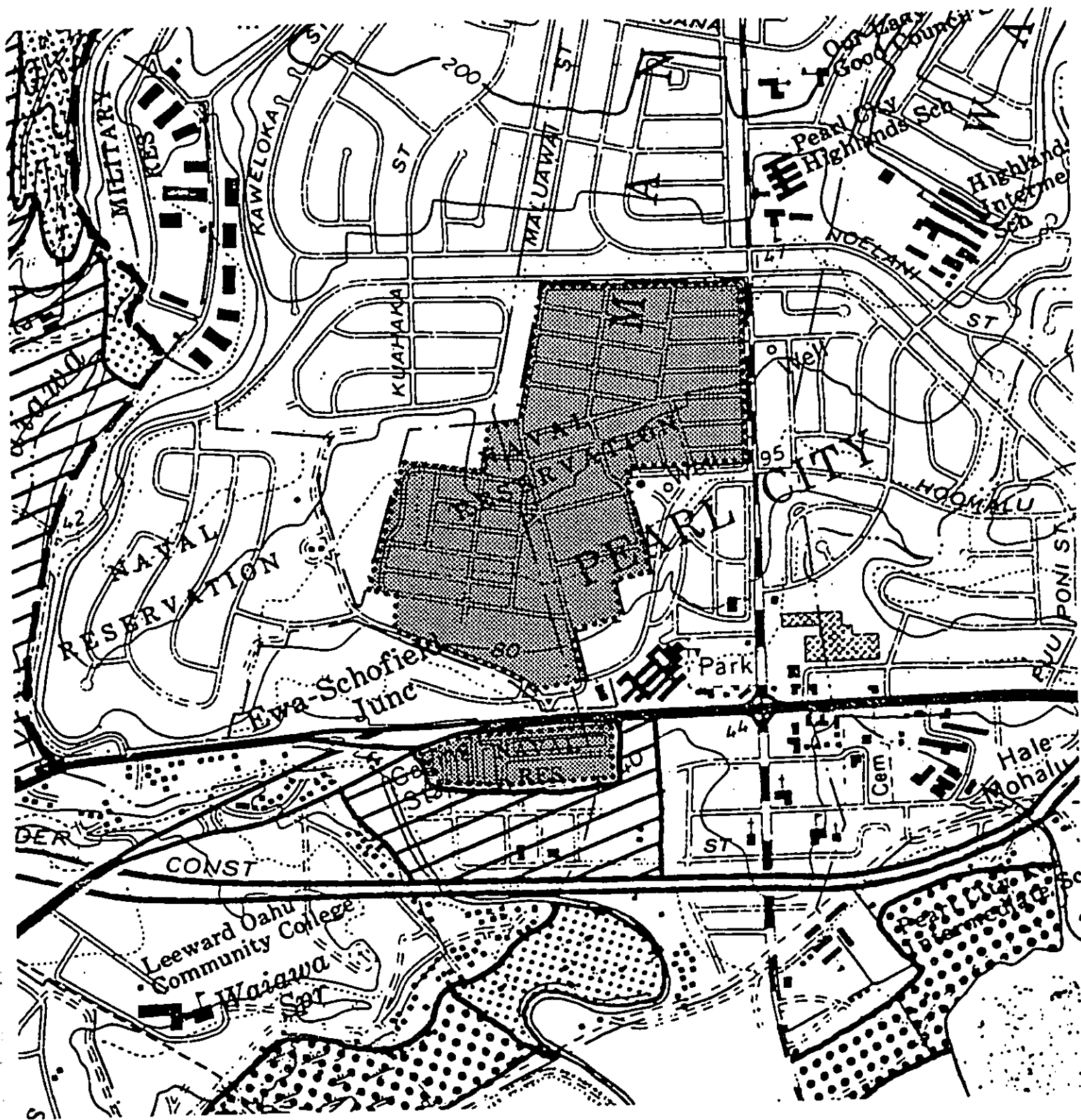
4.3.3 Agricultural Lands of Importance to the State of Hawaii

The *Agricultural Lands of Importance to the State of Hawaii* (ALISH) (1977) system was also prepared for the entire state, based on criteria established by the Soil Conservation Service. "Prime Agricultural Land" is defined as "...land best suited for the production of food, feed, forage, and fiber crops. Two other classes of land used by the ALISH system are "Unique Agricultural Land" and "Other Important Agricultural Land". Both describe successively less productive soils. However, because the subject property is highly urbanized and the original agricultural properties of the soils have been extensively altered, the Manana and Pearl City Junction sites are located on lands that are unclassified by the ALISH system map³ (refer to Figure 8).




4.4 Agricultural Impact

As described above, the Manana and Pearl City Junction parcels have been extensively modified by previous urban-type development and are surrounded by urban land uses. Compared to the relative abundance of other lands clearly more suited for agricultural purposes on Oahu, the subject properties do not contain the physical or economic attributes necessary for economically feasible or productive agriculture.

³ State of Hawaii, Department of Agriculture, *Agricultural Lands of Importance to the State of Hawaii: Island of Oahu*, Sheet O-9, Waipahu, Hawaii, January 1977



LEGEND

-  PRIME AGRICULTURAL LANDS
-  UNIQUE AGRICULTURAL LANDS
-  OTHER IMPORTANT AGRICULTURAL LANDS

Source: Dept. of Agriculture—State of Hawaii, Jan. 1977.

FIGURE 8
AGRICULTURAL LANDS OF IMPORTANCE
MANANA/PCJ DEVELOPMENT

CITY & COUNTY OF HONOLULU
 ISLAND OF OAHU

NORTH
 LINEAL SCALE (FEET)

PCF
 HAWAII
PBR
 HAWAII
 DATE: 11/18/76

4.5 Groundwater Resources

Although there are no potable wells located on the subject property, there are several wells in the vicinity of Leeward Community College and Middle Loch of Pearl Harbor, and makai of the H-1 Freeway. Consequently, the proposed land uses and wastewater collection and disposal system must be designed to ensure that groundwater resources are not impacted.

Because essentially all of Pearl City extends mauka of these potential water sources, it is difficult to determine where potential contamination would originate given the urban density of up-slope land uses.

4.6 Natural Hazards

The Federal Emergency Management Agency Flood Insurance Rate Map (FIRM) of March 4, 1987⁴, identifies the mauka parcel as within "Zone D" as an area of undetermined, but possible flood hazard. The makai parcel is in "Zone X" which is defined as areas outside of the 500-year flood plain. (Refer to Figure 10) As such, none of the subject property is subject to floods which may impact the design and/or location of project structures or improvements.

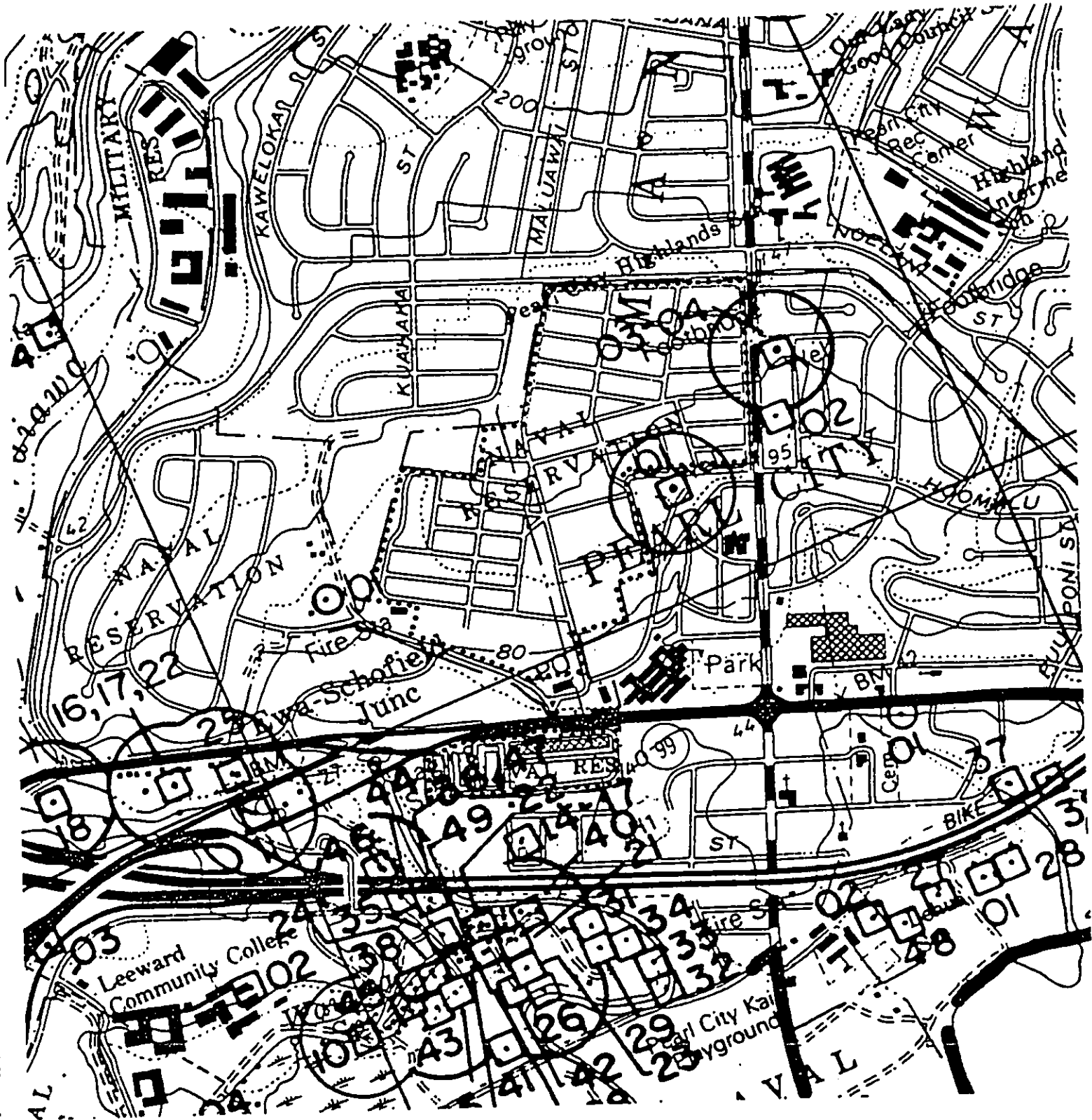
Other natural hazards such as earthquake and hurricane do potentially exist, but not to an extent greater than other locations on Oahu. For example, according to the State Office of Civil Defense, the entire island of Oahu is designated in Seismic Zone 2a. Consequently, all new structures within the project area will be designed and constructed in accordance with all building codes which are applicable to both wind and earthquake construction. Civil Defense sirens will also be provided as required with coordination from State and City Civil Defense agencies. Developers selected by the City will be reminded of their responsibility to coordinate the location and installation schedule (before buildings are substantially occupied) of civil defense sirens and directional speakers.

4.7 Flora





To identify whether there are significant botanical resources on the subject parcels, a botanical assessment study (Appendix B) was conducted to describe the vegetation on the proposed development sites and to search for threatened and endangered species as well as rare and vulnerable plants. Plant identifications were made in the field or from samples at the herbarium at the University of Hawaii for comparison with recent taxonomic literature.

Because the entire subject property has previously been extensively modified by the grading for construction of the warehouse storage facilities by the former landowner, the U.S. Navy, the original flora characteristic of the development parcels have been largely replaced with introduced weedy species and grassy lawn areas. The grassy areas on the Manana parcel are composed primarily of pitted beardgrass (*Bothriochloa pertusa*), bermuda grass (*Cynodon dactylon*), and Guinea grass (*Panicum maximum*). A sampling of the few plantings of trees and shrubs found around the warehouses include mango (*Mangifera indica*), African tulip

⁴ National Flood Insurance Program, Federal Emergency Management Agency, *FIRM Flood Insurance Rate Map: City and County of Honolulu, Hawaii*, Community Panel Number 150001 0065 B, Inset N, September 4, 1987



LEGEND


-  Underground Injection Control (UIC) line
-  Injection well
-  Drinking source
-  Other well

Source: Injection Control Line Map, District Map O-9, Department of Health, State of Hawaii, July 6, 1984

FIGURE 9
UNDERGROUND INJECTION CONTROL LINE
MANANA/PCJ DEVELOPMENT

CITY & COUNTY OF HONOLULU
 ISLAND OF OAHU

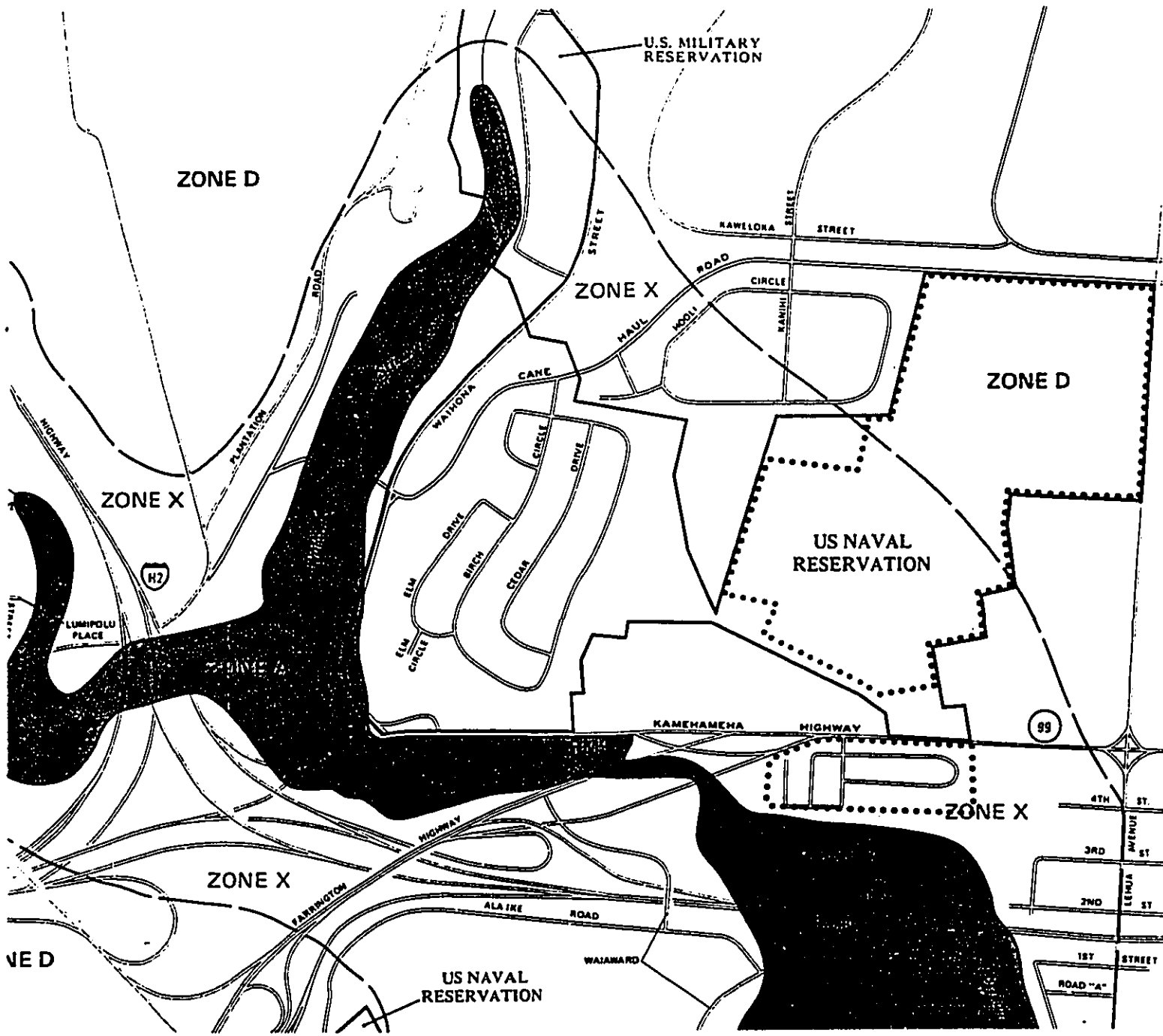
NORTH LINEAL SCALE (FEET)



PCF
 HAWAII

PBR
 HAWAII

DATE: 11/18/80



LEGEND

- ZONE A 100-YEAR FLOOD AREA;
NO BASE FLOOD ELEVATION DETERMINED
- ZONE D AREAS IN WHICH FLOOD HAZARDS
ARE UNDETERMINED
- ZONE X AREAS DETERMINED TO BE OUTSIDE
500-YEAR FLOOD PLAIN
- FLOOD BOUNDARY
- ZONE D BOUNDARY
- PROJECT SITE BOUNDARY

Source: FEMA, revised Sept. 4, 1987.

FIGURE 10
FLOOD INSURANCE RATE MAP
MANANA/PCJ DEVELOPMENT
 CITY & COUNTY OF HONOLULU ISLAND OF OAHU
 NORTH LINEAL SCALE (FEET)

(*Spathodea campanulata*), Plumeria, avocado (*Persea americana*), banana (*Musa*), and coconut (*Cocos nucifera*). A small vegetable garden was also identified.

Vegetation on the Pearl City Junction parcel is similar, composed of various grasses, coconut palms and *Ixora* hybrid shrubs found near the main gate.

Only one native species, the 'uhaloa or hi'aloa (*Waltheria indica*) was found on the project site. According to Appendix B, this species is presumed to be an indigenous species, native to the Hawaiian Islands and throughout the tropics.

None of the plants found during the field study is a listed, proposed, or candidate threatened and endangered species, nor is any plant considered rare and vulnerable. According to the botanical study, "the site has been so greatly disturbed by past human activities, there are no remnants of any native plant-dominated vegetation types left on the site." In addition, "there are no botanical reasons to impose any restrictions, conditions, or impediments to the proposed project."

During and after project buildout, the urban landscape associated with the proposed Master Land Use Plan will establish a much more diverse assortment of flora species than is currently present on the property. In addition to the aesthetic values created by the urban landscape, its diversity will also contribute to the establishment of new habitat for birds and other animals. As such, no mitigation measures are necessary, although the botanical survey does recommend that native dry, lowland species be used for landscaping some of the common areas.

4.8 Fauna

A faunal survey for the Manana and Pearl City Junction parcels (Appendix C) was conducted to document the bird and mammal species occurring on the property, the abundance of each species, presence of native fauna that may be considered "Endangered" or "Threatened", and if habitats important to native wildlife exist on the properties.

Generally, the survey found that fauna on the property is primarily comprised of the typical assortment of feral mammals including cats, dogs, and mongoose often found in most urban areas of Oahu. No endemic land birds or waterbirds were identified. Similarly, the Hawaiian Hoary Bat was not found during the survey nor is it unlikely any would utilize these properties as habitat. The Pacific Golden-Plover was identified on lawn habitats, although this species is not endangered or threatened. Most bird species observed were exotic birds previously introduced into Hawaii.

Because the entire subject property has previously been extensively modified by urban development, the native fauna habitats of the area have been replaced by the urban environment. As such, there were no endangered or threatened animal species or their habitats identified with the subject property. The faunal survey report concludes; "Habitat similar to that found on these properties occurs widely in leeward Oahu. I would not characterize these sites as unusual or extremely valuable to wildlife. Development will alter the local distribution and abundance of birds presently using the land but should have no measurable effect on the overall relative abundance of these species on Oahu."

According to their review of the DEIS, the United States Fish and Wildlife Services confirmed that "the Service does not anticipate significant adverse impacts to fish and wildlife resources" from the proposed development.

4.9 Hazardous Materials

To identify whether years of industrial use on the property resulted in improperly disposed of hazardous waste, the Navy prepared an Environmental Baseline Survey to research past practices and test the soils and buildings for contamination. This report entitled, the *Comprehensive Long-Term Environmental Action Navy (CLEAN) for Pacific Division Environmental Baseline Survey for Transfer for Manana Storage Area and Pearl City Junction* (hereinafter "Report"), identified potential hazardous environmental conditions on the subject properties.

According to the Memorandum of Understanding (MOU) with the U.S. Navy, the Navy is to "deliver the property to the City free of all surface and subsurface hazardous materials" and is "responsible for the remediation and costs thereof for any and all hazardous wastes, which are directly or indirectly related to the Navy's prior use or ownership of the subject parcels."

The survey evaluated the mauka (Manana) property for hazardous materials in three sections identified as Parcels A, B, and C. The following summarizes the major findings of the report.

Manana Storage Facility

- a. Manana Parcels A and C were found "suitable for transfer in accordance with the August 1993 Memorandum of Understanding. Parcel B may also be transferred prior to June 1996 if the hazardous substances identified in the Report are removed on schedule and conveyance documents duly recorded.
- b. Two environmental concerns associated with warehouse structures (which will be removed) were identified in the Report; 1) friable and non-friable asbestos was documented in the roofing tar and floor tiles of 28 warehouses, and 2) lead-based paint is assumed present throughout the project site.
- c. Appropriate mitigation measures will be implemented during demolition to comply with the applicable State and Federal standards in place at the time, regarding the removal and disposal of asbestos and lead-paint.
- d. According to the Memorandum of Understanding "The Navy is responsible for all cleanup of building interiors." In addition, "The Navy shall be responsible for the remediation and costs thereof for any and all hazardous waste, including petroleum based pollutants, which are directly or indirectly related to the Navy's prior use or ownership of the subject parcels."

Pearl City Junction

- a. At Pearl City Junction, the top 10 inches of soil must be removed and disposed of if PCB's and dieldrin are found in the soil layer. This layer should then be replaced with "clean" soil and the property used for commercial purposes.

The necessary clean-up at Pearl City Junction has been conducted by the Navy since the Report was issued. Based on the above discussion, no additional clean-up activities are required except for the normal procedures associated with asbestos and lead paint removal required in accordance with State and Federal regulations during demolition of the warehouse structures. To date, the Navy has removed the friable asbestos containing material/items from the interiors of the warehouses and identified non-friable asbestos in the roofing tar of the majority of the warehouse buildings.

4.10 Summary of Mitigation Measures

As indicated above, few potential adverse impacts to the area are expected to result from implementation of the proposed development. Short-term impacts in the initial construction phase will require on-site grading, trenching, and movement of vehicles within the project site. These activities will generate localized noise and dust during construction periods. Mitigation measures to minimize adverse air quality would include frequent watering of unpaved roads and construction areas, dust screens, mulching and planting of ground cover and other vegetation as soon as possible after construction. Construction activities would comply with all applicable noise control regulations of the City and Department of Health.

Long-term impacts from the development of the Manana property are expected to produce minimal impacts to the adjacent residential property owners. The proposed project is not expected to have any impact on the micro climate of the project area or region. Planned structures would not be tall enough to significantly effect existing wind patterns; and new landscaping will not significantly effect temperature, although some localized cooling can be expected to result from the establishment of landscaping. No specific or predominate natural feature is visually associated with the project site.

Recommended mitigation measures include the following:

Short term:

- Removal of existing warehouse structures in accordance with applicable State and Federal requirements.
- Frequent watering during construction and demolition activities to maintain dust control.
- Grassing of swales and sodding as soon as practicable once grading has been completed.
- Wind screening as appropriate to limit fugitive dust.
- Development of public facilities appropriate to the early phases of development.
- Restricting use of construction equipment to daylight hours.
- Establishment of on-site drainage retention basins during construction to mitigate soil erosion and off-site runoff.

- Reduction of construction time in accordance with market conditions to limit the amount of noise and dust associated with project construction.

Long term:

- Establishment of extensive landscaping to maintain long-term air quality and aesthetically integrate the Master Land Use Plan into the surrounding neighborhood.
- Creation of landscape buffers, where appropriate, between areas of high and low intensity land uses to reduce noise and glare within residential areas.
- Use of appropriate engineering, design and construction measures to ensure adequate drainage and irrigation of the site.
- Construction of transportation improvements to mitigate traffic generated by the Master Land Use Plan.

5.0 ASSESSMENT OF EXISTING HUMAN ENVIRONMENT, POTENTIAL IMPACTS AND MITIGATIVE MEASURES

5.1 Archaeological and Historic Resources

To identify whether the presence of archaeological or historic resources exists on the Manana and Pearl City Junctions parcels, an archaeological assessment was conducted in July, 1995. This assessment included a thorough search of the historic record of previous archaeological work, myths and legends, pre and post-contact history, and land use.

Historically, the subject parcels were being cultivated for dryland crops during the mid 1800's and some house lots were also established. By 1899, sugar had become a profitable venture and portions of the Pearl City Junction site were cultivated by the Honolulu Plantation. During World War II, the parcels were converted to warehouse use by the U.S. Government for military purposes.

Due to the extensive grading and other modifications conducted on the property associated with previous agricultural and military use, the Archaeological Assessment concludes that "there is little reason to believe significant historic sites remain in the project area." To confirm this assessment, a field inspection was conducted to determine if there were any areas not affected by post-contact activities. No archaeological or cultural sites were identified during the field check or are known to exist on the subject property.

The archaeological assessment concludes: "The findings of this assessment indicate no significant historic sites are present in the project area and it is recommended that no further archaeological work be required for this property."

During any development activity involving the extensive modification of the land surface, there is always the possibility, however remote, that previously unknown or unexpected subsurface cultural features, deposits or burials might be encountered. Should any archaeologically significant features be uncovered, immediate archaeological consultation will be sought with the Department of Land and Natural Resources State Historic Preservation Division in accordance with applicable regulations.

5.2 Roadways and Traffic

To assess the impact of the proposed project on area traffic patterns and levels of service, a traffic impact analysis was prepared for the Manana and Pearl City Junction Development (Appendix E). The general purpose of the study was to estimate future traffic demands both with and without development of the proposed project. Assumptions were also made regarding proposed improvements that would be inherently provided by the plan and preparation of recommended mitigation measures applicable to the project were prepared.

Existing Conditions

Access to the Manana parcel will be from Kamehameha Highway by Acacia Road and/or Waimano Home Road at the mauka end of the property. Access to Pearl City Junction will be via Kamehameha Highway. Currently, traffic from Kamehameha Highway must turn onto the two-lane Acacia Road at the signalized Kamehameha Highway/Acacia Road intersection to access the mauka parcel. After development, the Master Land Use Plan calls for a through road connecting Acacia with Moanalua Road at an intersection with Waimano Home Road. Current access from either parcel to the H-1 Freeway, traveling east or west, is not direct and requires extended drives down Kamehameha Highway or Moanalua Road to access freeway on-ramps.

To assess existing traffic generation, known regional developments were cumulatively evaluated to project overall increases in future traffic. For example, Pearl Highlands Center was assumed to be fully occupied. This analysis determined a growth factor of 8.25 percent to be used in projecting the growth in regional traffic.

Proposed

As depicted in the proposed development plan, Moanalua Road offers an opportunity to continue the existing circulation pattern through the project area to Acacia Road at an intersection opposite the Kuala Street. Intersection improvements providing for a left turn into the Pearl City Junction site from Kamehameha Highway will also be provided by the selected developer of Pearl City Junction after coordination with the Department of Transportation Services and State Department of Transportation.

The extension of Moanalua Road, also referred to as the "Spine Road", is envisioned as a landscaped parkway that would provide access to the project area and also serve as an alternate route to Waimano Home Road. Conceptually, the Spine Road is planned as an 80-foot right-of-way with a curb width of 64 feet, which is also sufficient for a bikeway. Moanalua Road would not be directly extended to Kuahaka Street, but would continue as the Spine Road through the project site to Acacia Road. Access would be provided between Moanalua Road and Kuahaka Street by a "connector" roadway, but the extension of Moanalua Road is not envisioned as a continuous roadway to Kuahaka Street. This alignment was planned to help reduce traffic congestion at the Waimano Home Road/Kamehameha Highway intersection.

Other major internal roads consist primarily of two loop roads to service the proposed light industrial area. The actual alignment of these roadway, however, will be determined by project developers with coordination from the City's Department of Transportation Services.

To serve the proposed business/industrial park areas, secondary roadways would also be developed. From these secondary roadway systems, there is the potential to provide improved ingress and egress to and from the Post Office at the intersection of Acacia Road and Kamehameha Highway, and the possibility of a new roadway access to Manana Kai Neighborhood Park also exists if the developer agrees. In addition, the Master Land Use Plan provides the potential future connection of the Moanalua Extension Road to Kuahaka Street via the old Cane Haul Road right-of-way to improve access to the Holiday City and surrounding neighborhoods. This extension would provide a more direct access to the proposed "Spine Road"/Moanalua Road from the neighborhoods and could alleviate the congestion at the intersections of Noelani Street and Moanalua Road with Waimano Home Road.

The proposed bus facility is also planned which will accommodate a maximum of approximately 250 buses. Although at this conceptual level of the planning process, the number of buses or the physical components of the facility have not been established, the Traffic Impact Analysis Report (TIAR) includes a preliminary assessment of the estimated bus trip generation, which as been included as Appendix E.

Traffic Impact Analysis Report (TIAR)

To identify the implications of the various vehicular access options and off-site impacts to the area transportation system, a traffic study based on the PCTF preferred conceptual plan (Appendix E) was prepared which identified potential mitigation measures required for area roadways and intersections. A summary of the findings of the Traffic Impact Analysis Report are as follows:

- Existing intersections operate reasonable well during the AM peak hour of traffic. The lowest Level of Service (LOS) conditions ("E") exist on the makai bound left turn movement from Waimano Home Road to Koko Head bound Moanalua Road and on the mauka bound through/right turn movement on Waimano Home Road. During the PM peak hour, the intersection of Kamehameha Highway and Waimano Home Road operates at an overall LOS "E", however the critical traffic movements at the intersection operate at LOS "F". The left turn movement from makai bound Acacia Road to Koko Head bound Kamehameha Highway also operates at LOS "E".
- Without project development, the TIAR assumed a growth factor of 8.25 percent to estimate the growth of background traffic from the existing conditions to the Year 2006. This level of growth was derived from traffic projects presented in the Oahu Regional Transportation Plan prepared by the Oahu Metropolitan Planning Organization.
- Without project development during the AM peak period, the intersection of Kamehameha Highway and Waimano Home Road will exceed the intersection's carrying capacity. Capacity conditions during the AM peak may also be approached at the Hoolaulea Street and Moanalua Road intersection. During the PM peak period, the Kamehameha Highway intersections with Acacia Road and Waimano Home Road are expected to exceed their respective capacities. The critical traffic movements at the intersection of Kamehameha Highway and Waimano Home Road/Lehua Street are expected to operate at LOS "F".

- With project development and the proposed transportation improvements afforded by the development plan (as described in the TIAR), the AM peak hour traffic operation at the intersection of Kamehameha Highway and Waimano Home Road will be significantly improved from LOS "E" to LOS "D". Side street and driveway access along Waimano Home Road will also be improved as well as its intersection of Moanalua Road. PM peak hour traffic at the intersection of Kamehameha Highway and Moanalua Road will continue to operate at LOS "F", but with improvement of the volume to capacity (v/c) ratio. Similarly, the intersection of Kamehameha Highway and Acacia Road will remain at LOS "E", but the v/c ratio will slightly improve.
- A summary of the proposed traffic impacts is presented as Table 3 of the TIAR, Appendix E.

Mitigation Improvements

In addition to the improvements to the traffic LOS inherent in the design of the proposed Manana and Pearl City Junction Development, other recommended roadway improvements were identified in the TIAR. A summary of the roadways recommended for further improvement are as follows: (The complete listing of recommended roadway improvements is provided in the TIAR.)

- Spine Road** - Four-lanes and exclusive left turn lanes. This road is planned with an 80 foot right-of-way which has a curb-to-curb width of 64 feet. A bike way will also be considered.
- Former Cane Haul Road** - Connect to Spine Road from Kuahaka Street with a stop controlled T- intersection. Moanalua Road would not be directly extended to Kuahaka Street, but would continue as the Spine Road through the project site to Acacia Road. Access would be provided between Moanalua Road and Kuahaka Street by a connector roadway, but the extension of Moanalua Road is not envisioned as a continuous roadway to Kuahaka Street.
- Intersection of Waimano Home Road and Moanalua Road/Spine Road** - Upgrade traffic signals to eight phase system and add a fourth lane approach to the Ewa bound Moanalua Road at Waimano Home Road intersection.
- Intersection of Waimano Home Road and Noelani Street** - Remove traffic signals and make Noelani Street stop-controlled at Waimano Home Road. Also restrict Noelani Street to right-turn-in and right-turn-out movements only. The final determination regarding the disposition of traffic signals will be made by the Department of Transportation Services which will consider the community's best interests and public safety. Presently, pedestrian crosswalks are located at the intersection of Waimano Home Road and Moanalua Road, a short block makai of Noelani Street.
- Intersection of Spine Road/Kuala Street and Acacia Road** - Signalize the intersection of Acacia Road and the proposed Spine Road/Kuala Street. Design Spine Road with exclusive left turn lane, a shared left turn/through lane, and a shared right turn/through lane. Also restripe other approaches to provide a shared left turn/through lane and an exclusive right turn lane.

- f. **Kuala Street** - Restripe Kuala Street to provide two through lanes in the makai bound direction between Acacia Road and Kamehameha Highway and prohibit parking on mauka side of Kuala Street during the PM peak hour.
- g. **Intersection of Kamehameha Highway and Kuala Street** - Provide a right turn acceleration lane from Kuala Street to Ewa bound Kamehameha Highway. Signalize intersection when warranted.
- h. **Intersection of Kamehameha Highway and Acacia Road** - Widen the Ewa bound lane of Kamehameha Highway to provide an exclusive left turn lane to the PCJ site and provide an exclusive right turn lane to Acacia Road. Both improvements can be accommodated within the existing right-of-way. Signals should also be modified.

Once more specific plans are available from project developers, the specific length of left and right-turn storage lanes will be determined including the schematic design for all major intersections. Underground conduits for signalization at major intersections will also be provided to facilitate future installation of signals when warranted. Updated studies should be provided as the project achieves buildout.

Based on the findings of the traffic study, the overall level of service in the area of the proposed project will generally improve relative to the projected conditions if the project were not constructed. Because the project will serve as an employment center, peak hour traffic will occur during the beginning and end of the work day. However, the proposed Spine Road will improve peak period traffic congestion, improve access to Pearl Highlands Center and Manana Naval Quarters, and should help to mitigate the traffic impacts resulting from the development of the Manana and Pearl City Junction Development.

At this conceptual stage of the planning process, it is anticipated that the Bus/HandiVan facility will access Waimano Home Road at the existing Board of Water Supply access driveway opposite Hoomalu Street, and also off the proposed Manana Spine Road. The community proposed Park/Youth Center is expected to have primary exclusive access from the Spine Road.

Waimano Home Road/Kamehameha Intersection

During the community based planning process, many residents expressed frustration when making a right turn movement in the existing single right turn lane from Waimano Home Road to Kamehameha Highway. Funds have been allocated by the State Legislature for adding an additional right turn lane and adjustment to traffic signals along the State Department of Transportation owned Kamehameha Highway to help mitigate the current level of congestion at this intersection. Specific improvements and their impacts to traffic patterns will be determined by the State Department of Transportation.

5.3 Noise

Existing

According to a Environmental Noise Impact Assessment Report (Appendix F) prepared for the proposed project, existing noise in the area ranges from 43.6 dBA near Manana Kai Park

to 65.6 dBA at Pearl City Junction along Kamehameha Highway. Distant noise associated with aircraft, the H-1 Freeway, and naturally occurring sounds (i.e. birds and wind) were also observed.

The off-site noise generated by heavily used transportation corridors in the surrounding area generates a steady low-level background noise which presently impacts the property. The dominant contributors to ambient noise levels in the area originate from the main traffic corridors of Kamehameha Highway, Waimano Home Road, and the H-1 Freeway.

Proposed

Generally, new development will result in increased noise levels. However, with the proposed redevelopment of the Manana and Pearl City Junction parcels, the Noise Impact Assessment Report indicates that existing noise levels along Waimano Home Road and Kamehameha Highway will actually experience a decrease in existing noise levels due to reduced traffic levels on these roadways. Only within the Manana parcel will noise levels increase above existing conditions. For example, Appendix F indicates that noise within the Manana parcel will increase by approximately 1.8 dB, but decrease 2.7 dB along Kamehameha Highway at the Pearl City Junction site.

Buildings located beyond 50 feet of the Moanalua Road ROW will be exposed to traffic noise levels which will comply with the Federal Highway Administration's recommendation for the land uses proposed. Department of Health requirements set a maximum allowable noise level of 55 dBA daytime and 45 dBA nighttime at the residential property lines adjacent to light industrial areas. For industrial uses adjacent to apartment areas, these noise levels are 60 dBA daytime and 50 dBA nighttime. Because light industrial uses often produce noise which exceeds these levels, mitigation measures will likely be required.

Mitigation

According to the Environmental Noise Impact Assessment Report, typical noise mitigation measures for stationary equipment, such as air-conditioning, ventilation equipment, refrigeration units, compressors, etc., includes mufflers, silencers, acoustic enclosures, noise barriers walls, etc. Within the light industrial area, uses proximate to residential areas may be restricted to quiet daytime operations to form a buffer zone which could potentially shield noise sensitive areas from other noisier industrial operations. Access and building orientation of repair bays within the HPTA Facility should be designed to direct noise away from residential areas. Circulation within the facility should also be directed away from residences. These restrictions could be disclosed on sale and lease documents with respect to noise sensitive areas and require compliance with the same.

Short-term construction noise will also impact off-site areas during the initial construction phase emanating from on-site grading activities and movement of construction vehicles. Construction activities would comply with all applicable noise control regulations of the City and County of Honolulu and State of Hawaii.

The use of noise suppression equipment on construction vehicles and construction curfew periods are required under the State Department of Health (DOH) noise regulations. Construction equipment will utilize required mufflers and be shut off when not operated. Other short-term noise mitigation measures recommended in Appendix F are;

- 1) No permit shall allow construction activities creating excessive noise...before 7:00 am and after 6:00 pm of the same day;
- 2) No permit shall allow construction activities which emit noise in excess of ninety-five dBA...except between 9:00 and 5:30 pm of the same day; and
- 3) No permit shall allow construction activities which exceed the allowable noise levels on Sundays and on ... certain holidays. Activities exceeding ninety-five dBA shall also be prohibited on Saturdays.

5.4 Air Quality

Existing Conditions

To determine the air quality impacts that would result from the proposed Manana and Pearl City Junction Development, an Air Quality Impact Report (AQIR) (Appendix G) was prepared which compared the existing air quality with the future air quality projected to occur from implementation of the conceptual development plan. Essentially, the AQIR analyzed the existing ambient air quality and then projected future air quality both with and without the project.

Generally, the AQIR determined that the presence of pollutants used to define air quality in the area are well below both State and Federal air quality standards. This indicates relatively high air quality inasmuch as Hawaii's standards for (CO, NO₂, and O₃) are clearly more stringent than their federal counterparts. In terms of particulate matter, air quality measured at the State Department of Health building in downtown Honolulu (there are no monitoring stations proximate to the project site) is well below State and Federal standards. However, according to the AQIR, air quality at the project area should be comparable or perhaps somewhat better given the site's somewhat lower density of development.

To determine existing levels of carbon monoxide at the intersection of Waimano Home Road and Kamehameha Highway in Pearl City, samples were taken in December 1995. The maximum concentration for any one hour period was found to be between approximately 0 and 10 milligrams per cubic meter, well within State and Federal standards. As confirmed by the January air quality sample testing, air quality in the project area is presently good, although some localized conditions such as heavy traffic at intersections, can negatively impact air quality during peak traffic periods.

Projected Conditions

To ensure that air quality continues to be high, both Federal and State standards have been established to identify ambient air quality and potential changes as they may occur in the future. At present, six parameters are regulated including: 1) particulate matter; 2) sulfur dioxide; 3) nitrogen dioxide; 4) carbon monoxide; 5) ozone; and 6) lead. Hawaii's standards are more stringent than comparable national limits except for sulfur dioxide.

As described in the AQIR, the transportation system and projected traffic levels generated by the project, are not expected to significantly alter air quality relative to the generally high air quality characteristic of the current conditions. In fact, due to the improved efficiency of the transportation system in the area due to the development of the proposed Spine Road and other transportation system improvements, the air quality in some heavily traveled locations

may actually improve compared to the current condition. In addition, although not specifically addressed in the AQIR, the close proximity of residential development to the amenities, shopping, and employment opportunities afforded by the Manana and Pearl City Junction Development is also likely to encourage pedestrian and bicycle use as an alternative to vehicular transportation.

Mitigation

Short-term impacts identified in the AQIR, indicate that it is possible that during the construction period, short-term air quality in the area may be impacted by exhausts generated from construction equipment and fugitive dust emissions during project grading. Therefore, mitigation measures will be employed during construction to ensure that soil erosion control measures are in place to reduce the quantities of both water and air borne emissions of silt and dust. Vehicular emissions must comply with State and Federal standards.

According to the AQIR, construction related erosion control measures generally consist of watering programs, covering open-bodied trucks, paving of parking areas, and establishment of landscaping to lower the potential for fugitive dust emission. The EPA has estimated that twice daily watering can reduce fugitive dust emissions by as much as 50 percent. Other short-term impacts from construction such as vehicle emissions and increased traffic should be insignificant. Some off-site emissions from batch plants and solid waste incineration at the City's electric generation plant will occur, however, these facilities are permitted by the State and must maintain acceptable levels of air emissions in accordance with permit requirements.

Although vehicular emissions within the property will increase, no other long-term air quality impacts are anticipated after project construction is completed. In those instances where air quality will decline relative to present conditions, the projected levels will still remain well within both state and federal standards. Air quality at other high traffic locations in the area will remain essentially unchanged or slightly improve, compared to current conditions due to increased efficiency of the transportation network.

5.5 Visual Resources

Existing views of the property are dominated by built features, mainly the light-colored mass of warehouse structures and surrounding chain-link fence which can be seen from surrounding streets and highways. There is essentially no landscaping and most of the existing warehouse structures are in disrepair. As such, no specific or predominate natural features are visually associated with the subject property. However, the topography and existing elevations will provide opportunities to establish interior views toward Pearl Harbor once existing structures are removed and view corridors established, especially along the proposed "Spine Road".

Once existing structures are removed, the site's topography will provide commanding views of Pearl Harbor from the upper elevations. To take maximum advantage of the visual resources which do exist, the conceptual development allows establishment of visual corridors from open space areas such as parks and the spine road.

The Manana and Pearl City Junction Development will be designed to integrate the proposed land uses into the established Pearl City community by organizing strong interrelationships between existing land forms and land use patterns. For example, because the subject

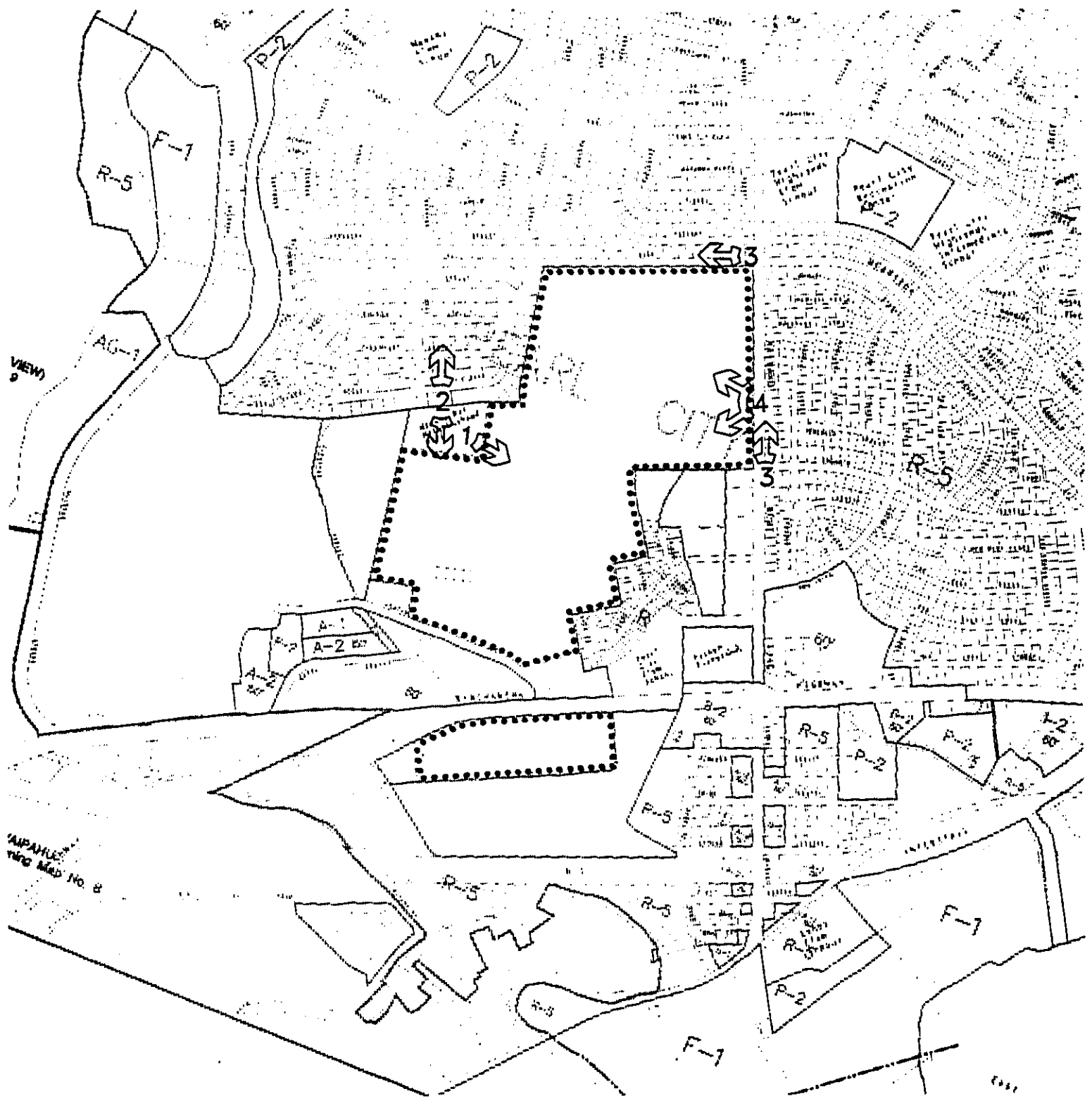


FIGURE 11
SITE PHOTOGRAPHS KEY MAP
MANANA/PCJ DEVELOPMENT

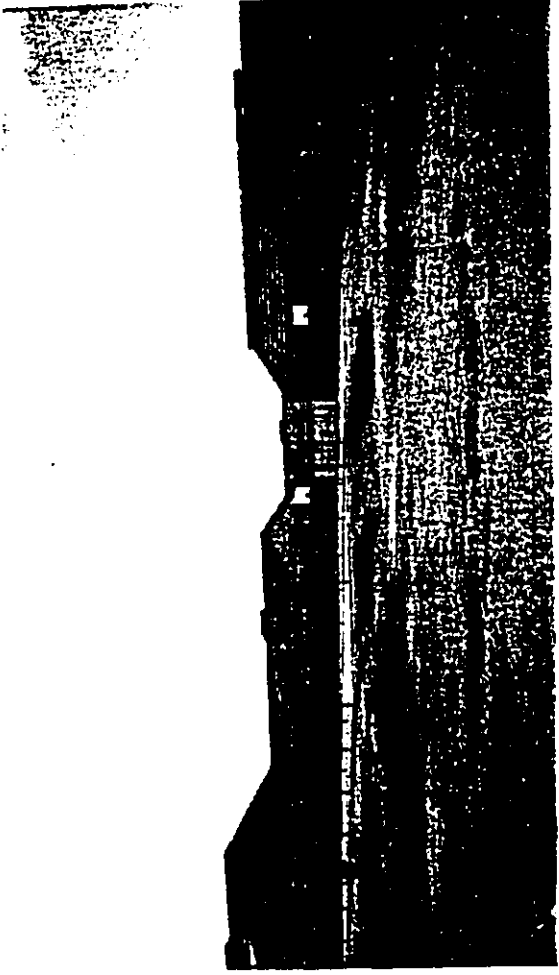
CITY & COUNTY OF HONOLULU ISLAND OF OAHU

NORTH LINEAL SCALE (FEET)

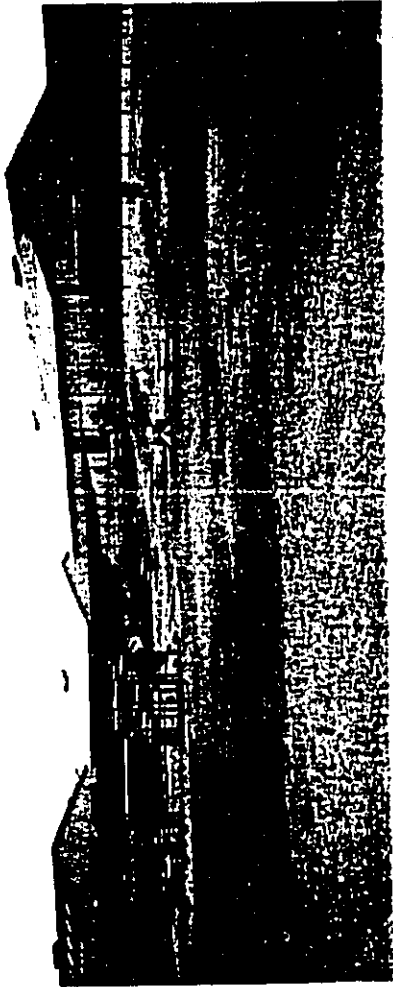
PCF
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HAWAII

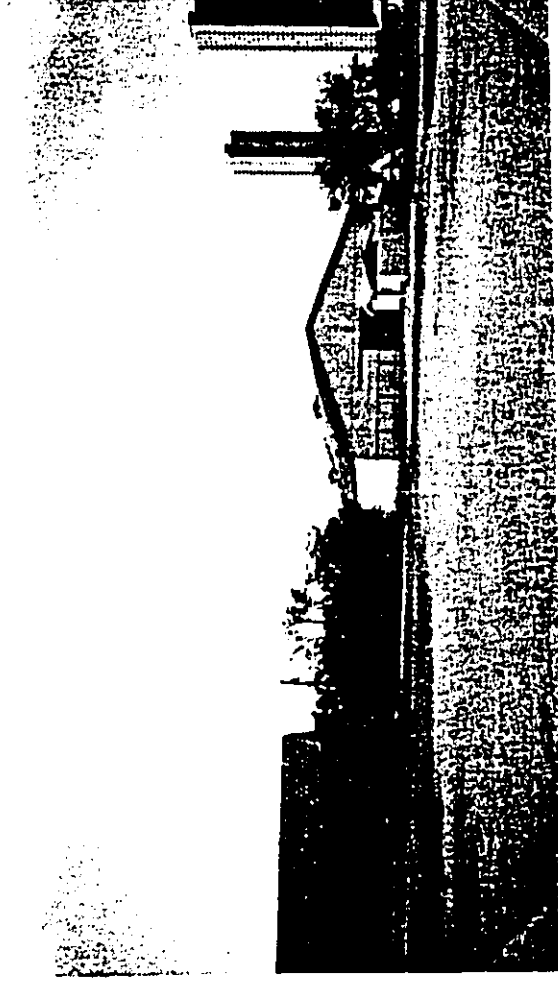
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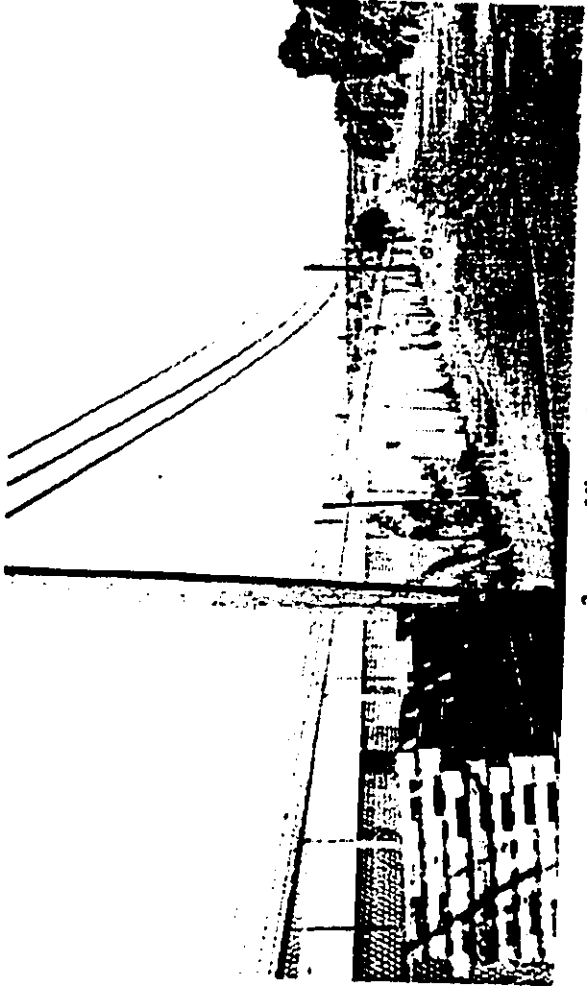


1. Views of existing warehouse structures looking makai from within Manana Kai Neighborhood Park. Note lack of landscape buffers, setbacks, fencing which restricts access into the park, and poor condition of structures.

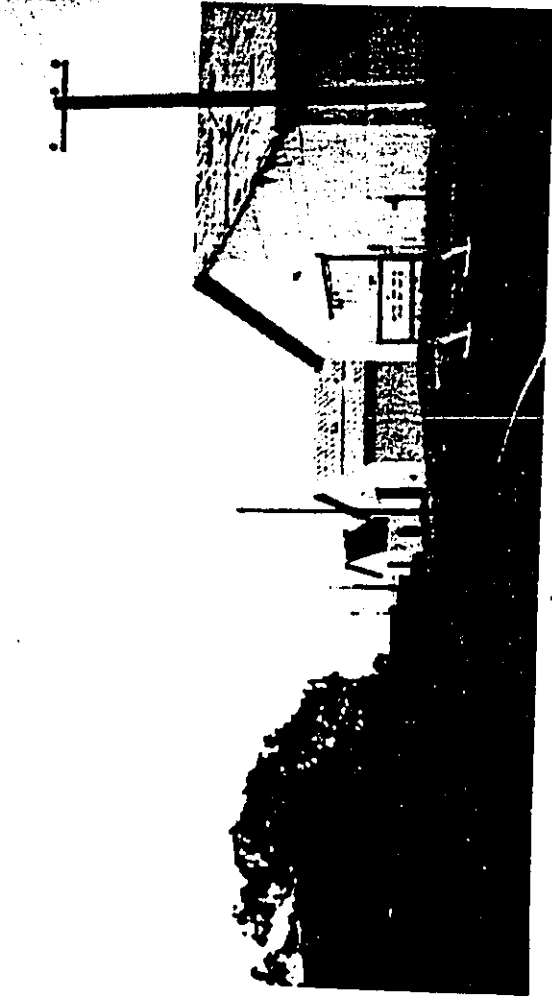
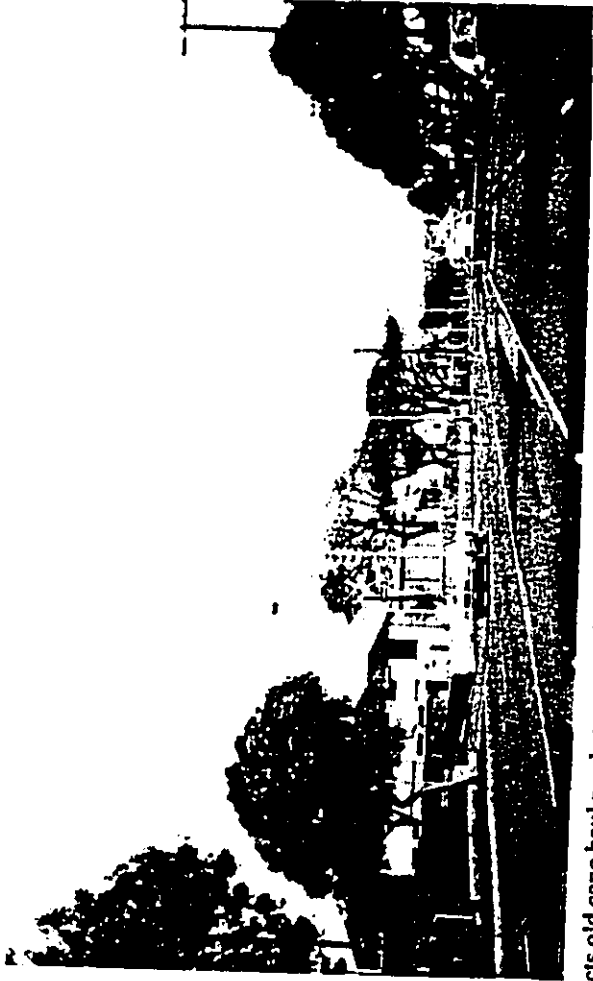


2. Makai view toward highrise apartment structures and mauka view of Manana Kai Neighborhood Park access walkway. Note mixture of apartment, warehouse, and residential land uses adjacent to the Manana parcel.





3. Views of Manana parcel boundaries. First photo depicts old cane haul road at proposed intersection of "Spine" road with Waimano Home Road. Second photo shows mauka view of Waimano Home Road. Note existing multi-family and single-family residential land uses.



4. Typical warehouse structures. Note visual impact of overhead power lines, building condition, fencing, and lack of landscaping. Generally, warehouse uses such as this are not compatible with surrounding residential development. The proposed light industrial development will be located within the property and controlled by landscape and architectural design guidelines.



FIGURE 13
SITE PHOTOGRAPHS
MANANA/PCJ DEVELOPMENT
 CITY & COUNTY OF HONOLULU ISLAND OF OAHU

property contains moderate slopes oriented toward Pearl Harbor, opportunities exist for the enhancement of visual resources and transitions between land uses with contrasting densities. Open space corridors in conjunction with the central "Spine Road" will be established to maximize the use of available visual resources.

At the appropriate time in the development process, the aesthetics of the development will be guided by the City to ensure appropriate architectural theme, materials, color, site design standards, and landscaping.

5.6 Social Characteristics

5.6.1 Population

According to the City Planning Department, population growth in the Primary Urban Center is projected to increase from 432,023 in 1990 to 489,141 in 2010. This growth represents an annual increase of approximately 2,850 persons per year. Similarly, the Social Impact Assessment (Appendix A) indicates that the Oahu's 1994 population was estimated at 874,300. Between 1990 and 2010, the census tracts comprising the Ewa district population will increase 29.2 percent from 230,175 to 273,900 persons in 2010.

Because the proposed Manana and Pearl City Junction Development land uses reflect no residential development, the project will not facilitate new population growth in the area through the establishment of new residential land uses. However, as stated in Appendix A, the project will provide needed services in response to the projected population growth of Central Oahu and Ewa.

5.6.2 Housing

As the population within the planning area continues to grow in the future, overcrowding of existing housing will continue to be a problem if relatively low production of new housing and high demand for new housing construction continues in the future.

The social implications of a housing shortfall are usually expressed in crowding from multi-generational households, out-migration, stress on families, and often the need for individuals to work at two jobs to pay for higher housing costs. However, in the Pearl City area, employment opportunities proximate to existing housing is also in demand.

With development of the proposed project, no new housing units are planned, but new opportunities for employment, access to recreational facilities, shopping, and medical facilities are enhanced. The existing housing supply in the area is in place and able to take advantage of the facilities proposed. New housing that is needed has been largely approved for off-site projects and will likely be provided within Ewa and Central Oahu.

Affordable housing options, both for sale and rental, were discounted early in the community-based planning efforts. While there is a need for affordable housing, the community had great concerns about the impact to traffic and the City is not in a financial position to underwrite the subsidy that would be necessary to make housing

at this site financially feasible.

5.6.3 Lifestyle/Character of the Community

According to the Real Property Tax Assessment Office, assessments are primarily based upon two broad factors: 1) the "neighborhood" in which the land is located; and 2) the fair market value of the land. Depending on the value of surrounding homes, the proposed development may have a positive effect on the land values of adjacent properties over time relative to the existing warehouse uses. The project will generate real property tax revenue where none currently exists due to its former military use.

According to Appendix A, although the project's mix of land uses will alter the character of the surrounding neighborhood, the proposed plan will provide much needed public and private services to the community and help to relieve some of the projected traffic congestion in the area. To provide the necessary improvements, however, residents living within the "Old Cane Haul Road" may require removal and relocation of occupants. Preliminary estimates of the residents impacted by the use of the Old Cane Haul Road is approximately six families.

In addition, the residents along the property currently enjoy privacy and a general quiet ambience. Consequently, the development of the Spine Road will alter the character of this area which will likely be objectionable to these residents.

5.7 Economic Characteristics

According to the Economic and Fiscal Impact Assessment (Appendix A), 100 percent of the PCJ site, family entertainment center and medical facility components of the plan will be absorbed within 5 years. Approximately 69 percent of the industrial and commercial land use elements will be absorbed during this period with the balance (approximately 30 percent) absorbed within 10 years. Assuming these absorption rates, implementation of the Manana and Pearl City Development will result in the following summary of economic and fiscal impacts.

5.7.1 Employment, Personal Income and Consumer Expenditures

According to Appendix A, existing median family income in Aiea is \$57,378, Pearl City at \$52,879, and Waimalu at \$56,359 with an island-wide average of approximately 3.15 persons per household. This is significantly higher than the City and County of Honolulu median household income of \$40,581. To identify how the proposed project would impact employment and personal income, Appendix A projected these estimates based on development of the proposed conceptual plan within 10 years.

During the construction period, construction employment during the first 5 years of development will total approximately 1,022 jobs, or an average of 204 per year. During the next years 6 to 10 year period, an additional 223 jobs are projected to be created. Operational employment will consist of approximately 3,850 jobs in the first five years and 850 new jobs in years 6 to 10. During the first 10 years of development and operation, approximately \$295 million in new employment income will be generated. Presently the number and types of jobs available on the Manana

property are limited to those related to the operation of the warehousing storage and distribution of various products.

The estimated development value of the Manana and Pearl City Junction Conceptual Master Land Use Plan is approximately \$285 million. As described in Appendix A, this estimate is based on land values of \$35 per square foot and construction values of \$75 per square foot for the light industrial/business park components. All other land uses are estimated at a development value of \$100 per square foot. This level of construction activity will significantly improve the island-wide level of construction spending which dripped 20 percent from \$3.4 billion in 1990 to \$2.7 billion in 1994.

In addition, the City Council's designation of the Manana, but not the Pearl City Junction area, as an enterprise zone is currently awaiting the governor's approval. Upon passage, qualifying business will be entitled to state and county incentives, and therefore, attract more employment opportunities. County incentives, under the City Council resolution, include rebates on property taxes for all new construction for two years and waivers of certain county fees for a period of seven years. State incentives include exemption from general excise tax for seven years on gross proceeds from all transactions within the enterprise zone, an income tax credit that decreased over a seven year period, and an income tax credit on a company's unemployment insurance premiums.

5.7.2 Economic Factors/Government Revenues

The implementation of the Manana and Pearl City Junction Development, would dramatically increase assessed land valuations above those currently collected by the City. For example, no significant real property tax revenues are presently generated from the subject property due to its current military designation. After project build-out and sales of real property to the private sector is complete, annual real property tax revenues to the City will reflect future property assessed valuations.

According to Appendix A, the City will realize approximately \$7.2 million of real property tax collections in the first five years of the project and \$11.8 million in years six through eight. By using current City expenditures on a per acre basis, the proposed project's land uses will generate expenditures of approximately \$1.4 million per year, well below the projected annual real property tax revenue of \$2.4 million. Similarly, State revenues based on revenue from the General Excise Tax in year 10 are projected at approximately \$9.4 million compared to State expenditures of approximately \$2.3 million.

5.8 Infrastructure

5.8.1 Water Supply Facilities

According to the Preliminary Engineering Report for the Manana and Pearl City Junction Development (Appendix H), the Board of Water Supply has determined that the existing "285-Foot System" potable water system in the area is adequate to service the proposed Manana and Pearl City Junction Developments provided on-site improvements are in place.

Specifically, the Preliminary Engineering Report (Appendix H) assumes that use of the Navy's private system will be discontinued, and that the Board of Water Supply system will be utilized. Prospective developers/proposers have been reminded in the Request for Proposals (RFP) issued in December 1995 and January 1996 that the U.S. Navy's private water system will be unavailable to the private developers.

Based on the present land use plan, Appendix H indicates that the development will have an average daily water demand of 0.4 million gallons per day (mgd). At this level of water consumption and given the existing municipal water system, a 12-inch water main with fire hydrants along the proposed spine road and within the industrial area loop roads will be required. The Pearl City Junction parcel can be serviced by a lateral from the existing 12-inch water main in Kamehameha Highway to meters installed in an accessible easement off the highway.

Preliminary engineering requirements for source development, storage requirements, and water distribution system design indicate that significant off-site improvements to the Board of Water Supply system will not be required, although the capacity of the present municipal system will be impacted. The actual need off-site fire flow infrastructure improvements will be determined once specific land use and architectural plans are available, especially for the proposed industrial land uses. Should manufacturing or other similar high intensity land uses be developed, off-site transmission improvements would be required to provide the necessary fire flow capacity.

The project will also increase the demand for water from the Pearl Harbor aquifer, although the State Water Commission has allocated the needed water to the BWS and Navy. Should the BWS require additional source development in the future, approvals from the Commission on Water Resource Management would be required.

To mitigate the impact of reduced capacity on the BWS system, the project's developer(s) will pay a facility charge for source development, storage and transmission at prevailing BWS rates prior to installation of water meters. These funds will be used by the BWS to replace the reduced capacity to the BWS system with new water source and transmission development. Project developers will also request required water from the BWS from its present Pearl harbor aquifer allocation. Cost for the main 12-inch line in the proposed spine road is estimated at \$600,000.

In addition, the planned expansion of the existing BWS baseyard is necessary for more efficient access to water system infrastructure as it expands in response to new developments planned for Ewa and Central Oahu. Therefore, development of the proposed project will facilitate the Board of Water Supply's ability to provide cost efficient service to Central Oahu and Ewa as future population growth continues.

5.8.2 Water Source Development

The proposed commercial/industrial and public facility land uses are needed in response to growing market and population demand. If they were not developed on the subject parcels, it is likely that their development would occur elsewhere on Oahu, thereby resulting in essentially the same demand for potable water, but at other locations. Presently, there are no on-site wells providing potable water on the subject properties.

New source development will likely be required in response to the cumulative impact of new development in the Ewa and Central Oahu regions and in response to Oahu's growing population. However, the proposed Manana and Pearl City Junction Development will not by itself trigger the need to develop new water sources.

5.8.3 Wastewater System

The proposed Manana and Pearl City Junction Development will require additional wastewater facilities to accommodate the planned medical, commercial, office, light-industrial, public and park uses. Consequently, the design flow rates used by the City to calculate the ultimate wastewater flows that will be generated by the project will depend on project phasing, density and ultimate use of the proposed facilities.

A complete description of the proposed wastewater system is provided in by the Preliminary Engineering Report, Appendix H. The following summary describes the existing conditions and proposed wastewater system.

Wastewater Collection

According to Appendix H, there is no current wastewater system within the subject property except for a 10" line connecting to the property in the vicinity of the Post Office. Existing wastewater collection lines along the edge of the property gravity flow toward the Kamehameha Highway corridor and eventually on to the Pearl City Wastewater Pump Station which pumps wastewater from Waiawa to Halawa, and then to the Honouliuli Wastewater Treatment Plant located at Ewa.

According to Appendix H, the existing 18- inch line in Waimano Home Road and the 42 inch interceptor line connecting to the pump station are at capacity. The Pearl City Wastewater Pump Station and Honouliuli Treatment Plant, however, do have available capacity to accommodate the project. As such, the proposed Manana and Pearl City Junction Development will require expansion and replacement of the existing wastewater collection lines to accommodate the requirements of the Master Land Use Plan and to add capacity to the collection system by constructing a new line the existing lines that are over capacity.

As described in the Preliminary Engineering Report, the necessary improvements consist of a new transmission pipeline system to discharge into the existing 21-inch municipal trunk sewer main located along the southern boundary of the Pearl City Junction parcel. In addition, off-site construction of a 15 or 18 inch sewer pipeline is also needed to relieve the capacity condition of a 600 foot portion of the existing trunk sewer main (See Appendix H, Figure 4). In addition to these improvements required to increase capacity of the existing transmission system, developer(s) will also be assessed a facility charge for transmission and treatment at the Honouliuli Wastewater Treatment Plant.

The new on-site wastewater collection system will generally follow the alignment of the proposed street system, however, the final design will depend on more detailed engineering analysis based on the land uses and street configuration proposed in the Master Land Use Plan. On-site collector lines will be constructed by the individual lot developers to collect and convey wastewater to the proposed sewer transmission main to be installed in the "spine road".

Wastewater Treatment

The present capacity of the Honouliuli WWTP is allocated by the City on a "first come, first serve" basis, however, the Engineering Report indicates that Honouliuli WWTP presently has sufficient capacity to accommodate the proposed project.

Effluent Disposal

Treated effluent from the Honouliuli WWTP is currently discharged via deep ocean outfall. This method of disposal will not be significantly impacted by development of the proposed project.

Construction Cost Estimates

The two primary improvements, 21-inch spine road sewer main and relief off-site sewer line, are projected to cost approximately \$700,000 and \$200,000 respectively. This estimate does not include collection lines for the industrial areas or on-site systems for individual lots since these improvements may vary based on final development plans.

5.8.4 Solid Waste Disposal Facilities

Solid wastes will be transferred to City designated facilities and ultimately recycled at the City's electrical co-generation plant. Other recycling efforts will be employed in accordance with adopted City policy. By recycling both solid and liquid waste products, a conservation ethic will be employed indefinitely into the future.

5.8.5 Drainage Facilities

According to the State Department of Health (DOH), the Manana and Pearl City Junction Development is located above the State's Underground Injection Control line. As such, the underlying groundwater is considered as a potential source of potable water (Figure 9). The elevation of the site is between forty-five and fifty feet, with groundwater being about thirty-five feet below ground surface. Consequently, fresh water floating on top of sea water is most likely the case.

To assure continued high quality groundwater, the DOH has recommended that monitoring wells could be utilized in the area to better understand the site conditions and future potential impacts on the groundwater resource. However, given the highly urbanized land uses surrounding the property, it would be difficult to specifically identify the source of groundwater pollutants if they were identified.

Surface water quality will be maintained through a program of soil erosion control measures and implementation of best management practices during project construction. A description of the proposed Storm Drainage System is provided in the Preliminary Engineering Report, Appendix H.

Generally, the Manana and Pearl City Development is divided into two drainage basins which discharge into the West and Middle Loch of Pearl Harbor via the Waiawa and Waimano Streams. For example, the Pearl City Junction parcel and

approximately 80 acres of the Manana parcel are tributaries to the Waiawa Drainage Basin. The remaining balance flows toward the east into existing drains and pipeline systems. As depicted on Figure 3 of the Preliminary Drainage Report, this system crosses the Waimano Home Road via 36-inch pipelines in the roadway and 48-inch culvert through the adjoining residential subdivision, and then eventually discharges into Waimano Drain Channel.

Because the existing warehouse roofs, parking areas, and roadways already establish impermeable surfaces, the projected increase in surface flows is expected to be minimal. The actual increase can only be determined once specific development plans are available for calculation of the build out condition and design of appropriate measures to maintain the present rate of storm water discharge. However, the Preliminary Engineering Report provides an estimated increase of 7 cubic feet per second (cfs) for the Pearl City Junction parcel and 40 cfs from the Manana parcel after project build-out. Generally, this increase can be mitigated by reducing the pavement area and/or slightly depressing some of the open areas to create storm water retention/detention basins. For example, within the 28 acre Waimano Drainage Basin, the proposed park area may actually cause the quantity of runoff to be reduced relative to the current flow levels.

Another aspect of the drainage system, is the quality of water discharged from the subject properties. For example, if the type of land uses developed potentially increase the amount of silt, debris, oil and other waste material, drain collection inlets and catch basins should be designed to separate oil and grease from storm runoff for appropriate handling and discharge.

The construction cost for drainage improvements in the spine road is estimated at \$600,000. This estimate does not include drainage structures within the proposed light industrial areas. Other improvements, such as on-site detention basins, will be constructed in conjunction with the improvements installed for each parcel and funded by the developer(s).

5.8.6 Electrical/Communication System

Presently, underground and overhead electrical and Cable TV (CATV) lines run along Kamehameha Highway and overhead lines run along Waimano Home Road. Telephone lines run along the same routes as well as overhead telephone lines running mauka of the Manana parcel along the former cane haul road.

According to the Building Department, police radio transmission signals from the Puu Manawahua station in Makakilo could be affected by tall buildings on the Manana parcel. Design and height considerations will be coordinated with the police department during the planning and design phases of development to ensure that the integrity of the police communication system is not impacted.

To service the proposed project, a 46kV system will enter the Manana parcel at two locations which will be determined once more specific plans are developed by project developers. Other improvements consist of conduits, manholes, a substation of approximately 15,200 square feet, and four switching stations. Exact easement locations and requirements will need to be coordinated with the Hawaiian Electric Company when exact lot and load requirements are identified, and appropriate

provisions can be made for screening, setbacks, and landscaping to mitigate potential visual impacts associated with substations.

Final configuration of the land uses to be developed may change as a result of the redevelopment proposals submitted by private developers in response to the City's Request for Proposals (RFP). Therefore, locations of specific improvements such as substations, easements, and capacity of required transmission lines will be specifically determined as information becomes available from project developers.

Telephone and CATV lines will be extended from Waimano Home Road. Two telephone switching stations will likely be required, but the exact location will need to be coordinated with Hawaiian Telephone Company. CATV lines will require a 3-inch conduit and several 2-foot X 4-foot handhole locations. Recommended telephone and CATV improvements are depicted in Figures 7 and 8 respectively in the Preliminary Engineering Report, Appendix H.

Construction cost estimates total \$1,730,000 comprised of the following; electrical (\$970,000), telephone (\$630,000), and CATV (\$130,000). These estimates do not include improvements for the industrial area, traffic light signals, and on-site improvements for individual lots.

5.9 Public Services

5.9.1 Schools

The public schools closest to the project site are: Pearl City Elementary, Highlands Intermediate, and Pearl City High. Employment opportunities generated by the project may encourage the relocation of some new residents to the Pearl City area school system from other areas on Oahu, however, none of the proposed land uses will directly contribute toward an increase in the school age population.

According to the State Department of Education (DOE), their primary concern focuses on the impact of construction on existing schools in the area, especially in the mitigation measures to control dust. Therefore, the City has agreed to coordinate developer activity with DOE officials to identify appropriate erosion and dust control measures while school is in session.

5.9.2 Police Protection

The District's police protection services are provided by officers from the Pearl City Police Station located on Waimano Home Road. Due to the close proximity of the subject property to the Pearl City Police Station, response time is relatively prompt and will continue to be so after project development.

As with any higher intensity land use, there will be an occasional and unavoidable demand for police protection services. However, appropriate lighting, security gates and barriers, and other security devices and management practices will be coordinated with the assistance of the Honolulu Police Department.

5.9.3 Fire Protection

Response times in case of emergency are relatively prompt as the Pearl City Fire Station located at 886 First Street, approximately 1.5 miles from the subject property, has primary responsibility for fire protection in the area. Other fire stations are located in Waipahu on Leonui Street (approximately 3 miles), a military fire station located adjacent to the subject property on Acacia Road, and the Waiiau Station located 1 mile away on Komo Mai Drive.

As the property attracts new development, employees, and consumers, an increased demand for fire protection services should be expected with the construction and completion of the proposed project. However, the Fire Department has indicated that fire protection services provided from Pearl City and Waiiau engine companies with ladder service from Waiiau are adequate. Access for emergency vehicles and new construction shall conform to applicable fire and building codes.

5.9.4 Health Care/Hospitals

The 116-bed Kapi'olani Hospital, formerly Pali Momi, approximately 2 miles from Manana in Aiea, is closest to the site. Ambulance service to the hospital from the site is therefore sufficient. A 122-bed long-term care facility located on Lehua Street was also recently completed. With the development of the proposed medical facilities envisioned by the Manana and Pearl City Junction Development Plan, the degree and level of health care services available to the surrounding community will be enhanced.

5.9.5 Recreational Facilities

Existing public recreational facilities in the Pearl City District include Manana Kai Park, Manana Neighborhood Park, Pacheco Playground, Pearl City Recreational Center, Waiiau District Park, Waiiau Park and Pearl Harbor Park.

Manana will expand public recreational opportunities in the Pearl City area by adding approximately 6 to 8 acres of additional park. Developers may agree to improve vehicular access to the existing Manana Kai Park, which will contribute to more efficient use of existing recreational facilities. The need for additional vehicular parking servicing the planned park will be determined as plans for the land uses proposed for adjacent properties are finalized during the development process. Based on the expansion of existing facilities and the addition of new park land, the impact on existing recreational resources is expected to be positive. The proposed project will not directly increase the population of the area or the demand for recreational opportunities.

6.0 CONTEXTUAL ISSUES

6.1 Cumulative and Secondary Environmental Impacts

According to the Market Analysis (Appendix A), the Manana and Pearl City Development is projected to absorb approximately 20 to 40 percent of the future demand for commercial and industrial space on Oahu. This demand will occur from the growth of the existing population, immigration, and replacement of existing facilities. Consequently, cumulative

and secondary environmental impacts typical of these developments may result from project development. However, if the project were not built, the future demand for these uses would still have to be satisfied by new development located elsewhere within the area or on Oahu.

Some of this demand would likely occur within Master Land Use Planned communities, but the balance would likely occur as less efficient small scale development scattered throughout the City. Such development may occur piecemeal and could eventually be costly to the City in providing infrastructure and public services to scattered small developments.

Consequently, cumulative and secondary environmental impacts would continue to occur with or without the Manana and Pearl City Development project. Only with the additional land use controls and infrastructure planning afforded by a master planned development can these potentially significant environmental impacts be efficiently mitigated. Weighing the environmental effects of the unplanned or "no action" alternative should receive commensurate consideration during the planning and land use approval process comparable to the proposed development.

6.2 Cumulative and Secondary Impacts on Public Services and Facilities

As the projected population of Honolulu grows in the future, cumulative and secondary impacts on public services and facilities will occur with or without development of the proposed project in response to the needs of a growing population. Although other large scale projects on an island-wide basis have received some or all of the required land use approvals (or are presently under construction), there is no guarantee that any or all of these projects will be built as originally planned.

Unforeseen events can occur that may alter market conditions or future population growth. Consequently, cumulative and secondary impacts affecting Honolulu, will occur as a result of overall population growth and economic fluctuations. Only site or regionally specific impacts to public services and facilities that will result from development of the Manana and Pearl City Development can be reasonably determined assuming project buildout will be achieved as presently envisioned. For example, the Traffic Impact Analysis Report estimated that an 8.25 regional traffic growth factor should be used to reflect additional traffic resulting from the cumulative Impact of new development in the area.

According to the Economic and Fiscal Impact Assessment (Appendix A), 100 percent of the PCJ site, family entertainment center and medical facility components of the plan will be absorbed within 5 years. Approximately 69 percent of the industrial and commercial land use elements will be absorbed during this period with the balance (approximately 30 percent) absorbed within 10 years.

As such, the following is an analysis of potential cumulative impacts on public services and facilities that will result from the Manana and Pearl City Development.

Land Use Character. As presently developed areas in Honolulu undergo renovation or redevelopment, changes in the pattern of land use will occur in response to the growing population's demand for new services and facilities, and new employment opportunities. By encouraging redevelopment projects within areas already served by necessary infrastructure, the public investment committed to these improvements will be much more efficiently utilized.

As this transition occurs, the cumulative demand for new development would be redirected into areas most suitable for urban development. In the Honolulu area, new development should be established within the Primary Urban Area or on lands adjacent to existing or planned urban development that is accessible to needed infrastructure and where existing public services are most efficiently available.

Traffic. Traffic levels will continue to increase in the Pearl City area as the project achieves buildout. Regional traffic levels and circulation patterns will also change as the future population of Honolulu continues to grow and Ewa and Central Oahu attract greater percentages of Oahu's future population. Even without project development, traffic volumes are projected to increase as a result of cumulative population growth. To mitigate the impact of future traffic, local roadway improvements are planned by the State and the City to improve traffic flow in presently congested areas and to accommodate new traffic growth. Once the Manana Spine Road is in place, a major alternative transportation corridor between Moanalua Road and Kamehameha Highway will be available to relieve some of the current and projected traffic congestion in the area.

Potable Water. Although the overall demand for potable water will increase with growth in the population, new demand for water will be addressed by installation of appropriate water source, storage, and distribution improvements throughout the island. Where other development projects are planned in areas without potable water service, similar improvements will also be required from the respective developer(s). Consequently, cumulative impacts should be evaluated relative to the capacity of the current water source, and not the facility improvements required for the future distribution and storage system required for potable water.

The Board of Water Supply, which provides essentially all potable water for Honolulu, has developed water sources on a island-wide basis with a very high sustainable yield of millions of gallons per day. Development of the proposed Manana and Pearl City Development will require approximately 0.4 mgd compared to the relatively insignificant demand typical of the current warehouse uses. Consequently, the cumulative impacts on the water resources of Oahu is estimated to be approximately less than 1 percent of the BWS's sustainable yield.

Other Public Services and Facilities. The cumulative impact of the project and future population growth in Honolulu on other public services and facilities (i.e. fire, police protection, and health care), have been addressed in Section 6.0 of the Final EIS.

Economic Impact. According to Appendix A, construction employment during the first 5 years of development will total approximately 1,022 jobs, or an average of 204 per year. During years 6 to 10 an additional 223 jobs. Operational employment will consist of approximately 3,850 jobs in the first five years and 850 new jobs in years 6 to 10. During the first 10 years of development and operation, approximately \$295 million in employment income will be generated.

Fiscal Impact. According to Appendix A, the City will realize approximately \$7.2 million of real property tax collections in the first five years of the project and \$11.8 million in years six through eight. By using current City expenditures on a per acre basis, the proposed project's land uses will generate expenditures of approximately \$1.4 million per year, well below the projected annual real property tax revenue of \$2.4 million. Similarly, State revenues in year 10 are projected at approximately \$9.4 million from General Excise Tax revenue compared to State expenditures of approximately \$2.3 million.

6.3 Relationship Between Short Term Issues and Maintenance of Long Term Productivity

As discussed in the previous sections of this Final EIS, the project area is largely vacant except for the existing warehouse structures previously associated with military support requirements. Long-term environmental impacts from continuing the current use, primarily visual impacts and inefficient economical use of the property, have been identified. Clearly, these existing impacts are considered undesirable relative to the long term productivity of the property. Retaining the property in its present use (the "No Action" alternative), would present a less than optimum use of the land especially considering the value of a property proximate to existing urban land uses, infrastructure, and community services. Without implementation of the proposed development, costs associated with under-utilization of the property will continue to economically impact the City.

Short term issues and long term productivity are primarily centered on the construction phases and productivity of the project after it achieves buildout. Short-term construction related impacts can be mitigated while they occur. The proposed long-term land uses of the Manana and Pearl City Development would result in significant social and economic benefit to the existing community in the form of the new public facilities, increased job opportunities and increased tax revenues. Direct full and part-time employment opportunities and temporary construction employment will be generated by the project and these in turn will impart multiple benefits to the residents of Oahu. Public revenues in the form of taxes paid by the project are expected to exceed and offset any expenses associated with the expansion of public services or public facilities needed to meet both the project development and indirect population growth.

Long-term impacts to the environment from the Manana and Pearl City Development will, on balance, be generally positive considering the mitigation measures available and their implementation. The physical attributes of the subject properties, including proximity to existing transportation infrastructure, the appropriateness land uses on surrounding properties, and the enhanced visual qualities afforded by the project, are ideally suited. Clearly, compatibility with surrounding land uses will be enhanced relative to the present condition.

Through careful site planning, the project area will be used in a manner that would maintain the essentially urban character of the region. Increased recreational and economic opportunities for all socio-economic levels of the community would also be provided, along with increased availability of community services and facilities.

6.4 Irreversible and Irretrievable Commitments of Resources

The development of the proposed Manana and Pearl City Development would result in the irreversible and irretrievable commitment of the land resource and require use of fiscal resources from the City and private sectors. Major resource commitments include the land on which the proposed project is located and the financial commitment of construction materials, manpower and energy required for the project's completion. The impacts reflected by the commitment of these resources, should be weighed against the positive socio-economic benefits that could be derived from the project versus the consequences of either taking no action or pursuing another less beneficial use of the property.

6.5 Probable Adverse Environmental Effects Which Cannot Be Avoided and Unresolved Issues

Many of the unresolved issues associated with the proposed project are characteristic of other similar development projects in Hawaii. Two finite resources, land and potable water will be utilized; visual alteration of the property will occur; noise and traffic impacts will result; and localized air pollution will occur, but remain well within the Federal and State allowable levels. Indirect impacts will also occur that affect lifestyles and economic conditions for many residents. Issues that arise during the development process will be resolved through implementation of mitigative measures and coordination with the appropriate agencies.

The location of the subject property creates a logical opportunity for urban expansion into an area with high potential for viable urban development. Existing infrastructure is available and the intensity of land uses is consistent with the surrounding neighborhood. These examples of integration into the surrounding neighborhood were reflected by comments received from the Pearl City Task Force and individual residents from the surrounding community.

Where appropriate, new land uses and infrastructure improvements will be provided in a manner reflecting existing land use patterns. However, the size, scale, and proximity of the project to existing residential land uses could significantly impact the surrounding community, so appropriate consideration to potential environmental impacts have been considered in the planning process.

7.0 CONFORMANCE WITH APPLICABLE STATE AND COUNTY POLICIES AND PLANS

7.1 Hawaii State Plan

According to the Hawaii State Plan, the Plan shall "*serve as a guide for the future long-range development of the State; identify the goals, objectives, policies, and priorities for the State of Hawaii; provide a basis for determining priorities and allocating limited resources, such as public funds, services, human resources, land, energy, water, and other resources; improve coordination of state and county plans, policies, programs, projects, and regulatory activities; and to establish a system for plan formulation and program coordination to provide for an integration of all major state and county activities.*"

The Plan is divided into three parts. Part I (Overall Theme, Goals, Objectives and Policies); Part II (Planning, Coordination and Implementation); and Part III (Priority Guidelines). Part II elements of the State Plan pertain primarily to the administrative structure and implementation process of the State Planning process. As such, project specific comments regarding the applicability of Part II (Section 226-52(a) and 226-52(b) - Statewide planning system) do not directly pertain to the proposed project, however, the entitlement review and approval process for the proposed project must follow the adopted planning procedure at both the State and County levels.

The following sections of the Hawaii State Plan are directly applicable to the review of the Manana and Pearl City Development and land use entitlement approvals.

(226-5) Objective and policies for population.

- (a) *"...guide population growth to be consistent with the achievement of physical, economic, and social objectives...."*
- (b) (3) *"Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the islands."*

Discussion: The Manana and Pearl City Development contains significant components of industrial, office, and commercial land uses. These land uses have been specifically included in the Master Land Use Plan in response to: 1) the existing and future need for new urban land area, and 2) to generate new employment opportunities proximate to existing and future residential areas.

The proposed development will offer short-term (construction-related) and long-term (commercial, industrial, public facilities) employment to Honolulu residents by contributing to the overall level of construction activity. Permanent operational employment opportunities will directly and indirectly increase employment throughout the community and state. After project build-out, the land uses proposed would assist in providing a diversity of employment opportunities at a scale and character that is consistent with that of the neighborhood, while stimulating increased economic activity in the region.

By encouraging the use of existing urban areas through development of the proposed project, future population growth (which is forecast to occur with or without the project) will be guided and encouraged to locate within the City's Primary Urban Center. In this manner, the implementation of the State's physical, economic, and social objectives will be achieved and encouraged consistent with community needs and desires.

State and county tax revenues (property taxes, the General Excise Taxes, income taxes, etc.) are anticipated to more than offset any costs associated with providing public services necessary to accommodate the proposed development (Appendix A). Without developing this City owned property into more productive uses, costs associated with the land acquisition will continue without the added benefit of new public and private enterprises and associated tax revenues.

(226-6) Objectives and policies for the economy in general.

- (a) (1) *"Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawaii's people."*
- (b) (6) *"Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives."*
- (b) (8) *"Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility."*
- (b) (13) *"Encourage businesses that have favorable financial multiplier effects within Hawaii's economy."*

Discussion: Location of new employment opportunities proximate to existing residential areas will foster a higher quality living standard, enhance lifestyles, and provide increased income and job choice. Increased and diversified employment opportunities, when coupled with the added availability of existing housing, will provide local residents with expanded economic opportunities. Production of new commercial and industrial development will respond to Oahu's growing population which is consistent with state growth objectives. The multiplier effect of large scale construction on Oahu's economy will provide local residents with additional opportunities to achieve their aspirations of residing and working within a high quality living environment.

(226-11) Relevant Hawaii State Plan objectives and policies for the physical environment - land-based, shoreline, and marine resources.

- (a) (1) *"Prudent use of Hawaii's land-based, shoreline, and marine resources."*
- (a) (2) *"Effective protection of Hawaii's unique and fragile environmental resources."*
- (b) (2) *"Ensure compatibility between land-based and water-based activities and natural resources and ecological systems."*
- (b) (3) *"Take into account the physical attributes of areas when planning and designing activities and facilities."*
- (b) (6) *"Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaii."*
- (b) (8) *"Pursue compatible relationships among activities, facilities, and natural resources."*

Discussion: The plan for the Manana and Pearl City Development was prepared in response to the needs of the community and after environmental studies identified the relative environmental impact applicable to the alternatives proposed. These plans integrated environmental considerations into the planning process at the earliest possible stage. No unique and fragile environmental resources were identified during the planning process. Implementation of proposed mitigation measures for the project will ensure continued protection of the land through better control of runoff and erosion, and improved visual quality beneficial to the community. No endangered plant or animal species or their habitats will be affected, thereby establishing a compatible relationship with the natural resources in the area.

(226-12) Relevant Hawaii State Plan policies for the physical environment - scenic, natural beauty, and historic resources.

- (a) *"...enhancement of Hawaii's scenic assets, natural beauty, and multi-cultural/historic resources."*
- (b) (1) *"Promote the preservation and restoration of significant natural and historic resources."*
- (b) (3) *"Promote the preservation of views and vistas to enhance the visual and*

aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features."

(b) (4) *"Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage."*

(b) (5) *"Encourage the design of developments and activities that complement the natural beauty of the islands."*

Discussion: To maintain and/or enhance the natural features of the site, planning for the Manana and Pearl City Development was based on its site attributes and surrounding urban land use patterns. Through the use of design guidelines, developers will site buildings to maintain mauka and makai views, and utilize building architecture, materials, and landscaping to complement the surrounding environment.

No significant historical or cultural resources are known to exist within the project area. Should any subsurface archaeological features be identified during construction, the Historic Preservation Division of the Department of Land and Natural Resources will be notified in accordance with State requirements.

226-13 Objectives and Policies for the Physical Environment - Land, Air and Water Quality.

Objectives:

(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:*

(a)(1) *Maintenance and pursuit of improved quality in Hawaii's land, air and water resources.*

(a)(2) *Greater awareness and appreciation of Hawaii's environmental resources.*

Policies:

(b)(2) *Promote the proper management of Hawaii's land and water resources.*

(b)(3) *Promote effective measures to achieve desired quality in Hawaii's surface, ground and coastal waters.*

(b)(5) *Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.*

(b)(6) *Encourage design and construction practices that enhance the physical qualities of Hawaii's Communities.*

Discussion: The Manana and Pearl City Development has been planned and designed in a manner environmentally beneficial and compatible with the subject properties and surrounding area. The sites are not subject to unusual hazards associated with erosion, flooding, tsunami, hurricanes, earthquakes, volcanic eruptions, or other natural or man-

induced hazards and disasters. Because the existing urban warehousing land uses will be replaced by other urban uses, no significant impacts on ground water are anticipated. Design and construction practices will be undertaken to complement the residential setting of the area while enhancing the physical attributes of the community.

(226-15) Relevant Hawaii State Plan objective and policies for facility systems - solid and liquid wastes.

- (a) (1) "Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.*
- (b) (1) Encourage the adequate development of sewerage facilities that complement planned growth.*
- (b) (2) Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.*

Discussion: Wastewater treatment facilities are adequate to accommodate the planned growth of the area in accordance with project phasing requirements. Treated wastewater will be treated and disposed of at the City's wastewater treatment facilities in accordance with applicable State Department of Health regulations. All required on-site and off-site collection system improvements required to accommodate the proposed development will be provided by project developers (Appendix H).

Solid wastes will be transferred to City designated facilities and ultimately recycled at the City's electrical cogeneration plant. Other recycling efforts will be employed in accordance with adopted City policy. By recycling both solid and liquid waste products, a conservation ethic will be employed indefinitely into the future.

In addition, the "re-use" of the Manana and Pearl City Development for the urban land uses proposed, actually reflects a "recycling" of Oahu's limited land resource. For example, by directing new urban development toward urban in-fill areas, the pressure to develop agricultural land elsewhere on Oahu is indirectly reduced. Therefore, in a very real sense, the land and infrastructure resources presently available at the Manana and Pearl City Junction sites are being recycled in a highly efficient way.

(226-16) Objectives and Policies for Facility Systems - Water

Objectives:

- (a) Planning for the State's facility systems with regard to water, shall be directed toward achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational and other needs within resource capacities.*

Policies:

- (b)(1) Coordinate development of land use activities with existing and potential water supply.*

- (b)(3) *Reclaim and encourage the productive use of runoff water and waste water discharges.*
- (b)(4) *Assist in improving the quality, efficiency, service and storage capabilities of water systems for domestic and agricultural use.*

Discussion: Potable water will be provided by the existing BWS system. No major off-site improvements to the existing system will be required unless fire flow requirements of future on-site industrial development triggers the need for new transmission improvements to the Board of Water Supply System. All necessary improvements will be provided by project developers (Appendix H). Ground water recharge will be encouraged by establishment of open space areas, retention areas, and drainage improvements to control the flow of surface water moving off-site, and will be designed in accordance with applicable City requirements. All applicable Department of Health standards for potable water use and disposal of wastewater will also be implemented.

(226-18) Relevant Hawaii State Plan Objective and Policy for Facility Systems - Energy/Tele-Communications

- (a)(2) *Planning for the State's Facility Systems with regard to energy/tele-communication shall be directed towards the achievement of the following objectives: increased energy self-sufficiency.*
- (c)(3) *To further achieve the energy objectives, it shall be the policy of the State to promote prudent use of power and fuel supplies through conservation measures including education and energy-efficient practices and technologies.*

Discussion: Through the use of design guidelines and restrictions imposed by the Land Use Ordinance, developers will be required to carefully investigate and analyze the most cost effective and energy efficient means of providing water heating and cooling for the planned land uses. The use of energy efficient lighting equipment, landscaping, and the promotion of energy conservation measures in the operation and maintenance of the planned facilities will also be encouraged. The latest communication infrastructure will be provided to ensure compatibility with advances in future communication technology.

(226-103) Economic Priority Guidelines

- (f)(1) *Encourage the development, demonstration, and commercialization of renewable energy sources.*
- (f)(2) *Initiate, maintain, and improve energy conservation programs aimed at reducing energy waste and increasing public awareness of the need to conserve energy.*
- (f)(3) *Provide incentives to encourage the use of energy conserving technology in residential, industrial, and other buildings.*

Discussion: The project area is located near the current and future commercial, industrial and employment centers of Oahu. This advantageous location of the project area adjacent to existing urban land uses and employment centers, will encourage the conservation of existing energy resources by reducing commuting time and distances for many residents.

Infrastructure connections to existing facilities can also be efficiently designed to take maximum advantage of transportation infrastructure and wastewater collection and treatment facilities.

Internally, pedestrian walkways will encourage alternative forms of transportation that are not dependent on fossil fuels. Renewable energy use will be encouraged through the use of passive solar design techniques (i.e. encourage building orientation to sunlight and trade winds, and landscaping to facilitate natural cooling). Where applicable, limited active solar energy technologies, such as hot water heating systems, will be employed.

The cost and energy effectiveness of utilizing energy efficient appliances and equipment within the planned industrial and commercial establishments will also be encouraged to determine the most economical and energy efficient methods of providing hot water, cooling, efficient use of water, and lighting systems.

By promoting planned development, the ability to control energy use through design guidelines and physical design is enhanced. The State's Model Energy Code will be considered during the preparation of the Manana and Pearl City Development's design guidelines.

(226-104) Population growth and land resources

- (b) (1) Encourage urban growth primarily to existing urban areas where adequate public facilities are already available or can be provided with reasonable public expenditures and away from areas where other important benefits are present, such as protection of important agricultural land or preservation of lifestyles.*
- (b) (6) Seek participation from the private sector for the cost of building infrastructure and utilities, and maintaining open spaces.*
- (b) (10) Identify critical environmental areas in Hawaii to include but not be limited to the following: watershed and recharge areas; wildlife habitats (on land and in the ocean); areas with endangered species of plants and wildlife; natural streams and water bodies; scenic and recreational shoreline resources; open space and natural areas; historic and cultural sites; areas particularly sensitive to reduction in water and air quality; and scenic resources.*
- (b) (12) Utilize Hawaii's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline, conservation lands, and other limited resources for future generations.*

Discussion: The proposed project will be constructed according to a phased schedule as market demand and infrastructure development progresses. Private sector developers will provide the necessary funding for infrastructure improvements. All public facilities, infrastructure, and services that require improvement or expansion as a result of project implementation will be provided by the developers. Construction employment over the development period will be offered to residents as well as long-term employment after

construction is complete. As previously noted, environmental studies have indicated that no critical habitats will be impacted by the project.

7.2 State Functional Plans

Twelve Functional Plans have been developed by the State to act in concert and coordination with the County General Plans and Development Plans in implementing the Hawaii State Plan. Although the Functional Plans work as the primary guideposts for implementation of the State Plan, at times competing policy interests are found within the Functional Plans and County General and Development Plans. The following overview of applicable State Functional Plans responds to this objective of the State Plan.

7.2.1 State Historic Preservation Functional Plan

Issue Assessment: Preservation of Historic Properties - According to the Historic Preservation Functional Plan, "the preservation of historic properties involves three major areas of activity: the identification, protection, and management and treatment of historic properties. Each of these areas of activity has its own specific problems and needs" as addressed by the Plan.

Discussion: An archaeological survey of the project area was completed to locate, describe and determine the significance of any historic sites and features within the project area. The archaeologist's report found no features in the project area. Accordingly, the proposed Manana and Pearl City Development will have "no effect" on significant historic sites.

7.2.2 Transportation Functional Plan

The following Policies of the State Transportation Functional Plan are applicable to the proposed Manana and Pearl City Development.

POLICY

- I.A.1 Increase transportation capacity and modernize transportation infrastructure in accordance with existing State laws requiring accessibility for people with disabilities.*
- I.A.2 Improve regional mobility in areas of the State experiencing rapid urban growth and road congestion.*
- I.B.1 Close the gap between where people live and work through decentralization, mixed zoning, and related initiatives.*
- I.C.5 Provide for a viable bikeway program.*
- III.A.2 Pursue private sector participation in the financing of transportation systems, developments and projects.*

Discussion: As described in the Traffic Impact Report (Appendix E), various on-site and off-site improvements are recommended to be implemented by the City and State during the project development years. These improvements will increase

transportation capacity and modernize transportation infrastructure in accordance with the State's plan to improve regional mobility through development of major new transportation improvements. All on-site transportation infrastructure required as a result of project development will be provided by the developer. The project is located proximate to existing residential and employment centers. Pedestrian walkways are planned, and mixed use zoning and related initiatives will be utilized.

7.2.3 State Agricultural Functional Plan

The objectives, policies, and implementation actions in the State Agricultural Functional Plan address the broad issues of agricultural research, marketing, development, regulations, and protection. These actions are not directly applicable to the proposed project. The sites are presently overgrown with grasses and shrubs, and not suitable for agricultural production.

7.2.4 State Conservation Lands Functional Plan

All of the subject property is located within the State Urban District (Figure 14). Furthermore, the objectives of the State Conservation Lands Functional Plan focus on research and inventory, management, and public education awareness of conservation lands. Thus, the implementing actions of the Conservation Lands Functional Plan are designed more for the governmental agencies that manage the Conservation District and to promote knowledge of ecological systems.

7.2.5 State Employment Functional Plan

The policies and recommended actions in the State Employment Functional Plan center around the development and improvement of career/job training programs, expansion of the labor pool, and the improvement of quality of life for workers. As such, the proposed commercial, light industrial, medical facilities, and family oriented recreational facilities will provide additional short and long term direct and indirect employment opportunities to residents of Honolulu.

7.2.6 State Energy Functional Plan

This functional plan outlines policies to promote energy efficiency, displace fossil fuel consumption, support public education and legislation on energy, and better develop and manage energy.

Because the Manana and Pearl City development parcels are located near an existing residential community, this locational advantage will encourage the conservation of existing energy resources by reducing commuting time and distances for many residents. In addition, infrastructure connections to existing facilities can be efficiently connected to existing physical facilities without major expansion.

Internally, pedestrian walkways will encourage walking as an alternative form of transportation that is not dependent on fossil fuels. By facilitating the development of master planned projects, the ability to control energy use through design guidelines and physical design is also enhanced.

7.2.7 State Recreation Functional Plan

The State Recreation Functional Plan addresses government action toward the acquisition of recreation areas and accesses, the establishment and development of areas and facilities, and the management of recreation resources and usage. None of the implementing actions outlined by the State Recreation Functional Plan are applicable to the Manana and Pearl City Development.

7.2.8 State Tourism Functional Plan

Objective II.A. Development and maintenance of well-designed visitor facilities and related developments which are sensitive to the environment, sensitive to neighboring communities and activities, and adequately serviced by infrastructure and support services.

Although no visitor accommodations are planned for the project, recent changes in the exchange rate of the dollar has made shopping in Hawaii an attractive visitor related activity for foreign tourists. As described in the market study (Appendix A), visitor related expenditures are continuing to exhibit steady growth. Consequently, the planned commercial land uses may also benefit from this trend.

7.3 State Model Energy Code

The State's Model Energy Code, Energy Efficient Standard for Buildings (DBEDT, July 1993) goal is to reduce our consumption of oil and provide significant savings in utility costs as well as help improve air quality by reducing fossil-fuel burning. As adopted, applicable standards of the Code for public buildings will be integrated into the Design Guidelines for the project.

7.4 Chapter 205, HRS - Land Use Commission

Chapter 205, Hawaii Revised Statutes (HRS), establishes the State Land Use Commission (LUC) and gives this body the authority to designate all lands in the State as Urban, Rural, Agricultural, or Conservation District lands. Land use decisions within Urban District lands are generally left to the counties to control in accordance with local General Plans and zoning ordinances. As such, the entire subject property is located within the State Urban District, but land uses on the property are controlled by the City's Development Plan and Land Use Ordinances. Consequently, no action from the State Land Use Commission is required to implement the proposed Manana and Pearl City Junction Development.

7.5 Environmental Impact Statements (Chapter 343, HRS)

In accordance with the State of Hawaii's Environmental Impact Statement Law, Chapter 343, HRS, there are eight conditions applicable to new development which trigger the environmental review process. Two of the eight conditions, the use of County lands and/or funds and amendment to the Primary Urban Center Development Plan, are the "triggers" which are applicable to the proposed project authorizing compliance with Chapter 343, HRS.

According to the Department of Health Rules which govern Chapter 343, HRS implementation, if "significant environmental effects" are not identified by an Environmental Assessment, preparation of a full Environmental Impact Statement is exempted, and a

"negative declaration" of significant environmental effects is issued. Otherwise, a Notice of Preparation is issued and processing of a full Environmental Impact Statement is required.

Because the proposed land uses of the Manana and Pearl City Junction Development are not presently consistent with the Primary Urban Center Development Plan (an element of the City's General Plan), City land is being used, and City funds may be required, Chapter 343, HRS is triggered. An Environmental Impact Statement Preparation Notice (EISPN) and Draft EIS were prepared and notice of their availability was published by the Office of Environmental Quality Control on October 23, 1995 and February 8, 1996, respectively. This Final Environmental Impact Statement is required in response to the determination of the Preparation Notice that there could be significant environmental effects generated by development of the proposed project.

7.6 General Plan for City and County of Honolulu

According to the City and County of Honolulu General Plan, the Plan is a written commitment by the City government to a future for the Island of Oahu which it considers desirable and attainable. The General Plan is implemented through the adoption of long range Objectives and Policies which facilitate the attainment of the Objectives of the Plan.

The proposed Manana and Pearl City Junction Development project implements the objectives and policies of the County General Plan in areas of land use, environment, economic, urban design, public utilities and facilities, and recreation and culture. The specific applicable General Plan Goals and Policies and their applicability to the proposed are discussed below.

a. General Plan Objectives and Policies

Population, Objective B - To Plan for Future Population Growth.

Discussion: Existing and planned large-scale housing development projects within the Primary Urban Center, Ewa, and Central Oahu Development Plan areas, will contribute to a future population growth rate that will require significant expansion of public and private facilities and services.

This expansion will become necessary as the overall population of Oahu grows and settlement patterns shift toward Ewa and Central Oahu. However, the proposed project will not in itself generate new population growth, but will provide potential employment opportunities, and sites for public and private expansion of facilities that will be necessary with or without the project.

Population, Objective B, Policy 1: Allocate efficiently the money and resources of the City and County in order to meet the needs of Oahu's anticipated future population.

Discussion: The costs for infrastructure improvements will likely be borne by the developers of the various development parcels (possibly as facilities charges or direct expenditures). These include City infrastructure for water distribution, collection of wastewater and solid waste, transportation improvements, and management of storm runoff from the project site. As such, City and County funds will not be diverted from the existing capital improvement program to fund project construction, yet

Economic Activity, Objective A - To promote employment opportunities that will enable all the people of Oahu to attain a decent standard of living.

Discussion: The proposed project will provide both temporary and long-term employment opportunities during the construction period and permanent employment in support of project operations. Indirect employment in a wide range of service related industries will also be created from construction through project development and operation. At this stage in the planning process, it is difficult to determine estimates of actual employment, however, the market study (Appendix A) has estimated approximately 1,200 new jobs during construction and approximately 4,600 operational jobs after project build-out is complete.

Natural Environment, Objective A - To protect and preserve the natural environment of Oahu.

Natural Environment, Objective A, Policy 1: Protect Oahu's natural environment, especially the shoreline, valleys and ridges, from incompatible development.

Discussion: Development of the property is compatible with the above objectives and policy by establishing a new community based facilities and services within an existing urban area. The physical character and natural environment of the subject property has been previously disturbed by military activities associated with the warehouse uses and storage of various military materials. As such, the property no longer reflects a "natural environment". Shoreline, valleys, and ridges will not be impacted by the Manana and Pearl City Development.

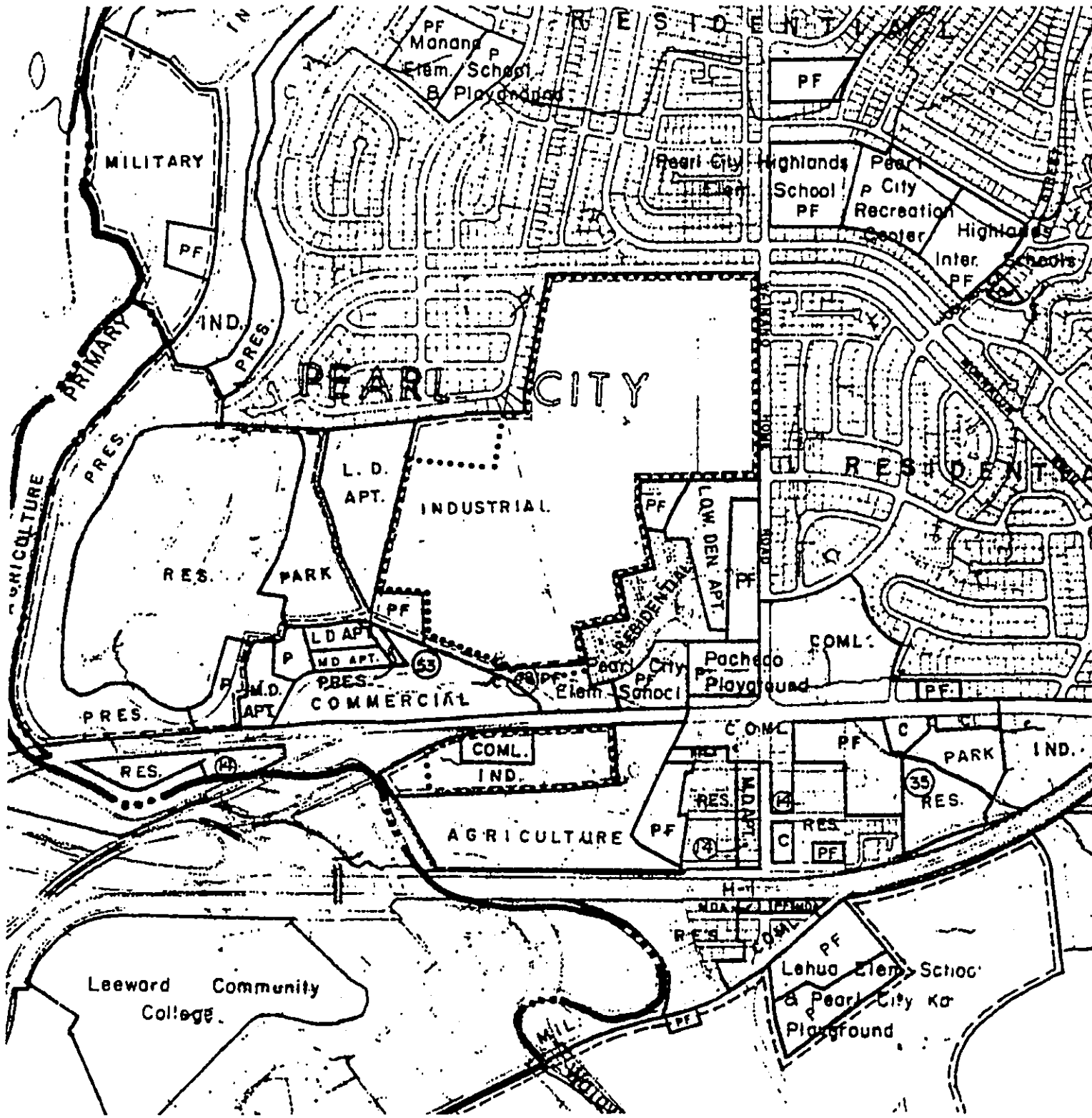
Natural Environment, Objective B - To preserve and enhance the natural monuments and scenic views of Oahu for the benefit of both residents and visitors.

Natural Environment, Objective B, Policy 2: Protect Oahu's scenic views, especially those seen from highly developed and heavily traveled areas.

Discussion: The proposed project will not impact scenic views of the ocean or any ridgelines from the H-1 Freeway or other heavily traveled roadways in the area. The visual character of the area will change from the military warehousing to landscaped urban uses compatible with surrounding residential land uses. Presently, the subject property is not landscaped or otherwise improved for aesthetic purposes (Figures 11 - 13). Compared to the visual impacts created by the existing structures, the proposed planned development will visually impact the area in a highly positive manner.

Physical Development and Urban Design, Objective A - To coordinate changes in the physical environment of Oahu to ensure that all new developments are timely, well designed and appropriate for the areas in which they will be located.

Discussion: The proposed project has been designed to be compatible with surrounding land use and circulation patterns. Construction of new structures, infrastructure improvements, and use of landscaping will ensure that the project is well designed in a manner appropriate for the area. None of the proposed development areas will be constructed prior to a determination that infrastructure is adequate or will be made available.



LEGEND

- IND INDUSTRIAL
- PF PUBLIC FACILITY
- COMM COMMERCIAL
- PROJECT SITE BOUNDARY
- MILITARY BOUNDARY

Source: City & County of Honolulu Planning Department
Development Plan Public Facilities Map, Primary Urban Center

FIGURE 15
DEVELOPMENT PLAN
MANANA/PCJ DEVELOPMENT
CITY & COUNTY OF HONOLULU
ISLAND OF OAHU

NORTH LINEAL SCALE (FEET)

PCF
HAWAII

PBR
HAWAII

DATE: 11/16/85

and modify the Park Symbol on the Manana site from "site undetermined beyond 6 years" to "site determined within 6 years".

The Development Plan Public Facility map amendment application (Planning Department I.D. No. 95/PUC-1004 IC) was passed out of Councilmember Mufi Hannemann's Economic Development and Planning Committee (Committee) on April 17, 1996 and Bill Number 18, CD 1, and was referred back to Committee at the third reading hearing on May 1, 1996 before the Full Council. The other public hearing dates are as follows: passed City Council second reading on March 13, 1996; referred out of Committee on February 28, 1996; passed first reading on February 14, 1996 and approved by the Planning Commission on February 7, 1996.

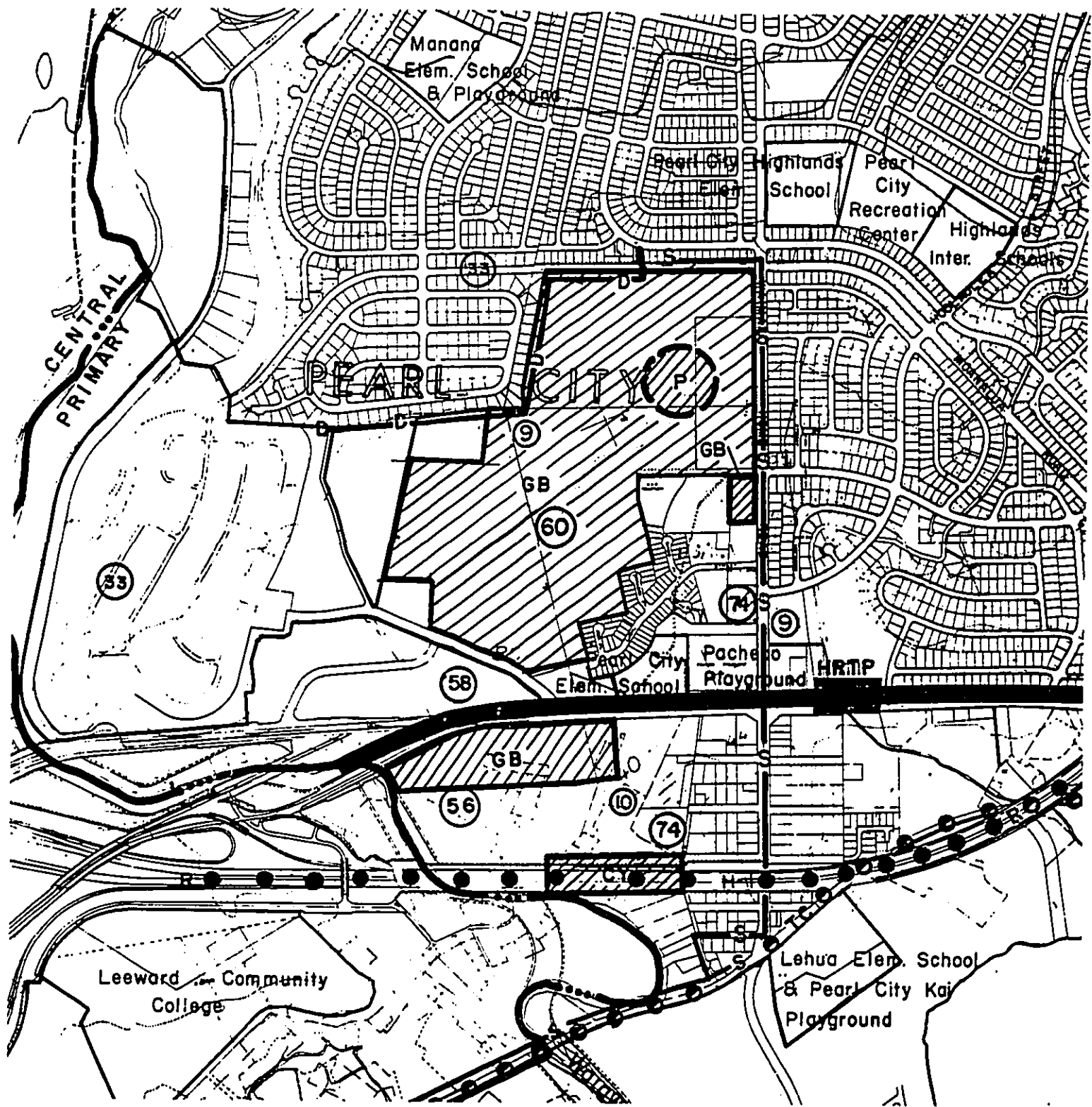
The following reflects the applicable Sections of the Primary Urban Center Development Plan.

Section 24-2.1 Area Description




The Special Provisions for the Primary Urban Center Development Plan state that physical growth and development in the Primary Urban Center of Oahu should be managed to implement the following general planning principles applicable to the Manana:

- 1) The overall development should be linear bounded by mountainous conservation lands and the sea.
- 2) Residential uses shall occur proximate to infrastructure. Heights and densities shall be appropriate to the surrounding land uses.
- 3) Commercial areas shall be located along major roadways provided that they are appropriate relative to surrounding land uses.
- 4) Major industrial centers and complexes shall be located near major transportation facilities such as Honolulu Harbor, the Airport, and the H-1 Freeway. Industrial uses should be buffered from surrounding land uses.
- 5) A strong mauka-makai orientation shall be promoted through the establishment and preservation of mauka-makai view corridors and open space.
- 6) Adequate amounts of recreational facilities and public parks shall be provided for active and passive recreation, particularly in areas where redevelopment or other activities create opportunities for new urban open spaces.

Discussion: By planning now to meet the future needs of the Pearl City community, the proposed project will be consistent with the existing urban character of the neighborhood and surrounding area. The location of the mauka and makai parcels proximate to Kamehameha Highway will make the proposed commercial, industrial, and office development consistent with the land use guidelines established for the Primary Urban Center. None of the proposed uses will obstruct existing views or be visually incompatible with the surrounding low-rise character of existing development. In addition, a significant element of the plan calls for the continued use of Manana Kai Neighborhood Park and the establishment of a new park with active recreational facilities. Parking for Manana Kai Neighborhood Park may be provided, subject to agreement by the project developer.




LEGEND

-  GOVERNMENT BUILDING
-  PARK
-  PROJECT BOUNDARY

Source: City & County of Honolulu Planning Department
Development Plan Land Use Map, Primary Urban Center

FIGURE 16
PUBLIC FACILITIES MAP
MANANA/PCJ DEVELOPMENT
CITY & COUNTY OF HONOLULU ISLAND OF OAHU

NORTH LINEAL SCALE (FEET)



PCF HAWAII **PBR** HAWAII

DATE: 11/16/90

Section 24-2.2 Urban Design Principles and Controls for the Primary Urban Center

a. Specific Urban Design Considerations

1. Open Space

The Open Space Design Considerations for the Primary Urban Center, focus primarily on "the visibility, preservation, enhancement and accessibility of open space areas" which shall be given "high priority in the design of adjacent and nearby developments in the Primary Urban Center." Presently, the subject property contains no open space values. Nevertheless, new open space areas will be established as a primary component of the proposed Manana which will significantly contribute to the overall "open space" inventory for in the region.

2. Public Views

Protection of public view areas as set-forth in the Development Plan are established to maintain views of landmarks and the natural environment when viewed from public places. Those areas applicable to the Manana and Pearl City Junction Development include distant views of the Koolau and Waianae mountain ranges and views of Pearl Harbor. The makai views from the subject property that are available, are not significant nor generally available to the public considering that access is presently restricted to military personnel. Views of the Koolau and Waianae mountain ranges from within the property will not be reduced relative to the current situation due to the relatively low density development and low building heights planned for Manana and Pearl City Junction Development.

3. Height Controls

The maximum heights for all of the proposed structures will be observed as set-forth in the Land Use Ordinance and the Special Provisions of the Primary Urban Center Development Plan. Height levels will be determined during the rezoning of the property, however, they should be consistent with residential heights typical of the surrounding single family and multi-family residential land uses along the edge of the development parcels. Consulting and coordinating design and use of the project site with the Pearl City Neighborhood Board and Pearl City Planning Task Force will continue during this process. The final developer proposal and zoning assignment selected by the City will be subject to City Council approval after the mandatory public and committee hearings.

4. Density Controls

Density controls established by the Primary Urban Center Development Plan focus primarily on densities for residential, apartment, and agricultural land uses. Residential maximum density is 12 units/acre, apartment maximum densities range from 30 to 140 units/acre, and agriculture areas are .5/acre. Inasmuch as the Manana and Pearl City Junction Development does not contain these land use components, the density requirements are not applicable.

Section 24-3.4 Land Use and Public Facilities Map

The Manana Property has been designated as "Military" on the Primary Urban Center Development Plan Land Use Map (Figure 15). According to the Land Use categories (Section 24-1.3) defined in the Development Plan Common Provisions, the Department of Housing and Community Development (DHCD) feels that the Commercial-Industrial Emphasis Mixed Use category allows maximum flexibility for the redevelopment proposals submitted in response to the Request for Proposals (RFP) issued by DHCD for both properties. The RFPs are intended to facilitate the redevelopment process for both properties in accordance with the recommended land use program contained in the Pearl City Planning Task Force final report, adopted by the Honolulu City Council on September 20, 1995 under Resolution 95-301.

DHCD's DPLUM Amendment Application is being processed by the Planning Department (PD ID No. 96/PUC-3) through the 1996 Annual Amendment Review (AAR) process. PD's Agency and Public Review Packages were distributed on February 15, 1996 for community comments. The 1996 AAR Report to the Planning Commission and City Council will be filed by the PD on July 1, 1996; public hearings before the Planning Commission will be scheduled for August and September 1996; and draft bills for each AAR proposal must be delivered to the City Council on or before October 1, 1996; the mandatory three Council hearings and Committee meetings and one public hearing will be scheduled by the Council between October and December 1996.

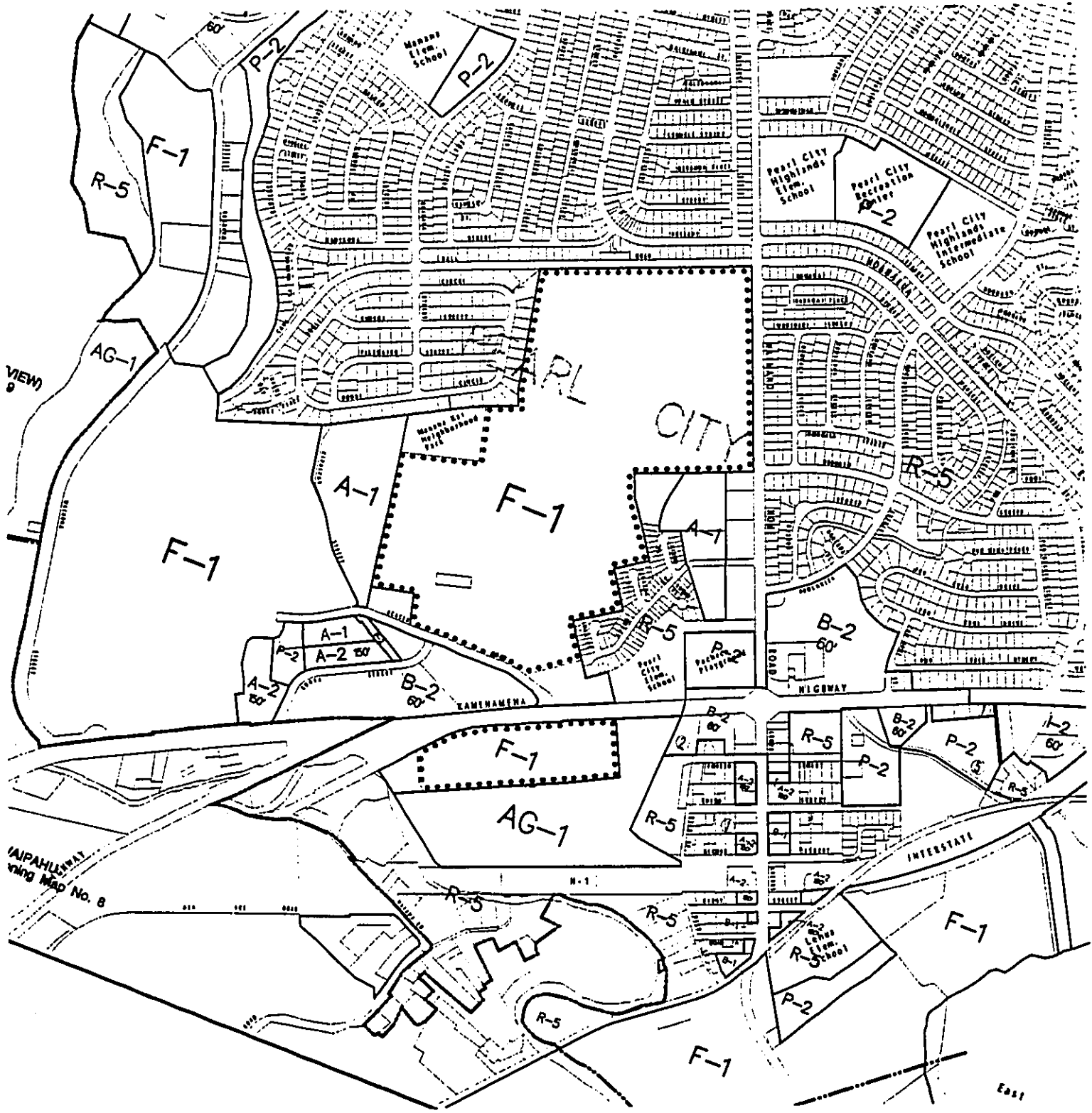
The Primary Urban Center Development Plan Public Facilities Map (Figure 16) presently designates the area for Government Buildings (GB) and Park improvements. Because the proposed structures will be developed by the private sector and not the City government, the Development Plan Public Facilities Map will also require amendment. The "P" symbol designating future park development is appropriate and applicable to the proposed Community Park, but will be changed to indicate development within six years.

To bring the proposed project into conformance with the Primary Urban Center Development Plan Public Facilities Map requirements, the City Department of Housing and Community Development filed requests in December, 1995, to delete the government building symbols from both the Pearl City Junction and Manana property sites on the Development Plan Public Facilities Map, to add Corporation Yard (CY) symbols on the Manana site for the planned Board of Water Supply (BWS) and Honolulu Public Transit Authority (HPTA) base yards and modify the Park Symbol on the Manana site from "site undetermined beyond 6 years" to "site determined within 6 years".

7.8 Land Use Ordinance

Presently, both the Pearl City Junction and larger Manana parcels are zoned F-1 Federal. However, in accordance with LUO Section 5.10(d), the zoning will revert to P-2 Preservation upon transfer to City ownership. As such, this zoning district does not permit development of the uses proposed for the Manana and Pearl City Development Plan prepared by the Pearl City Task Force until an ordinance amending the zoning district classifications is approved by the City Council.

Based on the ultimate type and density of land uses proposed by future developers, the appropriate zoning will be determined through consultation with future developers and the City's Department of Land Utilization later in the planning process.



LEGEND

- F-1 MILITARY & FEDERAL
- PROJECT BOUNDARY

Source: City & County of Honolulu Planning Department
 Halawa-Pearl City Zoning Map

FIGURE 17
C & C OF HONOLULU - ZONING MAP
MANANA/PCJ DEVELOPMENT

CITY & COUNTY OF HONOLULU ISLAND OF OAHU

NORTH LINEAL SCALE (FEET)



0 100 200 300 400 500



PKF
HAWAII



PBR
HAWAII

DATE: 11/16/70

During the rezoning process, the City will include the developer's conformance with the community's vision statement and the requested zoning, as an evaluation criteria of the various development proposals. The successful developer will also be required to coordinate its community planning efforts with the community through the Pearl City Neighborhood Board. Final zoning designation will be subject to City Council approval.

7.9 Hawaii Coastal Zone Management Program

The objectives of the Hawaii Coastal Zone Management (CZM) Program, as set forth in Chapter 205A, Hawaii Revised Statutes, apply to the protection and maintenance of valuable coastal resources. In Hawaii, essentially no land areas are excluded from the CZM program. Although the entire project area is located outside of the City's Special Management Area (SMA), it is still subject to the objectives of the CZM program.

A discussion of the applicable CZM Program objectives is presented below.

1. Recreational Resources

Objective:

Provide coastal recreational opportunities accessible to the public.

2. Historic Resources

Objective:

Protect, preserve, and where desirable, restore those natural and man made historic and pre-historic resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Policies:

- 2.a. Identify and analyze significant archaeological resources;
- 2.b. Maximize information retention through preservation of remains and artifacts or salvage operations; and
- 2.c. Support state goals for protection, restoration, interpretation and display of historic resources.

Response: An archaeological survey was prepared for the properties (Appendix D) and no features of historical or cultural significance were identified. Should any archaeologically significant artifacts, bones, or other indicators of previous on-site activity be uncovered during the construction phases of development, their treatment will be conducted in strict compliance with the requirements of the Department of Land and Natural Resources.

3. Scenic and Open Space Resources

Objective:

Protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources.

Policies:

- 3.b. Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline.
- 3.c. Preserve, maintain, and where desirable, improve and restore shoreline open space and scenic resources.

Response: The proposed development will replace the existing vacant warehouses previously used by the military. The addition of urban landscaping will mitigate the visual impact of the development as viewed from outside the site while the overall design will complement background vistas. Compared to the existing warehouse industrial uses, the proposed will protect and preserve open space resources in a more carefully controlled manner.

4. Coastal Ecosystems

Objective:

Protect valuable coastal ecosystems from disruption and minimize adverse impacts on all coastal ecosystems.

Policies:

- 4.a. Improve the technical basis for natural resource management;
- 4.b. Preserve valuable coastal ecosystems of significant biological or economic importance.

Response: Any possible impact to near-shore ecosystems resulting from surface runoff, will be mitigated by the establishment of on-site retention basins during the construction phases of development. After development, retention areas will serve the same function to encourage recharge of the groundwater. Protection of groundwater resources will be enhanced by a centralized sewage collection, treatment, and disposal system. None of the development parcels fronts a natural shoreline. Similarly, construction related impacts will be mitigated by the implementation of best management practices and establishment of on-site detention basins as applicable during the construction phases of development.

5. Economic Uses

Objective:

Provide public or private facilities and improvements important to the State's economy in suitable locations.

Policies:

- 5.b. Insure that coastal dependent development such as harbors and ports, visitor industry facilities and energy generating facilities are located, designed and constructed to minimize adverse social, visual and environmental impacts in the coastal zone management area.
- 5.c. Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside presently designated areas when:
 - ii. Adverse environmental effects are minimized.

Response: The proposed Manana and Pearl City Junction Development is located well inland from the shoreline ecosystem. To mitigate potential visual impacts, the proposed architecture and site planning can be designed to be integrated into the surrounding topography. Although there will be limited ocean views from the project, the commercial and industrial land uses, will be developed as part of an overall Master Land Use Plan that will minimize social, visual, and environmental impacts well outside of the shoreline area and coastal zone. By developing the Manana and PCJ sites as described in the conceptual plan, similar developments that are dependent on coastal resources will not be impacted or reduced by development of the proposed project.

6. Coastal Hazards

Objective:

Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion and subsidence.

Policies:

- 6.b Control development in areas subject to storm wave, tsunami, flood, erosion and subsidence.
- 6.c. Ensure that developments comply with the requirements of the Federal Flood Insurance Program.

Response: Both of the development parcels are located mauka and inland from shoreline areas. Any possible Impact to near-shore ecosystems resulting from surface runoff, will be mitigated by implementation of best management practices during the construction phases of development. None of the development parcels are located within the flood hazard zone

established by the Flood Insurance Rate Maps (FIRM) or subject to tsunami, storm waves, stream flooding, erosion, subsidence, or coastal-related flooding.

Development of drainage systems will follow City of Honolulu design standards to ensure the safe conveyance and discharge of storm runoff. All phases of development will comply with federal, state, and county requirements relating to natural hazards.

7. Managing Development

Objective:

Improve the development review process, communication and public participation in the management of coastal resources and hazards.

Policies:

- 7.a. Effectively utilize and implement existing law to the maximum extent possible in managing present and future coastal zone development.
- 7.b. Facilitate timely processing of application for development permits and resolve overlapping or conflicting permit requirements.
- 7.c. Communicate the potential short- and long-term impacts of proposed significant coastal developments early in their life-cycle and in terms understandable to the general public to facilitate public participation in the planning and review process.

Response: The property is not subject to coastal-related flooding. Development of drainage systems will follow design standards of the City to ensure the safe conveyance and discharge of storm runoff. In addition, the subject property is located outside of the City's Special Management Area (SMA).

7.10 Conclusions

The location of the subject property creates a logical opportunity for urban expansion into an area with high potential for viable urban development. Existing infrastructure and intensity of land uses are reflected in the proposed Manana. Were appropriate, new land uses and infrastructure improvements will be provided in a manner reflecting existing land use patterns.

8.0 ALTERNATIVES TO THE PROPOSED ACTION

In compliance with the provisions of Title 11, Department of Health, Chapter 200, Environmental Impact Statement Rules, Section 11-200-17(f), the "known feasible" alternatives to the proposed are limited to those that would allow the objectives of the project to be met, while minimizing potential adverse environmental impacts. The feasible alternatives must also realistically address the project's economic limitations while also responding to the surrounding residential and commercial land uses that will be impacted by the project.

In conformance with applicable regulations, other possible alternatives to those proposed have been investigated, with extensive input from the Pearl City community and elected officials, to identify the appropriate uses for Manana and how they would best be accomplished. For planning purposes,

these alternatives were described as Low Intensity, Medium Intensity, and High Intensity concepts to "test" the economic limitations inherent for the subject properties. Based on this assessment of various intensities, only the higher intensity concepts met the financial, service, and employment objectives of the City.

8.1 The Preferred Alternative

Although the final layout and configuration of the proposed project (as described in Section 2.0) will be refined through the engineering/design process, its development will ensure that the long range use of the property will contribute to both increased property tax revenues and income from the sale of improved property. These potential values will be enhanced by the careful assessment of interrelationships between differing land uses as identified by the plan.

The selected alternative will provide community-oriented facilities and support of public services, new employment opportunities, commercial, recreational opportunities, and potential revenues to the City. Those environmental impacts that do occur can be mitigated by the installation of appropriate infrastructure improvements and implementation of best management practices during project construction. Use of physical buffers (i.e. landscaping, roadways, topography, etc.) will also integrate the project into the surrounding community's land uses.

8.2 "No-Action Alternative"

The "no-action" alternative would not be consistent with stated governmental policies of establishing new employment opportunities, land uses compatible with surrounding residential development, nor create the overall positive economic opportunities to the residents of the area, City, and State that the proposed would provide.

This alternative would maintain the site as vacant warehouses. Consequently, the overall negative environmental impacts to the area, although primarily aesthetic, would also continue. In addition, the site would remain under-utilized in terms of meeting the demand for additional industrial/commercial development and as an employment center, and would not provide the increased tax revenues to the City. Without a reasonable opportunity for a return on investment, the City's financial resources would also be severely impacted.

8.3 Memorial Park Land Use (Low Intensity)

The "Low Intensity" alternative was examined to assess the feasibility of a memorial park to produce generous open space areas and other areas of low density development. Other potential low intensity land uses (relative to mixed use and commercial/industrial uses) considered were, park land, golf course, retirement community, single family residential development, and neighborhood commercial land uses oriented toward a pedestrian dominated internal circulation pattern.

Overall facility and infrastructure improvements required for the Low Intensity alternative are generally limited in scope and scale. Densities would be generally less than existing residential and commercial development typical of adjoining neighborhoods, and no significant trip generation centers would be established that would contribute to the already existing traffic congestion and capacity concerns in the area.

Upon review of the costs associated with removal of existing structures and infrastructure development, the revenues required to support these expenses was found to exceed the projected income of the low intensity land uses. In addition, this alternative did not provide the public facilities and services desired by the community. Specifically, the community expressed concerns regarding the appropriateness of a memorial park within a residential area, was concerned with the relatively high level of community opposition, and lack of economic feasibility for the low intensity alternative.

8.4 Mixed Use (Medium Intensity)

The "Medium Intensity" development alternative, analyzed a larger commercial/industrial component, but was more dependent on a vehicular transportation system. In addition, higher density multi-family residential development would increase the need and demand for commercial development to support the higher residential population in the area. Schools and other support facilities would also be necessary.

Employment centers associated with the industrial, commercial, and office development land uses would inherently generate a greater demand for residential land uses in the area. If these residential dwelling units could not be located proximate to the subject properties, regional transportation improvements would be necessary to mitigate the on-site and off-site trips generated by the Medium Intensity development concept. In addition, if the dwelling units associated with the Medium Intensity Alternative were developed on-site, the revenues generated may not be sufficient to "carry" the cost of the land, required infrastructure and public facilities needed to support the project.

8.5 Commercial/Industrial Mixed Use (High Intensity)

The "High Intensity" alternative was designed to reflect an intensity of uses and infrastructure improvements sufficient to generate revenues that could support the project development costs. Planned uses are primarily a mixture of recreational, commercial, industrial, office, and community facility development.

Various "themes" suitable for the High Intensity plans were considered, including a theme park, medical/community facilities complex, recreational/commercial complex, light industrial areas, and variations of each. All High Intensity Plans included sites for the HPTA facility yard and Board of Water Supply yard. These uses were all evaluated by the Pearl City Task Force and most were considered potentially feasible if appropriate planning and mitigation measures were implemented.

The high intensity alternative would require off-site and on-site transportation circulation improvements to accommodate the projected truck, commuter, and employee traffic. This would also help to relieve the currently unacceptable levels of service on Waimano Road and at its intersection with Kamehameha Highway. However, because the High Intensity alternatives would not result in increases to the regional residential population, the level of expansion for schools or other public service facilities should not be significant. Transportation, water, and wastewater infrastructure will require some improvement.

8.6 Summary of Major Impacts

The major impacts associated with development of the Manana and Pearl City Junction Development are not unique to this project, but are typical of most large scale commercial

and industrial development. Higher intensity land uses will likely result in greater impacts, thereby requiring additional or more extensive mitigative measures. Traffic patterns will be altered, air and noise impacts will occur, and additional demands on existing water and wastewater infrastructure systems within this area will result. However, without a significant residential land use component, impacts associated with population growth will be mitigated.

Project development will also impact use of public facilities in the area, and police and fire protection services, but the net fiscal impact to the City should be reduced as new employment opportunities are created that will be made available to Pearl City residents. Similarly, new property and general excise tax revenues and sale of real property will generate funds to needed to operate most government services. Consequently, the net fiscal impact of the project is expected to be positive.

It should be noted that the major environmental impacts related to project development can be mitigated by the implementation of best management practices during construction, through the development of new infrastructure and public service facilities, and with proper attention to environmental design. The necessary improvements will be provided by project developers and/or through joint ventures with the City. Consequently, no significant environmental effects will result from the development of subject property provided appropriate mitigation measures are employed throughout the development period and during project operation. Fiscal impacts to the City will also be minimized or eliminated (Appendix A).

9.0 SUMMARY OF UNRESOLVED ISSUES

According to the Content Requirements, Section 11-200-17(n), of the Department of Health Environmental Impact Statement Administrative Rules, a summary of "unresolved issues" must be provided in the Final EIS describing how such issues will be resolved and what overriding reasons there are for proceeding without resolving the issues.

As herein described, the unresolved issues applicable to the Manana and Pearl City Development deal primarily with future actions and decisions of future developers that cannot be determined at this time.

9.1 Overview

The Manana and Pearl City Development is conceptual at this stage of the planning process. Requested amendments to the Primary Urban Center Development Plan and Zoning will allow detailed, site specific planning during the next level of the approval process. These consist of architecture, land use, and level of participation relative to the overall Manana and Pearl City Development. As such, a number of issues remain unresolved, but are in the process of resolution.

The unresolved issues are described below and include: 1) Final determination of specific land uses, 2) timing of the completion of the proposed public facilities including TheBus, BWS, and neighborhood park, 3) development of architectural plans for the proposed structures, and 4) traffic monitoring and mitigation.

Final Determination of Specific Land Uses

As previously described, the project will likely be developed by private companies either individually or through joint venture arrangements with the DHCD. As such, the "Request for Proposals" (RFP) process, market conditions, and City zoning district designations will ultimately determine the specific type of land uses developed and their associated densities, heights, parking requirements, and vehicular circulation patterns. Consequently, this issue will remain unresolved until final development agreements are reached with private developers.

Timing of the Completion of the Proposed Public Facilities

The public facilities planned for the project include vehicle yards for the Board of Water and TheBus, and the new neighborhood park. However, development of each public facility is dependent on separate funding sources. For example, the BWS depends on user fees, TheBus receives funds from rider fares, and the City and Federal governments. Consequently, these facilities will likely be developed as funds become available and as the environmental review process established by Chapter 343, HRS, (for projects that utilize City funds) is applied. Therefore, this issue will remain unresolved until funding and program requirements are determined and the environmental review process for each project is completed.

Development of Architectural Plans for the Proposed Structures

In the development process, architectural plans will be prepared which respond to market conditions and site features such as existing architecture, slopes, access, views, and zoning standards such as height limits and setbacks. Consequently, the physical design of future buildings cannot be known until the development program for each parcel is defined by the market, developer requirements, and zoning restrictions established. Therefore, this issue will remain unresolved until the Request for Proposals (RFP) process is completed and the developers selected.

Traffic Monitoring and Mitigation

Although the proposed "Spine Road" will significantly alter area-wide transportation patterns (especially at the intersection of Waimano Home Road/Kamehameha Highway), traffic congestion will remain high with or without the project. As the project achieves build-out and regional transportation patterns are impacted by the future development of Ewa and Central Oahu, the project will become an important employment and commercial center of the community. As such, a program to periodically monitor traffic levels of service should be implemented to identify when traffic mitigation measures and system improvements are warranted.

Because the relatively high levels of traffic congestion are likely to continue even after improvements to the system are in place, this will remain as an unresolved issue into the foreseeable future. However, with proper attention to traffic monitoring and planning of future transportation improvements, the existing level of service on major roadways should not be significantly worsened.

9.2 Conclusion

All of the unresolved issues described will ultimately depend on close cooperation between the future developers of the project and various governmental agencies. However, none of the unresolved issues significantly impact the environmental quality of the area. Over the development period, the Manana and Pearl City Development will evolve and change in accordance with the needs of the community and future population. The significant range of community and socio-economic benefits provided by the project warrants its immediate undertaking while simultaneously working with future developers and government agencies on the unresolved issues.

10.0 SIGNIFICANCE CRITERIA

In addition, the Department of Health Rules (11-200-12) require that an applicant or agency must determine whether an action may have a significant impact on the environment, including all phases of the project, its expected consequences both primary and secondary, its cumulative impact with other projects, and its short and long-term effects. In making the determination, the Rules establish "Significance Criteria" to be used as a basis for identifying whether significant environmental impact will occur. According to the Rules, an action shall be determined to have a significant impact on the environment if it meets any one of the following criteria:

- **Involves a loss or destruction of any natural or cultural resources;**

Discussion: The proposed project will not impact scenic views of the ocean or any ridgelines from the H-1 Freeway or other heavily traveled roadways in the area. The visual character of the area of application will change from the military warehousing to landscaped urban uses, designed in a manner compatible with surrounding residential land uses. Presently, the subject property is not landscaped or otherwise aesthetically improved.

The property is not subject to coastal-related flooding or flooding during intense storm events due to the presence of topographical features such as streams or drainageways. In addition, the subject property is located outside of the City's Special Management Area (SMA). Design of the drainage improvements will follow applicable engineering standards of the City to ensure the safe conveyance and discharge of storm runoff.

As previously noted, no significant archaeological or historical sites are known to exist on the subject property. Should any archaeologically significant artifacts, bones, or other indicators of previous on-site activity be uncovered during the construction phases of development, their treatment will be conducted in strict compliance with the requirements of the Department of Land and Natural Resources.

- **Curtails the range of beneficial uses of the environment;**

Discussion: Because the subject property is highly urbanized and developed with military warehouses, the beneficial use of the natural environment has already been curtailed. To return the site to a natural environmental condition is not practical from both an environmental or economic perspective. However, by locating new development within an existing urban area, the need to develop similar land uses within agricultural or conservation areas elsewhere on Oahu is minimized.

- **Conflicts with the State's long-term goals or guidelines as expressed in Chapter 344, HRS;**

Discussion: The proposed Manana and Pearl City Junction Development is consistent with the Environmental Policies established in Chapter 344, HRS.

- **Substantially affects the economic or social welfare of the community or state;**

Discussion: The proposed project will significantly contribute to Oahu's future population by providing residents with the opportunity to live and work in harmony in a high quality living environment. Surrounding land use patterns will not be negatively or significantly altered, nor will unplanned population growth or its distribution be stimulated. However, new positive impacts associated with employment and provision of new commercial and recreational opportunities, will enhance the economic and social welfare of the community.

Consequently, development of the Manana and Pearl City Junction Development will provide future residents of Pearl City with a quality living environment close to their neighborhoods. This harmonious relationship between home and the land uses proposed for Manana will significantly improve the quality of life for many residents.

In addition, the City will receive increase real property tax revenues after development, while the State will receive added General Excise Tax and income tax revenues from consumers and project employees. Consequently, these funds can be utilized by both the City and State in beneficially affecting the economic and social welfare of Hawaii residents.

- **Substantially affects public health**

Discussion: Although the public health may be impacted by air, noise, and water quality impacts, any impacts will be insignificant or not detectable, especially when weighed against the positive economic, social, and quality of life implications associated with the project. These future impacts should be weighed against the current uses and associated environmental impacts characteristic of the warehouse uses on the property.

- **Involves substantial secondary effects, such as population changes or infrastructure demands**

Discussion: Existing and planned large-scale housing development projects within the Primary Urban Center Development Plan area, will contribute to a future population growth rate that will require expansion of public and private facilities and services. These improvements will become necessary as the overall population of Oahu grows and settlement patterns shift to Ewa and Central Oahu. However, the proposed project will not in itself generate new population growth, but will provide potential employment opportunities for a significant portion of the Development Plan area's present and future population which would occur with or without the project.

Infrastructure improvements will include water distribution, collection of wastewater and solid waste, and systems to improve the management of storm runoff from the project site. Needed infrastructure will not burden existing city systems, yet residents of Oahu will benefit from the expanded economic opportunities afforded by the proposed project.

In addition, higher property values and expansion of employment opportunities will generate new sources of direct and indirect revenue for residents and the City and County of Honolulu. Increased property tax revenues created by the development of Manana, will be placed into the City's General Fund. City government can then utilize these funds for capital improvements as appropriate to "meet the needs of Oahu's anticipated future population" on an island-wide basis.

- **Involves a substantial degradation of environmental quality;**

Discussion: The proposed Manana and Pearl City Development will replace the existing vacant warehouses previously used by the military. Additional urban landscaping will mitigate the visual impact of the development as viewed from outside the site while the overall design will complement background vistas. Compared to the existing warehouse industrial uses, the proposed project will protect and preserve open space resources in a more carefully controlled manner.

Although the subject property contains no significant open space values, new open space corridors along the spine road and a new neighborhood park, will be established as important elements of the proposed Manana and Pearl City Junction Development. This will significantly contribute to the overall inventory of "open space" within the region.

Makai views from the subject property are available, however, they are not significant nor generally available to the public in the property's present restricted condition. Views of the Koolau and Waianae mountain ranges from within the property will be protected by the relatively low density development and low heights planned for Manana.

- **Is individually limited but cumulatively has considerable effect on the environment, or involves a commitment to larger actions;**

Discussion: By planning the Manana and Pearl City Junction Development now to meet the future needs of the Pearl City community, the community based land use plan strives to ensure consistency with the existing urban character of the neighborhood. The location of the mauka and makai parcels along Kamehameha Highway will make the proposed commercial and industrial land uses consistent with the land use guidelines established by the Development Plan for the primary urban center. None of the proposed uses will significantly obstruct existing views or be visually incompatible with the surrounding low-rise character of existing development.

- **Substantially affects a rare, threatened or endangered species or its habitat;**

Discussion: There are no known rare, threatened or endangered species or habitats associated with the subject property or by the implementation of the proposed Manana and Pearl City Development.

- **Detrimentially affects air or water quality or ambient noise levels;**

Discussion: Any possible impact to near-shore ecosystems resulting from runoff of surface water, will be mitigated by the establishment of on-site retention basins during the project's construction phases. After development, retention areas will serve the same function to promote recharge of the groundwater. Protection of groundwater resources will be maintained by a centralized sewage collection, treatment, and disposal system. Noise levels

along major transportation corridors will increase as traffic levels increase in the future. However, with the construction of the proposed spine road, significant levels of traffic will be diverted from the Waimano Home Road and Kamehameha Highway resulting in an overall reduction in noise at those locations.

- **Affects an environmentally sensitive area, such as a flood plain, tsunami zone, erosion prone area, geologically hazardous land, estuary, freshwater area, or coastal waters.**

Discussion: Development of the property is compatible with the above criteria by establishing a needed development within an existing urban area. The physical character of the subject property has been previously disturbed by military activities associated with the warehouse uses and storage of various military materials. As such, the property no longer reflects a "natural environment". Shoreline, valleys, or ridges will not be impacted by the Manana and Pearl City Junction Development.

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U.S. Department of Agriculture Soil Conservation Service. (August, 1972). *Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*.

11.2 List of Preparers of the EIS

This Final EIS has been prepared by PBR HAWAII, Pacific Tower, Suite 650, 1001, Bishop Street, Honolulu, Hawaii 96813. The staff involved in the preparation of this document included:

Thomas. S. Witten, ASLA	Executive Vice President
David Hulse, AICP	Associate
Ken Jencks	Physical Planning
Toshiko Matsushita	Graphics
Chris Kimura	Graphics
Nadine Matsunaga	Production
Anne Furukawa	Production

Several key technical consultants were employed to provide specific assessments of environmental factors for this project. These consultants, their company affiliation, and their specialty are listed below:

Bernard Kea, P.E.	Community Planning	Civil Engineering
Randall Okaneku, P.E..	Traffic Management Consultant	Traffic
David Adams	Darby & Associates	Noise Impact Assessment
Jim Morrow		Air Quality Assessment
Robin Yoshimura	PKF Hawaii	Market Study, Economic/Fiscal Study
Robert L. Spear, Ph. D	Scientific Consultant Services, Inc.	Archaeology Assessment
Winona P. Char	Char and Associates	Botanical Assessment
Phil Bruner		Wildlife Assessment

12.0 CONSULTED PARTIES AND PARTICIPANTS IN THE FINAL EIS PROCESS

12.1 List of Agencies/Individuals Contacted in Preparation of the EIS

Consulted agencies or agencies which provided information in the preparation of this Final Environmental Impact Statement include the following:

State

Department of Agriculture
 Department of Accounting and General Services
 Department of Budget and Finance - Housing Finance and Development Corporation
 Department of Business, Economic Development and Tourism
 State Energy Office
 Department of Defense
 Department of Hawaiian Homelands
 Department of Education
 Department of Land and Natural Resources
 Department of Health
 Environmental Management Division
 Department of Transportation
 Office of State Planning
 Department of Land and Natural Resources
 Department of Land and Natural Resources, Historic Preservation Division
 Office of Environmental Quality Control

State Land Use Commission
University of Hawaii Environmental Center
University of Hawaii - Water Resources Research Center

City

Department of Land Utilization
Planning Department
Building Department
Department of Transportation Services
Department of Parks and Recreation
Department of Public Works
Board of Water Supply
Honolulu Public Transit Authority (HPTA)
Honolulu Fire Department
Honolulu Police Department
Department of Wastewater Management
Department of Finance

Federal

U.S. Department of the Interior, Fish and Wildlife Service
U.S. Department of the Interior - Geological Survey
U.S.D.A. Soil Conservation Service
U.S. Navy, Admiral G.S. Holder
U.S. Navy Facilities Engineering Office (Pearl Harbor)
U.S. Navy Environmental Planning Division
U.S. Department of Federal Aviation
U.S. Geological Survey
U.S. Department of the Army, Pacific Ocean Division, Corps of Engineers
U.S. Department of Agriculture, Natural Resource Conservation Service
U.S. Department of Commerce
U.S. Park Service

12.2 Consulted Parties (Non-governmental)

Hawaiian Electric Company
Oahu Metropolitan Planning Organization (OMPO)
Monroe Friedlander Management, Inc.
U.S. Congressman Neil Abercrombie
State Senator David Ige
State Senator Cal Kawamoto
State Representative Mark K. Takai
State Representative Roy Takumi
State Representative Noboru Yonamine
Councilmember Mufi Hannemann
PCNB Chair Jerry Souza
PCCA President Bob Kubo
Manana Community Association Secretary Gregory Gonsalves
Sherry Aquino

13.0 COMMENTS AND RESPONSES

13.1 Comments Received and Responses Provided on the Draft Environmental Impact Statement

The Department of Housing and Community Development extended the DEIS comment deadling from March 23, 1996 to April 25, 1996 to accept late comment letters and to allow for their publication in this Final Environmental Impact Statemement.

COMMENTS LETTER HISTORY REGARDING EISPN AND DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR MANANA/PCJ DEVELOPMENT

Checklist of Responses, Effective: April 23, 1996

AGENCY	EISPN MAIL DATE	DATE COMMENTS RECEIVED	COMMENTS (Y/N)	RESPONSE DATE	DATE DEIS COMMENTS RECEIVED	RESPONSE DATE
STATE						
Office of Environmental Quality Control	10/23/95	10/1/95	Yes	11/17/95	3/25/96	4/23/96
Dept. of Accounting and General Svcs.	10/23/95	11/14/95	No	11/21/95	3/8/96	3/21/96
Dept. of Agriculture	10/23/95					
Dept. of Business, Econ. Dev. and Tourism	10/23/95					
Dept. of Business, Econ. Dev. and Tourism (LUC)					2/14/96	3/18/96
Dept. of Business, Econ. Dev. & Tourism (Energy)	10/23/95	10/30/95	No	11/7/95	2/15/96	3/19/96
Dept. of Defense	10/23/95	11/15/95	No	11/22/95	4/15/96	5/14/96
Dept. of Education	10/23/95	11/8/95	Yes	11/27/95		
Dept. of Hawaiian Homes Lands	10/23/95	11/13/95	Yes	11/27/95	2/8/96	3/21/96
Dept. of Health (Environmental)	10/23/95					
Dept. of Health	10/23/95				4/9/96	4/23/96
Dept. of Land & Natural Resources (Preservation)	10/23/95	11/24/95	Yes	12/7/96	3/25/96	4/8/96
Dept. of Land & Natural Resources	10/23/95	12/22/95	No	1/17/96	3/15/96	4/16/96
Office of State Planning	10/23/95	10/30/96	Yes	11/17/95		
Dept. of Transportation	10/23/95	10/26/95	Yes	11/8/95		
Office of Hawaiian Affairs	10/23/95					
Housing and Finance and Development Corp					3/4/96	3/22/96
Office of State Planning					2/12/96	3/19/96
University of Hawaii - Environmental Center					3/26/96	4/24/96
University of Hawaii - Water Resources					2/8/96	3/21/96
FEDERAL						
US Army Corps of Engineers	10/23/95	11/3/95	Yes	11/17/95	2/14/96	3/19/96
Dept. of Agriculture	10/23/95				3/11/96	3/21/96
Dept. of Commerce	10/23/95					
Dept. of Federal Aviation Authority	10/23/95	12/21/95	No	12/29/95		
Dept. of the Interior Fish and Wildlife	10/23/95				4/6/96	4/24/96
Dept. of the Interior US Geological Survey	10/23/95	10/26/95	No	11/7/95	2/9/96	3/21/96
National Park Service	10/23/95					
Naval Fac. Eng. Command	10/23/95				2/25/96	3/21/96
Navy (Commander)	11/17/95	INFO ONLY			2/12 & 4/1/96	3/21 & 4/23/96
ELECTED OFFICIALS						
Congressman Abercrombie	10/23/95					
State Senator Kawamoto	10/23/95				3/19/96	4/23/96
State Representative Takai	10/23/95					
State Representative Takumi	10/23/95					
State Representative Yonamine	10/23/95					
Councilmember Hannemann	10/23/95	11/24/95	Yes	12/14/95		
PCNB Chair Souza	10/23/95	11/20/96	Yes	12/5/95		
PCCA President Kubo	10/23/95					
MANANA C/A - Gonsalves	-	11/13/95	Yes	12/5/95		
NON-GOVERNMENTAL AGENCIES						
American Lung Association	10/23/95					
Hawaiian Electric Company	10/23/95	11/15/95	Defer	11/27/95	3/4/96	3/21/96
Oahu Metropolitan Planning Authority	11/24/95	INFO ONLY				
Sherry Aquino					3/23/96	4/17/96
Pearl Highlands Center Associates					2/5/96	3/22/96
CITY						
Building Department	10/23/95	11/13/95	Yes	11/21/95	4/1/96	4/9/96
Board of Water Supply	10/23/95	11/28/95	Yes	12/7/95	1/22/1996	3/19/1996
Dept. of Land Utilization	10/23/95				3/21/96	4/11/96
Dept. of Parks and Recreation	10/23/95	11/13/95	No	12/5/95	3/25/96	4/12/96
Dept. of Public Works	10/23/95	11/16/95	No	11/22/95	11/13/95	2/20/96
Dept. of Transportation Services	10/23/95	11/30/95	Yes	12/29/95	3/26/96	5/8/96
Dept. of Wastewater Management	10/23/95	30-Nov	Yes	12/14/95	2/22/96	3/19/96
Dept. of Finance	10/23/95					
Honolulu Public Transit Authority	11/17/95	11/22/95	No	12/5/95	1/23/96	3/19/96
Dept. Planning.	10/23/95	11/1/95	Yes	11/17/95	3/20/96	5/9/96
Honolulu Fire Department	10/23/95	11/27/95	Yes	12/28/95		
Honolulu Police Department	10/23/95	11/15/95	Yes	11/21/95	2/20/96	3/19/96
Honolulu Police Department	10/23/95	10/30/95	No	11/7/95		



STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

228 SOUTH KING STREET
FOURTH FLOOR
HONOLULU, HAWAII 96813
TELEPHONE: 595-5111
FACSIMILE: 595-5119

March 25, 1996

Roland Libby, Jr.
Department of Housing and Community Development
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Attention: Ray Sakai

Dear Mr. Libby:

Subject: Draft Environmental Impact Statement (EIS) for Manana and Pearl City
Junction Development THK 9-7-24; 41 & por. 6; 9-7-23:01

In the final EIS please include the following:

1. A reference to past, present and future projects in the area and a full discussion of the cumulative impacts.
2. The amount of public funding for this project.
3. In the comments section, a response to Randall Fujiki of the Honolulu City & County Building Department is included but the comment letter is missing.
4. The response to the EIS preparation notice comment letter from the Department of Hawaiian Home Lands indicated that an application would be made to the Commission on Water Resources Management for a water allocation, but no application is listed in the draft EIS. Please list the date and status of this application.

If you have any questions, please call Nancy Heinrich at 596-4185.

Sincerely,

GARY GILL
Director

c: Cheryl Soon, City & County of Honolulu Planning Department
Robin Yoshimura, PKF Hawaii

GARY GILL
DIRECTOR

36 MAR 28 AM 1:26

4 COUN. COMM. DIV.

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 521-4217 • FAX: (808) 521-5199



JEREMY HARRIS
MAYOR

ROLAND D. LIBBY, JR.
DIRECTOR
ROBERT AGAR, JR.
DEPUTY DIRECTOR

Mr. Gary Gill, Director
April 23, 1996
Page 2

April 23, 1996

Mr. Gary Gill, Director
State Office of Environmental
Quality Control
220 South King Street, Fourth Floor
Honolulu, Hawaii 96813

Dear Mr. Gill:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

Thank you for your letter dated March 25, 1996 (copy attached), sent in response to our January 1996 DEIS on the above properties. Your letter will be reproduced in the Final Environmental Impact Statement (FEIS).

We appreciate this opportunity to address your comments and recommendations, which have been forwarded to our consultants for review and possible inclusion into the FEIS as follows:

1. Reference to the past, present, and future projects in the area and a full discussion of the cumulative impacts was provided in the DEIS as follows:

To determine the planning constraints characteristic of the subject properties, a Site Analysis (Figure 4) was prepared to graphically reflect past and present land use patterns, and to determine whether the proposed conceptual master plan would establish land uses compatible with the surrounding community.

The discussion on cumulative impacts provided in Sections 6.1 and 6.2 of the DEIS, was also prepared to describe how the existing Manana and Pearl City Junction properties will be transformed in the future as the conceptual master land use plan for the project is implemented. In addition, the Traffic, Noise Impact Assessment, Air Quality, Preliminary Engineering Report, Market Assessment, Economic and Fiscal Impact Assessment, and Social Impact Assessment Reports all

identified the cumulative impacts of the proposed project by incorporating "off-site" conditions, planning characteristics and impacts.

2. As stated in the DEIS, the subject properties were purchased from the U.S. Navy by the City for \$109 million. Other city funds required for interest payments and planning costs and the net fiscal impact to the City will be determined when the sale of the properties has been completed.
3. The Department of Housing and Community Development's (DHCD) response to Mr. Randall Fujiki of the Honolulu City and County Building Department will be included in the FEIS document.
4. Please note that DHCD's response to the Department of Hawaiian Home Lands does not indicate that an application would be made to the Commission on Water Resources Management for a water allocation. Rather, the application to the Commission will be made by the Board of Water Supply (BWS) as the total potable water demand generated by the primary users of the Pearl Harbor aquifer (BWS, agriculture and the military) increases in the future.

Please write or call Ray Sakai Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to share later.

Thank you once again for your cooperation in this matter.

Sincerely,

ROLAND D. LIBBY, JR.
Director

Attachment

cc: David Hulse, PBR Hawaii
Robin Yoshimura, PKF-Hawaii
Gail Kaito, DHCD Planning Division
Cheryl Soon, Planning Department

Department of Accounting and
General Services
1151 Punchbowl
Honolulu, Hawaii 96813

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 8TH FLOOR, HONOLULU, HAWAII 96813
PHONE: (808) 533-4427 FAX: (808) 537-5410

(P) 1163.6

JEREMY HARRIS
MAYOR



ROLAND D. LIBBY, JR.
DIRECTOR
ROBERT AGRES, JR.
DEPUTY DIRECTOR

MAR 8 1996

Planning Department
City and County of Honolulu
650 South King Street, 8th Floor
Honolulu, Hawaii 96813

36 MAR 11 AM 12

DEPT. OF ACCOUNTING
& COMM. DEVELOPMENT

Gentlemen:

Subject: Manana and Pearl City Junction Development
Ewa, Oahu, Hawaii
Draft EIS

Thank you for the opportunity to review the subject document. The proposed project will have no impact on our facilities. Therefore, we have no comments to offer.

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

Very truly yours,

Gordon Matsuoka
GORDON MATSUOKA
State Public Works Engineer

RY:jj
cc: Dept. of Housing & Community Dev.
PKF Hawaii
OSEOC

March 21, 1996

Mr. Gordon Matsuoka
State Public Works Engineer
Department of Accounting and General Services
1151 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Matsuoka:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

Thank you for your letter dated March 8, 1996, sent in response to our January 1996 DEIS on the above properties. We note that the Department of Accounting and General Services has no comments to offer at this time. Your letter will be reproduced in the Final Environmental Impact Statement (FEIS).

Please write or call Ray Sakai, Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to share later.

We will continue to keep you informed of any significant changes occurring in the project and look forward to your future review of our forthcoming FEIS.

Thank you once again for your cooperation in this matter.

Sincerely,
Roland D. Libby, Jr.
ROLAND D. LIBBY, JR.
Director

cc: Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKF-Hawaii
David Hulse, PKF-Hawaii
Gail Kaito, DHCD Planning Division



**DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT, AND TOURISM**

ENERGY DIVISION, 335 MERCHANT ST., RM. 110, HONOLULU, HAWAII 96813

RETURN TO: CHERYL SOON
1041 P. HAWAII
DUNEDIN
PO BOX 1000
DUNEDIN

FAX: (808) 587-3000



February 15, 1996

Ms. Cheryl Soon
City & County of Honolulu
Planning Department
650 South King St., 5th Floor
Honolulu, Hawaii 96813

Dear Ms. Soon:

Subject: Draft Environmental Impact Statement
Manana and Pearl City Junction Development
Tax Map Keys: 9-7-24-06 Por.: 9-7-24-41; 9-7-23-01

Thank you for the opportunity to comment on this DEIS for Light Industrial/Business Park development.

We note that you will be including applicable standards of the Model Energy Code for commercial buildings as adopted by City and County of Honolulu Ordinance 94-75 in the Design Guidelines of the project. Developers should be encouraged to address how they plan to develop energy efficient practices and technologies for this project.

Sincerely,

Maurice H. Kaya
Maurice H. Kaya
Energy, Resources, and Technology
Program Administrator

ER
cc: OEQC
Ray Sakai
PKF Hawaii

**DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU**

150 SOUTH KING STREET, 5TH FLOOR, HONOLULU, HAWAII 96813
PHONE: (808) 537-4317 FAX: (808) 537-5388



JEREMY HARRIS
MAYOR

HOLAND LIBBY, JR.
DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

March 19, 1996

Mr. Maurice H. Kaya
Energy, Resources, and Technology
Program Administrator
Department of Business,
Economic Development, and Tourism
Energy Division
335 Merchant Street, Room 110
Honolulu, Hawaii 96813

Dear Mr. Kaya:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement

Thank you for your letter dated February 15, 1996 in response to our January 1996 Draft Environmental Impact Statement (DEIS) on the above properties.

Your salient reminder and letter will be reproduced in the Final EIS document. Please write or call Ray Sakai, Project Officer, at 527-5321 or 523-4764 if you have any questions or have additional comments to contribute later.

We will continue to keep you informed of any significant changes occurring in the project and look forward to your review of our forthcoming Final Environmental Impact Statement.

Thank you once again for your cooperation in this matter.

Sincerely,
Holland Libby, Jr.
HOLLAND D. LIBBY, JR.
Director

cc: Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKF-Hawaii
David Hulbe, PBR Hawaii
Gail Kato, DHCD Planning Division



WILLIAM J. CALVERTANO
Major General, Retired
Director of Civil Defense



STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE DIRECTOR OF CIVIL DEFENSE
3040 DIAMOND HEAD ROAD
HONOLULU, HAWAII 96814-4465

PHONE (808) 725-4300
FAX (808) 725-4387

Mr. Ray Sakai
April 16, 1996
Page 2

Subsection 4.2, "Physical Characteristics," describes elevations of 50-135 feet with gentle slopes that reach up to 7 percent. Subsection 4.6, "Natural Hazards," describes flood hazards only. High wind and seismic hazards need to be addressed. Structures within the project area should be designed and constructed to resist winds at these elevations and be in compliance with the most currently adopted building codes for both wind and earthquakes. These structures could then be surveyed and evaluated for future use as potential public shelters.

If there are any further questions, please have your staff call Mr. Mel Wshihara of my staff at 733-4300.

Enc.

96 APR 19 10:15

DEPT. OF HOUSING AND COMMUNITY DEVELOPMENT

TO: Mr. Ray Sakai
Department of Housing and
Community Development
City and County of Honolulu

FROM: Roy C. Price, Sr.
Vice Director of Civil Defense

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS), HAWAII AND PEARL CITY JUNCTION DEVELOPMENT

We appreciate this opportunity to comment on the DEIS for the Hanana and Pearl City Junction Development, Pearl City, Island of Oahu, District of Ewa, Hawaii. THK: 9-7-24:06 por.: 9-7-24:41; 9-7-23:01.

State Civil Defense (SCD) requests that the applicant provide the following infrastructure improvement. The addition of one solar powered siren and siren support infrastructure purchased and installed by the developer with three (3) 117 dB directional speaker arrays at the existing Hanana Kai Park. The siren site with the approximate coverages is marked in red on Figure 5 of the Conceptual Master Plan, Hanana/PCJ Development. The existing siren locations with their approximate coverage areas are marked in blue pencil.

Section 2.0, "DESCRIPTION OF THE PROJECT," Subsection 2.3, "Key Elements of the Plan," Sub-subsection 2.3.1, "Public Facilities," subparagraph 2.3.1.3, "Park/Youth Center," addresses a Youth Center that could be developed in the future. Section 4.0, "ASSESSMENT OF THE EXISTING NATURAL ENVIRONMENT, POTENTIAL IMPACTS AND MITIGATIVE MEASURES," addresses environmental sensitivities to flooding, tsunamis and geologically hazardous land. Additionally, the island of Oahu is designated Seismic Zone 2a. The impact of torrential rainfall and potentially destructive winds, associated with tropical storm/hurricane force winds, also needs to be addressed.

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY OF HONOLULU

510 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 525-4227 • FAX: (808) 527-5578



JEREMY HARRIS
DIRECTOR

ROLAND D. LIBBY, JR.
DIRECTOR
ROBERT AGNES, JR.
DEPUTY DIRECTOR

MAY 15 1996

May 14, 1996

Mr. Roy C. Price, Sr.
Vice Director of Civil Defense
State Department of Defense
Office of the Director of Civil Defense
3949 Diamond Head Road
Honolulu, Hawaii 96816-4495

Dear Mr. Price:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

Thank you for your response, dated April 16, 1996 (copy attached), to our January 1996 DEIS on the above properties.

We and our consultants appreciate this opportunity to address your comments which will be included into the Final Environmental Impact Statement as follows:

Solar Powered Siren and Directional Speakers

We will remind successful proposers to the Request for Proposals issued by the Department of Housing and Community Development on December 11, 1995 and January 8, 1996 for PCJ and Manana Properties, respectively, of their responsibility to purchase and install one solar powered siren and support infrastructure and three 117dB directional speaker arrays. They will also be instructed to call Norman Ogasawara, the State Assistant Telecommunications Officer at 733-4300 and Wayne Jones, City and County of Honolulu, Oahu Civil Defense Agency Communications Officer at 523-4679 to coordinate the retention of the consulting engineer, the selection of the infrastructure location and installation schedule, before the buildings are "substantially occupied."

Assessment of the Existing Natural Environment, Potential Impacts and Mitigative Measures - Impact of torrential rainfall and potentially destructive winds associated with tropical storm/hurricane force winds and seismic hazards.

Mr. Roy C. Price, Sr.
May 14, 1996
Page 2

The potential for other natural hazards such as earthquake and hurricane is acknowledged, but not to any greater extent than other locations on Oahu. For example, according to your office staff, the entire island of Oahu is designated in Seismic Zone 2A. Consequently, all new structures within the project area will be designed and constructed in accordance with all building codes which are applicable to both wind and earthquake construction. Civil Defense sirens will also be provided as required with coordination from State and City Civil Defense agencies.

Please write or call Ray Sakai, Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to share later.

Sincerely,

ROLAND D. LIBBY, JR.
Director

Attachment

cc: David Hulse, PBR Hawaii
Wayne Jones, Oahu Civil Defense Agency
Gail Kaito, DHCD Planning & Analysis Division
Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKF-Hawaii



STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
Room 104, 104 Federal Building
Honolulu, Hawaii 96813
Telephone: 587-1822



DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
410 SOUTH KING STREET, 5TH FLOOR, HONOLULU, HAWAII 96813
PHONE: 508-1323, 4227 & FAX: 508-5251-5188

ROLAND LIBBY, JR.
DIRECTOR
ROBERT ADKINS, JR.
DEPUTY DIRECTOR

March 19, 1996

Ms. Cheryl D. Soon
Chief Planning Officer
Planning Department
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

February 14, 1996

Dear Ms. Soon:

Subject: Manana and Pearl City Junction Development - Draft
Environmental Impact Statement
TRK: 9-7-24: pck. 06. 41. 9-7-23: 01

The Department of Business and Economic Development has forwarded the subject draft environmental impact statement ("DEIS") to our office for review and comment.

Upon review of the DEIS, we confirm that the proposed area for the Manana and Pearl City Junction Development, is within the State Land Use Urban District.

We have no further comments to offer at this time.

Thank you for the opportunity to provide comments on the subject DEIS.

If you have any questions in regards to this matter, please feel free to contact me or Leo Asuncion of my staff at 587-3822.

Sincerely,

ESTHER UEDA
Executive Officer

EU:th

cc: Ray Sakai, DHCD
Robin Yoshimura, PKF Hawaii
OEQC
DBEDT (Dir. Referral No. 96-218-Q)

Ms. Esther Ueda
Executive Officer
State of Hawaii
Department of Business,
Economic Development and Tourism
335 Merchant Street, Room 104
Honolulu, Hawaii 96813

Dear Ms. Ueda:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement

Thank you for your letter dated February 14, 1996 in response to our January 1996 Draft Environmental Impact Statement (DEIS) on the above properties.

Your confirmation of the State Land Use Urban District status of the proposed development and letter will be reproduced in the final EIS document. Please write or call Ray Sakai, Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to contribute later.

We will continue to keep you informed of any significant changes occurring in the project and look forward to your review of our forthcoming Final Environmental Impact Statement.

Thank you once again for your cooperation in this matter.

Sincerely,

ROLAND D. LIBBY, JR.
Director

cc: Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKF-Hawaii ✓
David Hulise, PBR Hawaii
Gail Kaio, DHCD Planning Division



BENJAMIN J. CAVETTANO
GOVERNOR
STATE OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

PO BOX 1119
HONOLULU, HAWAII 96813

KALI WATSON
CHAIRMAN
HAWAIIAN HOMES COMMISSION
PO BOX 1119
HONOLULU, HAWAII 96813

February 8, 1996

Mr. Roland D. Libby, Jr., Director
Department of Housing and Community
Development
City and County of Honolulu
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Attention: Mr. Ray Sakai, Project Manager

Dear Mr. Libby, Jr.:

Subject: Manana/Pearl City Junction Environmental Assessment
Tax Map Keys: 9-7-24:06 por, 9-7-24:41, 9-7-23:01

In our letter of November 13, 1995, we raised the question of possible impacts of the Hawaiian Home Lands Recovery Act of 1995 (HHLRA) upon plans for the subject lands. Attached is a copy of the HHLRA for your information and use.

If you have any questions, call Joe Chu of our Planning Office at 586-3837.

Warmest aloha,

Kali Watson, Chairman
Hawaiian Homes Commission

Attachment

3846L19

96 FEB -8 P2:35
DEPT OF HOUSING,
& COMM. DEVELOPMENT

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

910 SOUTH KING STREET, FIFTH FLOOR, HONOLULU, HAWAII 96813
PHONE: (808) 525-4233 FAX: (808) 521-7668



COLLEEN LIBBY, JR.
DIRECTOR
HONORABLE ADOLE, JR.
DEPUTY DIRECTOR

Mr. Kaji Watson, Chair
March 21, 1996
Page 2

We will continue to keep you informed of any significant changes occurring in the project and look forward to your future review of our January 1996 DEIS and forthcoming Final EIS.

Thank you once again for your cooperation in this matter.

March 21, 1996

Mr. Kaji Watson, Chairman
Hawaiian Homes Commission
State of Hawaii
Department of Hawaiian Home Lands
P.O. Box 1879
Honolulu, Hawaii 96805

Dear Mr. Watson:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

We note that the Department of Hawaiian Home Lands has no comments to offer beyond those provided in your February 8, 1996 and November 13, 1995 letters (copies attached) in response to our September 1995 Environmental Impact Statement Preparation Notice, at this time. All letters will be reproduced in the Final EIS.

After reviewing the copy of the Hawaiian Home Lands Recovery Act of 1995 (HHLRA) provided by your office, we believe that Sections 203(b)(5)(C), 203(f)(9) and 205(d)(3) on pages 26, 31 and 35, stating that "No Federal lands that generate income (or would be expected to generate income) for the Federal Government may be conveyed pursuant to an exchange made under this paragraph to the Department of Hawaiian Home Lands" are applicable. We therefore believe that the City's proposed Manana/Pearl City Junction development is excluded from the provisions of HHLRA because the \$109 million which the former land owner, the U.S. Navy received from the City clearly establishes the value of the properties.

Please write or call Ray Sakai, Project Officer, at 527-5321 or 523-4264, if your interpretation differs, or you feel that the proposed development project does fall under the purview of the HHLRA, or if you have any questions or have additional comments to share.

Sincerely,

ROLAND D. LIBBY, JR.
Director

Attachments:

1. DHHL February 8, 1996 and November 13, 1995 letters
2. DHCD November 27, 1995 letter

cc: Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKF-Hawaii /
David Hulise, PBR Hawaii
Gail Kalio, DHCD Planning Division



STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96811

January 31, 1996

95-211/epo

96 FEB -5 AM 09

Mr. Randy Wong
Housing Development Administrator
Department of Housing and Community Development
City and County of Honolulu
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Wong:

Subject: Environmental Assessment (EA)
Manana and Pearl City Junction Development
Pearl City, Oahu
TRK: 9-7-24: por. 6 & 41; 9-7-23: 01

Thank you for allowing the Department of Health (DOH) to review and comment on the subject project. We have the following comments to offer:

Hazard Evaluation & Emergency Response (HEER)

The chemically-contaminated soil at the Pearl City Junction site has been removed and cleaned to the satisfaction of the DOH and the U.S. Environmental Protection Agency (EPA), Region IX office. However, the soil in parts of the Manana area is heavily contaminated with chemicals. The EA does not satisfactorily address this important issue. The Draft Environmental Impact Statement (DEIS) should address this issue in detail, including the status of any cleanup efforts or proposed mitigating measures. No construction should commence on this land until cleanup has been cleared by the DOH and the EPA.

If you have any questions on this matter, please contact Mr. Leslie Au of the HEER office at 586-4249.

Hazardous Waste

If the proposed development involves the installation and/or removal of underground storage tanks (USTs), these USTs may be regulated in accordance with the technical standards and

Mr. Randy Wong
January 31, 1996
Page 2

95-211

financial responsibility regulations of 40 CFR Part 280. These regulations include requirements for:

1. Design, construction, installation, and notification;
2. General operating requirements;
3. Release detection;
4. Release reporting, investigation, and confirmation;
5. Release response and corrective action;
6. Changes-in-service and closure; and
7. Financial responsibility.

Owners of newly installed USTs must notify our UST Section of the existence of such USTs within 30 days of installation. The installation of UST systems containing flammable and combustible liquids is also subject to regulation by the County Fire Departments. In this case, the Honolulu County Fire Department should be contacted regarding county requirements that govern UST systems.

The Underground Storage Tank Section has developed a detailed Technical Guidance Manual for Underground Storage Tank Closure and Release Response (August 1992) to assist responsible parties and their consultants and contractors in complying with the federal UST closure requirements and release response requirements as found in Title 40 Part 280 of the Code of Federal Regulations.

If you have any questions on this matter, please call Roxanne Kwan of our Underground Storage Tank Section at 586-4226.

Solid Waste

The DEIS should address the possibility of a recycling and material processing and reuse facility in this area. An excellent opportunity exists for utilizing the existing building makai of the H-1 freeway for this purpose. There is a great need for appropriately zoned land for a recycling facility in this area of Oahu.

This document contains very little discussion of solid waste generation and management as a result of the development. It should address the opportunity to use City and County land to meet waste reduction and recycling goals formally established by

ordinance and statute. Allocation of the existing structures and land makai of H-1 for this purpose would increase the volume of material recycled in Hawaii, increase the landfill capacity, and reduce the need to purchase or condemn other lands in the future.

Should you have any questions on this matter, please contact Ms. Carrie McCabe of the Office of Solid Waste Management (OSWM) at 586-4243.

Clean Air Branch (CAB)

Mixed Zoning Issues and Concerns:

In support of the proposed development project, there would be a need to expand or improve existing infrastructure facilities to include access and circulation roadways, bike and pedestrian roadways, drainage, water and waste water systems. One proposed use would be for light industrial activities to be incorporated into the master plan. This would allow residential areas to be situated in close proximity to activities classified as light industrial. Without knowing the type of light industrial activities that would be allowed in these areas, neighboring residential and commercial establishments may be impacted by paint emissions, smoke, soot, and odors from food establishments and other similar emissions that are found in light industrial areas.

The DOH has a concern that certain activities designated as light industrial may not be compatible with the surrounding business and residential establishments. Therefore, efforts should be made to clearly define light industrial activities and locate potential troublesome activities in areas with adequate buffers provided.

The removal of lead-based paint and polychlorinated biphenyl items found on the two project sites should be conducted in accordance with the appropriate Federal Regulations of the U.S. Environmental Protection Agency.

Demolition Involving Asbestos:

As a project that entails demolition and renovation activity, the Federal Register, 40 CFR Part 61, National Emission Standard for Hazardous Air Pollutants (NESHAP), Asbestos NESHAP Revision, Final Rule, November 20, 1990, would require inspection of all affected areas prior to demolition to determine whether asbestos is present.

Under the NESHAP's regulation, the contractor would be required to file with the DOH, Clean Air Branch an Asbestos Demolition/Renovation notification 10 working days prior to demolition of each building or the disturbance of regulated asbestos-containing material. All regulated quantities and types of asbestos-containing materials would be subject to emission controls, proper collection, containerizing, and disposal at a permitted landfill.

The State of Hawaii, Department of Commerce and Consumer Affairs requires that any contractor that disturbs friable asbestos-containing material must obtain an asbestos abatement license.

The State of Hawaii, Department of Labor and Industrial Relations, Occupational Safety and Health Division, requires other additional measures to protect employee working with asbestos.

If you have any questions regarding asbestos removal, please contact Mr. Reuben L. Bilan of the CAB's Asbestos Office at 586-4200.

Control of Fugitive Dust and Potential Nuisance Odors:

Due to the nature of the project, there is a significant potential for fugitive dust to be generated during the demolition and removal of debris, the construction and the landscaping activities for this project. The close proximity to occupants working and residing in the area may compound dust problems. Therefore, implementation of adequate dust control measures during all phases of the project is warranted. Construction activities must comply with the provisions of Chapter §11-60.1, Hawaii Administrative Rules, section §11-60.1-33 On Fugitive Dust.

The contractor should provide adequate means to control dust from road areas and during the various phases of construction activities. These means include, but are not limited to:

1. planning the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing material transfer points and onsite vehicular traffic routes, and locating potentially dusty equipment in areas of the least impact;
2. providing an adequate water source at site prior to startup of construction activities;

Mr. Randy Wong
January 31, 1996
Page 5

95-211

3. landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase;
4. control of dust from shoulders, project entrances, and access roads; and
5. providing adequate dust control measures during weekends, after hours, and prior to daily startup of construction activities.

If you have any questions regarding fugitive dust or mixed zoning issues, please contact Mr. Timothy Carvalho of the CAB at 586-4200.

Noise Concerns

The DOH also has concerns regarding the proposed project due to potential noise impacts resulting from the integration of light industrial/business park, commercial, the Bus/Handi-van facility, family entertainment center, community park, and residential uses.

1. Although the provisions of landscape buffers are proposed, light industrial/business park land uses next to residential areas may still result in potential noise problems. Noise associated with light industrial activities, such as deliveries, refuse collection, vehicular back-up alarms, etc. may result in negative impacts to the surrounding residences. Mitigative measures toward minimizing these impacts should be implemented within any planned mixed use community.
2. Noise from increased vehicular traffic associated with the Bus/Handi-van facility and the commercial retail/offices may also have a negative impact on the surrounding residential community. The use of heavy vehicles near the residential areas should be minimized to reduce noise impacts and must comply with Chapter 11-42, Hawaii Administrative Rules, "Vehicular Noise Control for Oahu."
3. Noise from recreational activities from the family entertainment center and the new Manana Kai neighborhood park, such as people shouting, yelling or screaming, and sound production and reproduction devices may impact surrounding residences in terms of annoyances.

Should there be any questions on this matter, please contact Jerry Haruno, Environmental Health Program Manager, Noise, Radiation & Indoor Air Quality Branch at 586-4701.

Mr. Randy Wong
January 31, 1996
Page 6

95-211

Water Pollution

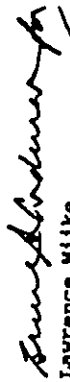
A National Pollutant Discharge Elimination System (NPDES) permit is required for any discharge to waters of the State including the following:

1. Storm water discharges relating to construction activities for projects equal to or greater than five acres;
2. Storm water discharges from industrial activities;
3. Construction dewatering activities;
4. Cooling water discharges less than one million gallons;
5. Hydrotreating water.

Any person wishing to be covered by the NPDES permit for any of the above activities should file a Notice of Intent with the Department's Clean Water Branch at least 90 days prior to commencement of any discharge to waters of the State.

Any questions regarding this matter should be directed to Mr. Denis Lau of the Clean Water Branch (CWB) at 586-4309.

Sincerely,


Lawrence Milke
Director of Health

c: CAB
CWB
HEER
HMB
NR
OSWH

CITY AND COUNTY OF HONOLULU

630 SOUTH KING STREET, 8TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 525-4437 • FAX: (808) 527-5499



ROLAND LIBBY, JR.
DIRECTOR
ROBERT ACRES, JR.
SENIOR DIRECTOR

April 23, 1996

Lawrence Milke, M.D.
Director of Health
State Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Dr. Milke:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

Thank you for your letter dated January 31, 1996 (copy attached), sent in response to our September Draft Environmental Impact Statement Preparation Notice (EISPN) on the above properties.

The need for further study or determination of mitigation measures applicable to the Manana and Pearl City Junction development have been addressed in the DEIS document. Although the EISPN referenced by your comments was superseded by the DEIS, which was forwarded to you on February 6, 1996 and published in the Office of Environmental Quality Control (OEQC) bulletin on February 8, 1996, your letter will be reproduced in the Final Environmental Impact Statement (FEIS).

Our responses to your comments on the EISPN document are being provided in the context of the information already provided in the DEIS. We appreciate this opportunity to address your comments and recommendations, which have been forwarded to our consultants for review and possible inclusion into the FEIS as follows:

Hazard Evaluation and Emergency Response

We concur that the chemically-contaminated soil at the Pearl City Junction site has been removed and cleaned, by the U.S. Navy for light-industrial use, to the satisfaction of the State Department of Health (DOH) and Federal Environmental Protection Agency (EPA).

Lawrence Milke, M.D.
April 23, 1996
Page 2

Navy reports the contaminated soils on the Manana parcel are presently being removed and cleaned by the Navy in accordance with all applicable DOH and EPA regulations. As indicated on page 24 of the DEIS, the Navy is responsible for all remediation and costs to mitigate hazardous material on the parcels before ownership of the Manana parcel can be transferred to the City. DOH will have ample opportunity to monitor the clean-up activities undertaken by the Navy.

Hazardous Waste

There are currently no present plans to install Underground Storage Tanks (UST) on the subject properties. However, should they be required in the future (i.e. for the bus yard or for future commercial-industrial users), the users/developers will be reminded that all applicable standards and regulations of the State DOH Underground Storage Tank Section will be followed. DHCD is unaware of past UST use(s) by the U.S. Navy, but should Navy's existing USTs require removal during the construction of the project, all applicable standards and regulations of the State DOH will be followed to ensure their safe removal and disposal.

Solid Waste

Your salient suggestion for a recycling, materials processing and reuse facility is acknowledged. Please note, however, that during the course of the City's participation in the community-based planning effort to determine economically feasible land uses for the subject properties, use of the existing structures for a future recycling center was soundly rejected by the Pearl City Planning Task Force (Task Force) and community. Should the community elect to support rezoning of portions of the subject property for solid waste recycling uses in the future, new facilities may be planned, within the proposed industrial areas identified in the Manana Master Land Use Plan, with active participation of the Pearl City Neighborhood Board and community.

The City will continue to support the recycling efforts by converting the building materials and waste removed from the properties into electricity at its co-generation plant. Those materials that are not combustible will be recycled in accordance with the City recycling regulations.

Lawrence Milke, M.D.
April 23, 1996
Page 3

Clean Air Branch - Mixed Mining Issues and Concerns

To identify potential air quality impacts associated with development of the proposed conceptual master plan, an Air Quality Impact Report is provided as Appendix G of the DEIS. According to the report, the primary source of air pollutants are those associated with motor vehicle emissions. However, your concerns regarding the relationship of proposed industrial uses was also a concern expressed by the community. As such, the type of land uses proposed for the light industrial/business park (DEIS, page 11), have been designed to ensure that conflicts with surrounding residential land uses are minimized. None of the land uses envisioned for the industrial component of the plan produce the emissions described in your comments.

Your Clean Air Branch representative, Mr. Reuben Bilan, recently completed field verification studies of the former land owner's (U.S. Navy) inventory and status report of the polychlorinated biphenyl (PCB) containing equipment on both the Pearl City Junction and Manana properties sites (on January 11, 1996 and February 6, 1996, respectively). The absence of PCB in the PCJ transformers was confirmed and results of the Manana field visit will be forthcoming from the EPA Regional IX office. The Clean Air Branch representative has confirmed the Navy's acceptance of responsibility for the removal and remediation of any PCB containing equipment.

The removal of lead-based paint, if identified during the demolition of the warehouse buildings, will be closely coordinated with both the U.S. EPA and the State DOH staff.

Clean Air Branch - Demolition Involving Asbestos

The entire subject property has been inspected for asbestos in accordance with the Comprehensive Long-Term Environmental Action Navy (CLEAN) program. In the CLEAN Environmental Baseline Survey, friable and non-friable asbestos were found in roofing tar and some floor tiles in 28 warehouse structures. As such, all applicable NESHAP regulations will be implemented to ensure that the asbestos is removed and disposed of in accordance with the applicable controls as described in your comments.

Lawrence Milke, M.D.
April 23, 1996
Page 4

Control of Fugitive Dust and Potential Nuisance Odors

The Air Quality Impact Report provided in the DEIS, concurs that fugitive dust emissions generated during construction may be significant if appropriate mitigation measures are not implemented. The two primary mitigation measures proposed are twice daily watering of exposed areas and establishment of landscaping as soon as possible after grading. To comply with all applicable Hawaii Administrative Rules and other regulations, these measures and those provided in your comments regarding construction management will be adhered to by project developers and contractors.

Noise Concerns

During the community-based planning process, compatibility of land uses was a primary concern expressed by the surrounding community. As presented in the Master Land Use Plan, there are no residential land uses proposed for either the Manana or Pearl City Junction parcels to reduce the potential land use conflicts referred to in your comments. Some light industrial/business land uses will still be located adjacent to existing residential land uses, however, it was the consensus of the community that the land uses proposed were superior to maintenance of the existing light industrial warehouse land uses. Lower density and intensity land uses were evaluated, but were rejected due to economic considerations and input from the community.

The community-based conceptual master land use plan will therefore, likely not change. However, the mitigation measures you propose will be implemented to reduce the potential conflicts with adjacent residential areas and to comply with applicable DOH noise control regulations. No sound production or reproduction devices are planned for any of the recreation or entertainment facilities.

Water Pollution

As stated on page 19 of the DEIS, a National Pollutant Discharge Elimination System (NPDES) permit will be a requirement of the project in accordance with the DOH regulations as described in your comments.

Lawrence Mike, M.D.
April 23, 1996
Page 5

Please write or call Ray Sakai, Project Officer, at 527-5321
or 523-4264 if you have any questions or have additional
comments to share later.

Thank you once again for your cooperation in this matter.

Sincerely,

ROLAND D. LIBBY, JR.
Director

Attachment

cc: David Hulse, PBR Hawaii ✓
Robin Yoshimura, PKF-Hawaii
Gail Kaito, DHCD Planning Division
Cheryl Soon, Planning Department



MAILING SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P.O. BOX 611
HONOLULU, HAWAII 96813

MICHAEL D. WILSON
Commissioner
BUREAU OF LAND AND NATURAL RESOURCES
DEPT.
OLBERT'S COCHINEAL AGAZIAN
SPECIALIST IN PLANTING
ADULTIC RESEARCH
PLANTING AND DESIGN RESEARCH
CONSERVATION AND RESTORATION
COMPLIANCE AND SERVICES
RESEARCH AND MONITORING
PLANTING AND RESTORATION
PLANTING AND RESTORATION
PLANTING AND RESTORATION
PLANTING AND RESTORATION

LM-AJ

Randy Wong, Housing Development Administrator
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

86 MAR 29 02:26

FILE NO. A106

Dear Mr. Wong:
SUBJECT: Draft Environmental Impact Statement
MAHANA and Pearl City Junction Development
TAX MAP KEY: 9-7-24106 FOR: 9-7-24141, 9-7-23101

The information that you have forwarded to us was distributed to our divisions for their review and comments. The following comments were received by our Land Division:

Oahu District Land Office

By letter dated December 22, 1995, the Oahu District Office of Land Division submitted comments to the City and County of Honolulu, Department of Housing and Community Development that we had no objections to the environmental assessment and conceptual use plan.

After further review, the Oahu District Office of the Land Division points out that in addition to recreational, medical, business, industrial and the family entertainment considerations, it is necessary to provide centers for social and community service functions. The community service facilities provide centers for the substantial number of members of the community who want to increase their participation in contributing to the community. In a large development such as this one, the social service and rehabilitation functions of the community should be present at an equal portion to the other functions that have been incorporated into the development.

We also request that the applicant obtain all applicable Federal, State and County permits prior to commencement of the project.

Mr. Randy Wong
Page 2

Thank you for the opportunity to review the Draft Environmental Impact Statement. We have no further comments to offer at this time. If you have any questions, please contact Al Jodar of the Land Division at 587-0424.

Aloha,

MICHAEL D. WILSON

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DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
400 SOUTH KING STREET, 2ND FLOOR, HONOLULU, HAWAII 96813
PHONE: 808/525-4422 FAX: 808/525-7488



ROLAND D. LIBBY, JR.
DIRECTOR
HONOLULU OFFICE

April 16, 1996

Mr. Michael D. Wilson
Chairperson
State Department of Land
and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Wilson:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement

Thank you for your letter dated March 25, 1996 (copy attached), sent in response to our January 1996 Draft Environmental Impact Statement (DEIS) on the above properties. Your letter will be reproduced in the Final Environmental Impact Statement (FEIS).

We appreciate this opportunity to address your comments and recommendations, which have been forwarded to our consultants for review and inclusion into the FEIS document as follows:

Social and Community Service Functions

Your suggestion about adding "social service and rehabilitation functions of the community" ... "at an equal portion to the other functions that have been incorporated into the development" to the Manana and Pearl City Junction development is acknowledged. However, while there is a need for such centers, the community, after an extensive 7-month community-based planning process with the Pearl City Planning Task Force (Task Force), selected as their "vision statement" for the proposed development, a land use component which "focuses on needs of the youth in the area." They also determined that the project should "be socially beneficial to the community with the addition of open space and recreational areas." The Task Force and community selected a new 8-acre Park/Youth Center and 14-acre Family Entertainment Center to provide opportunities for family based activities in the community.

Mr. Michael D. Wilson
April 16, 1996
Page 2

Given the \$109 million land cost associated with the project and the positive social benefits created by expanded employment opportunities and development of the Park/Youth Center and Family Entertainment Center proposed by the Task Force's Master Land Use Plan, the City is not in a financial position to subsidize the fiscal impact on the community of utilizing "an equal portion" or approximately 50 percent of the property for "social services and rehabilitation functions" that would be necessary to make your suggestion financially feasible.

Permits

Prospective developers/proposers have been reminded of their responsibility for obtaining all applicable Federal, State and County permits prior to commencement of the project in the Request for Proposals (RFP) which were issued in December 1995 and January 1996 for Pearl City Junction and Manana Properties, respectively. Your salient reminder is appreciated and will be conveyed in subsequent RFPs for development of either property.

Please write or call Project Officer Ray Sakai, at 527-5321 or 523-4264 if you have any questions or have additional comments to contribute later.

We will continue to keep you informed of any significant changes occurring in the project and look forward to your review of our forthcoming FEIS. Thank you once again for your cooperation in this matter.

Sincerely,

ROLAND D. LIBBY, JR.
Director

Attachment

cc: David Hulise, PBR Hawaii
Gail Kaito, Planning & Analysis Administrator
Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKF-Hawaii

BRUNNEN J. CASTITANO
City Engineer



STATE OF HAWAII
DEPARTMENT OF BUDGET AND FINANCE
HOUSING FINANCE AND DEVELOPMENT CORPORATION
570 QUEEN STREET, SUITE 300
HONOLULU, HAWAII 96813
FAX: (808) 537-0282

ROY S. OSHIRO
Executive Director

96: PPE/860

March 4, 1996

The Honorable Cheryl D. Soon
Chief Planning Officer
Planning Department
City and County of Honolulu
650 South King Street, 8th Floor
Honolulu, Hawaii 96813

Dear Ms. Soon:

Re: Draft Environmental Impact Statement (EIS) Manana and Pearl
City Development

We have reviewed the subject draft EIS and suggest that
consideration be given to providing rental housing opportunities
in the project. The proximity to employment and public services
make the project site ideal for siting rental housing.

Thank you for the opportunity to comment.

Sincerely,

ROY S. OSHIRO
Executive Director

c: OEOC
Dept. of Housing and Community Development



DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
570 QUEEN STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 531-6225 • FAX: (808) 537-5088



March 22, 1996

Mr. Roy S. Oshiro
Executive Director
State of Hawaii
Department of Budget and Finance
Housing Finance and Development Corporation
677 Queen Street, Suite 300
Honolulu, Hawaii 96813

Dear Mr. Oshiro:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

Thank you for your letter dated March 4, 1996, in response to our January 1996
DEIS on the above properties.

We appreciate your suggestion about providing rental housing opportunities.
However, affordable housing options, both for sale and rental, were discounted
early in the community-based planning effort. While there is a need for
affordable housing, the community had great concerns about the impact to
traffic and the city is not in a financial position to underwrite the subsidy
that would be necessary to make housing at this site financially feasible.

Please write or call Ray Sabal, Project Officer, at 527-5321 or 523-4264 if
you have any questions or have additional comments to share later.

We will continue to keep you informed of any significant changes occurring in
the project and look forward to your future review of our forthcoming Final
Environmental Impact Statement.

Thank you once again for your cooperation in this matter.

Sincerely,

ROLAND D. LIBBY, JR.
Director

cc: Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PEP-Hawaii
David Nalee, PEP-Hawaii
Gail Kaito, DECD Planning Division

ROLAND LIBBY, JR.
DIRECTOR
HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

850 SOUTH KING STREET, 31ST FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 521-2211 FAX: (808) 521-2212



ROLAND D. LIBBY, JR.
DIRECTOR
POST OFFICE BOX 3540
HONOLULU, HAWAII 96811

March 19, 1996

REGISTRATION
DIVISION

STATE OF HAWAII
OFFICE OF STATE PLANNING
P.O. Box 3540
Honolulu, Hawaii 96811 3540

February 12, 1996

Ref. No. 7-0010

The Honorable Cheryl Soon
Chief Planning Officer
Planning Department
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Ms. Soon:

Subject: Draft Environmental Impact Statement
Manana and Pearl City Junction Development
Tax Map Keys: 9-7-24-06 por; 9-7-24-41; 9-7-23-01

We have reviewed the subject document and do not have any comments to offer at this time.

Thank you for the opportunity to further review this project.

Sincerely,

Gregory G.Y. Pai, Ph.D.
Director

cc: Department of Housing and Community Development
v/PKF Hawaii
Office of Environmental Quality Control

Gregory G.Y. Pai, Ph.D.
Director
State of Hawaii
Office of State Planning
P.O. Box 3540
Honolulu, Hawaii 96811-3540

Dear Dr. Pai:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement

Thank you for your letter dated February 12, 1996, in response to our January 1996 Draft Environmental Impact Statement (DEIS) on the above properties. We note that the Office of State Planning has no comments to offer at this time. Your letter will be reproduced in the Final EIS.

Please write or call Ray Sabai, Project Officer, at 527-3321 or 523-4264 if you have any questions or have additional comments to share later.

We will continue to keep you informed of any significant changes occurring in the project and look forward to your future review of our forthcoming Final Environmental Impact Statement.

Thank you once again for your cooperation in this matter.

Sincerely,

ROLAND D. LIBBY, JR.
Director

cc: Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKF-Hawaii ✓
David Hulise, PBR Hawaii
Gail Kailo, DHCD Planning Division





University of Hawai'i at Mānoa

Environmental Center
A Unit of Water Resources Research Center
Crawford 317 • 2550 Campus Road • Honolulu, Hawai'i 96822
Telephone: (808) 956-7361 • Facsimile: (808) 956-3980

96 APR -2 12:53

RECEIVED

March 26, 1996
RE:0672

Mr. Ray Sakai
City and County of Honolulu
Department of Housing and Community Development
650 South King Street, 5th Floor
Honolulu, Hawai'i 96813

Dear Mr. Sakai:

Draft Environmental Impact Statement
Manana and Pearl City Junction Development
Manana, Oahu

The City and County Department of Housing and Community Development proposes to convert two parcels of land totaling 109 acres into a mix of commercial, retail and office uses, public service facilities, open spaces, and recreational improvements. Presently the mauka parcel is zoned F-1, Military and Federal, while the makai parcel is zoned F-1 and used for warehousing by the Navy and the City. The project sites are surrounded by well-established residential and commercial areas with a high level of existing services. Various community groups contributed to the project plans over an 8-month planning period. Proposed infrastructure improvements include expanded access and circulation roadways, bike and pedestrian routes, a drainage system, a water system, and a wastewater system.

We reviewed this draft Environmental Impact Statement (EIS) with the assistance of Panos Prevedouras, Civil Engineering; Kern Lowry, Urban and Regional Planning; and Paul Berkowitz of the Environmental Center.

Page 2

Overview

In general, since this is an urban infill project on a site formerly occupied by military warehouses, few major environmental concerns exist. When the project plan is disclosed in greater detail, further concerns may arise. For instance, will any of the future light industrial uses involve discharge of potentially hazardous materials into the environment? Since this sort of question cannot be answered now, our greatest concerns for the moment involve traffic issues.

Scope of Traffic Analysis

Given the large size of the proposed development, the traffic study focuses on an unacceptably small region which includes only immediately adjacent intersections. Because of the large number of trips generated, long stretches of arterial streets such as Moanalua and Kamehameha will be affected. Additionally the proposed project will affect freeway traffic and freeway on and off ramps. Thus it is insufficient to prepare a traffic study for this project which does not include any freeway analysis.

Cumulative Traffic Impacts

According to Section 11-200-12 of the Hawaii Administrative Rules (HAR), applicants "shall consider the sum of effects on the quality of the environment." In other words, the applicant needs to evaluate cumulative as well as individual effects upon the environment. In terms of traffic analysis, this EIS makes no effort to include other planned or in-progress development within a reasonable radius (e.g. 1-2 miles) around the proposed project. This failure to consider cumulative effects represents a major flaw in the document, as cumulative impacts should be an essential component of any study of this nature.

Presentation Style

The style of presentation in Appendix E, section C is poor. No map exists which clearly delimits the entire study area and the intersections considered. If a map were prepared, then the limited scope of analysis (outlined above) would become clearer. Furthermore, for each intersection studied, a drawing should be provided to show the before / after scenarios. Without these illustrations, reviews and comparisons are cumbersome.

Trip Generation

On page 13, the proportion of pass-by trips (34%) is wrong. In the 5th edition of "Trip Generation" (p. 1-23), the "equation indicates that only 34% of the variation in pass-by trip percentage can be explained by the size of the shopping center." This value refers to the statistical term R-squared, not the percentage of trips! The proper number can be derived from Figure VII-A, page 1-30, or by applying the following modeling procedure:

Retail Development	Gross Floor Area	Gross Leasable Area
Pearl City Junction	207,000	103,500
Town Center	330,000	165,000

The ITE model assumes that the gross leasable area (GLA) is half the gross floor area (GSF). The total value for GLA (268.5 thousand square feet) is then plugged into the equation:

$Ln(\% \text{ Pass-by}) = -.0431 \cdot Ln(268.5) - 5.376$

The resulting percent of pass-by trips, when computed in this manner, is 19.4%.

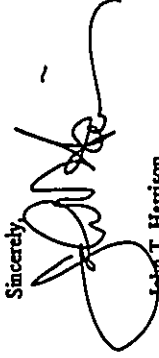
Also with regard to pass-by trips, the analyst applied the pass-by reduction to all generators listed in Table 2 (i.e. the baseyard, nursing home, medical office, commercial, etc.). This is not legitimate, as pass-by trips apply to shopping generators only. In essence, all trips were discounted by 34% due to pass-by trips, while the correct procedure is to discount only the shopping trips by 19.4%.

These errors have considerable implications. On page 17 (Appendix E), the draft EIS states that "2,039 vph [vehicles per hour] are expected to be new trips and the remaining 638 are expected to be pass-by-traffic." In other words, 638 trips are discounted as pre-existing traffic. If the calculations were performed properly, our reviewers estimate that at most 260 trips would be pass-by (i.e. pre-existing) and 2,477 would be new trips. The correct figure for new trips (2,477 instead of 2,039) represents a 21% higher volume of traffic than estimated in the draft EIS. These corrections are likely to greatly worsen the predicted Level of Service (LOS), most likely to unacceptable levels.

Conclusion

In summary, we find the draft EIS for Manana and Pearl City Junction Development generally acceptable except in the area of traffic. In this realm, the document is poorly presented, limited in its scope of analysis, lacking in information on cumulative effects, and incorrect in its predictions of new trips and future Levels of Service. Given the magnitude of these errors, we suggest either resubmitting or supplementing the draft EIS to correct the traffic analysis inadequacies.

Thank you for the opportunity to review this draft EIS.

Sincerely,

John T. Harrison
Environmental Coordinator

- cc: OEQC
 Roger Fujioke
 Cheryl Sooa
 Robin Yoshimura
 Ken Lowry
 Panos Prevedouras
 Paul Bertowicz

JOHN T. HARRISON
MAYOR



ROLAND LEESE, JR.
DIRECTOR
ROBERT ADAMS, JR.
DEPUTY DIRECTOR

April 24, 1996

Mr. John T. Harrison
Environmental Coordinator
University of Hawaii at Manoa
Environmental Center, Crawford 317
2550 Campus Road
Honolulu, Hawaii 96822

Dear Mr. Harrison:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

Thank you for your response, dated March 26, 1996 (copy attached) to our January 1996 DEIS on the above properties, which will be reproduced in the Final Environmental Impact Statement (FEIS).

We appreciate this opportunity to address your comments and recommendations, which have been forwarded to our consultants for review and inclusion into the FEIS document as follows:

1. Scope of Traffic Analysis

We note your suggestion to add a freeway analysis to the document. However, we do not believe such additional analysis is necessary for the following reasons:

The site-generated peak hour traffic is primarily comprised of retail traffic. The proposed retail developments are considered to be community shopping centers, which would attract trips from the surrounding Pearl City community. Therefore, such site-generated traffic is not expected to significantly impact the freeway ramps, as would a regional shopping center, which would attract traffic from the entire island.

Mr. John T. Harrison
April 24, 1996
Page 2

The study area for the Traffic Impact Analysis Report (TIAR) for the proposed Manana and Pearl City Junction Development is determined by the level of significance of probable traffic impacts on the surrounding streets. The proposed project is considered an employment center, therefore, the trip generation characteristics during the peak hour of generator are vastly different from the commuter peak hour traffic in the project vicinity, in terms of the direction of flow and time.

The AM peak hour of generator is expected to occur between 7:00 AM and 8:00 AM, after the early morning commuter peak period which begins as early as 5:30 AM. The PM commuter peak period of traffic on the freeway off-ramps continues past 6:30 PM. The peak hour of generator is expected to occur between 3:30 PM and 4:30 PM.

During the AM peak hour, traffic flows on Kamehameha Highway and on Moanalua Road are primarily in the Honolulu bound direction. Site-generated traffic flows primarily towards the project, in the opposite (Ewa bound) direction. PM peak hour commuter traffic is the more significant period of analysis, which on Kamehameha Highway and Moanalua Road flows generally in the Ewa bound direction. About 30 percent of the Ewa bound traffic, entering the site, is comprised of pass-by traffic. Site traffic, exiting the site in the Ewa bound direction, can use Kuala Street where traffic flows relatively smoothly beyond Acacia Road, toward the Interstate Routes H-1 and H-2 On Ramps, during the PM peak hour.

2. Cumulative Traffic Impacts

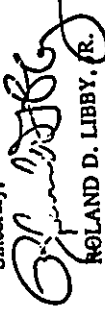
We concur with your view that "cumulative impacts should be an essential component of any study of this nature." Please note that the traffic impact analysis does include planned developments in the vicinity. The Pearl Highlands Center is an existing development, although it was not fully occupied at the time of the study. The additional traffic, resulting from full-occupancy of the Pearl Highlands Center, is included in the external traffic. The U.S. Navy is planning a housing project on the Pearl City Peninsula, which has stalled due to lack of funding. An elderly housing project is under construction near the intersection of Lehua Street and 3rd Street, however, elderly housing projects are not considered significant trip generators, especially during the peak hours of traffic and therefore was not included in the analysis. Finally, a growth factor of 8.25 percent is used to estimate the growth in regional traffic.

Mr. John T. Harrison
April 24, 1996
Page 4

separated by Kametameha Highway and most likely will be developed as separate projects by different developers. Furthermore, only the retail component of the Town Center, which is estimated to be 75 percent or 247,500 of the total GFA, should be analyzed for pass-by traffic. The pass-by percentage for the 207,000 GFA Pearl City Junction is 35 percent. The pass-by percentage for the 247,500 GFA retail portion of the Town Center is 33 percent. For the purpose of uniformity, an average rate of 34 percent was used in the TIAR.

Please write or call Project Officer Ray Sakai at 527-5321 or 523-4264 if you have any questions or have additional comments to contribute later.

Sincerely,



ROLAND D. LIBBY, JR.
Director

Attachment

cc: David Hulise, PBR Hawaii
Gail Kaito, Planning & Analysis Division
Cheryl Soon, Chief Planning Officer
Charles Swanson, DTS
Robin Yoshimura, PKF-Hawaii

Mr. John T. Harrison
April 24, 1996
Page 3

3. Presentation Style

Figure 1 in the TIAR will be revised to more clearly illustrate the street system in the vicinity of the project to reflect your suggestion. However, please note that Figures 7 through 10 depict the Year 2006 peak hour traffic without the project at the intersections within the study area, i.e., the "before" conditions; Figures 11 through 14 depict the Year 2006 peak hour traffic with the proposed project at the study area intersections, i.e., the "after" scenario; and that Table 3 of the TIAR summarizes the operating Levels of Service at key intersections in the study area for the purpose of comparison.

4. Trip Generation

The retail traffic is further broken down to pass-by traffic and primary or "new" trips. The pass-by traffic is defined as traffic already on the surrounding roadways, which may stop at the retail developments before continuing on to their final destinations.

Pass-by traffic does not increase the overall traffic in the vicinity of the project. The estimated pass-by traffic analyzed in the TIAR is not based upon the statistical R-squared coefficient. It is based upon the regression equation developed by the Institute of Transportation Engineers (ITE), presented on Page I-23 of "Trip Generation, 5th Edition." The equation given in your response is incorrect. The sign of the constant in your equation appears to be a typographical error and the coefficient is also incorrect. As a result, your mathematical calculation of pass-by trip percentage of 19.4 percent is incorrect.

The correct equation is:

$$\ln(\%Pass-By) = -0.341 \cdot \ln(1,000 \text{ GLA}) + 5.376$$

Your estimation of the gross leasable area (GLA) is also incorrect. Your assumed GLA as 50 percent of gross floor area (GFA) is underestimated. Gross floor area does not include the parking area. For smaller shopping centers the gross floor area (GFA) is equal to the gross leasable floor area (GLA). In larger shopping centers, the GLA can be about 80 percent of GFA. The analysis in the TIAR assumes that the GLA is equal to the GLA, which results in the development of a more conservative pass-by factor.

The calculations for the pass-by traffic, generated by the Pearl City Junction development and the Town Center, were properly performed in the TIAR on an individual rather than a cumulative basis, since the projects are physically

University of Hawaii at Manoa

Water Resources Research Center
Holmes Hall 303 • 5340 Dole Street
Honolulu, Hawaii 96822

8 February 1996

Ms. Cheryl Soon
Housing Development Administrator
Dept. of Housing and Community Development
City and County of Honolulu
650 S. King Street, 5th Floor
Honolulu, Hawaii 96813

Dear Ms. Soon:

Subject: Draft Environmental Impact Statement
Manana and Pearl City Junction Development

We have reviewed the subject DEIS and have no comments to offer at this time.

Thank you for the opportunity to comment.

Sincerely,

R. Sakai
Roger S. Fujjoka, Ph.D.
Director, WRRC

RSF:jmn

cc: R. Sakai
Dept. of Housing & Community Development
/R. Yoshimura
PFK Hawaii

AN EQUAL OPPORTUNITY EMPLOYER

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

510 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: 808/535-2627 • FAX: 808/535-9189



REGISTERED
MAIL

ROLAND LIBBY, JR.
DIRECTOR
HOUSING AND
COMMUNITY DEVELOPMENT

March 21, 1996

Roger S. Fujjoka, Ph.D., Director
University of Hawaii at Manoa
Water Resources Research Center
Holmes Hall 283, 2540 Dole Street
Honolulu, Hawaii 96822

Dear Dr. Fujjoka:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

Thank you for your letter dated February 8, 1996 to the Chief Planning Officer, sent in response to the Department of Housing and Community Development's (DHCD) January 1996 DEIS on the above properties.

We note that the University of Hawaii at Manoa's Water Resources Research Center has no comments to offer at this time. Your letter will be reproduced in the Final Environmental Impact Statement (FEIS).

Please write or call Ray Sakai, Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to share later.

We will continue to keep you informed of any significant changes occurring in the project and look forward to your future review of our forthcoming FEIS.

Thank you once again for your cooperation in this matter.

Roland Libby, Jr.
ROLAND D. LIBBY, JR.
Director

cc: Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PFC-Hawaii
David Heise, PCR Hawaii
Gail Kaito, DHCD Planning Division



DEPARTMENT OF THE ARMY
PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS
FT. SHAFTER, HAWAII 96838-5440

ATTENTION OF

February 14, 1996

Planning and Operations Division

Mr. Randy Wong
Housing Development Administrator
City and County of Honolulu
Department of Housing and Community Development
650 South King Street, 5th Floor
Honolulu, Hawaii 96813

36 FEB 15 P4:17

OFFICE OF THE
CHIEF OF ENGINEERS
CORPS OF ENGINEERS
HONOLULU, HAWAII

Dear Mr. Wong:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement for the Manana and Pearl City Junction Development Project, Oahu (TMK 9-7-24; por. 6, 41; and, 9-7-23: 1). We do not have any further comments to offer beyond those provided in our previous letters dated November 3, 1995 and December 11, 1995.

Sincerely,

Paul Mizue, P.E.
Acting Chief, Planning
and Operations Division

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
450 SOUTH KING STREET, 5TH FLOOR, HONOLULU, HAWAII 96813
PHONE: (808) 523-4431 FAX: (808) 527-5480



ATTENTION OF

March 19, 1996

Mr. Paul Mizue, P.E.
Acting Chief
Planning and Operations Division
Department of the Army
Pacific Ocean Division, Corps of Engineers
Ft. Shafter, Hawaii 96838-5440

ROLAND LIBBY, JR.
DIRECTOR

COMBAT ZONES
PLANNING DIVISION

Dear Mr. Mizue:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement

Thank you for your letter dated February 12, 1996, in response to our January 1996 Draft Environmental Impact Statement (DEIS) on the above properties. We note that the Army Corps of Engineers has no comments to offer beyond those provided in your November 3 and December 11, 1995 letters, at this time. All letters will be reproduced in the Final EIS.

Please write or call Ray Sakai, Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to share later.

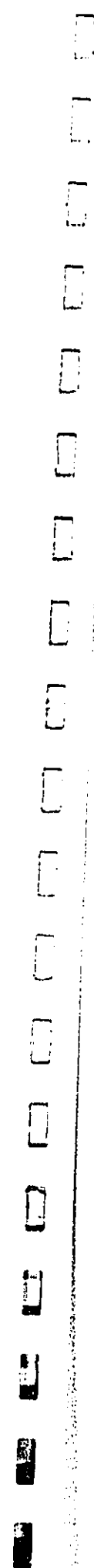
We will continue to keep you informed of any significant changes occurring in the project and look forward to your future review of our forthcoming Final Environmental Impact Statement.

Thank you once again for your cooperation in this matter.

Sincerely,

ROLAND D. LIBBY, JR.
Director

cc: Cheryl Soom, Chief Planning Officer
Robin Yoshimura, PKF-Hawaii
David Hulst, PBR Hawaii
Gail Kaibo, DHCD Planning Division





United States
Department of
Agriculture

Natural
Resources
Conservation
Service

P. O. Box 50004
Honolulu, HI
96850-0001



DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

630 SOUTH KING STREET 5TH FLOOR • HONOLULU HAWAII 96813
PHONE: (808) 525-4227 • FAX: (808) 525-9188

JOSEPH HARRIS
DIRECTOR

ROLAND D. LIBBY, JR.
DIRECTOR
ROBERT ADAMS, JR.
DEPUTY DIRECTOR

March 11, 1996

Ms. Cheryl Soon, Chief Planning Director
Planning Department
City and County of Honolulu
650 South King Street, 8th Floor
Honolulu, Hawaii 96813

Dear Ms. Soon:

Subject: Draft Environmental Impact Statement (DEIS) - Manana and Pearl City
Development, Oahu, Hawaii

We have reviewed the above-mentioned document and have no comments to offer at this time.
We thank you for the opportunity to review this document.

Sincerely,


KENNETH M. KANESHIRO
State Conservationist

cc: Mr. Ray Sakai, Department of Housing and Community Development, City and County of
Honolulu, 650 South King Street, 5th Floor, Honolulu, Hawaii 96813
Mr. Robin Yoshimura, PKCF Hawaii, 1100 Alakea Street, Suite 2200,
Honolulu, Hawaii 96813

March 21, 1996

Mr. Kenneth M. Kaneshiro
State Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
P.O. Box 50004
Honolulu, Hawaii 96850-0001

Dear Mr. Kaneshiro:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

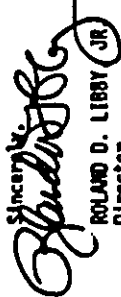
Thank you for your letter dated March 11, 1996 to the Chief Planning
Officer, sent in response to the Department of Housing and Community
Development's January 1996 DEIS on the above properties.

We note that the United States Natural Resources Conservation Service
has no comments to offer at this time. Your letter will be reproduced
in the Final Environmental Impact Statement (FEIS).

Please write or call Ray Sakai, Project Officer, at 527-5321 or 523-4264
if you have any questions or have additional comments to share later.

We will continue to keep you informed of any significant changes
occurring in the project and look forward to your future review of our
forthcoming FEIS.

Thank you once again for your cooperation in this matter.


ROLAND D. LIBBY JR.
Director

cc: Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKCF-Hawaii
David Hulse, PBA Hawaii
Gail Kaito, DHED Planning Division

The Natural Resources Conservation Service
formerly the Soil Conservation Service, works
hand-in-hand with the American people to
conserve natural resources on private lands.

AN EQUAL OPPORTUNITY EMPLOYER



United States Department of the Interior

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

February 9, 1996



DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

430 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE (808) 527-8221 • FAX (808) 527-5288

ROLAND LIBBY, JR.
DIRECTOR

36 FEB 13 P2

DEPT. OF THE INTERIOR
& COMMUNITY DEVELOPMENT

Mr. Randy Wong
Housing Development Administrator
City and County of Honolulu
Department of Housing and Community Development
650 South King St., 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Wong:

Subject: Draft Environmental Impact Statement
Manana and Pearl City Junction Development
Tax Map Keys: 9-7-24:06; 9-7-24:41; 9-7-23:01

The staff of the U.S. Geological Survey, Water Resources Division, Hawaii District, has reviewed the Draft Environmental Impact Statement, and we have no comments to offer at this time.

Thank you for allowing us to review the DEIS. We are returning the report for your future use.

Sincerely,

William Meyer
William Meyer
District Chief

Enc.

March 21, 1996

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

Dear Mr. Meyer:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

Thank you for your letter dated February 9, 1996, sent in response to the Department of Housing and Community Development's January 1996 DEIS on the above properties.

We note that the United States Geological Survey's Water Resources Division has no comments to offer at this time. Your letter will be reproduced in the Final Environmental Impact Statement (FEIS).

Please write or call Ray Sakai, Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to share later.

We will continue to keep you informed of any significant changes occurring in the project and look forward to your future review of our forthcoming FEIS.

Thank you once again for your cooperation in this matter.

Sincerely,
Roland D. Libby, Jr.
ROLAND D. LIBBY JR.
Director

cc: Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKF-Hawaii
David Hulse, PKF-Hawaii
Gail Kaito, DRED Planning Division





United States Department of the Interior M 4:04
 FISH AND WILDLIFE SERVICE
 PACIFIC ISLANDS BOARDER
 300 ALA MOANA BOULEVARD, ROOM 3108
 HONOLULU, HAWAII 96850
 PHONE: (808) 541-3441 FAX: (808) 541-3470

Manana and Pearl City Junction
 Draft Environmental Impact Statement
 Page 2

the opportunity to comment. If you have questions regarding these comments, please contact Fish and Wildlife Biologist Christine Willis at 808/541-3441.

In Reply Refer To: CAW

APR - 8 1996

Ms. Cheryl Soon
 City and County of Honolulu
 Planning Department
 650 South King Street, 8th Floor
 Honolulu, Hawaii 96813

Re: Review of the Draft Environmental Impact Statement for the proposed Manana and Pearl City Development, Oahu, Hawaii

Dear Ms. Soon:

The U.S. Fish and Wildlife Service (Service) has reviewed the Draft Environmental Impact Statement (DEIS) for the proposed Manana and Pearl City Development, Oahu, Hawaii. The DEIS was prepared in support of the proposed zoning change of 122-acres of land in Pearl City, Oahu. The reclassification of 122-acres from the Urban District to Primary Urban Center would allow for the development as outlined in the master plan included in the DEIS. The project area includes lands owned and/or controlled by The City and County of Honolulu in accordance with a Memorandum of Understanding with the U.S. Navy, which transferred ownership of this property from the U.S. Navy to the City over a phased three year period. The Service offers the following comments for your consideration.

The Service has reviewed the information provided in the DEIS, which describes a site that has been previously disturbed and does not provide significant habitat for fish and wildlife resources. Based on this information, the Service does not anticipate significant adverse impacts to fish and wildlife resources to result from the Manana and Pearl City Junction Development. The Service appreciates

Sincerely,

 Brooks Harper
 Field Supervisor
 Ecological Services

cc: DLNR, Honolulu
 CWB, Honolulu

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

630 SOUTH KING STREET, 27TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 525-4437 • FAX: (808) 525-6449



JEREMY HARRIS
MAYOR

ROLAND D. LIBBY, JR.
DIRECTOR
ROBERT AGNES, JR.
DEPUTY DIRECTOR

April 24, 1996

Mr. Brooks Harper, Field Supervisor
United States Department of the Interior
Fish and Wildlife Service
Pacific Islands Ecoregion
300 Ala Moana Boulevard, Room 3108
Box 50088
Honolulu, Hawaii 96850

Dear Mr. Harper:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

Thank you for your letter, dated April 8, 1996 (copy attached) to Chief Planning Officer Cheryl Soon, sent in response to our January 1996 DEIS Environmental Impact Statement (FEIS).

We acknowledge the United States Fish and Wildlife Service's (Service) confirmation that "the Service does not anticipate significant adverse impacts to fish and wildlife resources" from the proposed development and has no other comments to offer at this time.

Please write or call Ray Sakai, Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to share later.

Thank you once again for your cooperation in this matter.

Sincerely,

ROLAND D. LIBBY, JR.
Director

Attachment

cc: David Hulse, PBR Hawaii
Gail Kaito, DHCD Planning Division
Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKF-Hawaii



DEPARTMENT OF THE NAVY
PACIFIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
TAGAJUAGA, HI
PEARL HARBOR, HAWAII 96860-5020

5090P
SER 2317 356

25 JAN 1995

Mr. Randy Wong
Department of Housing and Community Development
City and County of Honolulu
650 South King Street, Fifth Floor
Honolulu, HI 96813

Dear Mr. Wong:

Thank you for the opportunity to review the Draft Environmental Assessment (EA) for Manana and Pearl City Junction Development. The following comment is provided for your use and consideration in preparing the Final EA:

a. Section 1.0, First Paragraph, page 3. Recommend that the paragraph be revised as follows:

"Pursuant to a Memorandum of Understanding with the United States Navy dated August 1993, the Pearl City Junction parcel was conveyed to the City in June 1994 and it is anticipated that ownership of the Manana parcel will be conveyed to the City by December 1996."

If you should have any questions, the Navy's point of contact is Mr. Mel Ramos (Code 231MR), Pacific Division, Naval Facilities Engineering Command at 471-9338 or by facsimile transmission at 474-4890.

Sincerely,

Ralph T. Kameshiro

RALPH T. KAMESHIRO
Director
Environmental Planning Division
Acting

Copy to:
Commander
Naval Base
Box 110
Pearl Harbor, HI 96860-5020

96 JUN 29 P2:17
DEPT OF THE NAVY
& COMM DEVELOPMENT



DEPARTMENT OF THE NAVY
COMMANDER
NAVAL BASE PEARL HARBOR
BOX 110
PEARL HARBOR, HAWAII 96860-5020

5090P
SER M4(23)/5912
12 Feb 96

UNREPLY REFER TO

Mr. Ronald Libby
Department of Housing and Community Development
City and County of Honolulu
650 South King Street, Fifth Floor
Honolulu, HI 96813

Dear Mr. Libby:

Subj: DRAFT ENVIRONMENTAL ASSESSMENT PREPARATION NOTICE,
MANANA AND PEARL CITY JUNCTION DEVELOPMENT OF
SEPTEMBER 1995

Thank you for the opportunity to review the Draft

Environmental Assessment Preparation Notice, Manana and Pearl City Junction Development of September 1995.

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 B.C. Yuen

Stanford B.C. Yuen, PE
By direction

96 FEB 15 P2:19

DEPT OF THE NAVY
& COMM DEVELOPMENT

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

810 SOUTH KING STREET, 5TH FLOOR, HONOLULU, HAWAII 96813
PHONE: (808) 531-6631 • FAX: (808) 531-9338



ROLAND LIBBY, JR.
DIRECTOR
ROBERT AGNES, JR.
DEPUTY DIRECTOR

March 21, 1996

Mr. Stanford B.C. Yuen, Deputy Engineer
Department of the Navy
Facilities Engineering Office
Commander, Naval Base Pearl Harbor
Box 110, Code W44
Pearl Harbor, Hawaii 96860-5020

Dear Mr. Yuen:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

Thank you for your letter dated February 12, 1996, sent in response to the Department of Housing and Community Development's January 1996 DEIS on the above properties.

We note that the United States Navy Commander's Office has no comments to offer at this time beyond those provided in the January 25, 1996 commentary (copy attached) from Navy's Environmental Planning Division, that Navy intends to convey ownership to the Manana parcel to the City by December 1996. Both letters will be reproduced in the Final Environmental Impact Statement (FEIS).

Please write or call Ray Sakai, Project Officer, at 577-5221 or 523-4264 if you have any questions or have additional comments to share later.

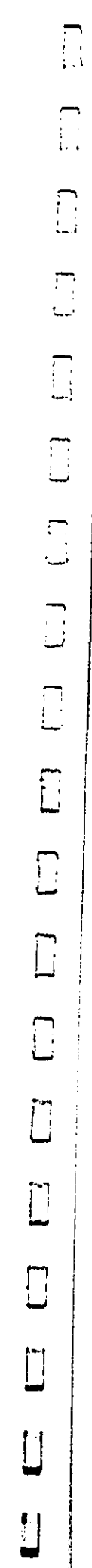
We will continue to keep you informed of any significant changes occurring in the project and look forward to your future review of our forthcoming FEIS.

Thank you once again for your cooperation in this matter.

ROLAND D. LIBBY, JR.
Director

Attachment

cc: Ralph Kaneshiro, U.S. Navy
Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PEP-Hawaii
David Hulse, PEP Hawaii
Gail Katco, DMCD Planning Division



630 SOUTH KING STREET, 8TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 522-2431 • FAX: (808) 527-3588



ROLAND LIBBY, JR.
DIRECTOR
ROBERT AGRES, JR.
DEPUTY DIRECTOR

MAR 25 1996

April 23, 1996

The Honorable Cal Kawamoto, Senator
Nineteenth District
State Capitol
Honolulu, Hawaii 96813

Dear Senator Kawamoto:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

Thank you for your response, dated March 19, 1996 (copy attached) to Chief Planning Officer Cheryl Soon, to our January 1996 DEIS on the above properties.

We appreciate this opportunity to address your comments and recommendations, which have been forwarded to our consultants for inclusion into the Final Environmental Impact Statement (FEIS) document as follows:

- 1. Removal of Traffic Signals on Waimano Home Road at Moalania Street**
We acknowledge your concerns for the safety of the students who cross Waimano Home Road at the Moalania Street crosswalk should the traffic signals be removed at the intersection of Moalania Street and Waimano Home Road. The Department of Transportation Services (DTS) will make the final determination regarding the disposition of traffic signals in this area which will consider the community's best interests and public safety; we will transmit your comments to DTS via this letter. If DTS removes the traffic signal and crosswalks, please note that pedestrian crosswalks are also located at the intersection of Waimano Home Road and Moanalua Road, a short block makai of Moalania Street; and we are working with DTS on the possible installation of traffic signals and pedestrian crossings at the intersection of Waimano Home Road and Leomele Street, located one block mauka of Moalania.
- 2. Item No. 2 - Connector Road Between Kuahaka Street and the Spine Road**
Thank you for this opportunity to clarify the proposed connector roadway. Moanalua Road is not proposed to be directly extended to Kuahaka Street but would continue as the Spine Road through the project site to Acacia Road. Instead, a connector roadway is



The Eighteenth Legislature

of the
State of Hawaii

STATE CAPITOL
HONOLULU, HAWAII 96813

March 19, 1996

Cheryl D. Soon, Chief Planning Officer
City and County of Honolulu
630 South King Street, 8th floor
Honolulu, Hawaii 96813

Dear Ms. Soon:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement Manana and Pearl City Junction. We have the following comments to offer:

- 1. The removal of the traffic signals at the intersection of Moanalua Street and Waimano Home Road may cause an unsafe condition for the students who live in the west side of Waimano Home Road and attend either Pearl City Highlands Elementary School or Highlands Intermediate School. The traffic signals assist them when they cross Waimano Home Road.**
- 2. It appears that the extension of Moanalua Road to Kuahaka Street may be a reality and that the Cane Haul Road may be developed to alleviate the traffic problem that may occur for the residents exiting lower Maunala subdivision and Holiday City since there will be no traffic signals at the Moalania intersection. Will the residents along the Cane Haul Road, Manana Community Association, and the residents of Holiday City have an opportunity to voice their concerns?**
- 3. In viewing the proposed land uses, will the Bus/Handi-Van access on the same road as the users of the Park/Youth Center or will they share the road with the Board of Water Supply? It would be more feasible if the later was done.**

We appreciate the opportunity to comment on the document. Should you have any questions, please contact our office at 586-6970. We look forward to continued cooperation in working with you for the betterment of our community.

Sincerely,

CAL KAWAMOTO
Senator

cc: Ray Sakai

- HONOLULU DISTRICT
- MAE MCARTHUR
- VICE PRESIDENT
- ROSALYN BAUER
- WENDY LUGER
- LEE SHARA, JR.
- WENDY FLOOR LEAVER
- BRIAN TANKULICH
- WENDY WONG
- CALVIN KAWAMOTO
- WENDY CALOJA (LEAVER)
- MICHAEL M. F. LEE
- WENDY LEAVER

- FIRST DISTRICT
- MAIAMA KOLIKOVA
- SECOND DISTRICT
- ROBERT M. WATSON
- THIRD DISTRICT
- ROBERT W. LEAVER
- FOURTH DISTRICT
- ROBERT W. LEAVER
- FIFTH DISTRICT
- JOE TERESA
- SIXTH DISTRICT
- ANDREW COUGHLIN
- SEVENTH DISTRICT
- LOUISA FRANCES SALLING
- EIGHTH DISTRICT
- DOREEN A. AEDA
- NINTH DISTRICT
- MULTI-MULTI-DISTRICT
- TENTH DISTRICT
- LEE SHARA, JR.
- ELEVENTH DISTRICT
- SHAWN TARDUCCI
- TWELFTH DISTRICT
- CAROL FURUKAWA
- THIRTEENTH DISTRICT
- ANDREW A. A.
- FOURTEENTH DISTRICT
- WALTER HOLT
- FIFTEENTH DISTRICT
- ROBERT W. LEAVER
- SIXTEENTH DISTRICT
- REY GONZALEZ
- SEVENTEENTH DISTRICT
- DAVID OBI
- EIGHTEENTH DISTRICT
- ANDREW A. A.
- NINETEENTH DISTRICT
- CALVIN KAWAMOTO
- TWENTIETH DISTRICT
- SHAWN TARDUCCI
- TWENTY-FIRST DISTRICT
- JAMES A. A.
- TWENTY-SECOND DISTRICT
- ROBERT W. LEAVER
- TWENTY-THIRD DISTRICT
- WENDY CALOJA
- TWENTY-FOURTH DISTRICT
- MICHAEL M. F. LEE
- TWENTY-FIFTH DISTRICT
- WENDY CALOJA
- CHIEF CLERK
- 7 BIRD HOOK, HI

The Honorable Cal Kawamoto, Senator
April 23, 1996
Page 2

proposed between Kuahaka Street and the Spine Road, along the former "Cane Haul Road." Access would be provided between Moanalua Road and Kuahaka Street via said connector roadway but the "Moanalua Road Extension" is not envisioned as a continuous roadway to Kuahaka Street.

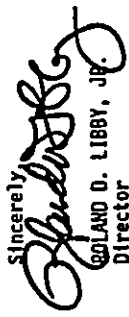
The residents along the former Cane Haul Road and the Manana and Holiday City communities can continue sharing their views with the Department of Housing and Community Development (DHCD) through their representatives on both the Pearl City Planning Task Force and the Pearl City Neighborhood Board. Concerned residents can also continue to voice their concerns and constructive suggestions in the future during the Development Plan Amendment and rezoning process.

DHCD has not yet completed its evaluation of this proposed connector roadway between the "Spine Road" and Kuahaka Street and will continue to keep you informed of our position.

3. Item No. 3 - Bus/Handi-Van Access

At this conceptual planning level, it is anticipated that the Bus/Handi-Van facility will access Waimano Home Road at the Board of Water Supply access driveway, opposite Hoamalua Street and also, off of the proposed Manana Spine Road. The Park/Youth Center is expected to have primary exclusive access from the Spine Road. The Waimano Home Road access is proposed as a conceptual and therefore preliminary concept.

Please write or call Project Officer Ray Sakai at 527-5321 or 523-4264 if you have any questions or have additional comments to contribute later.

Sincerely,

ROLAND D. LIBBY, JR.
Director

Attachment

cc: David Hulise, PBR Hawaii
Gail Kaito, Planning & Analysis Division
Cheryl Soon, Chief Planning Officer
Charles Swanson, DTS
Robin Yoshimura, PKF-Hawaii



PEARL CITY NEIGHBORHOOD BOARD NO. 21

P.O. BOX 1088 • PEARL CITY, HAWAII 96762

36 APR -4 P3:41 MARCH 25, 1996

MEMO TO: RAY SAKAI, PROJECT OFFICER
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

FROM: JERRY SOUZA, CHAIR
PEARL CITY NEIGHBORHOOD BOARD NO. 21

SUBJECT: DRAFT EIS FOR MANANA AND PEARL CITY JUNCTION DEVELOPMENT

WE HAVE REVIEWED THE ABOVE-MENTIONED MATERIALS AND SUBMIT THE FOLLOWING COMMENTS:

1. PAGE 2, 2ND PARAGRAPH: WHAT SPECIFIC OFF-SITE IMPROVEMENTS ARE BEING PLANNED BY THE CITY AND STATE?
2. PAGE 3, 1ST PARAGRAPH: INDIVIDUAL ROADWAY IMPROVEMENTS PLANNED FOR WAIMANO HOME ROAD AND KAMEHAMEHA HIGHWAY HAVE NOT BEEN FUNDED. THESE PROPOSED PROJECTS SHOULD BE INCLUDED IN THE OAHU METROPOLITAN PLANNING ORGANIZATION'S TRANSPORTATION IMPROVEMENT PROJECTS LISTING WITH INPUT BY DTS DOT, CITY COUNCIL AND THE STATE LEGISLATURE TO ASSURE MONIES WILL BE PROVIDED. DISCLOSURE OF IMPLEMENTATION FOR THIS FUNDING SHOULD BE INITIATED BY DHCD.
3. PAGE 6, SECTION 1.5., 2ND PARAGRAPH: DISCLOSURE OF CONTINUED OR INITIAL USE OF THE EXISTING WAREHOUSE SPACES FOR SHORT-TERM LEASING BY THE BUILDING AND FINANCE DEPARTMENTS TO OBTAIN ZONING VARIANCES ON THE PROJECT SITES FOR COMMERCIAL AND INDUSTRIAL USES SHOULD BE MADE.
4. PAGE 7, SECTION 2.1.: CORRECT JANUARY 25, "1996" TO READ JANUARY 25, 1995.
5. PAGE 11, SECTION 2.31.4. MOANALUA ROAD EXTENSION:
 - a. ALTHOUGH THE PEARL CITY TASK FORCE ADOPTED THE ALIGNMENT OF THE SPINE ROAD, WE STILL HAVE RESERVATIONS REGARDING THE CURRENT LOCATION OF ITS MAKAI INTERSECTION AT ACACIA ROAD AND KUJALA STREET. WE BELIEVE THAT OUR INITIAL ALTERNATIVE RECOMMENDATION OF THE ACACIA AND KAMEHAMEHA HIGHWAY INTERSECTION LOCATION FOR THE MAKAI TERMINUS OF THE SPINE ROAD WILL ALLOW GREATER TRAFFIC VOLUME CAPACITY AND BE MORE CONVENIENT FOR MOTORISTS, NOT WITHSTANDING ANY PHYSICAL ROAD GRADE OR SLOPE CONSTRAINTS, AS A MORE VIABLE AND ACCEPTABLE SELECTION.
 - b. WE DO NOT FAVOR THE EXTENSION OF THE CANE HAUL ROAD FROM KUJAHAKA STREET IN AN EASTERLY DIRECTION TO THE SPINE ROAD, BASED ON IMMEDIATE AREA RESPONSES FROM AFFECTED HOLIDAY CITY AND LOWER MANANA SUBDIVISION RESIDENTS. OUR PRIOR RECOMMENDATION TO EXTEND KUJAHAKA STREET IN A MAKAI ROUTE TO MEET THE SPINE ROAD IN VICINITY OF THE MANANA KAI PARK WOULD BE MORE ECONOMICALLY FEASIBLE AND PROVIDE AREA RESIDENTS A MORE DIRECT AND FAVORABLE ACCESS TO COLLECTOR ROADS.
 - c. CORRECT SPELLING OF "MOANALUA" ON THE 6TH LINE TO MOANALUA.

11. PAGE 79, SECTION 12.1: CORRECT "NO" TO YES RESPONSE FOR THE 11/13/95 RECEIPT OF COMMENTS FROM THE BUILDING DEPARTMENT FOR THE EIS PREPARATION NOTICE.

12. APPENDIX E, TRAFFIC IMPACT ANALYSIS REPORT:

- a. PAGE 13, 1ST PARAGRAPH: THE SECOND SENTENCE SHOULD READ: "THESE INCLUDE THE EWA BOUND THROUGH/RIGHT TURN MOVEMENT AND KOKO HEAD LEFT TURN MOVEMENT....". ALSO, ADD WAIMANO HOME ROAD P.M. PEAK ANALYSIS FOR THE NOELANI STREET, MOANALUA ROAD, HOOMALU AND HOOLAULEA STREETS INTERSECTIONS, AS SHOWN ON FIGURE 6.
- b. PAGE 18, SECTION III.B.4., END OF 3RD LINE: ADD COMPARISON OF LEVEL OF SERVICE, 'AT LOS 'E' FROM LOS 'D'....
- c. SECTION IV.A: LABEL OR INDICATE GRAPHICALLY BY REFERENCE, THE FIGURE OR MAP WHERE THE PROPOSED IMPROVEMENTS TO THE ROADWAYS ARE TO BE IMPLEMENTED.
- d. PAGE 24, SECTION IV.A.2: DELETE THE THIRD AND FOURTH SENTENCES, AS THE MOANALUA (CANE HAUL) ROAD EXTENSION TO CENTRAL OAHU IS PURELY CONJECTURE AND WILL NEVER BE IMPLEMENTED.
- e. PAGE 24, SECTION IV.A.3: WE FEEL THAT THE ULTIMATE METHOD TO MITIGATE ANY ADVERSE TRAFFIC CONGESTION IMPACTS AT WAIMANO HOME ROAD AND MOANALUA ROAD IS TO CONSTRUCT A GRADE-SEPARATED INTERSECTION. PROVISIONS SHOULD BE MADE IN THE LAND USE MASTER PLANNING OF THE MAUKA WAREHOUSE SITE TO SET ASIDE THIS AREA FOR FUTURE ROADWAY UTILIZATION.
- f. PLEASE INDICATE GRAPHICALLY THE 'EIGHT-PHASE' TRAFFIC SIGNALIZATION SYSTEM.
- g. PAGE 25, SECTION IV.A.4: ADD ANOTHER SECTION TO INCLUDE AN ANALYSIS OF IMPACTS FOR THE USE, TRAFFIC SIGNALIZATION AND RECONSTRUCTION OF THE WAIMANO HOME ROAD AND LEOMELE STREET INTERSECTION AS A REPLACEMENT FOR THE NOELANI STREET ACCESS WHICH WILL ALLOW ONLY RIGHT-TURN MOVEMENTS.
- h. SECTIONS IV.B. AND IV.C.: FOR COMPARISON ANALYSIS, PLEASE INDICATE IN THE TEXT OR TABLE 3, THE CHANGES IN LEVEL OF SERVICE FOR ALL INTERSECTIONS.
- i. HAS THE TRAFFIC ANALYSIS TAKEN INTO ACCOUNT, THE QUEUING OF BUSES DURING THE P.M. PEAK HOUR AT BUS STOPS ON THE MAUKA SIDE OF KAMEHAMEHA HIGHWAY, EWA OF WAIMANO HOME ROAD AND ACACIA ROAD, THAT MAJOR CONGESTION OCCURS EVERY DAY?
- h. PAGE 26, SECTION IV.C., 2ND LINE: INDICATE AT WHICH INTERSECTION OF KAMEHAMEHA HIGHWAY THAT THE TRAFFIC OPERATION WILL OCCUR.

6. PAGE 24, SECTION 4.9: THE INFORMATION REGARDING HAZARDOUS MATERIALS CONTAINED IN YOUR RESPONSE TO OUR NOVEMBER 20, 1995 LETTER SHOULD BE DISCLOSED. SPECIFICALLY, THE FACT THAT THE NAVY HAS REMOVED THE FRIABLE ASBESTOS MATERIALS INSIDE THE WAREHOUSES. FURTHER, PROSPECTIVE DEVELOPERS WILL BE REQUIRED TO DEMOLISH THE EXISTING STRUCTURES AND REMOVE REMAINING ASBESTOS AND LEAD-BASED PAINT TO COMPLY WITH ALL APPLICABLE REGULATIONS.

7. PAGES 27 TO 29, SECTION 5.2: WE ARE GREATLY CONCERNED THAT TRAFFIC PLANNING FOR THIS PROJECT IS BEING CONDUCTED IN A PIECE-MEAL MANNER. THE TRAFFIC IMPACT ANALYSIS (APPENDIX E) DOES NOT INCLUDE THE EFFECTS OF THE PROPOSED TRANSIT/HANDI VAN FACILITY AND THE EXPANSION OF THE BWS BASEYARD. THOUGH SEPARATE EVALUATIONS WILL BE PREPARED, PRELIMINARY TRIP GENERATION VOLUMES FOR THOSE FACILITIES SHOULD BE ADDED IN THE CONSULTANT'S OVERALL REPORT TO ASSESS TOTAL TRAFFIC IMPACTS AND MITIGATION MEASURES FOR THE PROJECT.

8. PAGES 31 AND 32, SECTION 5.4: PLEASE DISCUSS THE LONG-TERM GASOLINE AND DIESEL FUEL EMISSION IMPACTS ON AIR QUALITY TO BE GENERATED BY THE BUS/HANDI VAN FACILITIES DURING TRADE AND "KONA" WEATHER CONDITIONS ON THE ADJACENT RESIDENTIAL AND APARTMENT UNITS, ESPECIALLY DURING EARLY MORNING AND LATE EVENING HOURS OF VEHICLE OPERATIONS.

9. PAGE 65, SECTION 8.3: IN ASSESSING THE FEASIBILITY OF MEMORIAL PARKS, HOW DO RETIREMENT COMMUNITY AND SINGLE-FAMILY RESIDENTIAL DEVELOPMENTS COME TO BE INCLUDED AS LOW INTENSITY LAND USES?

WE RECOMMEND THAT THE FOLLOWING COMMUNITY CONCERNS BE INCLUDED TO JUSTIFY THE REASONS THAT THIS ALTERNATIVE NOT BE CONSIDERED:

- a. THE DIFFICULT AND TIME CONSUMING PERIOD TO CHANGE THE LAND USE AND ZONING TO ANOTHER DESIGNATION, ONCE THE MEMORIAL PARK HAS BEEN CONSTRUCTED.
 - b. THE INAPPROPRIATE PLACEMENT OF SUCH A FACILITY IN A WELL-ESTABLISHED RESIDENTIAL AREA.
 - c. OVERWHELMING COMMUNITY OPPOSITION, AS EVIDENCED BY A VOTE TAKEN AT A PEARL CITY TASK FORCE PUBLIC INFORMATIONAL GENERAL MEETING.
 - d. SIMILAR-TYPES OF LOW INTENSITY RESIDENTIAL DEVELOPMENT WILL NOT PROVIDE THE CITY WITH ADEQUATE FUNDS TO RECOUP THEIR INVESTMENT IN THE PROJECT.
10. PAGE 72, SECTION 11.2: CORRECT "NEIL" ABERCROMBIE TO READ NEIL ABERCROMBIE.

I. PAGE 33, SECTION V.H.2.: PLEASE GRAPHICALLY DEPICT THE SIX-PHASE TRAFFIC SIGNAL OPERATION AT KAMEHAMEHA HIGHWAY AND ACACIA ROAD.

J. PAGE 34, 2ND PARAGRAPH, 2ND LINE: CORRECT MOANALUA "INTERCHANGE" TO MOANALUA ROAD. THE SPINE ROAD ALIGNMENT SHOULD FOLLOW THE ROUTE OF THE PROPOSED MAJOR DRAINAGE SYSTEM LOCATED IN THE CENTRAL PORTION OF THE MAUKA WAREHOUSE SITE. THIS WILL PROVIDE MORE USABLE AREA FOR DEVELOPMENT OF THE LAND USES APPROVED BY THE PEARL CITY TASK FORCE.

13. APPENDIX H, ENGINEERING REPORT:

a. PAGES 4 AND 5, ITEM III.A.2.: SHOW LOCATIONS OF THE PROPOSED STORM DRAINAGE SYSTEM FOR THE PROJECT SITE ON AN EXHIBIT, AS DESCRIBED IN THE TEXT.

b. PAGE 8, ITEM III.B.2.: INDICATE IN THE TEXT THE LOCATION OF THE 600 FEET OF RELIEF SEWER TO BE INSTALLED.

c. PAGE 12, ITEM III.D.2.a.: INDICATE IN TEXT THE SPECIFIC LOCATION (ACACIA ROAD) WHERE SERVICING OF THE NEW ELECTRICAL FACILITIES FROM WEST SIDE OF THE PROJECT SITE WILL BE CONNECTED.

WHERE IS THE LOCATION OF THE WAIMANO SUBSTATION INDICATED ON FIGURE 6?

d. PAGE 12, ITEM II.D.2.b.: INDICATE IN THE TEXT THE LOCATION OF PROPOSED TELEPHONE SYSTEM WITHIN THE PROJECT SITE AND THE MAKAI TERMINUS FACILITY CONNECTION.

THANK YOU FOR THE OPPORTUNITY TO PROVIDE COMMENTS AND REMARKS FOR THIS MOST IMPORTANT PROJECT. WE WISH TO APOLOGIZE FOR ANY DELAY IN THE SUBMITTAL OF OUR INPUT, BUT AWAIT THE RESPONSE TO OUR CONCERNS TO BE INCLUDED IN THE REVISED TEXT OF THE FINAL EIS.

CC: ROBIN YOSHIMURA, PKF HAWAII
TOM WHITTEN, PBR HAWAII
OEQC
COUNCIL MEMBER MUFI HANNEMANN
GREGORY GONSALVES, MANANA COMM. ASSN.
PEARL CITY N. BD. MEMBERS
NEIGHBORHOOD COMM. OFFICE

CITY AND COUNTY OF HONOLULU

850 SOUTH KING STREET, 21ST FLOOR • HONOLULU, HAWAII 96813
PHONE (808) 525-5275 • FAX (808) 527-5288



JEREMY HARRIS
MAYOR

ROLAND D. LESTER, JR.
DIRECTOR
ROBERT ACHER, JR.
DEPUTY DIRECTOR

Mr. Jerry Souza, Chairperson
April 19, 1996
Page 2

Department of Housing and Community Development (DHCD) completes the development of the property.

4. The correction will be made in the FEIS document.

5. a. For the conceptual planning purposes, the proposed connection of the "Spine Road" to Acacia Road appeared to be the best alternative. Your preference for the "makai terminus" of the spine road at the Acacia and Kamehameha Highway intersection is duly noted. The actual connection location will most likely be determined by the successful project developers in their responses to the Request for Proposal (RFP) process.

b. The extension of the former Cane Hau Road to Kuahaka Street via a proposed connector roadway between Kuahaka Street and the Spine Road is a conceptual planning option which appears to offer the best technical potential to alleviate traffic. Please note that while indirect access would be provided between Moanalua Road and Kuahaka Street via the "Spine Road connection," the "Moanalua Road Extension" is not a continuous roadway to Kuahaka Street. DHCD has not yet completed its evaluation of this option and will continue to keep you informed of our position. In the meantime, your position against this extension over to Kuahaka Street is duly noted.

c. The spelling correction to "Moanalua" will be made.

6. Section 4.9 will be revised as suggested in your comments.

7. The traffic consultant was initially instructed by the DHCD to exclude estimates of the Board of Water Supply (BWS) and Honolulu Public Transit Authority (HPTA) baseyard operations in their preliminary TIAR since both City agencies will be conducting their own Environmental Assessments and/or EIS for their respective field operations.

As requested at your February 29, 1996 meeting, the traffic consultant has been instructed to include preliminary trip generation figures for both operations to its preliminary TIAR estimates, if the required operational data estimates are available from BWS and HPTA.

8. Specific air quality impacts from the bus facility will be prepared once the program requirements of the bus yard are known. This air quality analysis will be prepared as part of the EA/EIS required for development of the bus facility.

9. The retirement community and single family residential alternatives are included as low intensity relative to industrial, commercial uses. Your comments regarding the reasons for community opposition to the memorial park land use alternative will be included in the FEIS.

April 19, 1996

Mr. Jerry Souza, Chairperson
Pearl City Neighborhood Board No. 21
P.O. Box 1025
Pearl City, Hawaii 96782

Dear Mr. Souza:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

Thank you for your letter dated March 25, 1996 (copy attached), sent in response to our January 1996 Draft Environmental Impact Statement (DEIS) on the above properties. Your letter will be reproduced in the Final Environmental Impact Statement (FEIS).

We appreciate this opportunity to address your comments and recommendations, which have been forwarded to our consultants for review and inclusion into the FEIS document as follows:

1. As described in the Preliminary Traffic Impact Assessment Report (TIAR) and Engineering Report, the off-site improvements required as a result of project development consist of transportation improvements and a wastewater transmission line to increase capacity of the existing wastewater system.
2. The Oahu Metropolitan Planning Organization (OMPO) Regional Transportation Plan evaluates traffic patterns on an island-wide basis. The improvement projects which qualify for funding from the Federal government are intended to address regional transportation needs rather than project specific improvements anticipated for the planned development. As such, the improvements planned for the Home Road and Kamehameha Highway would require a more detailed regional analysis from OMPO, to receive Federal funds. We would also recommend sharing your concerns with the elected state legislators who are ex-officio members of the Pearl City Planning Task Force and will be able to better convey the community's concerns to the State Legislature, Department of Transportation and OMPO authorities.
3. The Building Department applied to the Department of Land Utilization for a variance from the Land Use Ordinance, in February 1996, to rent the existing warehouses on the 108.679-acre Manana property for light-industrial uses for 3 years or until the

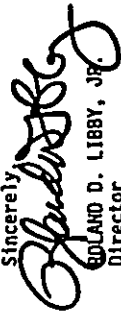


Mr. Jerry Souza, Chairperson
April 19, 1996
Page 4

- determined later during the design phase of the project and subject to DIS review and approval.
- j. Your comments have been noted and will be incorporated into the FEIS document.
 - 13. a. At this conceptual level of the planning process, the design of a proposed storm drain system would not be feasible or accurate. As more detailed responses are received from potential developers in the RFP process, it should be possible to more accurately determine storm runoff based on the amount of impermeable surfaces proposed. Similarly, temporary construction related drainage facilities will be determined by the proposed developer plan.
 - b. As described in the text of the engineering report, the location of the proposed 600' wastewater relief line will be installed along the route of the existing sewer mains to the Pearl City Sewage Pump Station.
 - c. The location of the Waimano substation and servicing facilities referenced in your correspondence will be determined at the appropriate time in the development and design process by the project's developers.
 - d. The location of the proposed telephone system referenced in your correspondence will be determined at the appropriate time in the development and design process by project developers.

Please write or call Project Officer Ray Sakai at 527-5321 or 523-6264 if you have any questions or have additional comments to contribute later.

We will continue to keep you informed of any significant changes occurring in the project and look forward to your review of our forthcoming FEIS. Thank you once again for your cooperation in this matter.

Sincerely,

ROLAND D. LIBBY, JR.
Director

Attachment
cc: David Hulse, PBR Hawaii
Gail Kaiko, Planning & Analysis Division
Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKF-Hawaii

April 19, 1996
Page 3

- 10. The correction will be made and incorporated into the FEIS document.
 - 11. The correction will be made and incorporated into the FEIS document.
 - 12. a-d: Your comments have been noted and will be incorporated into the FEIS document.
 - e. Your recommendation for a grade-separated interchange at the intersection of Moanalua Road and Waimano Home Road is noted. However, said exchange may not be warranted as the intersection improvements, recommended in the TIAR, are expected to mitigate the traffic impacts resulting from the proposed project, as well as maintain the existing Levels of Service.
- An "eight-phase" traffic signal system at the intersection of Waimano Home Road and Moanalua Road will include an exclusive left turn phase on each leg of the intersection. A diagram at this preliminary planning stage is premature as the final traffic signal phasing sequence will be determined later during the design phase of the project and subject to the Department of Transportation Services (DTS) review and approval.

f. The Kane Haul Road extension between the Spine Road to Kuahaka Street was expected to mitigate the removal of traffic signals and the restricted traffic movements on Waimano Home Road and Moelani Street.

DMCD will also be working with DTS to access the effect of the Moelani Street conversion to allow only right-turn improvements, to determine if a traffic signal is warranted at the intersection of Waimano Home Road and Leomele Street.

g. Table 3 will be expanded in the FEIS to include all the intersections in the study area.

The traffic analysis does include bus traffic on Kamehameha Highway. However, the queuing of buses is an operational matter which will be forwarded to the HPTA for review of their bus schedules on Kamehameha Highway.

h. The referenced intersection is Kamehameha Highway and Waimano Home Road. The correction will be made in the FEIS document.

i. A "six-phase" traffic signal system at the intersection of Kamehameha Highway and Acacia Road means Acacia Road and the Pearl City Junction Access Drive will operate on separate phases. A diagram at this preliminary planning stage is premature as the final traffic signal phasing would be



Pearl City Community Association

P.O. BOX 314 PEARL CITY, HAWAII 96782

March 21, 1996

Cheryl Soon
CC Honolulu: Planning Dept.
650 So. King St.
Honolulu, HI 96813

Dear Ms. Cheryl Soon:

Subject: Comments: Manana & Pearl City Development
Draft Environmental Impact Statement

The creation of the Pearl City Task Force provided an excellent vehicle for community participation in the ground level planning of the heart and center of our Pearl City community. Through the guiding influence of Councilman Hahnemann and the open and cordial manner of the Mayor and his staff the Board feels satisfied that the effort and time spent on the Task Force was productive and meaningful.

However, we do realize that this is only the preliminary stage and the Draft EIS on this project is strictly conceptual (p.70). It is hoped that the community will be given ample opportunity to participate in the forth coming levels of planning.

At the present time, our primary focus is on the visual impact of this development in our community. It is agreed that almost anything is better than the sight of the old, Navy warehouses. We are happy to note that the Draft many times mentions this aspect of the impact. Aesthetics; landscape buffers (p.26) the Spine Road; a landscaped Parkway (p.27); site buildings will maintain makai/mauka views and enhance natural features of the site; existing views will remain unobstructed and the low rise character of the area will be maintained (p.47). On the subject of Height Controls (p.59) we were unable to locate the provisions set forth in the Land Use Ordinance. But, all of this remains conceptual; we would be most interested in being informed in the rezoning process that must take place before the property can be developed.

Our second area of concern is the daily congestion of traffic on Waimano Home Road and the poorly planned (unplanned) pattern of traffic in the Post Office and Power Center area. We are agreed that even without the development traffic congestion in Pearl City will get worse (p.42). It is also agreed that the proposed Spine Road will provide another access to Kam Hwy.



Pearl City Community Association

P.O. BOX 314 PEARL CITY, HAWAII 96782

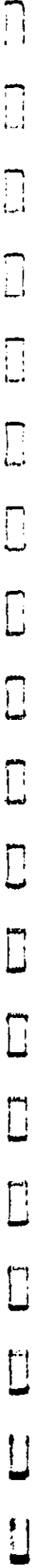
But we are most skeptical about the adequacy of relief that this new access will provide as far as congestion on Waimano Home Rd. The recently proposed change of allowing two ft. turn lanes from Waimano Home Rd. to Kam Hwy (turning west from Pearl City mauka) will help but will be inadequate. We need an additional lane on Waimano Home Rd. that turns right into Kam Hwy.

The PCCA Board thanks you sincerely for this opportunity to comment on the Draft EIS. We look forward to continued participation in the planning process in the development of the center and heart of our own community.

Sincerely,
[Signature]
Civil Improvement Committee
Pearl City Community Association

Mr. Ray Sakai
CC Honolulu: Housing/Community Development
650 South King St. Honolulu, HI 96813

Mr. Robin Yoshimura
PKF Hawaii
1100 Alakea St. Honolulu, HI 96813



JEREMY HARRIS
DIRECTOR



ROLAND D. LIBBY, JR.
DIRECTOR
ROBERT AGRES, JR.
DEPUTY DIRECTOR

Mr. Kenji Uejo
April 23, 1996
Page 2

2. For obtaining the appropriate rezoning designation from the City and City Council. Although the height limit must conform to requirements of the proposed zoning, developers were informed that heights in excess of the surrounding structures may not be favorably received by the Pearl City community; and
3. The final developer proposal and zoning assignment selected by the City will be subject to City Council approval after the mandatory public and committee hearings.

Mr. Kenji Uejo
Civic Improvement Committee
Pearl City Community Association
P.O. Box 284
Pearl City, Hawaii 96782

April 23, 1996

Dear Mr. Uejo:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

Thank you for your letter dated March 21, 1996 (copy attached), sent in response to our January 1996 DEIS on the above properties. Your letter will be reproduced in the Final Environmental Impact Statement (FEIS).

The City is pleased that your Board is satisfied with the results of the community-based planning effort and that "the time spent on the Task Force was productive and meaningful." We look forward to your Board's continued participation in the City's efforts in redeveloping said properties.

We in turn, appreciate this opportunity to address your comments and recommendations, which have been forwarded to our consultants for review and possible inclusion into the FEIS as follows:

Rezoning

As noted in the DEIS comments, the Land Use Ordinance (LUO) does not specifically identify heights of proposed structures without first being designated on the City's official zoning maps.

The Request for Proposals (RFP) recently issued by the Department of Housing and Community Development (DHCD) to seek developers/proposers to redevelop both the Pearl City Junction and Manana properties hold such developer/proposers responsible for the following:

1. Consulting and coordinating design and use of the project site with the Pearl City Neighborhood Board and the Pearl City Planning Task Force; and

Therefore, the Pearl City Community Association will have ample opportunities during the "change of zoning" process to provide input on the appropriateness of future height restrictions.

Traffic

We also concur with your concerns regarding traffic congestion. The Waimano Home Road/Kamehameha Highway intersection will remain congested even after the "spine road" is developed. However, the Traffic Impact Study indicates that this turning movement will result in a 2006 Level of Service (LOS) of "C" in the AM peak and "F" during the PM peak hours. While the PM movement is clearly not a desirable LOS, the mitigation measure you propose, of an additional right turn lane from Waimano Home Road onto the State Highway, Kamehameha Highway, may be appropriate only when warranted as determined by monitoring traffic levels in the future.

Please write or call Ray Sakai, Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to share later.

Sincerely,

ROLAND D. LIBBY, JR.
DIRECTOR

Attachment

- cc: David Hulse, PBR Hawaii
Robin Yoshimura, PKF-Hawaii
Gail Kaito, DHCD Planning Division
Cheryl Soon, Planning Department

Hawaiian Electric Company, Inc. • PO Box 2750 • Honolulu HI 96840-0001

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
830 SOUTH KING STREET 9TH FLOOR • HONOLULU HAWAII 96813
PHONE: (808) 523-4433 • FAX: (808) 527-3458



William A. Bonnat
Manager
Environmental Department

IF REPLY BY MAIL
PLEASE



ROLAND D. LIBBY, JR.
DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

March 4, 1996

March 21, 1996

Ms. Cheryl Soon
City & County of Honolulu
650 South King Street, 8th Floor
Honolulu, Hawaii 96813

Dear Ms. Soon:

Subject: Manana and Pearl City Junction Development

Thank you for the opportunity to comment on your January 1996 Draft Environmental Impact Statement report for the Manana and Pearl City Junction Development project, as proposed by the City & County of Honolulu, Department of Housing and Community Development. We have reviewed the subject document and have no comments at this time on the proposed project. HECO shall reserve further comments pertaining to the protection of existing powerlines bordering the project area until construction plans are finalized. Again, thank you for the opportunity to comment on this Draft Environmental Impact Statement.

Sincerely,

cc: Ray Sakai
City & County of Honolulu
Dept. of Housing and Community Development
650 S. King St., 5th Floor
Honolulu, HI 96813

PKF Hawaii
1100 Alahea St., Suite 22100
Honolulu, HI 96813

An HEI Company

Mr. William A. Bonnat, Manager
Environmental Department
Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, Hawaii 96840-0001

Dear Mr. Bonnat:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

Thank you for your letter dated March 4, 1996, sent in response to the Department of Housing and Community Development's January 1996 DEIS on the above properties.

We note that Hawaiian Electric Company, Inc. has no comments to offer at this time about the proposed development and defers further comments until the successful developer's project plans are finalized. Your letter will be reproduced in the Final Environmental Impact Statement (FEIS).

Please write or call Ray Sakai, Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to share later.

We will continue to keep you informed of any significant changes occurring in the project and look forward to your future review of our forthcoming FEIS.

Thank you once again for your cooperation in this matter.

ROLAND D. LIBBY, JR.
Director

cc: Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKF-Hawaii
David Hulse, PBR Hawaii
Gail Kaito, OHCD Planning Division





ROLAND LIBBY, JR.
DIRECTOR
ROBERT ADAMS, JR.
DEPUTY DIRECTOR

April 17, 1996
APR 23 1996

DEPARTMENT OF
PLANNING

Ms. Sherry Aquino
Aina Haina Barber and Hairstyling
820 West Hind Drive, Room 111
Honolulu, Hawaii 96821

Dear Ms. Aquino:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

Thank you for your letter postmarked March 29, 1996 (copy attached), sent in response to our January 1996 Draft Environmental Impact Statement (DEIS) on the above properties. Your letter will be reproduced in the Final Environmental Impact Statement (FEIS). We appreciate this opportunity to address your comments, which have been forwarded to our consultants for review and inclusion into the FEIS document as follows:

1. Please note that when the bus facility was relocated from the preliminary location at the Pearl City Junction site, to the 17-acre Manana parcel, the community members on the Pearl City Planning Task Force (Task Force), initially expressed similar concerns about potential noise and air quality impacts from a busyard located near a residential area.
2. However, full disclosure of the anticipated bus operations and employment opportunities (250 to 300 employees) by the Honolulu Public Transit Authority (HPTA) during the 7-month community-based planning process (especially at the May 17 and 23, 1995 Task Force meetings and the July 20, 1995 Community meeting) was instrumental in enlisting the community's support.
 - a. The current Manana location is located as far away as possible from the surrounding residential areas to minimize potential conflicts.
 - b. The facility will start with primary service to the Ewa and Waianae areas with 100 buses.

DEPARTMENT OF
PLANNING

Project Officer: Mike Ray Sakai
City & County of Honolulu

My concern is the Environment,

① Noise
② Pollution - Bus is worst

You are going to put a 17-acre Bus Facility there. In the back of MANANA Single Family Homes. Its going to be "Noisy" all hours of Day Buses leaving in mornings and late night repairs going on 24 hrs Buses waiting up in mornings 6min per Bus. Pollution is not a Industrial Park. We as Residence should be able to live a quiet and peaceful ENVIRONMENT with no noise and Pollution. Now we have a very quiet and peaceful place where we the residence can live, sleep and breathe clean Air. We don't want an ENVIRONMENT with Noise and Pollution can cause sickness to residence.

Thank you!
SHERRY Aquino
Mike Ray Sakai

Ms. Sherry Aquino
April 17, 1996
Page 2

c. HPTA data reveal the following peak periods:

● Morning Departures:

- First bus leaves 3:30 a.m.
- Peak occurs between 4 to 5 a.m. (only 18 of the 100 buses involved).
- All buses out by 6:30 a.m.

● Afternoon Departures:

- Peak occurs between 3 to 4 p.m. (14 out of the 100 buses involved).

● Return:

- Majority return between 5:30 to 9:30 p.m.
- The busiest period is in the evening when the buses have to be washed and serviced.
- After 9:30 p.m., activity slows down until the last straggler returns at 1:00 a.m.

d. Maximum of 250 buses at the facility.

e. Much of the shop noise can be controlled during the design of the building. The exterior can be designed to give the appearance of an office building rather than a maintenance facility. Acoustical consultants have calculated the distance noise takes to dissipate and the building will be located accordingly. The building can be oriented to reduce the evening noise from the washing station and service station.

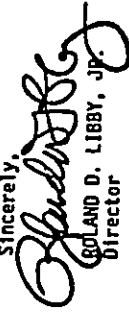
f. HPTA hired a consultant to study the effect of the operations on the air quality but the studies showed no significant air pollution.

Although at this conceptual level of the planning process, the number of buses or the physical components (i.e. building size, parking areas, landscape and setback buffers, etc.) have not been established, our traffic consultant has been instructed to include a preliminary Assessment of the bus trip generation estimates in the Traffic Impact Assessment Report (TIAR), which will be included as an Appendix in the FEIS. Once the requirements of the facility are better defined, HPTA will most likely prepare an Environmental Assessment (EA), prior to any

Ms. Sherry Aquino
April 17, 1996
Page 3

development on the property. This EA report will evaluate in greater detail, the traffic, noise, and air quality impact concerns expressed in your correspondence.

Please write or call Ray Sakai, Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to contribute later.

Sincerely,

ROLAND D. LIBBY, JR.
Director

Attachment

cc: David Hulse, PBR Hawaii
Gail Kaito, Planning & Analysis Administrator
Cheryl Soon, Chief Planning Officer
Howard Takara, HPTA
Robin Yoshimura, PKF-Hawaii

RECEIVED

FEB 16 11:43

FEBRUARY 5, 1996 HONOLULU

MONROE & FRIEDLANDER
MANAGEMENT, INC.

Ms. Cheryl D. Soon, Chief Planning Officer
Department of Housing and
Community Development
CITY AND COUNTY OF HONOLULU
650 South King Street, 8th Floor
Honolulu, HI 96813-4850

96 MAR 15 P 1:49

MONROE & FRIEDLANDER
& COMPANY

Re: PD 95/PUC-1004 (IC)
Manana/Pearl City Junction Properties, Pearl City, Oahu, Hawaii

Dear Ms. Soon:

We are in receipt of the plan for the above-referenced property and would like to submit our comments on the proposed development.

It was our understanding that there had been some discussion early into the planning stages to include affordable housing in the Manana track. Although the proposed development plan includes many attractive features, we feel a housing community should also be considered. Many people, future residents and merchants alike, would benefit from a planned housing area in such a prime location. The potential for taxes being generated through real property tax and retail sales seems like the "highest and best use" for the property.

Thank you in advance for considering our suggestion. Should you have any questions with regard to this matter, please contact me at 808/453-2800.

Very truly yours,

MONROE & FRIEDLANDER
MANAGEMENT, INC.
Managing Agent for
Pearl Highlands Center Associates

Suzette I. Timine
Suzette I. Timine (S)
Senior Property Manager

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR, HONOLULU, HAWAII 96813
PHONE: 808-523-6227 • FAX: 808-527-5488



ROLAND LIBBY, JR.
DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

Ms. Suzette J. Timms
March 22, 1996
Page 2

We will continue to keep you informed of any significant changes occurring in the project and look forward to your future review of our forthcoming Final Environmental Impact Statement.

Thank you once again for your cooperation in this matter.

March 22, 1996

Ms. Suzette J. Timms
Senior Property Manager
Monroe & Friedlander Management, Inc.
Managing Agent for Pearl Highlands
Center Associates
P. O. Box 257
Honolulu, Hawaii 96809

Dear Ms. Timms:

Subject: Manana/Pearl City Junction (PCJ)
Draft Environmental Impact Statement (DEIS)

Thank you for your letter dated February 5, 1996 to the Chief Planning Officer, sent in response to the Department of Housing and Community Development's January 1996 DEIS on the above properties.

We appreciate your suggestion about providing rental housing opportunities. However, affordable housing options, both for sale and rental, were discounted early in the community-based planning effort. While there is a need for affordable housing, the community had great concerns about the impact of traffic and the City is not in a financial position to underwrite the subsidy that would be necessary to make housing at this site financially feasible.

Please write or call Ray Sakai, Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to share later.

Sincerely,

ROLAND D. LIBBY, JR.
Director

cc: Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PEP-Hawaii
David Hulise, PEP Hawaii
Gail Kaito, DHCD Planning Division

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
531 SOUTH BEREANUA STREET
HONOLULU, HAWAII 96843
PHONE: (808) 527-5100
FAX: (808) 531-2714



March 21, 1996

JEREMY HARRIS, Mayor
WALTER O. WATSON, JR., Chairman
MURPHEE YAMASATO, Vice Chairman
KAZUHAYASHIDA
MELISSA P.J. LUM
FOREST C. MURPHY
REIMTHE SPRAGUE
BURGHARMI STANLEY

RAYMOND H. SATO
Manager and Chief Engineer

TO: ROLAND D. LIBBY, JR., DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM: *Raymond H. Sato*
RAYMOND H. SATO, MANAGER AND CHIEF ENGINEER MAR 25 P 3:04
BOARD OF WATER SUPPLY

SUBJECT: YOUR LETTER OF FEBRUARY 2, 1996 REGARDING THE PRELIMINARY
ENVIRONMENTAL IMPACT STATEMENT (DEIS) FOR THE MANANA AND PEARL
PEARL CITY JUNCTION DEVELOPMENT, TMK: 9-7-024; PORTION 06;
9-7-024; 41; AND 9-7-023; 1

Thank you for the opportunity to review and comment on the DEIS for the Manana and Pearl City Junction Development. Our previous comments of January 22, 1996 on the Preliminary DEIS are still applicable.

We have the following additional comments to offer:

1. The developers will be required to pay their proportionate share for resource development and our Water System Facilities Charges for transmission and daily storage.
2. A water master plan should be submitted for our review and approval. The master plan should include hydraulic calculations showing that the proposed system can accommodate peak flows and fire protection for the planned land use, in accordance with our Water System Standards. Off-site pipeline improvements may be required to provide fire flow requirements for the proposed light industrial area. As such, the statements in the DEIS and Appendix H on adequacy of the off-site water system will require revision.
3. Preliminary Engineering Report, Appendix H, Page 11, Section C-3-a. The State Commission on Water Resource Management allocates any available aquifer water source to potential users. The Board of Water Supply, agriculture and the military are the primary users of water from the Pearl Harbor aquifer.

If you have any questions, please contact Barry Usagawa at 527-5235.

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
530 SOUTH KEELEMANA STREET
HONOLULU HAWAII 96843
PHONE (808) 527-6190
FAX (808) 531-2714



March 21, 1996

JEREMY HARRIS, Mayor
WALTERO WATSON, JR., Chairman
LAURICE H. YAMASATO, Vice Chairman
KAZU HAYASHIDA
BELOUSA Y. J. LUI
FOREST C. MURPHY
KEIMETHE SPRIGGLE
BARBARA KIM STANTON
RAYMOND H. SAITO
Manager and Chief Engineer

TO: ROLAND D. LIBBY, JR., DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
FROM: *Raymond H. Saito*
RAYMOND H. SAITO, MANAGER AND CHIEF ENGINEER MAR 25 P 3:04
BOARD OF WATER SUPPLY

SUBJECT: YOUR LETTER OF FEBRUARY 2, 1996 REGARDING THE PRELIMINARY
ENVIRONMENTAL IMPACT STATEMENT (DEIS) FOR THE MANANA AND
PEARL CITY JUNCTION DEVELOPMENT, TMS: 9-7-024; PORTION 06;
9-7-024; 41; AND 9-7-023; 1

Thank you for the opportunity to review and comment on the DEIS for the Manana and Pearl City Junction Development. Our previous comments of January 22, 1996 on the Preliminary DEIS are still applicable.

We have the following additional comments to offer:

1. The developers will be required to pay their proportionate share for resource development and our Water System Facilities Charges for transmission and daily storage.
2. A water master plan should be submitted for our review and approval. The master plan should include hydraulic calculations showing that the proposed system can accommodate peak flows and fire protection for the planned land use, in accordance with our Water System Standards. Off-site pipeline improvements may be required to provide fire flow requirements for the proposed light industrial area. As such, the statements in the DEIS and Appendix H on adequacy of the off-site water system will require revision.
3. Preliminary Engineering Report, Appendix H, Page 11, Section C-3-a. The State Commission on Water Resource Management allocates any available aquifer water source to potential users. The Board of Water Supply, agriculture and the military are the primary users of water from the Pearl Harbor aquifer.

If you have any questions, please contact Barry Usagawa at 527-5235.

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

430 SOUTH KING STREET, 3RD FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 525-3227 • FAX: (808) 527-9400



HONOLULU LIBRARY
300 N. BERKELEY
HONOLULU, HI 96813
TEL: 525-3227

April 11, 1996

TO: RAYMOND H. SATO, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

FROM: ROLAND D. LIBBY, JR., DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

SUBJECT: MANANA/PEARL CITY JUNCTION (PCJ)
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Thank you for your letter dated March 21, 1996 (copy attached), sent in response to our January 1996 Draft Environmental Impact Statement (DEIS) on the above properties. Your letter will be reproduced in the Final Environmental Impact Statement (FEIS).

We appreciate this opportunity to address your comments and recommendations, which have been forwarded to our consultants for review and possible inclusion into the FEIS document as follows:

1. Your cogent reminder that the project's developer(s) will pay a proportionate share for resource development and a facility charge for storage and transmission at prevailing Board of Water Supply (BWS) rates prior to installation of water meters, is cited on page 36 of the DEIS and will be retained in the FEIS.
2. Our engineering consultant has been instructed to revise the statements in the DEIS and Appendix H about the adequacy of the off-site water system pending BWS review of the revised water master plan.
3. We acknowledge that should the primary users, the BWS agricultural users and the military, demand for potable water from the Pearl Harbor aquifer source increase, that an application from the BWS to the Commission on Water Resource Management would be required for additional source development.

Please write or call Ray Sakai, Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to contribute later.

TO: RAYMOND H. SATO, MANAGER AND CHIEF ENGINEER
April 11, 1996
Page 2

We will continue to keep you informed of any significant changes occurring in the project and look forward to your review of our forthcoming FEIS. Thank you once again for your cooperation in this matter.

Sincerely,

ROLAND D. LIBBY, JR.
Director

cc: Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKF-Hawaii
David Hulise, PBR Hawaii
Gail Kalto, DKCD Planning Division

CITY AND COUNTY OF HONOLULU
BUILDING DEPARTMENT
HONOLULU MUNICIPAL BUILDING
430 SOUTH KING STREET
HONOLULU, HAWAII 96813



JOSEPH MALONE
MAYOR

RANDALL K. FUJIKI
DIRECTOR AND BUILDING SUPERINTENDENT
HONOLULU, HAWAII 96813

PB 96-196

April 1, 1996

36 APR 24 10:23

MEMO TO: ROLAND D. LIBBY, JR., DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM: RANDALL K. FUJIKI
DIRECTOR AND BUILDING SUPERINTENDENT

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)
MANANA AND PEARL CITY JUNCTION DEVELOPMENT
TRKS: 9-7-24:05 POR, 9-7-24:41, 9-7-23:01

This is in response to your memo dated February 2, 1996 for comments relevant to the subject DEIS. Our comments are as follows:

Please be advised that tall structures in the project may interfere with the existing radio microwave path between the Pearl City Police Station and the radio site at Pun Manawahua (see attachment). Therefore, we suggest that building height restrictions be considered during the rezoning process to ensure that integrity of our police communications system are not affected by the proposed development.

The following comments regarding the electrical infrastructure are offered by our staff based on their recent investigations and may have been addressed in the Request for Proposals:

Page 39, Section 5.B.5, Electrical/Communication System

Please confirm that 46 kv transmission lines and 46 kv-12 kv step down transformers will be used, as typically power to such developments is 12 kv. The location of a 46 kv substation is not indicated on the master plan (Figure 5).

Roland D. Libby, Jr.
Page 2
April 1, 1996

Preliminary Engineering Report, Appendix H, Page 11,
D. Electrical and Communication Systems: 1. Existing
Facilities: a. Electric

The following clarifies existing electric facilities serving the PCJ and Manana areas:

Manana and Pearl City Junction currently served by Navy installed overhead 11.5 kv distribution system that originates south of Pearl City Junction and crosses Kamehameha Highway to Manana.

A second 11.5 kv service is being installed from Waimano Home Road to permit the elimination of the 11.5 - kv line crossing Kamehameha Highway in the near term.

Figure 5, Electrical Master Plan, Manana/PCJ Development

Please confirm the use of new 46 kv lines feeding Manana. We request your further investigation to determine the location and impact of transmission voltage facilities.

Should there be any questions, please have your staff contact Douglas Collinson at ext. 6375.

RANDALL K. FUJIKI
Director and Building Superintendent

Attach.



ROLAND D. LIBBY, JR.
DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

MAY 10 1996

May 9, 1996

TO: Randall K. Fujiki, Director and Building Superintendent
May 9, 1996
Page 2

3. Preliminary Engineering Report - Existing Electric Facilities

We acknowledge your clarification of Navy's existing electric facilities serving the PCJ and Manana sites. Please note that said information was conveyed to the prospective developers in the RFPs.

4. Electric Master Plan

As stated in item 2 above, at this level of conceptual planning, we believe the location and estimated impact of transmission voltage facilities is premature. However, we will respond to your request to confirm the use of the new 46 kV transmission lines to the Manana property when our engineering consultants complete their review.

Please write or call Ray Sakai, Project Officer, at X5321 or X4264 if you have any questions or have additional comments to share later.

ROLAND D. LIBBY, JR.

Attachment

cc: David Hulise, PBR Hawaii
Gail Kaito, DHCD Planning & Analysis Division
Cheryl Soon, Chief Planning Officer
Robin Yoshitaura, PKF-Hawaii

TO: RANDALL K. FUJIKI, DIRECTOR AND
BUILDING SUPERINTENDENT
FROM: ROLAND D. LIBBY, JR., DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
SUBJECT: MAWANA/PEARL CITY JUNCTION (PCJ)
DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

Thank you for your response, dated April 1, 1996 (copy attached), to our January 1996 DEIS on the above properties, which will be reproduced in the Final Environmental Impact Statement (FEIS).

We appreciate this opportunity to address your comments and recommendations, which have been forwarded to our consultants for review and inclusion into the FEIS as follows:

1. Radio Microwave Path

We appreciate your salient reminder about the existing radio microwave path between the Pearl City Police Station and the radio site at Puu Manawahua (in Makakilo). Successful proposers to the Request for Proposals (RFP) issued by the Department of Housing and Community Development on December 11, 1995 and January 8, 1996 for Pearl City Junction (PCJ) and Manana Properties, respectively, will be instructed to call the Honolulu Police Department, contact Mr. Osame Kobayashi, Radio Engineer, at 831-7200 for the radio microwave path coordinates and height elevation and coordinate their proposed building designs plans to ensure the police communication system's integrity is not compromised.

2. Electrical/Communications System

It is assumed the final configuration of the land uses may change as a result of the redevelopment proposals submitted by private developers in response to the RFPs. Accordingly, affixing the location of a 46 kV substation would be premature at this level of conceptual planning.

We will respond to your request to confirm the use of the 46 kV transmission lines and 46 kV to 12 kV step down transformers when our engineering consultants complete their review.

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
5th SOUTH BERTANNA STREET
HAWAII, U.S.A. HAWAII 96813

PHONE (808) 527-6190
FAX (808) 533-2714



January 22, 1996

JERRY HARRIS, Mayor
WALTER HATSON, JR., Chairman
WALTER H. TAMASATO, Vice Chairman
TATU HAYASHIDA
WELISSA Y. J. LUI
FORREST C. MURPHY
KEITHA E. SPRAGUE
BARBARA T. STANTON
RAYMOND H. SATO
Manager and Chief Engineer

96 JAN 24 10:31:10

TO: ROLAND D. LIBBY, JR., DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM: FOR RAYMOND H. SATO, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

SUBJECT: YOUR LETTER OF JANUARY 17, 1996 REGARDING THE DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS) FOR THE MANANA AND PEARL CITY JUNCTION DEVELOPMENT, TMK: 9-7-24: 06; 9-7-24: 41; AND 9-7-23: 1

Thank you for the opportunity to review and comment on the Draft EIS for the Manana and Pearl City Junction Development. Our previous comments of November 28, 1995 on the Environmental Impact Statement Preparation Notice are still applicable and should be included in the Final EIS.

We have the following additional comments to offer:

1. The expansion of our existing Board of Water Supply (BWS) facility from two acres to seven acres will accommodate a combined field operations corporation yard and automotive maintenance facility.
2. A supplemental EIS for the proposed expansion project will be prepared.
3. We understand that the current estimated water demand is 400,000 gallons per day. Based on this revised estimate, the City should coordinate the installation of a source and storage facilities with BWS.

If you have any questions, please contact Barry Utagawa at 527-5235.

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
830 SOUTH KING STREET, 5th FLOOR • HONOLULU, HAWAII 96813
PHONE (808) 523-2222 • FAX (808) 527-3488



JERRY HARRIS
MAYOR

ROLAND D. LIBBY, JR.
DIRECTOR
ROBERT AGRES, JR.
DEPUTY DIRECTOR

March 19, 1996

MEMORANDUM

TO: RAYMOND H. SATO, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

FROM: ROLAND D. LIBBY, JR., DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

SUBJECT: MANANA/PEARL CITY JUNCTION (PCJ)
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Thank you for your letter dated January 22, 1996 in response to our January 1996 Draft Environmental Impact Statement (DEIS) on the above properties.

Your comments and those previously provided in your November 28, 1995 letter will be provided to our consultants to update their engineering studies and both letters will be reproduced in the Final EIS.

Please write or call Ray Sabai, Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to contribute later.

We will continue to keep you informed of any significant changes occurring in the project and look forward to your review of our forthcoming Final Environmental Impact Statement.

Thank you once again for your cooperation in this matter.

ROLAND D. LIBBY, JR.

cc: Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKP-Hawaii
David Hulse, PBR Hawaii
Gail Kaito, DHCD Planning Division

CITY AND COUNTY OF HONOLULU
150 SOUTH KING STREET
HONOLULU, HAWAII 96813-1001



ROLAND D. LIBBY, JR., DIRECTOR
Page 2
March 25, 1996

PATRICK T. ONISHI
DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
96-00700(JT)
'96 ZA Comments Zone 9

Patrick T. Onishi
PATRICK T. ONISHI
Director of Land Utilization

March 25, 1996

MEMORANDUM

TO: ROLAND D. LIBBY, JR., DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM: PATRICK T. ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)
MANANA AND PEARL CITY JUNCTION DEVELOPMENT
TAX MAP KEYS: 9-7-211, 011 AND 9-7-241, FOR .06 AND 41

We have reviewed the above-referenced document and have the following comments:

Page 50, "7.8 Land Use Ordinance":

1. Clarification should be made on discussion of BX-4 Central Business District zoning. We would oppose such a requested zone change for this area. This District is not intended for general application.
2. The FEIS should include a proposed zoning map, particularly if more than one type of zoning will be involved. We would also be interested to know whether the area to be designated Commercial-Industrial Mixed Use is intended to be zoned IM-1 Industrial-Commercial Mixed Use District, or a combination of industrial and commercial zoning districts.

There should also be a discussion of the proposal's compatibility with existing surrounding uses. We are especially concerned with the potential impacts to adjacent residential uses, particularly with respect to loading operations, general noise and lighting and traffic circulation.

If zoning is not known at this time, and is dependent upon the selected developer and development scheme, this should be stated in the FEIS.

Thank you for the opportunity to comment. Should you have any questions, please contact Joan Takano of our staff at 527-5038.

PTO:fm
p:0410001.110

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

450 SOUTH KING STREET, 5TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 527-2271 • FAX: (808) 527-5100



ROLAND D. LIBBY, JR.
DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

April 12, 1996

TO: PATRICK T. ONISHI, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: ROLAND D. LIBBY, JR., DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

SUBJECT: MANANA/PEARL CITY JUNCTION (PCJ)
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Thank you for your letter dated March 25, 1996 (copy attached), sent in response to our January 1996 Draft Environmental Impact Statement (DEIS) on the above properties. Your letter will be reproduced in the Final Environmental Impact Statement (FEIS) document.

We appreciate this opportunity to address your comments which have been forwarded to our consultants for review and inclusion into the FEIS document as follows:

1. The BMX-4 and IMX-1 designations were cited merely for illustrative purposes so the FEIS will be modified to reflect that the zoning for the proposed project is undetermined at this time and is dependent upon the selected developer and development schedule which will be determined by the Request for Proposal (RFP) process now underway.
2. The RFP assigns responsibility to the developer or proposers for the following:
 - o For consulting and coordinating design and use of the project site with the Pearl City Neighborhood Board and the Pearl City Planning Task Force; and
 - o For obtaining the appropriate re-zoning designation from the City and City Council. Although the height limit must conform to requirements of the proposed zoning, developers were informed that heights in excess of the surrounding structures may

TO: PATRICK T. ONISHI, DIRECTOR
April 12, 1996
Page 2

not be favorably received by the Pearl City community; and

- o The final developer proposal and zoning assignment selected by the City will be subject to City Council approval after the mandatory public and committee hearings.

3. As such, a proposed zoning map will not be provided in the FEIS at this time.

Please write or call Project Officer Ray Sakai, at X5321 or X4264 if you have any questions or additional comments to contribute later.

We will continue to keep you informed of any significant changes occurring in the project and look forward to your review of our forthcoming FEIS. Thank you once again for your cooperation in this matter.

ROLAND D. LIBBY, JR.

Attachment

cc: David Hulise, PBR Hawaii
Gail Kaito, DHCD Planning Division
Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKF-Hawaii

CITY AND COUNTY OF HONOLULU
DEVELOPMENT USING COMMUNITY DEVELOPMENT
850 SOUTH KING STREET, 21ST FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 525-4327 • FAX: (808) 525-3488

JEREMY HARRIS
DIRECTOR



February 20, 1996

DONA L. HANAIAKE
DIRECTOR
ALVIN K. LAU
DEPUTY DIRECTOR

JEREMY HARRIS
DIRECTOR



ROLAND D. LIBBY, JR.
DIRECTOR
ROBERT AGREE, JR.
DEPUTY DIRECTOR

TO: CHERYL SOON, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT

FROM: DONA L. HANAIAKE, DIRECTOR

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)
PURSUANT TO CHAPTER 343, HRS, FOR HANANA AND
PEARL CITY JUNCTION DEVELOPMENT
HANANANUI, OAHU, HAWAII
TAX MAP KEYS 9-7-024, 006 (POR.)
9-7-024:041 AND 9-7-023:001

April 18, 1996

TO: DONA L. HANAIAKE, DIRECTOR
DEPARTMENT OF PARKS AND RECREATION

FROM: ROLAND D. LIBBY, JR., DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

SUBJECT: HANANA/PEARL CITY JUNCTION (PCJ)
DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

RECEIVED
APR 12 09:51
DEPT. OF HOUSING
& COMMUNITY DEVELOPMENT

We have reviewed the DEIS for the above-described project and make the following comment.

The comments stated in our November 13, 1995 memorandum (copy attached) to the Department of Housing and Community Development department are still applicable.

Thank you for the opportunity to review this project.

Should you have any questions, please contact Lester Lai of our Advance Planning Branch at extension 4696.

We note that the Department of Parks and Recreation has no further comments to add to its November 13, 1995 comments. Your letter will be reproduced in the Final Environmental Impact Statement (FEIS).

Please write or call Project Officer Ray Sakai, at 527-5321 if you have any questions or additional comments.

We will continue to keep you informed of any significant changes occurring in the project and look forward to your future review of our forthcoming FEIS.

[Signature]
For DONA L. HANAIAKE
Director

DLH:el
Attachment

Thank you once again for your cooperation in this matter.

[Signature]
ROLAND D. LIBBY, JR.

Attachment

cc: David Hulse, PBR Hawaii
Gail Kaito, DHCD Planning Division
Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKF Hawaii

We Add Quality to Life

DEPARTMENT OF WASTEWATER MANAGEMENT
CITY AND COUNTY OF HONOLULU
830 SOUTH KING STREET
HONOLULU HAWAII 96813



JEREMY HARRIS
SAISON

FELIX B. LIMITACO
DIRECTOR
CHERYLE OLSON, SEPE
MANAGER

JEREMY HARRIS
SAISON



ROLAND D. LIBBY, JR.
DIRECTOR
ROBERT GORDES, JR.
DEPUTY DIRECTOR

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
830 SOUTH KING STREET, 8TH FLOOR, HONOLULU, HAWAII 96813
PHONE: (808) 523-8837 • FAX: (808) 521-5888

In reply refer to:
WCC 96-25

March 19, 1996

MEMORANDUM

TO: MR. ROLAND D. LIBBY, JR., DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM: FELIX B. LIMITACO, DIRECTOR
DEPARTMENT OF WASTEWATER MANAGEMENT

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)
MANANA AND PEARL CITY JUNCTION DEVELOPMENT
IMK: 9-7-24:06; 9-7-24:41; 9-7-23:81

We have no objection to the proposed subject project. Please use peak flows (as opposed to average flows) to determine adequacy and pipe sizes of the proposed sewer system. Also, our previous comments as noted in Section 12.2 of this report are still applicable.

If you have any questions, please contact Ms. Tessa Yuen of the Service Control Branch at 523-4956.

FELIX B. LIMITACO
Director

MEMORANDUM

TO: FELIX B. LIMITACO, DIRECTOR
DEPARTMENT OF WASTEWATER MANAGEMENT

FROM: ROLAND D. LIBBY, JR., DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

SUBJECT: MANANA/PEARL CITY JUNCTION (PCJ)
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Thank you for your letter dated February 22, 1996 in response to our January 1996 Draft Environmental Impact Statement (DEIS) on the above properties.

Your salient reminder will be provided to our consultants to update their engineering studies and your letter will be reproduced in the Final EIS document.

Please write or call Ray Sabal, Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to contribute later.

We will continue to keep you informed of any significant changes occurring in the project and look forward to your review of our forthcoming Final Environmental Impact Statement.

Thank you once again for your cooperation in this matter.

ROLAND D. LIBBY, JR.

cc: Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKF-Hawaii
David Hulse, PBR Hawaii
Gail Kaio, DHCD Planning Division



CITY AND COUNTY OF HONOLULU

DMCD

711 KAPOLAHU BOULEVARD, SUITE 1100
HONOLULU, HAWAII 96812

JEREMY HARRIS
54190



CHARLES O. SWANSON
DIRECTOR

March 28, 1996 2/96-00587R

MEMORANDUM

TO: CHERYL D. SOON, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT

FROM: CHARLES O. SWANSON, DIRECTOR

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR MANANA AND PEARL CITY JUNCTION DEVELOPMENT

36 MAR 29 P1:36

In response to your February 2, 1996 memorandum, we reviewed the subject document and have the following comments:

1. The proposed land use changes within the Manana site are conceptually acceptable. However, roadway design and access to proposed and existing streets may need to be modified as the project progresses. Of particular concern is the new driveway access fronting Waimano Home Road in the vicinity of the Park/Youth Center. Since the plan for the area is still conceptual, it would seem that our prior comments relating to driveway alignment with existing cross streets are still applicable. Our intent is to minimize the introduction of additional conflict points onto Waimano Home Road. If the driveway cannot be aligned with an existing cross street, then access to/from Waimano Home Road should not be allowed.
2. As indicated in your response to our previous comments, the developer of the site will be responsible for providing the roadway master plan to our department. The developer should work closely with our department to establish roadway sections and alignments. The report states that the "spine road" will have an 80-foot right-of-way which has a curb-to-curb width of 64 feet. Provisions for a bike facility should be included on this roadway. It should be noted that we are still concerned about the alignment of the circular road servicing the light industrial area and the loop may be eliminated.

Cheryl D. Soon
Page 2
March 28, 1996

3. We generally concur with the preliminary findings of the Traffic Impact Analysis Report. However, for subsequent submittals, an analysis of proposed lengths of left- and right-turn storage sacs should be provided, as well as schematic designs for all major intersections. Signal phasing, timing and coordination with adjacent intersections should be addressed. Underground conduits should be provided at all intersections where signals may be anticipated. The installation of signals should be a requirement of the developer at all intersections where signals become warranted throughout the progress of the development until completion of the project. Updated studios should be provided at approximately two-year intervals. The studies should include any changes in generation rates and traffic distribution from the various land uses as more information becomes available.
4. There appears to be a discrepancy in the total number of dwelling units that would be required to be removed and residents relocated in the various reports that have been produced regarding the Manana site.
5. It is our understanding that the Pearl City Junction site will have an internal driveway system independent of the City's roadway system.

Should you have any questions regarding these comments, please contact Faith Miyamoto at Local 6976.

F. Swanson

FOR CHARLES O. SWANSON

cc: ✓ Ray Sakai, Department of Housing and Community Development
Robin Yoshimura, PKF Hawaii
Office of Environmental Quality Control

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

830 SOUTH KING STREET, 27th FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 525-4451 • FAX: (808) 527-2456



JEREMY HARRIS
MAYOR

ROLAND D. LIBBY, JR.
DIRECTOR
ROBERT AGRUEL, JR.
DEPUTY DIRECTOR

May 8, 1996

MEMORANDUM

TO: CHARLES O. SWANSON, DIRECTOR
DEPARTMENT OF TRANSPORTATION SERVICES

FROM: ROLAND D. LIBBY, JR., DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

SUBJECT: MANANA/PEARL CITY JUNCTION (PCJ)
DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

Thank you for your response, dated March 28, 1996 (copy attached) to our January 1996 DEIS on the above properties, which will be reproduced in the Final Environmental Impact Statement (FEIS).

We appreciate this opportunity to address your comments and recommendations which have been forwarded to our consultants for review and inclusion into the FEIS document as follows:

1. Roadway Design and Access

We acknowledge your concerns that modifications to the proposed conceptual roadway design and access to the proposed and existing streets may be required to align driveways with existing cross streets and where alignment is not possible, to minimize/restrict access to/from Waimano Home Road.

However, it is anticipated at this conceptual planning level, that the Bus/Handi-Van facility will access Waimano Home Road at the existing Board of Water Supply access driveway, opposite Hoomalu Street and also off of the proposed interior Manana "Spine Road". The community proposed Park/Youth Center is expected to have primary exclusive access from the Spine Road.

Charles O. Swanson, Director
Page 2
May 8, 1996

2. Manana Spine Road

We acknowledge your salient reminder that project developer(s) should work closely with the Department of Transportation Services (DTS) to establish roadway sections and alignments.

Please note that the planned Spine road, with an 80-foot right-of-way with a curb width of 64 feet, considers a bikeway. Also, that Moanalua Road would not be directly extended to Kuahaka Street, but would continue as the Spine Road through the project site to Acacia Road. Access would be provided between Moanalua Road and Kuahaka Street by a "connector" roadway, but the extension of Moanalua Road is not envisioned as a continuous roadway to Kuahaka Street.

At this conceptual planning stage, two loop roads to service the proposed light industrial area are contemplated. However, the actual alignment will be determined by the project developer(s) in coordination with your staff.

3. Traffic Impact Analysis Report (TIAR)

The TIAR affirms your suggestions in that "Once more specific plans are available from project developers, the specific length of left and right-turn storage lanes will be determined, including schematic design for all major intersections around the project site. Underground conduits or "stub outs" for signalization at major intersections will also be provided to facilitate future installation of signals when warranted. Updated studies should be provided as the project achieves build-out."

4. Relocation

The Department of Housing and Community Development's (DHCD) Housing Services Division staff will formally coordinate the relocation procedures when the decision on the use of the former Cane Haul Road properties is finalized. At this conceptual planning stage, the preliminary estimate of the residents on the two lots is two families on TMK: 9-7-24; 26 and four families on 9-7-74; 74.

5. Pearl City Junction (PCJ) Site

The Request for Proposals (RFP), issued by DHCD on December 11, 1995, assigns the prospective proposer to be responsible for developing and coordinating vehicular circulation with the City DTS and State Department of

Charles O. Swanson, Director
Page 3
May 8, 1996

Transportation (DOT). Accordingly, the successful proposer will be required to initiate dialogue with your Department and/or the State DOT to discuss their proposed improvements.

Please write or call Project Officer, Ray Salai at 527-5321 or 523-4264 if you have any questions or have additional comments to contribute later.


ROLAND D. LIBBY, JR.

Attachment

cc: David Hulse, PBR Hawaii
Gail Kaiio, DHCD
Cheryl Soon, Planning Dept.
Robin Yoshimura, PKF-Hawaii

HONOLULU PUBLIC TRANSIT AUTHORITY
CITY AND COUNTY OF HONOLULU

PACIFIC PARK PLAZA, SUITE 2725
 111 HONOLULU AVENUE, HONOLULU HAWAII 96813
 PHONE: (808) 527-6227 • FAX: (808) 527-5498



January 23, 1996

JEREMY HARRIS
 MAILING

BOARD OF DIRECTORS
 THEODORE JUNG
 Chairman

PATROL IGUSA
 Vice Chairman

GARRETT BUNDA
 Director of Operations

DEAN J. W. HARRIS
 Director of Finance & Administration

ROBERT W. WYATT
 Director of Engineering

DAVID S. HARRIS
 Director of Planning & Development

8 JAN 26 PM 3:05

MEMORANDUM

TO: ROLAND LIBBY, DIRECTOR OF DEPARTMENT OF HOUSING AND
 COMMUNITY DEVELOPMENT

FROM: HOWARD K. TAKARA, ACTING EXECUTIVE DIRECTOR
 HONOLULU PUBLIC TRANSIT AUTHORITY

SUBJECT: DRAFT EA FOR PEARL CITY JUNCTION/MANAWA PROPERTY
 FACILITY

This is in reply to your request for our review of the draft Environmental Assessment report for the Manawa/Pearl City property. We do not have any comments at this time. Thank you for the opportunity to review this document. Should you have any questions in this matter, please call Pierson Koike at 523-4714.

Howard K. Takara
 HOWARD K. TAKARA

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

150 SOUTH KING STREET, FIFTH FLOOR • HONOLULU HAWAII 96813
 PHONE: (808) 527-6227 • FAX: (808) 527-5498



March 19, 1996

ROLAND LIBBY, JR.
 DIRECTOR
 DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

TO: HOWARD K. TAKARA, EXECUTIVE DIRECTOR
 HONOLULU PUBLIC TRANSIT AUTHORITY (HPTA)

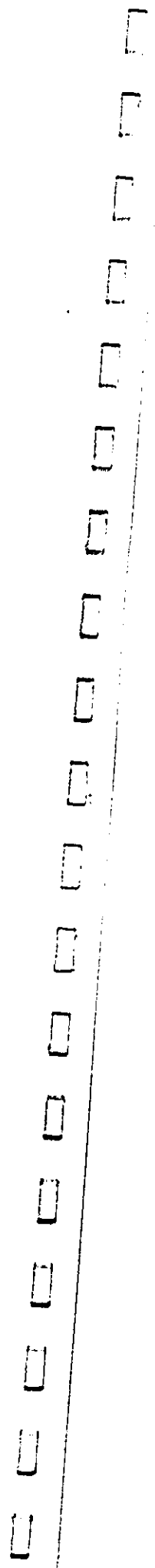
FROM: ROLAND D. LIBBY, JR., DIRECTOR
 DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

SUBJECT: MANAWA/PEARL CITY JUNCTION (PCJ)
 DRAFT ENVIRONMENTAL IMPACT STATEMENT

Thank you for your letter dated January 23, 1996, in response to our January 1996 Draft Environmental Impact Statement (DEIS) on the above properties. We note that HPTA has no comments to offer at this time. Your letter will be reproduced in the Final EIS document. Please write or call Ray Sakai, Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to share later. We will continue to keep you informed of any significant changes occurring in the project and look forward to your future review of our forthcoming Final Environmental Impact Statement. Thank you once again for your cooperation in this matter.

Roland D. Libby, Jr.
 ROLAND D. LIBBY, JR.
 Director

cc: Cheryl Soon, Chief Planning Officer
 Robin Yoshimura, PKF-Hawaii
 David Hulise, PBR Hawaii
 Gail Kaito, DMCD Planning Division





CHESTER D. SOON
CHIEF PLANNING OFFICER
CAROLY TEANASIM
DEPUTY CHIEF PLANNING OFFICER

TH 2/96-0337

March 20, 1996

96 MR 21 P 3:36

MEMORANDUM

TO: ROLAND D. LIBBY, JR., DIRECTOR & COMM. DEVELOPMENT
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

FROM: CHERYL D. SOON, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS) FOR THE
MANANA AND PEARL CITY JUNCTION PROPERTIES, PEARL CITY,
OAHU, HAWAII. TMS: 9-7-23:01, 9-7-24:41 AND POR OF 06

In response to your memorandum of February 2, 1996, we have reviewed the subject draft EIS and offer the following comments.

Project Need

1. The "Executive Summary" (page 1) and "Description of Project" (Section 2.0) need to describe the specific "need" for the proposed project, in accordance with Section 11-200-17(d), Environmental Impact Statement Rules, Title 11, Chapter 200, Hawaii Administrative Rules.

Development Plan

1. The first, second and third paragraphs on page 58 do not give a clear explanation regarding the relationship between the proposed project and the City's Development Plans. Additionally, the first paragraph incorrectly states that Figure 15 depicts the subject property as including "Public Facility" on the Primary Urban Center Development Plan (DP) Land Use Map. Neither the Manana site nor the Pearl City Junction site include lands which are designated "Public Facility."

Rolando D. Libby, Jr., Director
March 20, 1996
Page 2

The final EIS should discuss the relationship between the community-based planning effort, the proposed land use program (discussed on pages 9-13) and the need to amend the DP Public Facilities and Land Use Maps from Military to Commercial-Industrial Emphasis Mixed Use. The final EIS should also explain that the DHCD has submitted an application to amend the Primary Urban Center DP Land Use Map in January 1996 as part of the 1996 Annual Amendment Review which is currently underway.

2. The third paragraph on page 58 which states that the Department of Housing and Community Development (DHCD) "will be filing requests" to delete the government building symbols from both sites, adding two corporation yard symbols and modifying a park symbol on the Manana site needs to be revised in the final EIS. First, the final EIS should mention that the DHCD filed the DP Public Facilities Map amendment in December 1995. Second, the amendment, 95/PUC-1004(JC) would also add new publicly funded water, drainage, and sewer, and additional right-of-way and new streets symbols site determined, within six years, as well as delete two existing government building symbols on both sites, and change an existing park symbol from site undetermined, beyond six years to site determined, within six years. Third, the final EIS should mention that the Planning Commission held a public hearing on February 7, 1996 and recommended approval of the amendment. The amendment, known as Bill 18 (1996) is currently being reviewed by the City Council.

Unresolved Issues

1. Section 9.0 of the draft EIS does not adequately explain the proposed project's unresolved issues (page 70). Therefore, please revise Section 9.0 of the final EIS by providing a separate and expanded discussion for each of the project's unresolved issues. The final EIS should also provide either a corresponding discussion of how the unresolved issues will be resolved prior to construction, or a discussion as to why the project should proceed without resolving the issues.
2. Traffic congestion along Moanalua Road, Waimano Home Road and Kanehameha Highway in the vicinity of the Manana and Pearl City Junction properties has long been a problem for the community. Although the Preliminary Traffic Impact Analysis Report recommends several mitigation measures designed to relieve some peak period traffic congestion to the surrounding area, traffic is still considered a problem which will require further monitoring and mitigation as redevelopment of the two sites occur. Therefore, please add traffic to the list of current unresolved issues.
3. The discussion of "Significance Criteria" (page 67-68) is not directly related to the proposed project's unresolved issues, and therefore should be discussed separately.

Roland D. Libby, Jr., Director
March 20, 1996
Page 3

Thank you for the opportunity to comment on this matter. Should you have any questions, please contact Tim Haia of our staff at 527-6070.

Clyde A. Rom
CHERYL D. SOON
Chief Planning Officer

CDS:js

cc: DHCD, Attn: Ray Sakai, Project Officer
PKF Hawaii, Attn: Robin Yoshimura
PBR, Hawaii





ROLAND LIBBY, JR.
DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

MAY 14

May 9, 1996

TO: CHERYL D. SOOM, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT
FROM: ROLAND D. LIBBY, JR., DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
SUBJECT: MANANA/PEARL CITY JUNCTION (PCJ)
DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

Thank you for your response, dated March 20, 1996 (copy attached), to our January 1996 DEIS on the above properties, which will be reproduced in the Final Environmental Impact Statement (FEIS).

We appreciate this opportunity to address your comments and recommendations, which have been forwarded to our consultants for review and inclusion into the FEIS as follows:

Project Need

A description of the project purpose or "need" as required by Section 11-200-17(d), as determined through an extensive community-based planning process, is in Appendix I and stated on page 8 of the DEIS as follows:

"To develop the Manana Property in a manner which addresses the needs of the City and Community while maintaining fiscal responsibility."

To prepare a project master plan which maintains fiscal responsibility, a complete description of project need and an analysis of the economic viability of the proposed Conceptual Master Plan was prepared and is provided in Appendix A of the DEIS. The need assessment was summarized in Section "2.4 Market Demand" of the DEIS.

Development Plan

1. We concur with your statement that none of the subject Manana property is presently designated as "Public Facility" on the Development Plan Land Use Map. However, the "Public Facility" referenced in the DEIS refers to the existing Board of Water Supply facility adjacent to the subject property which would be expanded as shown by the Conceptual Master Plan.

TO: CHERYL D. SOOM, CHIEF PLANNING OFFICER
May 9, 1996
Page 2

Since it generically describes the proposed desired land uses of the Pearl City Planning Task Force master land use plan, we have proposed Commercial-Industrial Emphasis Mixed Use in the Development Plan Land Use Map Amendment Application as the most appropriate land use designation.

It is presumed that the redevelopment proposals submitted by private developers in response to the Request for Proposals (RFP) issued by the Department of Housing and Community Development for both properties may ultimately re-configure the currently proposed land uses. Accordingly, depiction of specific land uses, as on a zoning map, would be premature, and more importantly, be inconsistent with the City's overall policy intent. Once the RFPs are received and accepted by the City, the appropriate discrete and specific land use boundaries can be established during subsequent rezoning public hearings and approval process.

2. The FEIS will be revised to reflect the filing dates and current status of the Development Plan Amendment requests.

Unresolved Issues to be added to the Final Environmental Impact Statement (FEIS)

In response to your comments, we will add the following:

1. A new section to explain unresolved issues and how they will be resolved or whether the project can proceed without resolving the issues.
2. Monitoring of traffic to determine future mitigation measures.
3. A separate section discussing the significance criteria used to determine environmental impacts will be formatted as a separate section of the FEIS as recommended by your comments.

Please write or call Ray Sakai, Project Officer, at X5321 or X4264 if you have any questions or have additional comments to share later.

ROLAND D. LIBBY, JR.

Attachment

- cc: David Hulise, PBR Hawaii
Gail Kaito, DHCD Planning & Analysis Division
Robin Yoshimura, PKF-Hawaii

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
1515 KAPALANAN STREET, SUITE 4025
HONOLULU, HAWAII 96813



DATE: 02/20/96

ANTHONY J. LOPEZ, JR.
FIRE CHIEF
FIRE DEPARTMENT

JOSEPH HARRIS
DEPUTY CHIEF

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU
450 SOUTH KING STREET, SUITE 500 • HONOLULU, HAWAII 96813
PHONE: (808) 525-4427 • FAX: (808) 527-5400



ROLAND D. LIBBY, JR.
DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

February 20, 1996

March 19, 1996

MEMORANDUM

TO: CHERYL D. SOON, CHIEF PLANNING OFFICER
PLANNING DEPARTMENT

FROM: ANTHONY J. LOPEZ, JR., FIRE CHIEF

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)
MANANA AND PEARL CITY JUNCTION DEVELOPMENT
TAX MAP KEYS: 9-7-24:06 FOR 9-7-24:41; 9-7-23:01

We have reviewed the subject material provided and foresee no adverse impact in Fire Department facilities or services. Fire protection services provided from Pearl City and Wai'ale engine companies with ladder service from Wai'ale are adequate.

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 Arthur Ugalde of our Administrative Services Bureau at 831-7774.

ANTHONY J. LOPEZ, JR.
Fire Chief

AJL/TKP:ny

cc: Dept. of Housing & Community Development (Ray Sakai)
PKF Hawaii (Robin Yoshimura)
Office of Environmental Quality Control w/report

TO: ANTHONY J. LOPEZ, JR., FIRE CHIEF
HONOLULU FIRE DEPARTMENT

FROM: ROLAND D. LIBBY, JR., DIRECTOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

SUBJECT: MANANA/PEARL CITY JUNCTION (PCJ)
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Thank you for your letter dated February 20, 1996 in response to our January 1996 Draft Environmental Impact Statement (DEIS) on the above properties.

Your silent reminder and letter will be reproduced in the Final EIS document. Please write or call Ray Sakai, Project Officer, at 527-5321 or 523-4264 if you have any questions or have additional comments to contribute later.

We will continue to keep you informed of any significant changes occurring in the project and look forward to your review of our forthcoming Final Environmental Impact Statement.

Thank you once again for your cooperation in this matter.

ROLAND D. LIBBY, JR.

cc: Cheryl Soon, Chief Planning Officer
Robin Yoshimura, PKF-Hawaii
David Hulse, FBR Hawaii
Gail Kaito, DHCD Planning Division

Market Demand
Fiscal Impact
Social Impact

APPENDIX A

**CITY & COUNTY OF HONOLULU
DEPARTMENT OF HOUSING
& COMMUNITY DEVELOPMENT**

**Manana and Pearl City Junction Development
Conceptual Land Use Master Plan
Market Assessment**

January 1996



January 16, 1996

*Represented by
The CPA Consulting Group, Inc.
A Professional Corporation*

1100 Alakea Street
Suite 2100
Honolulu, Hawaii 96813-2833
Telephone (808) 521-1021
FAX (808) 531-2353

Mr. Roland Libby, Director
Dept. of Housing and Community Development
City & County of Honolulu
650 S. King Street
Honolulu, Hawaii 96813

Dear Mr. Libby:

In accordance with your request we have completed our market assessment relating to the Manana and Pearl City Junction Development Conceptual Land Use Master Plan.

The conclusions reached are based on our analysis of the various commercial real estate markets and economic conditions in Hawaii as of the completion of our fieldwork on January 8, 1996.

We have evaluated the market support for the light industrial, retail, office and medical components of the Manana and Pearl City Junction Conceptual Master Plan. The limitations that apply to this report are included in Exhibit A following this letter.

Very truly yours,

LIMITATIONS OF THE STUDY

1. Management is responsible for disclosure of significant information that might affect the ultimate realization of the projected results.
2. We have no obligation to update our findings regarding changes in market conditions which occur subsequent to the completion of our fieldwork.
3. Our report, and the material submitted, may not be used in any prospectus of printed material used in connection with these sale of securities or participation interests to the public.
4. The scope of our study and reports thereon would not include the possible impact of zoning or environmental regulations, licensing requirements or other such matters unless they have been brought to our attention and are disclosed in the report.
5. Any drafts or preliminary information communicated to you during the course of the assignment are for your internal management use only, and may not be disclosed to any outside third parties without prior written consent.
6. Any changes from the assumptions of estimates used in our study, due to unforeseen economic or other subsequent changes in the environment, may lead to substantial differences in actual results when compared to our report.
7. PKF-Hawaii's maximum liability relating to the consulting services outlined above, regardless of form of action, whether in contract negligence or otherwise, shall be limited to the charges paid to PKF-Hawaii for the portion of its services or work products giving rise to liability. In no event shall PKF-Hawaii be liable for consequential, special incidental punitive loss, damage or expense.

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EXECUTIVE SUMMARY

The major findings regarding the market potentials for the urban uses of the Manana and Pearl City Junction Development are presented below.

Project Description

The Manana and Pearl City Junction Development is located in Pearl City in the City and County of Honolulu. The Manana site consists of two parcels totaling approximately 108.5 acres, while the Pearl City Junction site, located on Kamehameha Highway, is 13.8 acres in area. The subject parcels are identified as follows:

<u>Tax Map Key</u>	<u>Acreage</u>
9-7-24:06 (por)	108.0
9-7-24:41	0.5
9-7-23:01	<u>13.8</u>
Total	<u>122.3</u>

Locational Attributes

Overlooking Pearl Harbor, the Project Area offers excellent visual and development opportunities to establish a clearly defined community core or center for Pearl City. The site's close proximity to Oahu's major airport, surface transportation and military harbor facilities, as well as the shifting of Oahu's future population towards Central Oahu and Ewa, suggests that the site could be much more intensively and efficiently utilized as a master planned community with mixed-use development.

Planned Land Uses

To ensure that future development of the subject property appropriately addressed the urban expansion needs of the Pearl City area, the City and County of Honolulu entered into a Memorandum of Understanding, dated August 1993, with the U.S. Navy to acquire the fee interest in the property and which will transfer ownership of the property to the City over a phased three-year acquisition schedule ending no later than December 1996.

In January 1995, the City Council adopted Resolution 94-327 which established a 23-member planning task force (the "Pearl City Planning Task Force") comprised of federal, state and city representatives and residents of the Pearl City and surrounding communities, to study and recommend future development plan land use options for the Manana and PCJ sites.

The community-based planning process spanned the months of January 1995 to August 1995 during which 9 task force meetings and 4 community meetings were conducted to specially discuss and formulate the development land use master plan.

A variety of urban land uses, which have been identified through this community-based planning effort, are proposed for the project area.

<u>Land Use</u>	<u>Acreage*</u>
Commercial (Pearl City Junction)	13.8
Light Industrial/Business Park	29.0
Commercial Retail/Office	22.0
Family Entertainment Center	14.0
Medical Facilities	8.0
Bus/Handi-Van	17.0
Board of Water Supply	5.0
Community Park/Youth Center	8.0
Moanalua Road Extension and Miscellaneous Open Space	<u>7.0</u>
Total	123.8

*Acreages shown here are approximate and are for general planning purposes only.

This market assessment addresses the economic potential for the County of Honolulu and specifically the market demand potential for the commercial retail/office, light industrial/business park, family entertainment and medical land use components of the conceptual master plan.

Light Industrial/Business Park

Oahu has 32,835,000 square feet of industrial space, which includes land used for manufacturing as well as warehousing. Up until recent years, space was tight on the island, with users often forced to occupy sites that did not adequately serve their needs. As the island's population and economy have grown, industrial land located close to Honolulu's urban core has been converted to other uses.

Over the 1985 to 1995, period vacancy rate for industrial property on Oahu ranged between 1.4 percent and 7.1 percent, with the average vacancy over the period averaging 3.5 percent. The highest vacancy rates were in 1994 and 1995, at 7.0 percent and 7.1 percent, respectively.

Based projections of future employment in the sectors of the economy that utilize industrial space and the historical relationship between additional industrial employment and additional occupied industrial space, Oahu is expected to require additional industrial space over the next ten years. Due to the Manana property's location and improved access to the site with the construction of the planned extension of Moanalua Road, industrial space at Manana can be expected to capture some of the future demand for space. Based on Manana capturing 20 percent to 40 percent of the future annual requirements, absorption of land can be expected to range between four and nine

acres per year. Accordingly, the 29 acres in the light industrial/business park component of the master plan can be expected to be fully absorbed within an eight-year period.

Commercial Retail

The State of Hawaii has approximately 17.1 million square feet of retail space. Most of the state's retail space, some 9.7 million square feet, is located in facilities with fewer than 200,000 square feet. Due to the large number of facilities involved, accurate statistics are only available for shopping centers with more than 200,000 square feet of leasable space. A total of 6.8 million leasable square feet are located in Oahu's shopping centers containing more than 200,000 leasable square feet. Oahu in recent years has been considered an "under retailled" market, meaning that the market could support additional retail development.

In the past few years a number of national U.S. retailers, perhaps recognizing that the Oahu market was underserved, have opened stores on the island. The so-called "retail revolution" that the island has seen peaked in 1993 with the openings of the Waikale Center and Pearl Highlands Center, adding over 1.1 million square feet of leasable square footage between them.

The demand for retail space on Oahu is driven by population increases and increases in per capita retail spending. Retail spending on Oahu totaled \$4.3 billion, or \$5,000 per person, in 1992. Sales at retail facilities in Hawaii with three or more stores have averaged \$180 per square foot over the past several years.

Because of its excellent visibility from the H-1 freeway and frontage along Kamehameha Highway, the Pearl City Junction site is an attractive retail site. The proposed commercial development on the Manana parcel will have frontage along and access provided by the proposed extension of Moanalua Road. The extension of Moanalua Road will provide much more direct access to and from H-1 than is available currently. Based on projected population growth on Oahu, expected additions to the supply of retail space and the Manana and Pearl City Junction properties' potential for retail development, we have estimated that retail components of the Manana and Pearl City Junction properties can be expected to capture between 20 percent and 40 percent of Oahu's additional retail space requirements during the next ten years, translating into absorption of raw land of between three and six acres per year. The commercial retail component of the plan can be expected to be fully absorbed within eight years.

The absorption period for the 13.8-acre Pearl City Junction parcel has been estimated to be one year, representing significantly faster absorption than for other components of the master plan. This is because the marketing for sale of the Pearl City Junction parcel, via a request for proposals, will occur well in advance of the marketing of the Manana parcels, and because the attractiveness of the site, from a visibility and access perspective, is very good.

Family Entertainment Center

Although many commercial developments currently have an entertainment component, there are currently no facilities on Oahu geared exclusively toward entertainment and recreation. Multi-

screen movie theaters were added to Kahala Mall, Pearlridge Center and Restaurant Row years after the centers were originally built. Similarly, other recreational uses such as miniature golf have been retrofitted into locations that are separate from other recreational facilities. Examples of this include Jungle River Mini Golf in Aiea and Hilton Hawaiian Village Mini Golf in Waikiki. A family entertainment center would house a variety of recreational uses, providing multiple entertainment experiences to customers in one location. Examples of elements of such a family entertainment center could include:

- Movie Theaters
- Golf Driving Range
- Miniature Golf
- Batting Cages
- Video Games/Redemption Games
- Simulation Rides
- Playroom (Discovery Zone type facility)
- Family Restaurants

While the various components of such a family entertainment center currently exist in various separate locations around Oahu, bringing these uses to a single entertainment destination will allow for multiple activities during one visit. From a customer's perspective such an entertainment destination would be preferable to a facility offering a single entertainment experience because of the opportunity to do more than one recreational activity. For this reason it is believed that market support exists for a facility providing space for currently existing but geographically separated recreational businesses. Due to the unique character of such a development, it is believed that the land would absorb separately from the other commercially-zoned land in the subject property. As such, full absorption can be expected to take five years.

Commercial Office Market

Oahu has over 12.5 million square feet of office space, 10.0 million square feet of which are located in downtown Honolulu, the Kapiolani Boulevard corridor and Waikiki. The remainder of the space is located in several suburban markets that have a total of 2.5 million square feet of space. The Manana and Pearl City Junction properties are located in one of the suburban markets. The vacancy rate for the island is 12.7 percent, while the downtown vacancy rate stands at 16.8 percent.

During the late 1980s and early 1990s, downtown Honolulu's office market was one of the tightest in the nation, with downtown vacancy hovering around three percent at a time that many mainland markets were experiencing vacancy rates in the 15 percent to 20 percent range. Since that time, however, a soft state economy and a wave of office building development have contributed to a downtown vacancy of 16.8 percent in 1994. The downtown market is expected to remain soft in the next few years, as the First Hawaiian Center, scheduled to open in late 1996, will introduce another 418,000 square feet of leasable space to the market.

In the market area, however, which is currently experiencing a vacancy rate of 9.5 percent, the demand for additional space cannot be accommodated by current vacancies or planned additions to supply. The market area currently contains approximately three percent of the island's inventory of available space. Capturing three percent space (the market area's current share of the total market) of the future demand for office translates into the need for an additional 67,000 square feet of space. Consequently, although market support for office space development at the Manana property appears to exist, it is expected to be a relatively small component, as office space in the suburban markets primarily serve the needs of the surrounding community. Absorption of the commercial office component is expected to occur within the projected eight year absorption period of the retail commercial component.

Medical Office Sub-Market

The medical office building sub-market in the area is experiencing lower occupancy than the market as a whole. The 44,000 square foot Aiea Medical Building consistently experiences a vacancy rate near zero percent. It is an owner-occupied condominium building. The Pali Momi Medical Center also reports a vacancy rate of zero percent. As a specialized sub-market, the medical office building is less affected by the current over supply of office space than typical office buildings. The medical office sub-market also appears to be a viable component of the conceptual master plan.

Medical Facilities

While the market potential for development of new medical facilities is dependent upon current and future market demand for such facilities, as well as the supply of such facilities, development of new hospitals is regulated by the State of Hawaii. In order to develop new acute or long-term care facilities, a Certificate of Need (CON) must be granted by the State of Hawaii Department of Health.

Based on Department of Health projections, Oahu has sufficient acute care bed capacity to accommodate demand through the year 2010. For long-term care, however, the analysis shows that Oahu will have a deficit of approximately 500 beds in 1995, growing to 1,300 beds by 2010. A separate SHPDA study reported that at the end of 1993 there were 257 acute care beds on Oahu being utilized by patients who should have been using long-term care facilities, but could not be accommodated because of the shortage of beds.

According to Department of Health analysis, market support for additional long-term care beds currently exists on Oahu. Another type of development that would be healthcare-related but not regulated by the CON process would include medical office facilities. An absorption period of four years has been used in analyzing the medical component.

HAWAII'S ECONOMY

The economic potentials of the Island of Oahu and the City and County of Honolulu are directly linked to the growth potential of the State's primary industries. This section presents a brief discussion on the general economic condition of the State and its primary industries.

Gross State Product

Fueled by strong foreign interest in Hawaii-based investments, Hawaii's gross state product averaged a 4.9 percent real growth from 1985 to 1989 (based on restated 1982 dollars), dropped to 3.4 percent in 1990 and registered a 0.4 percent real decline in 1991. Table I-1 presents a summary of Hawaii's GSP from 1980 to 1994 in current annual dollars and in restated 1982 dollars.

In 1992, GSP began a slow recovery with an average 0.8 percent real growth totaling \$30.1 billion and has remained sluggish since then with average real growth of 0.3 percent in 1993 and no real growth registered in 1994.

Although tourism growth has exceeded initial expectations in 1994, construction and agriculture have significantly declined. Bank of Hawaii forecasts real GSP growth to be about 2.0 percent for 1995 exclusive of any significant declines in the overseas economic environment. Similarly, the remainder of the 1990's is forecast to register a slow but positive continued real growth.

Major Industries

Based on the latest statistics compiled by DEBDT, in 1990 the service sector was ranked as the largest industry in the State of Hawaii in terms of gross state product. The major component of the service sector is tourism.

Tourism is Hawaii's primary industry, with visitor expenditures accounting for an approximately 30 percent of GSP. In 1994, visitor expenditures totaled \$8.7 billion, compared to \$2.9 in visitor expenditures in 1980. This represented annual compounded growth of 8.2 percent per year. During 1994, the state registered 6.45 million visitor arrivals, down from the record 6.97 million arrivals recorded in 1990, primarily due to the combination of Hurricane Iniki and the economic slowdown experienced in Japan and the mainland U.S. Nevertheless, the long-term prospects for tourism remain favorable. To accommodate the growing visitor industry, there were 70,683 visitor accommodation units in the State at the end of 1994 which were available for transient use.

The second and third largest industries in the State were government followed by the finance/insurance/real estate sector. In 1990 the combined Federal and State government gross state product totaled \$5.8 billion while the finance/insurance/real estate sector amounted to \$5.6 billion.

Table I-1
State of Hawaii
Gross State Product 1980 - 1994

Year	Current Dollars	Percent Change	1982 Dollars	Percent Change
1980	\$12,225,700,000	--	\$13,690,500,000	--
1981	13,078,300,000	7.0%	14,022,500,000	2.4%
1982	13,691,000,000	4.7%	13,691,000,000	-2.4%
1983	14,811,800,000	8.2%	14,210,000,000	3.8%
1984	15,826,500,000	6.9%	14,637,300,000	3.0%
1985	17,139,700,000	8.3%	15,344,400,000	4.8%
1986	18,483,000,000	7.8%	16,170,600,000	5.4%
1987	20,027,300,000	8.4%	16,759,300,000	3.6%
1988	22,324,000,000	11.5%	17,745,700,000	5.9%
1989	24,574,700,000	10.1%	18,589,000,000	4.8%
1990	27,033,600,000	10.0%	19,227,300,000	3.4%
1991	28,608,600,000	5.8%	19,149,000,000	-0.4%
1992	30,083,300,000	5.2%	19,296,500,000	0.8%
1993	31,106,900,000	3.4%	19,357,100,000	0.3%
1994	31,947,900,000	<u>2.7%</u>	19,350,600,000	<u>-0.0%</u>
Average growth, 1980 - 1994:		<u>7.1%</u>		<u>2.5%</u>

Sources: The State of Hawaii Data Book, DBEDT, 1993 - 1994
and DBEDT

Hawaii's retail industry is the fourth largest industry recording a gross state product of \$3.3 billion in 1990. The fifth and sixth industries throughout the State in terms of gross state product were transportation/utilities, followed by construction.

Tourism

Tourism is the State of Hawaii's primary industry. With the introduction of wide-body jet airliners, Hawaii's visitor industry began a quarter century of near-uninterrupted growth in the mid-1960s. Table I-2 contains a summary of visitor arrivals to the state during the 1980 to 1994 period. Visitor arrivals have grown from 3.93 million in 1980 to 6.46 million in 1994, after peaking at 6.97 million in 1990. During this period, visitor arrivals grew at an average rate of 3.6 percent per year.

From 1991 to 1993 Hawaii's visitor industry experienced an unprecedented three-year slump, with visitor arrivals decreasing in each of the three years. The slump, which began shortly after the Persian Gulf War, deepened as a result of economic slowdowns in Japan and California, two of the state's main visitor markets. In 1994 the industry began to emerge from the slump, with visitor arrivals increasing 5.4 percent from 1993 levels.

Fueling the visitor industry recovery in 1995 was impressive growth in Eastbound arrivals, primarily Japanese visitors. Through the first ten months of 1995, Eastbound arrivals were up 8.8 percent over 1994 levels, while Westbound visitor arrivals were down 0.1 percent. Various airlines announced plans to increase seat capacity to the state in 1995, indicating continued growth in visitor arrivals in the future.

While the Mainland United States, in particular the West Coast, continues to be Hawaii's biggest source of visitors, the market has matured, meaning minimal future growth in leisure travel from Westbound market can be expected in the future. The Eastbound market is expected to account for future growth in visitor arrivals, from emerging markets such as Korea and Taiwan as well as from the more mature but still growing Japanese market.

In 1998 the Hawai'i Convention Center is scheduled to open on the outskirts of Waikiki, making the state a major competitor in the meetings and conventions business for the first time. The Convention Center Authority estimated that the center would eventually generate up to 700,000 new visitor arrivals per year on a stabilized basis. The meetings and conventions market is particularly attractive because of the historic spending patterns of meetings and conventions visitors in Hawaii. In 1993, Westbound visitors in the meeting convention and incentive market had average daily expenditures of \$181.40 per person per day, considerably more than the \$116.35 average for Westbound leisure visitors. As a result, the Hawai'i Convention Center is expected to have a significant positive impact on the local economy.

**Table I-2
State of Hawaii
Visitor Arrivals
1980 - 1994**

<u>Year</u>	<u>Visitor Arrivals</u>	<u>Percent Change</u>
1980	3,934,500	--
1981	3,934,600	0.0%
1982	4,242,900	7.8%
1983	4,368,100	3.0%
1984	4,855,600	11.2%
1985	4,884,100	0.6%
1986	5,607,000	14.8%
1987	5,799,800	3.4%
1988	6,142,400	5.9%
1989	6,641,800	8.1%
1990	6,971,200	5.0%
1991	6,873,900	-1.4%
1992	6,513,900	-5.2%
1993	6,124,200	-6.0%
1994	6,455,200	5.4%
Average growth, 1980 - 1994:		<u><u>3.6%</u></u>

**Sources: The State of Hawaii Data Book, DBEDT, 1993 - 1994
and Hawaii Visitors Bureau**

Employment Trends

Table I-3 contains the job count by industry for the State of Hawaii from 1989 through 1994. As can be seen in the table, the services industry was the state's largest employer in 1994 with 164,100 jobs, a reflection of the many service sector jobs in the visitor industry.

Between 1989 and 1994, the service sector experienced the highest employment growth, increasing at an average annual rate of 2.5 percent. The finance, insurance and real estate sector grew at an average rate of 2.2 percent per year, followed by the government sector, which grew at an average rate of 1.9 percent per year.

The number of nonagricultural jobs in 1994 totaled 566,700, a 1.9 percent decrease from 1993. Table I-3 shows the Hawaii job count by industry for the years 1989 through 1994. The largest industry in Hawaii is the service industry which includes the visitor industry and professional service companies. This industry, which totaled 164,100 in 1994, comprises approximately 28.4 percent of the total labor force. The next largest employer was the trade sector with 130,600 jobs, including both retail and wholesaling jobs, followed by the government sector, with 111,600 jobs in 1994.

Table I-4 shows Hawaii's unemployment from 1980 to 1994. In 1989 the statewide unemployment rate was 2.6 percent, the lowest it has been in the past ten years. The 1994 figure for unemployment is dramatically higher at 5.5 percent. This statewide figure from unemployment comprises a 4.3 percent and 6.3 percent unemployment rate from the Counties of Honolulu, and Maui, respectively, and higher rates of 9.6 percent and 11.7 percent for the Counties of Hawaii and Kauai. These higher unemployment rates are primarily due to the current economic recession resulting in the softening of the construction industry, closing of several agricultural plantations, and the fact that several hotels on Kauai have still not reopened subsequent to Hurricane Iniki.

The latest employment projections which were published in March 1993 by the Department of Labor and Industrial Relations forecasts a 1.5 average annual increase in nonagricultural jobs for 1995 and 1996. Sectors with the highest projected average annual growth rates are services with 2.0 percent (2,998 jobs), retail trade with 1.9 percent (2,114 jobs) and transportation with 2.2 percent (784 jobs). Construction, although the most dynamic sector during 1986 and 1991, is expected to continue to grow but dropping to a rate of 1.6 percent from a 1986-1994 historical growth rate of 5.94 percent. Other sectors that are expected to experience minimal growth are government, finance, real estate, insurance and communications. Manufacturing is the only sector that is expected to experience a negative growth rate.

POPULATION

Table I-5 illustrates the historical population and growth rate in Hawaii. Compared to Oahu, the Neighbor Islands are experiencing larger percentage increases in annual population growth. This trend is expected to continue into the future as Oahu matures and development interest

Table I-3
State of Hawaii Job Count by Industry
1989 - 1994

Industry	1989	1990	1991	1992	1993	1994 (1)	Five Year Avg Annual Growth
NONAGRICULTURE, WAGE & SALARY	505,450	528,400	539,150	542,800	539,400	532,800	1.1%
CONTRACT CONSTRUCTION	29,200	32,300	33,550	31,550	32,300	29,600	0.3%
MANUFACTURING	21,500	21,050	20,450	19,700	19,150	17,550	-4.0%
DURABLE GOODS	4,350	4,400	4,450	4,250	4,100	3,750	-2.9%
NONDURABLE GOODS	17,150	16,650	16,000	15,450	15,050	13,800	-4.3%
FOOD PROCESSING	9,500	9,350	8,750	8,350	7,850	6,700	-6.7%
TEXTILE, APPAREL	2,500	2,200	2,100	2,100	2,250	2,250	-2.1%
PRINTING, PUBLISHING	3,650	3,600	3,650	3,500	3,500	3,400	-1.4%
OTHER NONDURABLES	1,550	1,500	1,500	1,500	1,450	1,450	-1.3%
TRANSPORTATION, COMMUNICATION, UTILITIES	39,950	42,250	43,300	43,250	41,100	39,800	-0.1%
TRANSPORTATION	29,900	31,850	32,850	32,900	31,100	30,050	0.1%
COMMUNICATION	7,300	7,400	7,350	6,900	6,450	6,200	-3.2%
UTILITIES	2,800	3,000	3,100	3,400	3,550	3,550	4.9%
TRADE	132,550	135,950	136,450	135,750	132,700	130,600	-0.3%
WHOLESALE	21,850	22,500	22,750	22,500	21,850	21,200	-0.6%
RETAIL	110,700	113,450	113,700	113,250	110,850	109,400	-0.2%
FINANCE, INSURANCE, REAL ESTATE SERVICES & MISCELLANEOUS	35,250	36,800	37,400	37,950	39,050	39,350	2.2%
HOTELS	145,400	154,400	159,100	163,550	163,550	164,100	2.4%
OTHER SERVICES, MISCELLANEOUS	37,000	38,750	40,800	40,950	38,000	37,700	0.4%
GOVERNMENT	108,400	115,650	118,300	122,600	125,550	126,400	3.1%
FEDERAL	101,600	105,600	108,900	111,100	111,600	111,800	1.9%
AIR FORCE	34,000	34,150	33,850	33,250	31,850	31,200	-1.7%
ARMY	2,350	2,300	2,250	2,200	2,200	2,150	-1.8%
NAVY	5,550	5,600	5,400	4,800	4,650	4,500	-4.1%
OTHER	12,200	11,450	11,200	11,100	10,700	10,550	-2.9%
STATE	13,850	14,800	15,000	15,150	14,300	14,000	0.2%
LOCAL	53,550	57,050	60,250	62,600	64,250	65,000	4.0%
AGRICULTURE, WAGE & SALARY	14,100	14,400	14,750	15,250	15,500	15,600	2.0%
SUGAR	9,650	9,550	9,550	9,300	8,550	8,050	-3.6%
PINEAPPLE	3,300	3,100	2,950	2,850	2,500	(2)	-6.7% (3)
OTHER	1,850	1,850	1,700	1,450	1,350	(2)	-7.6% (3)
NONAGRICULTURE, SELF - EMPLOYED	4,500	4,600	4,850	5,000	4,700	(2)	1.1% (3)
AGRICULTURE, SELF - EMPLOYED	33,400	32,750	35,250	34,850	38,350	33,900	0.3%
AGRICULTURE, SELF - EMPLOYED	3,500	3,600	4,250	4,350	3,950	3,850	1.9%

NOTE:

- (1) Represents preliminary information provided by DLIR, January - December 1994
- (2) DLIR is unable to provide a breakout for these industries
- (3) Four year average annual growth

SOURCES:

Department of Business, Economic Development & Tourism
The State of Hawaii Data Book 1992-94
Hawaii State Department of Labor and Industrial Relations

**Table I-4
State of Hawaii and Oahu
Unemployment Rate
1980 - 1994**

<u>Year</u>	<u>State</u>	<u>Oahu</u>
1980	4.9%	4.6%
1981	5.4%	5.0%
1982	6.7%	6.1%
1983	6.5%	5.8%
1984	5.6%	5.3%
1985	5.6%	5.1%
1986	4.8%	4.4%
1987	3.8%	3.5%
1988	3.2%	2.8%
1989	2.6%	2.2%
1990	2.8%	2.4%
1991	2.8%	2.3%
1992	4.5%	3.2%
1993	4.2%	3.1%
1994	6.1%	4.7%

**Sources: The State of Hawaii Data Book, DBEDT, 1993 - 1994
and DBEDT**

Table I-5
Resident Population in Hawaii and Oahu
1940-2010 (1)

Year	State of Hawaii		Island of Oahu	
	Population	Annual Growth	Population	Annual Growth
Historical:				
1940	422,800	—	257,700	—
1950	499,800	1.7%	353,000	3.2%
1960	632,800	2.4%	500,400	3.6%
1970	769,900	2.0%	630,500	2.3%
1980	968,500	2.3%	764,600	1.9%
1985	1,039,700	1.4%	804,300	1.0%
1986	1,051,800	1.2%	810,400	0.8%
1987	1,067,900	1.5%	818,400	1.0%
1988	1,079,800	1.1%	824,100	0.7%
1989	1,094,600	1.4%	831,300	0.9%
1990	1,112,900	1.7%	838,200	0.8%
1991 (2)	1,133,800	1.9%	849,300	1.3%
1992 (2)	1,153,000	1.7%	861,000	1.4%
1993 (2)	1,165,500	1.1%	866,500	0.6%
1994 (3)	1,178,600	1.1%	874,300	0.9%
Projected: (4)				
1995	1,196,300	1.5%	883,000	1.0%
2000	1,257,300	1.0%	896,300	0.3%
2005	1,321,400	1.0%	914,400	0.4%
2010	1,402,600	1.2%	937,500	0.5%

NOTES:

- (1) 1940 to 1970 figures are as of April 1; all others are as of July 1.
- (2) Revised according to DBEDT.
- (3) Preliminary estimate according to DBEDT.
- (4) PKF-Hawaii projections based on projected rates of growth published by the Department of Planning and DBEDT.

SOURCES:

- Department of Business, Economic Development & Tourism (DBEDT)
 - (a) The State of Hawaii Data Book, 1970 and 1993-1994
 - (b) DBEDT Research Library
 - (c) Population and Economic Projections for the State of Hawaii to 2010, Series M-K, November 1988

increasingly turn toward the Neighbor Islands. Oahu is currently inhabited by approximately 874,000 residents, or 74.2 percent of the State's total population.

The 1994 State population estimate reported a resident population of 1,178,600. This total included approximately 52,800 members of the United States Armed Forces. The total population has risen from 58,000 in 1878 to 154,000 in 1900 and 423,000 in 1940. During the 1970s, Hawaii experienced an overall population growth rate of 25.5 percent, the second highest decade of growth in the last 50 years, exceeded only by 26.6 percent in the 1950s. The State's Department of Planning and Economic Development reports Hawaii's resident population surpassed 1.0 million for the first time in 1983.

As evidence of strong economic growth prospects, even during Hawaii's economic recessions of the early 1980s and the 1990s, population consistently increased during both recessionary periods. Such strong growth in population does indicate considerable economic growth potential.

Island of Oahu

With approximately 75 percent of the State's population, Oahu is the center of the State's economic activity. Oahu accounted for \$21.6 billion of the State's \$27.4 billion in personal income in 1993. Between 1980 and 1993, Oahu has represented between 78.9 percent and 82.0 percent of the State's total personal income.

Oahu also accounts for a similar share of the State's labor force. Of the 548,000 person civilian labor force in the State in 1994, Oahu represented 423,900 of the jobs, or 77.4 percent. Since 1980, Oahu's share of the State's civilian labor force has ranged between 75.2 percent and 81.4 percent.

In addition to having most of the State's population and jobs, Oahu has traditionally had a lower unemployment rate than the rest of the state. Table I-4 includes a comparison of the unemployment rates in the State of Hawaii and on Oahu for the period from 1980 to 1994. In each year, Oahu had a lower unemployment rate than the state as a whole. During this period, Oahu's unemployment has ranged from a low of 2.2 percent in 1989 to a high of 6.1 percent in 1982. In 1994 Oahu's unemployment rate was 4.7 percent, compared to 6.1 percent for the state as a whole.

Employment

Civilian employment on Oahu totaled 433,400 in 1994, up slightly from 1993 levels, as can be seen in Table I-6. The number of civilian jobs has increased by a considerable amount since 1980, growing from 338,350 in 1980 to 1994's 433,400, representing average growth of 1.8 percent per year.

Table I-6
Oahu Employment
1980 - 1994

	1980	1985	1990	1991	1992	1993	1994 (1)
Civilian Labor Force	338,350	359,600	404,550	416,950	421,200	425,450	433,400
Employment	322,800	341,150	394,750	407,550	407,850	411,700	414,750
Unemployment Rate	4.6%	5.1%	2.4%	2.3%	3.2%	3.2%	4.3%
Sources of Employment:							
Contract Construction	19,000	14,100	24,550	25,400	24,200	24,050	22,050
Manufacturing	17,100	15,850	15,850	15,200	14,250	14,000	13,100
Transportation, Communication, Utilities	26,000	27,050	34,300	35,300	35,550	33,850	32,550
Trade	87,600	91,900	102,750	102,300	102,150	100,150	98,500
Finance, Insurance, Real Estate	28,500	27,000	29,750	30,500	31,250	32,100	32,150
Hotels	15,200	16,100	19,650	19,950	19,600	18,350	18,150
Other Services, Miscellaneous	64,100	71,200	95,750	97,050	100,150	102,150	102,550
Government	75,550	79,000	88,050	89,900	90,900	90,400	90,050
Agriculture, Wage & Salary	2,650	2,650	2,300	2,250	2,200	2,100	2,100
Non-Agriculture, Self-Employed	20,900	24,050	21,750	23,050	22,650	24,900	21,750
Agriculture, Self-Employed	950	700	700	950	950	850	800

NOTE:

(1) Represents preliminary information provided by DLIR, January - December 1994

SOURCES:

Hawaii State Department of Labor and Industrial Relations, Labor Force Data Book, April 1994

DEMOGRAPHICS

This subsection presents an overview of key demographic characteristics of Oahu and, most specifically, the Market Area, which provide background for projections related to the potential demand for the urban uses of the Project.

Market Area

For the purposes of this study, the "Ewa" area, extending from Red Hill to Kahe and up to Mililani, was considered the Market Area. Also considered were "Honolulu", the area between Kalama Valley and Red Hill, and "Other Oahu", which includes areas of Oahu not included in the Ewa or Honolulu areas.

Resident Population

The resident population of the State of Hawaii is estimated at 1,178,600 as of 1994 and is projected to reach 1,402,600 by the year 2010, as shown in Table I-5. Population growth has slowed in recent years, with 1993 and 1994 growth rates of 1.1 percent per year, down considerably from the growth rates in the 1950s, 1960s and 1970s that were averaging 2.0 percent per year or more.

Oahu's population is projected to reach 937,500 by the year 2010, up from an estimated 874,300 in 1994. In recent years, Oahu's population has grown at a slower rate than the state as a whole, reflecting the relatively higher population growth of the Neighbor Islands. Despite a slower projected population growth rate, Oahu is expected to continue to represent a majority of the state's population in the year 2010.

The population growth rates employed were based on the State of Hawaii Department of Business, Economic Development and Tourism Series M-K Projections. Due to the fact that the Series M-K was last updated in 1988, the projected growth rates were adjusted to reflect the differences between Series M-K projections and actual population for the years 1995 through 2010. Specifically, Oahu's population growth rates were adjusted downward.

Table I-7 contains historical and projected population on Oahu by area. Honolulu is expected to continue to have a greater population than the Ewa and Other areas through the year 2010. Honolulu is projected to represent a declining share of Oahu's population over the projected period, primarily due to the higher projected population growth in the Ewa region. Ewa's share of Oahu's population is projected to be 273,900 by 2010, or 29.2 percent of Oahu's population, up from an estimated 28.6 percent in 1995.

Households and Household Size

In 1990 there were 265,300 households on Oahu, with an average household size of 3.02 persons. There has been a downward trend in household size on Oahu, with the average size falling from 3.83 in 1970 to 1990's 3.02. This trend is projected to continue during the projection period, to an average of 2.74 persons per household in 2010. Due to the projected growth in population, however, the number of total households is expected to grow to 353,800 by the year 2010, as shown in Table I-8.

Households by Number of Persons in Household

Table I-9 contains a summary of households on Oahu by number of persons in the household for Oahu, Honolulu, Ewa and Other Oahu areas. In 1990, there were 65,100 households in the Ewa area, out of 265,300 total households on the island. Households in the Ewa region are comprised of an average of 3.35 persons, compared to 3.02 persons for the entire island.

Ewa has fewer one- and two-person households than Oahu as a whole. One-person households account for 10.1 percent of all Ewa households, considerably lower than the 18.8 percent of all Oahu households that are one-person households. Two-person households comprise 25.5 percent of all households in the Ewa area, compared to 28.3 percent of all households on Oahu that have two persons. In contrast, Ewa has greater than average shares of three-person, four-person, five-person, six-person and seven-person households.

Population by Age

The Ewa area has a relatively young population compared to Oahu as a whole, as can be seen in Table I-10. Of the 230,200 Ewa residents, 92,000 or 40.0 percent, were under the age of 25 in 1990, compared to 36.1 percent for the island as a whole. Ewa also has a slightly greater than average share of residents in the 25-44 age group, representing 36.5 percent of its population compared to 34.6 percent for all of Oahu in 1990. The Ewa area had 39,300 residents aged between 45 and 64 in 1990, or 17.1 percent of all Ewa residents, slightly lower than the 18.3 percent of all Oahu residents in that age group. Ewa had 14,800 residents over the age of 65 in 1990, representing 6.4 percent of the area's population. Overall, 10.9 percent of Oahu's population was over 65 in 1990.

Household Income

Households in the Ewa region have higher than average incomes, as can be seen in Table I-11. In 1989, the most recent year for which statistics are available, Ewa's median household income was \$47,218, compared to the \$36,820 median for Honolulu and the \$38,829 statewide median. Within the Ewa region, Aiea, Pearl City and Waimalu all had median incomes higher than the

Table I-7
Population - Oahu and Selected Areas
1970-2010 (1)

Year	Total Oahu Population	Island of Oahu								
		Honolulu (2)			Ewa (3)			Other		
		Population	% of Oahu	Annual Growth	Population	% of Oahu	Annual Growth	Population	% of Oahu	Annual Growth
Historical:										
1970	630,500	324,900	51.5%	-	132,300	21.0%	-	173,300	27.5%	-
1980	764,600	365,000	47.7%	1.2%	191,100	25.0%	3.7%	208,500	27.3%	1.9%
1990	838,200	377,100	45.0%	0.3%	230,200	27.5%	1.9%	230,900	27.5%	1.0%
Projected: (4)										
1995	883,000	382,800	43.4%	0.3%	252,900	28.6%	1.9%	247,300	28.0%	1.4%
2000	896,300	388,600	43.4%	0.3%	258,000	28.8%	0.4%	249,700	27.9%	0.2%
2005	914,400	394,500	43.1%	0.3%	265,800	29.1%	0.6%	254,100	27.8%	0.3%
2010	937,500	402,500	42.9%	0.4%	273,900	29.2%	0.6%	261,100	27.9%	0.5%

NOTE:

- (1) All figures are as of April 1.
- (2) Kalama Valley (East Oahu) - Moanalua/Honolulu International Airport
- (3) Red Hill/Hickam Air Force Base - Kahe/Mililani
- (4) PKF-Hawaii projections based on projections by the Department of Planning

SOURCE:

Department of Planning
 U.S. Bureau of the Census, 1990 Census of Population and Housing

Table I-8
Households and Household Size on Oahu
1970-2010 (1)

Year	Island of Oahu			
	Number of Households	Annual Growth	Household Size	Annual Growth
Historical:				
1970	164,800	-	3.83	-
1980	230,200	3.40%	3.15	-1.94%
1990	265,300	1.43%	3.02	-0.42%
Projected: (2)				
1995	291,500	1.9%	3.04	0.1%
2000	314,000	1.5%	2.89	-1.0%
2005	333,300	1.2%	2.80	-0.6%
2010	353,800	1.2%	2.74	-0.4%

NOTE:

- (1) All figures are as of April 1.
- (2) PKF-Hawaii projections based on projected rates of growth published by the Department of Planning and DBEDT.

SOURCES:

Department of Business, Economic Development & Tourism,
 The State of Hawaii Data Book, 1970 and 1993-1994
 Department of Planning
 U.S. Bureau of the Census, 1990 Census of Population and Housing

Table I-9
Households by Persons in Household
1990 (1)

# of Persons	Total Oahu	Island of Oahu		
		Honolulu	Ewa	Other
1 person	50,000	36,600	6,600	6,800
2 persons	75,000	42,800	16,600	15,600
3 persons	49,700	23,400	13,800	12,500
4 persons	45,000	18,100	14,200	12,700
5 persons	23,200	9,000	7,000	7,200
6 persons	11,100	4,100	3,400	3,600
7 persons	11,300	4,000	3,500	3,800
Total	265,300	138,000	65,100	62,200
Average persons per household	3.02	2.63	3.35	3.38

NOTE:

(1) All figures are as of April 1.

SOURCE:

PKF-Hawaii

U.S. Bureau of the Census, 1990 Census of Population and Housing

Table I-10
Population by Age - State, Oahu and Selected Areas
1990 (1)

Age	State of Hawaii	Island of Oahu	Island of Oahu		
			Honolulu	Ewa	Other
Under 25 years	398,400	302,000	112,000	92,000	98,000
25 to 44 years	381,900	289,300	129,200	84,100	76,000
45 to 64 years	203,300	153,400	77,700	39,300	36,400
65 years and over	124,700	91,500	58,200	14,800	18,500
Total	1,108,300	836,200	377,100	230,200	228,900

Age	Ewa	Ewa			
		Aiea	Pearl City	Waimalu	Other Ewa
Under 25 years	92,000	2,600	11,300	14,100	64,000
25 to 44 years	84,100	2,700	9,300	12,200	59,900
45 to 64 years	39,300	2,100	7,700	5,600	23,900
65 years and over	14,800	1,500	2,700	1,800	8,800
Total	230,200	8,900	31,000	33,700	156,600

NOTE:

(1) All figures are as of April 1.

SOURCE:

U.S. Bureau of the Census, 1990 Census of Population and Housing

Table I-11
Households by Household Income
1989 (1)

Income	State of Hawaii	Island of Oahu	Island of Oahu		
			Honolulu	Ewa	Other
Under \$37,500 (2)	172,400	122,400	70,500	23,500	28,400
\$37,500 to \$47,499	44,700	33,100	16,200	9,300	7,600
\$47,500 to \$59,999	44,800	33,800	15,400	10,600	7,800
\$60,000 and over (3)	94,400	76,000	35,900	21,700	18,400
Total	356,300	265,300	138,000	65,100	62,200
Median Income	\$38,829	\$40,581	\$36,820	\$47,218	N/A

NOTE:

- (1) All figures are as of April 1.
- (2) Under 80% of median income for Ewa.
- (3) Over 120% of median income for Ewa.

SOURCE:

U.S. Bureau of the Census, 1990 Census of Population and Housing

median for the entire area, as shown in Table I-12. Aiea's median income was \$54,825, while Waimalu's was \$51,985 and Pearl City's median household income was \$50,752 in 1989.

CONCLUSION:

Households in the Ewa region are larger than average for Oahu, younger than average and with have above average household incomes. This suggests that the area is more family-oriented and affluent than the island as a whole.

Table I-12
Households by Household Income In Ewa
1989 (1)

Income	Ewa	Ewa			
		Aiea	Pearl City	Waimalu	Other
Under \$37,500 (2)	23,500	800	3,000	3,200	16,500
\$37,500 to \$47,499	9,300	300	1,100	1,400	6,500
\$47,500 to \$59,999	10,600	400	1,300	1,800	7,100
\$60,000 and over (3)	21,700	1,200	3,400	4,000	13,100
Total	65,100	2,700	8,800	10,400	43,200
Median Income	\$47,218	\$54,825	\$50,752	\$51,985	N/A

NOTE:

- (1) All figures are as of April 1.
- (2) Under 80% of median income for Ewa.
- (3) Over 120% of median income for Ewa.

SOURCE:

U.S. Bureau of the Census, 1990 Census of Population and Housing

INDUSTRIAL MARKET ASSESSMENT

This industrial market assessment evaluates market support for industrial development in the market area by considering current and projected demand, current and projected competitive supply and occupancy rates.

Market Overview

Oahu has 32,835,000 square feet of industrial space, which includes land used for manufacturing as well as warehousing. Up until recent years, space was tight on the island, with users often forced to occupy sites that did not adequately serve their needs. As the island's population and economy have grown, industrial land located close to Honolulu's urban core has been converted to other uses. Examples of this shift have occurred in the Kakaako and Iwilei areas, where industrial uses have been replaced by other commercial uses or residential redevelopment projects. Due to rising land values near Honolulu's central business district, industrial users have been relocating to Central and West Oahu.

Much of the island's industrial land is leasehold. Recent ground lease renegotiations in the Airport and Mapunapuna industrial areas have resulted in substantial increases in ground rents in the area, often based on fee simple transactions at prices that some industry insiders consider to be economically insupportable if the properties remain in industrial usage. In addition, many of the warehouse structures in these areas are somewhat old and may have features that make them unattractive from an operational perspective. For industrial users facing these types of issues, sites located in Central and West Oahu are appealing alternatives. Projects such as Mililani Technology Park can offer users both fee simple ownership and the opportunity to build modern structures that fit their needs.

For many years Oahu had a very tight industrial market, in which users often had difficulty finding available space that met their needs. The island's low vacancy rate up through the last few years has demonstrated this. As more facilities have been developed, the market is no longer characterized by tight supply. Speculative development, in which a structure is built without a specific tenant in mind, has become less common. With more available space on the market, users have more choices with respect to location, size and type of facilities than they did in years past.

Built-out office space, warehouse ceiling height of 24 feet or greater, ample parking and yard space, a building-to-lot ratio of 60 percent or less, loading docks, skylights and large roll up doors are all considered attractive features in an industrial property. These features, which determine the functionality of a particular property, account for the variability of lease rents within a particular industrial area.

Users purchasing fee simple industrial land appear to pay a premium for the security of not having to face leasehold renegotiation in the future. In addition to the uncertainty of future renegotiation, lenders are unwilling to extend loans for terms longer than the fixed terms of ground leases.

Another shift in the market has been caused by the proliferation in recent years of new nationally-based retailers to the island, such as Costco, Kmart, Wal-Mart, Sam's Club and others. Often these retailers drop-ship merchandise to their stores, meaning goods are delivered directly to the stores rather than to off-site warehouses where shipments are divided and distributed to stores.

Industrial Space Demand

Demand for industrial space increases with increases in the types of economic activity that require industrial space. Examples of such businesses that require industrial space are the construction, manufacturing, transportation, communications and utilities industries. The employment and space needs of these industries both grow as businesses grow. As illustrated in Table II-1, employment in these sectors has grown from 56,850 in 1983 to 72,830 in 1993, representing average compounded growth of 2.5 percent per year.

Between 1985 and 1995, the amount of occupied industrial space on the island grew from 26,899,000 square feet to 30,504,000 square feet. Over this period the vacancy rate for industrial property ranged between 1.4 percent and 7.1 percent, with the average vacancy over the period averaging 3.5 percent. The highest vacancy rates were in 1994 and 1995, at 7.0 percent and 7.1 percent, respectively. Part of this increase can be attributed to the 650,000 square feet of warehouse space in the Kapalama Military Reservation that the State of Hawaii put on the market in 1993 and 1994. The market has absorbed an average of 405,000 square feet of space per year during this period. Table II-2 details Oahu's inventory of available industrial space and vacancy rates during the period from 1985 to 1995.

Projected Industrial Space Demand

Demand for industrial space on Oahu is based upon projections of job growth in industries that utilize industrial space, as well as the space requirements for each additional industrial job. The State of Hawaii Department of Business, Economic Development & Tourism (DBEDT) produces long-range projections, "Population and Economic Projections for the State of Hawaii (Series M-K)". As the most recent projections were published in 1988, they are considered out of date. The most recent projections of employment were issued by the State of Hawaii Department of Labor and Industrial Relations in 1993. These projections were for the 1992 - 1997 period contained the following growth rates for the industrial sectors:

Table II-1
Industrial Job Count on Oahu
1983 - 1993

Year	Construction & Mining	Manufacturing	Transportation Communications & Utilities	Total	Annual Percent Change	Annual Percent Change Over Five Years
1983	14,650	16,450	25,750	56,850	--	
1984	13,100	15,800	26,350	55,250	-2.8%	
1985	14,100	15,850	27,050	57,000	3.2%	
1986	15,150	16,250	28,000	59,400	4.2%	
1987	16,800	16,200	30,200	63,200	6.4%	
1988	18,450	16,450	31,150	66,050	4.5%	3.0%
1989	22,400	16,200	32,450	71,050	7.6%	
1990	24,550	15,850	34,300	74,700	5.1%	
1991	25,400	15,200	35,300	75,900	1.6%	
1992	24,200	14,250	35,550	74,000	-2.5%	
1993	24,250	14,000	34,580	72,830	-1.6%	2.0%
Average					<u>2.5%</u>	

Source: Department of Labor and Industrial Relations

Table II-2
Industrial Space on Oahu
1985 - 1995

Year	Available Industrial Space (SF)	Vacancy Rate	Occupied Space (SF)	Vacant Space (SF)	New Space (SF)	Space Absorbed (SF)
1985	28,020,000	4.0%	26,899,000	1,121,000	139,000	-
1986	28,159,000	2.2%	27,540,000	619,000	485,000	641,000
1987	28,644,000	2.4%	27,957,000	687,000	1,070,000	417,000
1988	29,714,000	1.4%	29,298,000	416,000	386,000	1,341,000
1989	30,100,000	1.4%	29,679,000	421,000	600,000	381,000
1990	30,700,000	2.0%	30,086,000	614,000	400,000	407,000
1991	31,100,000	2.4%	30,354,000	746,000	440,000	268,000
1992	31,140,000 (1)	5.0%	29,583,000	1,557,000	720,000	(371,000)
1993	31,860,000	4.0%	30,586,000	1,274,000	550,000 (2)	1,003,000
1994	32,410,000	7.0%	30,141,000	2,269,000	425,000 (2)	(445,000)
1995	32,835,000	7.1%	30,504,000	2,331,000	0	-
Average		<u>3.5%</u>				<u>405,000</u>

- Notes: (1) Includes 400,000 sf reduction in market size due to condemnation.
 (2) Includes 650,000 sf of converted military warehousing in Kapalama Military Reservation brought to market in 1993 - 1994.

Source: CB Commercial

**Table II-3
Employment Growth Rates
Honolulu MSA
1992 - 1997**

<u>Sector</u>	<u>Average Annual Growth Rate</u>
Construction	1.2%
Manufacturing	-0.3%
Transportation, Communications & Utilities	1.7%

Source: State of Hawaii, Department of Labor & Industrial Relations, "Employment Outlook for Industries and Occupations, 1992 to 1997", 1993.

The weighted average of the above growth rates is 1.2 percent. Using a growth rate of 1.2 percent per year, industrial employment has been projected in Table II-4.

Based on these employment projections and the historical relationship between additional industrial employment and additional occupied industrial space, Oahu's requirements for additional industrial space through 2010 are outlined in Table II-5. The table also contains estimates of the absorption of industrial land at Manana, based on Manana capturing 20 percent, 30 percent and 40 percent of the annual requirements. Under the 20 percent capture scenario, between four and five acres per year at Manana will be absorbed by the market, while under the 40 percent capture scenario between eight and nine acres per year will be absorbed by the market.

Current Supply of Available Space

Of Oahu's 32,835,000 square feet of industrial land, approximately 30,504,000 square feet are occupied, for a vacancy rate of 7.1%. This is the highest vacancy rate that Oahu's industrial space market has seen in recent years. Between 1985 and 1995, the average vacancy rate on the island ranged from a low of 1.4% to the current high of 7.1%.

Future Supply of Industrial Space

Currently, there is no additional industrial space under construction, although there is a supply of land that is either zoned for industrial usage or has been proposed as such. Table II-6 lists the various new industrial properties expected to be built in the next few years.

Due to current soft market conditions, particularly the relatively high vacancy rate, no other additions to the supply have been announced. In addition, there are a number of undeveloped

**Table II-4
New Industrial Jobs on Oahu
1994 - 2010**

<u>Year</u>	<u>Projected Average Annual Increase</u>	<u>Total Number Industrial Jobs</u>	<u>New Industrial Jobs</u>
1993	--	72,830	--
1994 - 2000	1.2%	79,300	6,470
2001 - 2005	1.2%	84,300	5,000
2006 - 2010	1.2%	89,600	<u>5,300</u>
Total			<u><u>16,770</u></u>

Source: PKF-Hawaii, Department of Labor and Industrial Relations,
"Employment Outlook for Industries and Occupations 1992 - 1997,"
March, 1993.

Table II-5
 Industrial Space Requirements on Oahu
 1994 - 2010
 And Industrial Absorption at Manana

Period	New Industrial Jobs	Space Per Job (SF)	Industrial Space Requirements (SF)		Gross Acreage Requirements (1)		Manana Capture Rate		
			Total	Average Per Year	Total	Average Per Year	20%	30%	40%
							Acres Absorbed Per Year	Acres Absorbed Per Year	Acres Absorbed Per Year
1994 - 2000	6,470	450 (2)	2,900,000	414,300	139	20	4	6	8
2001 - 2005	5,000	450	2,300,000	460,000	110	22	4	7	9
2006 - 2010	5,300	450	2,400,000	480,000	115	23	5	7	9

Notes: (1) Based on a 60% building-to-lot ratio and 20% of gross acreage needed for roads.
 (2) Source: City & County of Honolulu, Department of General Planning

Source: PKF-Hawaii

Table II- 6
Oahu Industrial Property
Current Development

<u>Project</u>	<u>Estimated Completion</u>	<u>Location</u>	<u>Estimated Square Footage</u>
Wood Development	1996	Mapunapuna	65,000
Hawaii Modular	1996	Kapolei	50,000
Crazy Shirts	1997	Halawa	200,000
Undisclosed	1997	Kapolei	120,000
Crazy Shirts / C&H	1998	Aiea	150,000

Source: CB Commercial

**Table II-7
Undeveloped Industrial Land on Oahu**

Zoned Industrial:

<u>Land</u>	<u>Location</u>	<u>Zoning</u>	<u>Acreage</u>
Campbell Industrial Park	Ewa	I-2	340
Halawa Industrial Park	Halawa	I-2	23
Kapolei Business Park	Kapolei	I-2	135
Kenai Industrial Park	Barbers Point	I-3	61
Mililani Technology Park	Mililani	IMX-1	83
Waipio Gentry	Waipio	I-2	50

Unzoned Potential Industrial:

<u>Land</u>	<u>Location</u>	<u>Proposed Zoning</u>	<u>Acreage</u>
Amfac	Waipahu	I-2	45
Kahuku Light Industrial	Kahuku	NA	15
Kapaa Valley	Winward	I-2	78
Kemper/Bedford/Bishop Estate	Hawaii Kai	NA	NA
Laie Industrial	Laie	NA	30
Mililani Technology Park Phase II	Mililani	IMX-1	136
Waiawa Phase I	Waiawa	I-2	90
Waiawa Phase II	Waiawa	I-2	123

Source: CB Commercial

parcels of land that currently have industrial zoning as well as several properties that have been proposed for industrial use but currently lack the necessary zoning. A summary of these parcels is presented in Table II-7.

In 1993 and 1994 the State of Hawaii offered for lease approximately 650,000 square feet of warehouse space and 390,000 of yard space in the Kapalama Military Reservation. Current tenants are paying between \$0.30 - \$0.45 per square foot per month, on month-to-month leases, plus C.A.M. charges of \$0.02 - \$0.04 per square foot per month. These rents are significantly lower than current market rental rates. The market has absorbed this tremendous supply of below-market space. It is expected that the State will redevelop this 85-acre facility at some point.

PROJECTED MARKET SUPPORT FOR INDUSTRIAL DEVELOPMENT ON OAHU

The future growth in supply of committed industrial space is outlined below:

Table II-8
Future Supply of Industrial Space on Oahu

<u>Year</u>	<u>Square Footage</u>
1996	115,000
1997	320,000
1998	<u>150,000</u>
Total	<u>585,000</u>

The timing and size of specific new developments beyond 1998 are more difficult to project because of the added uncertainty involved. Currently, development activity is limited due to market conditions. It is believed that the pace of new development will increase as the amount of vacant space decreases. Between 1985 and 1995 the average vacancy rate for Oahu's industrial market was 3.5%. A certain level of vacancy in the market is to be expected, due to the dynamic nature of the market. As businesses relocate or close, particular spaces may be vacant for a period of time before rented by a new user. Consequently, in order to accommodate the expected future demand for industrial space and maintain the 3.5% historical vacancy level, the market needs to add approximately 1,800,000 square feet of leasable space by the year 2000, as shown in Table II-9.

Committed future supply through 1998 totals 585,000 square feet, resulting in a projected shortfall of 1,215,000 square feet by 2000.

Table II-9
 Projected Industrial Space Requirement on Oahu
 1994 - 2010

<u>Period</u>	<u>Vacant Space At the Beginning of the Period (SF)</u>	<u>Additional Space Requirement During The Period (SF)</u>	<u>Additional Demand For Space During The Period (SF)</u>	<u>Vacant Space At the End of The Period (SF)</u>	<u>Vacancy at The End of the Period (SF)</u>
1994 - 2000	2,269,000	1,800,000	2,900,000	1,169,000	3.4%
2001 - 2005	1,169,000	2,400,000	2,300,000	1,269,000	3.5%
2006 - 2010	1,269,000	2,400,000	2,400,000	1,269,000	3.3%

Source: PKF-Hawaii

INDUSTRIAL MARKET IN CENTRAL AND WEST OAHU

The Pearl City, Aiea, Waipahu Waipio and Mililani areas contain approximately seven million square feet of industrial space, or about 21 percent of the total island inventory. The area has a vacancy rate of about six percent, which compares favorably with the island-wide vacancy rate of 7.1 percent. One reason for the lower vacancy is that industrial properties in the area are often newer than those in areas such as Kalihi and Mapunapuna, and therefore more likely to have been built to meet the needs of the user or to include attractive features.

Rental rates in the Pearl City area average between \$0.60 - \$0.75 per square foot per month, triple net. Recent fee simple sales of unimproved industrial lots within existing industrial parks ranged from a low of \$20 per square foot for 100,000 square foot I-2 zoned parcel in Campbell Industrial Park to a high of \$55 per square foot for lots between 20,000 and 55,000 square feet located in the Gentry Business Park in Waipio, and land values in the \$60 per square foot range in the Halawa Business Park.

Table II-10 contains a profile of existing industrial developments in the market area. The Pearl City Industrial Park is located nearest to the Manana and Pearl City Junction properties, is fully built-out and has a vacancy rate of nine percent. The Manana property will have superior access to the H-1 freeway with the construction of the proposed extension of Moanalua Road. As can be seen in the table, light industrial developments that are relatively closer to Honolulu's urban core, such as the Bougainville Commercial Center, Halawa Valley Industrial Park, Pearl City Industrial Park and Waipahu Industrial Park are more fully built-out than the more remotely located facilities such as the Kapolei Business Park and the Mililani Technology Park. There is a relatively even split between leasehold and fee simple projects in the area, with some containing a mix of leasehold and fee simple property.

CONCLUSION

Despite the current softness in the local economy and real estate markets, this analysis concludes that market support exists for a light industrial business park at the Manana property. The long term trend of light industrial uses being pushed out of areas such as Kakaako and the Airport area due to the higher land values in those areas is expected to continue, as is the continued demand for high quality, built-to-suit light industrial facilities. The construction of the spine road through the Manana property, as an extension of Moanalua Road, will greatly improve access to the H-1 freeway.

Based on the above observation and factors, noting current land values in light industrial areas such as Waipio and Halawa, and considering the projected period of land absorption of eight years, or four acres per year, it is believed that the value of industrial-zoned land in the Manana and Pearl City Junction properties would range between \$30 to \$35 per square foot.

Table II-10
Profile of Existing Competitive Supply
in Central Oahu

Name	Location	Size	Status	Tenure	Year Opened	Transportation	Comments
Bougainville Commercial Center	Salt Lake	24 acres	Fully built out, 5% vacancy (estimate)	Leasehold	1983	2 miles from Airport, 6 miles from Honolulu Harbor, access to H-1 via Salt Lake Blvd.	Retail-oriented, with tenants such as Costco.
Campbell Industrial Park	Barbers Point	1,314 acres	500 acres built out, 11% vacancy	Mixed	1958	Adjacent to Barbers Point Harbor, 16 miles to Airport, 22 miles to Honolulu Harbor.	Kenai and Kapolei projects are part of Campbell Industrial Park.
Central Business Park	Halawa Valley	48 acres	Fully built out, 9% vacancy	Leasehold	1979	4 miles from Airport, 8 miles from Honolulu Harbor, good access to H-1, H-3.	One 11-acre site owned by Crazy Shirts not yet developed.
Gentry Waipio Business Park	Waipio Valley	120 acres	5% vacancy (estimate)	Mixed	1979	10 miles from Airport, 15 miles from Honolulu Harbor, good access to H-2.	
Halawa Industrial Park	Halawa Valley	33 acres	95% built out, 8% vacancy (estimate)	Leasehold	1988	3 miles from Airport, 7 miles from Honolulu Harbor, good access to H-1, H-3.	
Kapolei Business Park	Ewa	135 acres	2 lots sold	Leasehold	1992	15 miles from Airport, 21 miles from Honolulu Harbor	Built as a buffer between City of Kapolei and Campbell Industrial Park.
Kenai Industrial Park	Ewa	65 acres	No lots sold	Leasehold	1992	17 miles from Airport, 23 miles from Honolulu Harbor	Oceanfront location on Barbers Point.
Mililani Technology Park	Mililani	256 acres	24 acres built out, 2% vacancy	Fee Simple	1988	12 miles from Airport, 17 miles from Honolulu Harbor, good access to H-1, Kamehameha Hwy.	
Pearl City Industrial Park	Pearl City	45 acres	Fully built out, 9% vacancy	Fee Simple	Late 1960s	5 miles from Airport, 9 miles from Honolulu Harbor, access to H-1 can be difficult due to winding road.	
Waiau Light Industrial Park	Waiau	33 acres	Fully built out, Vacancy not available	Mixed	1970	4 miles from Airport, 8 miles from Honolulu Harbor.	
Waipahu Industrial Park	Waipahu	103 acres	Fully built out, 5% vacancy	Fee Simple	Early 1960s	10 miles from Airport, 14 miles from Honolulu Harbor, good access to Farrington Highway and H-1.	Location of one of Oahu's two speculative warehouses constructed since 1992, a 115,000 building, 60% leased.

Source: Department of Business and Economic Development, "1991 Directory of Industrial & Technology Parks"
CB Commercial Real Estate Group

RETAIL MARKET ASSESSMENT

This section assesses the market for additional retail development on Oahu and within the market area of Central and West Oahu considering current and projected demand, current and projected competitive supply and occupancy rates.

Market Overview

Oahu in recent years has been considered an "under retailed" market, meaning that the market could support additional retail development. Bolstering this view have been statistics indicating that Hawaii households have significantly higher average retail spending than the national average. In 1992 the Survey of Buying Power Data Service found that statewide retail spending per household averaged \$32,008, compared to the national average of \$20,710. Retail spending on Oahu totaled \$8.3 billion in 1992.

In the past few years a number of national U.S. retailers, perhaps recognizing that the Oahu market was underserved, have opened stores on the island. The so-called "retail revolution" that the island has seen has primarily included discounters such as Kmart, Wal-Mart, Sam's Club, Marshalls and a host of others.

Oahu's "retail revolution" peaked in 1993 with the openings of the Waiekele Center and Pearl Highlands Center, adding over 1.1 million square feet of leasable square footage between them. In comparison, Ala Moana Center has approximately 1.5 million square feet of leasable space.

Retail Space Demand

The demand for retail space on Oahu is driven by population increases and increases in per capita retail spending. Visitors also contribute to the demand for retail space on Oahu. This analysis, however, has not attempted to differentiate between spending by residents and visitors, due to the fact that retail spending by visitors is included in gross sales figures for the island.

Population - Between 1940 and 1994, Oahu's resident population increased from 257,000 to 874,300, representing average compounded growth of 2.3 percent per year. Table III-1 contains Oahu's population growth between 1940 and 1994 as well as the island's projected population through the year 2010.

Per Capita Retail Spending - Retail spending on Oahu totaled nearly \$1.5 billion dollars in 1977, or \$2,000 per resident. By 1992 the figure had grown to over \$4.3 billion, or \$5,000 per person. Much of this growth, however, was the result of inflation. When restated using 1992 dollars, 1977 retail sales equaled \$3.7 billion, or \$4,960 per person. Real retail spending on a per capita basis increased only slightly between 1977 and 1992, as shown in Table III-2.

Sales at retail facilities in Hawaii with three or more stores have averaged \$180 per square foot over the past several years, as shown in Table III-3.

**Table III-1
Resident Population of Oahu
Historical 1940 - 1994
And Projected 1995 - 2010**

<u>Year</u>	<u>Population</u>	<u>Annual Growth Rate</u>	<u>Annual Growth Rate Over Ten Years</u>	<u>Annual Growth Rate 1940 - 1994</u>
1940	257,700	--	--	--
1950	353,000	3.2%	3.2%	
1960	500,400	3.6%	3.6%	
1970	630,500	2.3%	2.3%	
1980	764,600	1.9%	1.9%	
1985	804,300	1.0%		
1986	810,400	0.8%		
1987	818,400	1.0%		
1988	824,100	0.7%		
1989	831,300	0.9%		
1990	838,200	0.8%	0.9%	
1991	849,300	1.3%		
1992	861,000	1.4%		
1993	866,500	0.6%		
1994	874,300	0.9%		2.3%
1995	882,700	1.0%		
2000	926,000	1.0%		
2005	971,000	1.0%		
2010	1,019,000	1.0%		

Sources: State of Hawaii, Department of Business Economic Development and Tourism,
"The State of Hawaii Databook", annual. (Historical)
City & County of Honolulu Department of General Planning (Projections)

Table III-2
Oahu Retail Sales per Person
1977 - 1992
And Projected Retail Sales Per Person
To 2010

<u>Year</u>	<u>Resident Population</u>	<u>Retail Sales</u>	<u>Honolulu CPI-U</u>	<u>Retail Sales Stated In 1992 Dollars</u>	<u>Retail Sales Per Person Stated In 1992 Dollars</u>
1977	737,000	\$1,463,610,000	62.1	\$3,655,489,700	\$4,960
1982	776,100	\$2,298,477,000	97.2	\$3,667,631,500	\$4,730
1987	818,400	\$3,516,173,000	114.9	\$4,746,374,500	\$5,800
Actual 1992	863,100	\$4,311,937,000	155.1	\$4,311,937,000	\$5,000
Estimated 1995	883,000		151.9	\$4,415,000,000	\$5,000
Projected 2000	926,000			\$4,630,000,000	\$5,000
2005	971,000			\$4,855,000,000	\$5,000
2010	1,019,000			\$5,095,000,000	\$5,000

Table III-3
Hawaii Shopping Centers
Sales Per Square Foot
1989 - 1993

<u>Year</u>	<u>Leasable Area (sf)</u>	<u>Retail Sales</u>	<u>Sales Per Square Foot</u>
1989	14,000,000	\$2,400,000,000	\$171
1990	14,000,000	\$2,600,000,000	\$186
1991	14,000,000	\$2,600,000,000	\$186
1992	15,000,000	\$2,700,000,000	\$180
1993	16,000,000	\$2,900,000,000	\$181

Source: National Research Bureau

Projected Retail Space Demand

Based on population projections published by the Department of General Planning of the City & County of Honolulu, average retail expenditures of \$5,000 per person, in 1992 dollars and retail sales in 1992 dollars of \$180 per square foot, Oahu's projected retail space requirements through the year 2010 are presented in Table III-4.

Current Supply of Available Space

The State of Hawaii has approximately 17.1 million square feet of retail space. Most of the state's retail space, some 9.7 million square feet, is located in facilities with fewer than 200,000 square feet. Due to the large number of facilities involved, accurate statistics are only available for shopping centers with more than 200,000 square feet of leasable space. A total of 6.8 million leasable square feet are located in Oahu's shopping centers containing more than 200,000 leasable square feet. With 1,500,000 and 1,199,000 leasable square feet respectively, Ala Moana Shopping Center and Pearlridge Center are the island's only super regional shopping centers, meaning that they have the size and extensive variety in types of stores and merchandise to draw customers from the entire island. Super regional shopping centers are generally anchored by three or more major department stores. The island also has a number of regional shopping centers, which are smaller than super regional centers, have fewer total stores and are anchored by one or two department stores. These centers include Windward Mall and Kahala Mall.

Smaller than regional centers, and drawing customers from a smaller geographic area are community centers, which can be anchored by a small department store, variety store or discount store in addition to a supermarket. Examples of community centers include Mililani Town Center, Moanalua Shopping Center, Waipahu Town Center, Windward City Shopping Center, Hawaii Kai Town Center and others. Two shopping centers in Waikiki, the Royal Hawaiian Shopping Center and the Waikiki Shopping Plaza cater to visitors staying in Waikiki, and to a much lesser extent to local residents. Oahu also has two power centers, Waikele Center and Pearl Highlands Center. Power centers are a relatively new category to retailing. Built around a few discount stores and category killers, these centers draw customers from a wide geographical area. Category killers are big box stores that specialize in one category of goods, such as electronics, sporting goods or books, and offer such a wide selection that they have advantages over competitors with smaller stores.

Table III-5 contains a summary of Oahu's shopping centers with over 200,000 leasable square feet and their current vacancy rates. The group, with a total of 6,795,000 square feet of available space, has an average vacancy rate of 3.5 percent.

Future Supply of Available Space

A total of 560,000 square feet of committed new retail space is expected to be added to Oahu's inventory in 1995 and 1996, a summary of which is contained in Table III-6. In addition, another 920,000 square feet has been announced, but is as yet uncommitted. Some of the space may be developed in the time frames announced, however it is likely that much of it will not reach the

Table III-4
Projected Retail Space Requirements on Oahu
1996 - 2010

<u>Period</u>	<u>Projected Additional Retail Spending Stated in 1992 Dollars</u>	<u>Estimated Sales Per Square Foot Stated in 1992 Dollars</u>	<u>Requirements (SF)</u>	
			<u>Total</u>	<u>Average Per Year</u>
1996 - 2000	\$215,000,000	\$180	1,194,000	238,800
2001 - 2005	\$225,000,000	\$180	1,250,000	250,000
2006 - 2010	\$240,000,000	\$180	<u>1,333,000</u>	266,600
Total			<u><u>3,777,000</u></u>	

Source: PKF-Hawaii

Table III-5
Shopping Centers on Oahu
With More than 200,000 Leasable Square Feet

<u>Name</u>	<u>Location</u>	<u>Year Opened</u>	<u>Gross Leasable Square Footage</u>	<u>Site Area In Acres</u>	<u>Vacancy Percentage</u>
Ala Moana Shopping Center	Honolulu	1959	1,500,000	50	1.0%
Pearlridge Center	Aiea	1972	1,199,000	54	1.0% (1)
Waikele Center	Waikele	1993	620,000	NA	1.0%
Windward Mall Shopping Center	Kaneohe	1982	530,000	32	7.0%
Pearl Highlands Center	Pearl City	1993	410,000	15	25.0%
The Town Center of Mililani	Mililani	1993	400,000	NA	2.0%
Kahala Mall	Kahala	1970	377,000	10	0.0%
Waikiki Shopping Plaza	Waikiki	1977	300,000	1	0.0%
Royal Hawaiian Shopping Center	Waikiki	1980	281,000	6	3.0%
Pearl City Shopping Center	Pearl City	1967	252,000	14	1.0%
Moanalua Shopping Center	Honolulu	1953	250,000	15	0.0%
Waipahu Town Center	Waipahu	1988	244,000	11	3.0%
Windward City Shopping Center	Kaneohe	1956	232,000	15	16.0%
Hawaii Kai Town Center	Hawaii Kai	1993	<u>200,000</u>	20	<u>1.0%</u>
			<u>6,795,000</u>		<u>3.5%</u>

Note: (1) Estimate

Source: Hawaii 1992 Shopping Center Directory, Interviews

Table III-6
 Future Supply of Oahu Retail Space
 1995 - 2010

Name	Year	Location	Leasable Square Footage
Committed:			
Dole Factory Stores	1995	Iwilei	200,000
Mililani Mauka	1995	Mililani	75,000
Royal Kunia/Wal-Mart	1995	Kunia	135,000
550/590 Paiea	1995	Airport	130,000
Stadium Marketplace	1996	Aiea	<u>20,000</u>
Subtotal			560,000
Uncommitted, Date of Opening Announced:			
Paradise Beverage	1996	Mapunapuna	120,000
Kapolei Power Center	1997	Kapolei	400,000
Kapolei Shopping Center Phase II	1997	Kapolei	100,000
Dole Properties	1998	Iwiki	<u>300,000</u>
Subtotal			920,000
Uncommitted, No Opening Date Announced:			
Kamehameha Drive In		Aiea	200,000
Bishop Estate		Pearl City	250,000
Ward Properties		Kakaako	<u>1,100,000</u>
Subtotal			<u>1,550,000</u>
Grand Total			<u><u>3,030,000</u></u>

Source: CB Commercial

market until a later date. Beyond the specific projects discussed above, another 1,550,000 uncommitted square feet of retail space as yet has no announced opening date. Two of these potential developments are located near to the subject property, while most of this space, totaling 1,100,000 is located in Kakaako.

PROJECTED MARKET SUPPORT FOR RETAIL DEVELOPMENT ON OAHU

As shown in Table III-4, the anticipated population growth on Oahu between the present and the year 2010 will support approximately 3.8 million square feet of additional retail space. A total of 560,000 square feet of additional space is expected to be introduced to the market in 1995 and 1996. An additional 920,000 square feet has been announced, but is not yet committed, for opening before 1998. Looking further out, several potential projects contain another 1,550,000 square feet of space.

Over 2,147,000 square feet of new space opened in 1993 and 1994. By the middle of 1995 approximately 1,896,000 square feet of that space had been absorbed by the market. In addition, vacancy rates at Oahu's established shopping centers remains relatively low. It is therefore anticipated that market support for future retail development will exist, based on expected increases in resident population.

Table III-7 also translates this anticipated demand for leasable square footage into corresponding gross acreage requirements. Based on this analysis, market support exists for an additional 14 to 15 acres per year put into retail use on Oahu between the present and 2010. The percentage of this annual requirement that is met by retail development at the subject site depends on many factors, including how desirable the site is for retail development in relation to other developable sites on the island.

Lastly, Table III-8 shows how many acres of land at Manana could be absorbed by the market each year based on land in the subject property capturing 20%, 30% and 40% of the total island-wide demand each year. This analysis shows that between three and six acres of land per year would be absorbed by the market under these capture rates.

RETAIL MARKET IN CENTRAL AND WEST OAHU

Due to the availability of land and growing residential communities, much of the island's retail development in recent years has been in Oahu's Central and West regions. In addition to the new development in the area, Pearlridge, with about 1.2 million leasable square feet and one of Oahu's two regional shopping centers, is approximately 2.5 miles away. A summary of the recent retail development on Oahu is presented in Table III-9.

In 1992 1.5 percent of all retail sales on Oahu took place in Pearl City, which has 2.6 percent of the island's population. (It must be noted that Pearl City's share of Oahu's retail spending has increased since the study as a result of the 1993 opening of Pearl Highlands Center.) A breakdown of Pearl City retail spending by category is presented in Table III-10.

Table III-7
 Projected Retail Space Requirements on Oahu
 1996 - 2010
 And Retail Absorption at Manana

Period	Projected Additional Retail Spending Stated in 1992 Dollars	Estimated Sales Per Square Foot Stated in 1992 Dollars	Retail Space Requirements (SF)		Gross Acreage Requirements (1)		Manana Capture Rate		
			Total	Average Per Year	Total	Average Per Year	20%	30%	40%
			Acres Absorbed Per Year	Acres Absorbed Per Year	Acres Absorbed Per Year	Acres Absorbed Per Year	Acres Absorbed Per Year		
1996 - 2000	\$215,000,000	\$180	1,194,000	238,800	69	14	3	4	6
2001 - 2005	\$225,000,000	\$180	1,250,000	250,000	72	14	3	4	6
2006 - 2010	\$240,000,000	\$180	1,333,000	266,600	77	15	3	5	6

Note: (1) Based on a floor to area ratio of 50% and 20% for roads.

Source: PKF-Hawaii

Table III-8
Projected Retail Space Requirements on Oahu
1996 - 2010
And Retail Absorption at Manana

Period	Retail Space Requirements (SF)		Gross Acreage Requirements (1)		Manana Capture Rate		
	Total	Average Per Year	Total	Average Per Year	20%	30%	40%
			Acres Absorbed Per Year	Acres Absorbed Per Year	Acres Absorbed Per Year	Acres Absorbed Per Year	Acres Absorbed Per Year
1996 - 2000	1,194,000	238,800	69	14	3	4	6
2001 - 2005	1,250,000	250,000	72	14	3	4	6
2006 - 2010	1,333,000	266,600	77	15	3	5	6

Note: (1) Based on a floor to area ratio of 50% and 20% for roads.

Source: PKF-Hawaii

Table III-9
Major Additions to Supply of Retail Space on Oahu
1993 - 1994

Year	Name	Leasable Square Feet	Vacancy Percentage	Occupied Space (SF)
1993	Pearl Highlands Center	410,000	25.0%	242,000
1993	Waikēle Center	620,000	1.0%	614,000
1993	Hawaii Kai Town Center	200,000	1.0%	198,000
1993	The Town Center of Mililani	400,000	2.0%	392,000
1993	Kapolei Shopping Center	133,000	6.8%	124,000
1994	Waikēle Factory Stores	105,000	37.4%	65,700
1994	Aloha Tower Marketplace	178,000	10.0%	160,200
1994	Stadium Marketplace	<u>101,000</u>	<u>0%</u>	<u>101,000</u>
Total		<u>2,147,000</u>	<u>11.6%</u>	<u>1,896,900</u>

Source: CB Commercial

Table III-10
Retail Sales by Segment
Oahu and Pearl City
1992

<u>Segment</u>	<u>Oahu</u>	<u>Pearl City</u>	<u>Pearl City % of Oahu</u>
Food Stores	\$1,301,906,000	\$15,197,000	1.2%
Automotive Dealers	1,108,632,000	17,456,000	1.6%
Gas Stations	355,066,000	12,679,000	3.6%
Apparel and Accessories Stores	753,862,000	5,812,000	0.8%
Furniture and Home Furnishings Stores	339,680,000	8,031,000	2.4%
Eating and Drinking Places	1,388,471,000	24,266,000	1.7%
Miscellaneous Retail Stores	767,310,000	4,068,000	0.5%
Other	<u>2,326,703,000</u>	<u>56,734,000</u>	<u>2.4%</u>
Total	<u>\$8,341,630,000</u>	<u>\$144,243,000</u>	<u>1.7%</u>

Source: 1992 Census of Retail Trade

Much of the recent demand for retail space on Oahu has been for so-called "big box" retailers. Due to the space requirements and nature of these retailers, they have typically not located within the island's existing shopping centers. Rather, they have opened stand-alone stores, or located within new centers specifically geared toward "big boxes," such as Waialele Center or Pearl Highlands Center.

Although several "big box" retailers have entered Oahu's retail market in the past few years, there are a number of merchandise categories still not represented here. According to commercial real estate brokers, there are a number of nationally-based "big box" retailers looking to enter the Oahu market. These retailers include The Home Depot, which is the country's leading home improvement retailer, Incredible Universe, a consumer electronics superstore and others. In addition to future new entrants to the market, some existing "big box" retailers intend to open additional stores on the island to give them better market coverage and the improved economies of scale provided by having more than one store in a market area.

A major challenge these companies face in establishing themselves in the market is the scarcity of suitable sites. One option is to redevelop an existing location, as has happened with The Sports Authority replacing the GEM store on Ward Avenue. Another option is to locate within a power center, such as Waialele Center or Pearl Highlands Center, or to develop a stand-alone store on vacant land.

Both the 13.75-acre Pearl City Junction site and the area across the street from Pearl Highlands Center are attractive sites for a "big box" retailer. The Pearl City Junction site offers not only frontage along Kamehameha Highway but also offers high visibility from the H-1 freeway, providing valuable exposure along two major transportation corridors.

The site *mauka* of the Pearl Highlands Center is also an attractive site for "big box" retailers due to its proximity to the center. The introduction of a major new retailer or retailers to the site would increase the draw of the area. The proposed extension of Moanalua Road through the subject property would greatly improve access to the area by providing more direct access from Westbound H-1 traffic, via Moanalua Road.

The most recent sale of a commercial parcel of size similar to those in the subject property was in early 1994, when Wal-Mart Stores, Inc. paid \$27.50 per square foot for nine acres in Royal Kunia. The site of the Pearl Highlands Center was purchased by the center's developer in 1992 for \$40 per square foot. Due to the limited number of market sales comparables, it is difficult to assess the current fee simple land values of the Manana/Pearl City Junction sites. However, taking into account the previous sales mentioned above, together with the current soft market conditions and the preferable size and location of the Manana/Pearl City Junction sites, it is estimated that the Manana/Pearl City Junction sites should be able to command values per square foot in the \$30 to \$35 range, with the Pearl City Junction site value on the upper end of this range.

Family Entertainment Center

Although many commercial developments currently have an entertainment component, there are currently no facilities on Oahu geared exclusively toward entertainment and recreation. Multi-screen movie theaters were added to Kahala Mall, Pearlridge Center and Restaurant Row years after the centers were originally built. In a shopping center, entertainment facilities such as theaters are considered to be tenants that attract people to the mall, thereby improving sales for other tenants.

Similarly, other recreational uses such as miniature golf have been retrofitted into locations that are separate from other recreational facilities. Examples of this include Jungle River Mini Golf in Aiea and Hilton Hawaiian Village Mini Golf in Waikiki. A family entertainment center would house a variety of recreational uses, providing multiple entertainment experiences to customers in one location. Examples of elements of such a family entertainment center could include:

- Movie Theaters
- Golf Driving Range
- Miniature Golf
- Batting Cages
- Video Games/Redemption Games
- Simulation Rides
- Playroom (Discovery Zone type facility)
- Family Restaurants

While the various components of such a family entertainment center currently exist in various separate locations around Oahu, bringing these uses to a single entertainment destination will allow for multiple activities during one visit. From a customer's perspective such an entertainment destination would be preferable to a facility offering a single entertainment experience because of the opportunity to do more than one recreational activity. For this reason it is believed that market support exists for a facility providing space for currently existing but geographically separated recreational businesses. Due to the unique character of such a development, it is believed that the land would absorb separately from the other commercially-zoned land in the subject property.

The estimated space requirements for the various components are as follows:

<u>Component</u>	<u>Leasable Square Footage</u>
Movie Theaters	30,000 - 40,000
Golf Driving Range	150,000 - 180,000
Miniature Golf	40,000 - 50,000
Batting Cages	5,000 - 10,000
Video Games/Redemption Games	3,000 - 4,000
Simulation Rides	3,000 - 4,000

Playroom	5,000 - 6,000
Family Restaurants	<u>15,000 - 20,000</u>
Total	<u>251,000 - 316,000</u>

CONCLUSION

Market support for retail development at the Manana and Pearl City Junction properties appears to exist. Because of its excellent visibility from the H-1 freeway and frontage along Kamehameha Highway, the Pearl City Junction site is an attractive retail site. The proposed commercial development on the Manana parcel will have frontage along and access provided by the proposed extension of Moanalua Road. The extension of Moanalua Road will provide much more direct access to and from H-1 than is available currently. Access has reportedly been one of the factors that has negatively impacted the Pearl Highlands Center. Retail development at the Manana site will increase the number of retail businesses in the immediate area, providing greater customer drawing power than the Pearl Highlands Center currently has. For retailers, the Manana and Pearl City Junction properties provide the opportunity to locate in an area with a sizable, established residential base.

It is believed that the value of commercial retail-zoned land in the Manana/Pearl City Junction properties would range between \$30 to \$35 per square foot, based on a number of factors, including:

- the limited number of comparable sales
- the location and size of the Manana/Pearl City Junction sites
- current market conditions
- projected period of land absorption of eight years, or three acres per year for commercial retail use
- projected period of land absorption of five years, or three acres per year for family entertainment center

OFFICE MARKET ASSESSMENT

This office market assessment evaluates market support for office building development in the market area by considering current and projected demand, current and projected competitive supply and occupancy rates.

Market Overview

Oahu has over 12.5 million square feet of office space, 10.0 million square feet of which are located in downtown Honolulu, the Kapiolani Boulevard corridor and Waikiki. The remainder of the space is located in several suburban markets that have a total of 2.5 million square feet of space. The subject property is located in one of the suburban markets. The vacancy rate for the island is 12.7 percent, while the downtown vacancy rate stands at 16.8 percent. Monthly rent for Class A space in downtown Honolulu averages between \$1.35 and \$1.66 per square foot, triple net, per month.

During the late 1980s and early 1990s, downtown Honolulu's office market was one of the tightest in the nation, with downtown vacancy hovering around three percent at a time that many mainland markets were experiencing vacancy rates in the 15 percent to 20 percent range. Since that time, however, a soft state economy and a wave of office building development have contributed to a downtown vacancy of 16.8 percent in 1994. Some landlords responded quickly to the changing market by lowering monthly rents and offering generous tenant improvement allowances. In addition, base rents fell 30 percent between 1992 and 1995.

The downtown market is expected to remain soft in the next few years, as the First Hawaiian Center, scheduled to open in 1996, will introduce another 418,000 square feet of leasable space to the market.

Office Space Demand

Demand for office space grows with increases in the types of economic activity that require office space. Businesses in the finance, insurance and real estate sector, as well as service businesses excluding hotels, and the government all utilize Class A office space. As shown in Table IV-1, employment in these sectors of the economy has grown from 172,050 in 1983 to 216,390 in 1993. This represents average growth of 2.3 percent per year. As can be seen in Table IV-2, an average of 4,470 new office jobs per year were created on Oahu during the period between 1988 and 1993.

Current Supply of Available Space

Of Oahu's 12.5 million square feet of office space, approximately 10.9 million square feet were occupied in 1994, for a vacancy rate of 12.7 percent. Between 1988 and 1994, the average vacancy rate on the island has ranged between 3.6 percent and 12.7 percent, as shown in Table IV-3.

Table IV-1
Oahu Job Counts by Sectors Utilizing Office Space
1983 - 1993

Year	Finance Insurance & Real Estate	Services, Excluding Hotel	Government	Total	Annual Percent Change	Annual Percent Change Over Five Years
1983	27,250	67,350	77,450	172,050	--	
1984	27,150	68,750	77,800	173,700	1.0%	
1985	27,000	71,200	79,000	177,200	2.0%	
1986	28,000	75,950	79,200	183,150	3.4%	
1987	28,350	80,400	80,800	189,550	3.5%	
1988	28,800	82,700	83,500	195,000	2.9%	2.5%
1989	28,700	90,250	84,950	203,900	4.6%	
1990	29,750	95,750	88,050	213,550	4.7%	
1991	30,500	97,050	89,900	217,450	1.8%	
1992	31,250	100,150	90,900	222,300	2.2%	
1993	<u>32,240</u>	<u>97,220</u>	<u>86,930</u>	<u>216,390</u>	-2.7%	2.1%
Avg. growth 1983 - 1993	<u>1.7%</u>	<u>3.7%</u>	<u>1.2%</u>	<u>2.3%</u>		

Source: Department of Labor and Industrial Relations, "Labor Force Data Book," April 1994.

Table IV-2
New Office Jobs On Oahu
1988 - 1993

Year	<u>Office Job Count</u>	<u>New Office Jobs</u>
1988	195,000	5,450
1989	203,900	8,900
1990	213,550	9,650
1991	217,450	3,900
1992	222,300	4,850
1993	216,390	<u>(5,910)</u>
Total		<u>26,840</u>
Average 1989 - 1993		<u>4,470</u>

Source: Department of Labor and Industrial Relations,
"Labor Force Data Book," April 1994.

**Table IV-3
Office Space on Oahu
1988 - 1994**

<u>Year</u>	<u>Available Office Space (SF)</u>	<u>Vacancy Rate</u>	<u>Occupied Space (SF)</u>	<u>Annual Increase In Occupied Space (SF)</u>	<u>Annual Percent Change</u>
1988	8,881,000	5.1%	8,429,000	--	--
1989	9,722,000	5.1%	9,229,000	800,000	9.5%
1990	9,960,000	3.6%	9,599,000	370,000	4.0%
1991	10,246,000	4.7%	9,768,000	169,000	1.8%
1992	10,923,000	8.7%	9,969,000	201,000	2.1%
1993	10,949,000	10.9%	9,753,000	(216,000)	-2.2%
1994	12,526,000	12.7%	10,935,000	1,182,000	12.1%
Average					<u>4.4%</u>

Source: CB Commercial

Projected Office Space Demand

Demand for office space on Oahu is based upon projections of job growth in industries that utilize office space, as well as the space requirements for each additional industrial job. The State of Hawaii Department of Business, Economic Development & Tourism (DBEDT) produces long-range projections, "Population and Economic Projections for the State of Hawaii (Series M-K)". As the most recent projections were published in 1988, they are considered out of date. The most recent projections of employment were issued by the State of Hawaii Department of Labor and Industrial Relations (D.L.I.R.) in 1993. These projections were for the 1992 - 1997 period and contained the following growth rates for the traditional office space sectors:

<u>Sector</u>	<u>D.L.I.R. Annual Growth</u>
Finance, Insurance & Real Estate	1.2%
Services, Excluding Hotel	1.8%
Government	0.4%

Due to the slow growth of the economy in the years since the D.L.I.R. projections, we have utilized slower growth rates in estimating the numbers of office jobs in the period through 2010. For the five year periods ending in 2000, 2005 and 2010 the following employment growth rates have been utilized.

<u>Sector</u>	<u>Annual Growth</u>
Finance, Insurance & Real Estate	0.8%
Services, Excluding Hotel	0.5%
Government	0.4%

Using the above growth rates, employment in these three sectors is projected in Table IV-4. Through the year 2010, an estimated additional 22,410 office jobs are projected.

Based on these employment projections and the historical relationship between additional office employment and additional occupied office space, Oahu's requirements for additional office space through 2010 are outlined in Table IV-5. By the year 2000, projected job creation is estimated to generate demand for 1,120,000 square feet of space on the island, or an average of 224,000

Table IV-4
 Estimated New Office Jobs on Oahu
 1994 - 2010

Year	Finance, Insurance & Real Estate		Services, Excluding Hotel		Government		Total New Office Jobs
	Jobs	Annual Increase	Jobs	Annual Increase	Jobs	Annual Increase	
Actual 1993	32,240	1.2%	97,220	1.8%	86,930	0.4%	-
Projected 1995	33,000	0.8%	100,800	0.5%	87,600	0.0%	5,010
2000	34,300	0.8%	103,300	0.5%	89,400	0.4%	5,600
2005	35,700	0.8%	105,900	0.5%	91,200	0.4%	5,800
2010	37,200	0.8%	108,600	0.5%	93,000	0.4%	<u>6,000</u>
							<u>22,410</u>

Sources: Department of Labor and Industrial Relations, "Employment Outlook for Industries and Occupatio
 1992 - 1997," March, 1993.
 PKF-Hawaii

Table IV-5
Estimated Office Space Requirements on Oahu
1996 - 2010

<u>Period</u>	<u>New Office Jobs</u>	<u>Space Per Job (SF) (1)</u>	<u>Office Space Requirements (SF)</u>	
			<u>Total</u>	<u>Average Per Year</u>
1996 - 2000	5,600	200	1,120,000	224,000
2001 - 2005	5,800	200	1,160,000	232,000
2006 - 2010	6,000	200	1,200,000	240,000

Note: (1)PKF-Hawaii estimate based on City & County of Honolulu Dept. of General Planning estimate of space requirements per office job.

Source: PKF-Hawaii

square feet per year. Estimated office space requirements total 1,160,000 square feet during the 2001 to 2005 period and 1,200,000 square feet during the 2006 to 2010 period.

PROJECTED MARKET SUPPORT FOR OFFICE BUILDING DEVELOPMENT

Based on employment projections and the historical relationship between additional office sector employment and additional occupied office space, Oahu's demand for new office space is projected in Table IV-6 below. The analysis indicates that between 1995 and 2010 there will be demand for approximately 3.5 million square feet of new office space. The current inventory of vacant space is 1.6 million square feet. The First Hawaiian Center, due to open in 1996, will add another 418,000 square feet to the market.

Based on the current inventory of vacant space and the construction of the First Hawaiian Center, there appears to be little demand for new office space on Oahu between the present and 2010. The short term over-supply will be greatest in the downtown market, where the vacancy rate is expected to peak at 20 percent in 1996.

Table IV-6

<u>Category</u>	<u>Square Feet</u>
Current Vacant Office Space	1,591,000
First Hawaiian Center	<u>418,000</u>
Total Additional Space	<u>2,009,000</u>
Additional Requirement by 2010	<u>3,480,000</u>
Projected Shortfall	<u>1,471,000</u>

In the market area, however, which is currently experiencing a vacancy rate of 9.5 percent, the demand for additional space cannot be accommodated by current vacancies or planned additions to supply. Table IV-7 shows vacancy rates of the various suburban office markets, with the market area having the lowest vacancy rates of any of the suburban markets. The market area currently contains approximately three percent of the island's inventory of available space. Capturing three percent space (the market area's current share of the total market) of the future demand for office translates into the need for an additional 67,000 square feet of space, as shown in Table IV-8.

OFFICE MARKET IN THE MARKET AREA

The Pearl City, Aiea, Waipahu, Waipio and Mililani areas contain approximately 340,000 square feet of office space, or about 2.8 percent of the total island inventory. The area has a vacancy rate of about 9.5 percent, which compares favorably with the island-wide vacancy rate of 12.7 percent.

Table IV-7
Suburban Office Markets
1994

<u>Area</u>	<u>Total Square Footage</u>	<u>Vacancy Rate</u>
East Oahu	185,000	15.6%
East Central Oahu	245,000	21.2%
West Central Oahu	1,410,000	6.6%
Leeward Oahu	340,000	9.5%
West Oahu	120,000	13.0%
Windward Oahu	<u>230,000</u>	<u>9.2%</u>
Total	<u>2,530,000</u>	<u>9.6%</u>

Source: CB Commercial

Table IV-8
Projected Office Space Requirement
In Market Area
1995 - 2010

	<u>Square Feet</u>
Office Space Requirement on Oahu	3,480,000
3% Capture Rate of Market Area	104,400
Current Vacancy in Market Area	<u>37,400</u>
Estimated Shortfall	<u><u>67,000</u></u>

Source: PKF-Hawaii

As businesses that locate in suburban office buildings tend to serve their surrounding communities, the suburban markets are somewhat distinct from the downtown office market. Due to the small amount of available space in a suburban market, however, the addition of new supply can lead to wide swings in area vacancy rates.

Monthly rents in the area range between \$1.47 per square foot and \$2.25 per square foot, triple net, with the average in the \$1.70 to \$1.79 range. A profile of the existing supply of office space is presented in Table IV-9. No new office buildings are planned for the area in the near future, although additional development in the "second city" of Kapolei is a possibility. The existing demographics in the immediate project area does indicate possible support for future office space development in the area.

Interviews with real estate professionals and appraisers indicate a limited supply of appropriately-zoned land in the area for office use, tending to be smaller parcels which would be only developable by a owner-user, and that such parcels can have market values of up to \$50 per square foot. Larger parcels suitable for multi-tenant office development would tend to have lower per square foot values.

Medical Office Sub-Market

The medical office building sub-market in the area is experiencing lower occupancy than the market as a whole. The 44,000 square foot Aiea Medical Building consistently experiences a vacancy rate near zero percent. It is an owner-occupied condominium building. The Pali Momi Medical Center also reports a vacancy rate of zero percent. As a specialized sub-market, the medical office building is less affected by the current over supply of office space than typical office buildings. As Oahu's population growth continues to occur in the island's Central and West regions, demand for medical services in the area will continue. A medical mall, providing 125,000 to 175,000 square feet of medical office space, is scheduled to open in Kapolei in 1997. In 1994, Kaiser Permanente purchased 21 acres in the Mililani Technology Park for the construction of an office, storage and clinical facility.

CONCLUSION

Although the downtown office market is currently overbuilt and experiencing a relatively high vacancy rate, the market for office space in the project area currently has a lower vacancy rate. Anticipated growth in demand for office space in the market area will create the need for additional space in the years to come. Due to the small size of the office market in the project area, however, the projected need for additional square footage is also relatively small. Businesses located in office space in the area primarily serve the needs of the immediate area, which tends to limit the total demand for space. However, there are a number of factors indicating strong demand for an office building in the Manana/Pearl City Junction development, including:

- the large existing resident base in the immediate area
- favorable office vacancy rates in the area

- lack of planned additions to supply in the immediate area
- superior location to the major residential and commercial development in the nearby Ewa Plains area

The lack of available medical office space in the area also indicates demand for additional medical office space, which would additionally benefit from association with components of medical facilities located in the development.

Table IV-9
Profile of Existing Competitive Supply
With More Than 20,000 Leasable Square Feet
In Market Area

<u>Name</u>	<u>Location</u>	<u>Leasable SF</u>	<u>1995</u> <u>Vacancy</u>	<u>Year</u> <u>Opened</u>	<u>Monthly Rent</u> <u>(Triple Net)</u>	
					<u>Low</u>	<u>High</u>
Bank of America Waipahu	Waipahu	30,635	3.0%	1977	\$1.50	\$1.50
Lee Towne Center	Aiea	27,000	47.7%	1993	\$2.25	\$2.25
Leilehua Building	Wahiawa	25,000	0.0%	1988	\$1.75	\$2.00
Newtown Office Building	Newtown	61,058	1.9%	1975	\$1.80	\$2.10
Mililani Towne Center	Mililani	21,000	21.0%	1993	\$2.25	\$2.25
Pearl City Business Plaza	Pearl City	53,400	10.3%	1981	\$1.75	\$1.75
Pearl City Plaza	Pearl City	30,939	2.7%	1988	\$1.60	\$1.60
Pearlridge Office Center	Pearlridge	87,291	<u>0.0%</u>	1976	\$1.47	\$1.62
Average			<u><u>7.6%</u></u>			

Source: CB Commercial

MEDICAL MARKET ASSESSMENT

This section will assess the market potential for medical facility development in the subject property.

Market Overview

While the market potential for development of new medical facilities is dependent upon current and future demand for such facilities, as well as the supply of such facilities, development of new hospitals is regulated by the State of Hawaii. In order to develop new acute or long-term care facilities, a Certificate of Need (CON) must be granted by the State of Hawaii Department of Health.

In reviewing applications for CONs, the Department of Health considers many factors, including current utilization of existing facilities, expected future demand for different types of beds based on demographic trends and CONs granted for future development. Changing patterns of medical care, such as the trend toward shorter length of stay in acute care facilities and the increasing popularity of health maintenance organizations (HMOs) are also considered.

Due to the fact that development of new medical facilities is ultimately controlled by the CON process, this market assessment will concentrate on reports issued by the Department of Health.

Definitions

Acute care facilities cater to the treatment of a single medical episode of relatively short duration and possible severe symptoms, after which the patient is able to return to a normal level of activity. Long-term care consists of a variety of services for people of all age groups who have chronic physical or mental impairments. It includes a variety of health care and social services to promote as independent a lifestyle as possible for patients.

Current Supply of Hospital Beds On Oahu

The current supplies of acute and long-term care beds on Oahu are presented in Tables V-1 and V-2.

Utilization of Oahu Hospital Beds

Between 1982 and 1993, occupancy rates at Oahu's acute care hospitals has ranged between 67.3 percent and 79.1 percent, and averaged 71.9 percent in 1993, the most recent year for which data are available. During the same period, occupancy at Oahu's long-term care facilities ranged

Table V-1
Oahu Hospitals
Acute Care Beds

Facility	Medical/ Surgical	Critical Care	OB	Ped.	Neo.ICU	Psych.	Total
Castle Medical Center	73	8	14	0	0	55	150
Kahuku Hospital	6	2	3	0	0	0	11
Kaiser Medical Center	124	20	30	20	7	0	201
Kapiolani Medical Center	68	30	60	64	18	0	240
Kuakini Medical Center	225	25	0	0	0	0	250
Pali Momi	108	8	0	0	0	0	116
Queen's Medical Center	394	37	25	0	0	74	530
St. Francis - Liliha	230	22	0	4	0	0	256
St. Francis - West Oahu	96	12	26	0	0	0	134
Straub Clinic & Hospital	136	23	0	0	0	0	159
Wahiawa General Hospital	50	5	14	0	0	0	69
	1,510	192	172	88	25	129	2,116

Source: State of Hawaii, State Health Planning and Development Agency

Table V-2
Oahu Hospitals
Long Term Care Beds

Facility	SNF	ICE	SNF/ ICE	Acute/SNF Swing	Total
Aloha Health Care	0	0	130	0	130
Ann Pearl Health Care	0	86	0	0	86
Arcadia Retirement Home	60	0	0	0	60
Beverly Manor Conv. Care	0	0	108	0	108
Castle Medical Center	10	0	0	0	10
Convalescent Ctr. of Hawaii	0	0	183	0	183
Crawford's Convalst. Home	0	68	0	0	68
Hale Ho Aloha	0	85	0	0	85
Hale Malamalama	0	31	0	0	31
Hale Nani Health Center	0	0	288	0	288
Island Nursing Home	0	0	42	0	42
Kahuku Hospital	11	0	0	4	15
Kaiser Medical Center	55	0	0	0	55
Kuakini Medical Center	50	150	0	0	200
Leahi Hospital	98	81	0	0	179
Leeward Nursing Home	0	93	0	0	93
Liliha Health Care Center	0	0	92	0	92
Maluhia Hospital	0	0	158	0	158
Maunalani Hospital	0	0	101	0	101
Nuuanu Hale	0	0	75	0	75
Oahu Care Facility	0	82	0	0	82
Pohai Nani Care Center	0	0	42	0	42
Queen's Medical Center	30	0	0	0	30
St. Francis - Liliha	52	0	0	0	52
Wahiawa General Hospital	0	0	93	0	93
	<u>366</u>	<u>676</u>	<u>1312</u>	<u>4</u>	<u>2,358</u>

Source: State of Hawaii, State Health Planning and Development Agency

between 90.5 percent and 97.3 percent, averaging 93.9 percent in 1993. These occupancy rates are presented in Table V-3.

Average Length of Stay

The average length of stay at Oahu's acute care hospitals has increased from 6.6 nights in 1982 to 7.2 nights in 1993, contrary to the national trend toward a shorter length of stay and increasing prevalence of outpatient procedures. At Oahu's long-term care hospitals, the average length of stay has ranged between a low of 336 days in 1993 to 458 days in 1989, as illustrated in Table V-4.

Projected Demand for Beds

The State Health Planning and Development Agency (SHPDA) has projected the demand for both acute and long-term care hospital beds through the year 2010. These projections were based on the projected population and historical trend analysis. Two methods for projecting use rate were used. The Use Rate Trend (URT) method projects past use rate trends into the future, meaning that any change in use rates over the past few years will be continued into the future. The Average Use Rate (AUR) method uses an average of prior years' use rates. This method assumes that, over time, use rates do not change.

Based on both the URT and AUR methods, Oahu has sufficient acute care bed capacity to accommodate demand through the year 2010, as shown in Table V-5. For long-term care, however, the analysis shows that, under the URT methodology demand for long-term care beds will be met by current supply in 2005, and exceeded thereafter. The AUR methodology concludes that Oahu will have a deficit of approximately 500 beds in 1995, growing to 1,300 beds by 2010, as shown in Table V-6. A separate SHPDA study reported that at the end of 1993 there were 257 acute care beds on Oahu being utilized by patients who should have been using long-term care facilities, but could not be accommodated because of the shortage of beds.

Beds Approved Through the CON Process

Certificates of Need have been approved for the following facilities on Oahu:

Table V-3
Occupancy Rates at Oahu Acute and Long Term Care Facilities
1982 - 1993

<u>Year</u>	<u>Occupancy Rates</u>	
	<u>Acute Care</u>	<u>Long Term Care</u>
1982	79.1%	96.0%
1983	76.5%	95.4%
1984	70.8%	97.3%
1985	67.7%	97.2%
1986	67.3%	90.5%
1987	74.4%	93.7%
1988	75.0%	91.4%
1989	74.9%	95.0%
1990	72.0%	92.9%
1991	70.0%	91.8%
1992	72.7%	94.6%
1993	71.9%	93.9%

Source: State of Hawaii, State Health Planning and Development Agency

Table V-4
Average Length of Stay at Oahu Hospitals
1982 - 1993

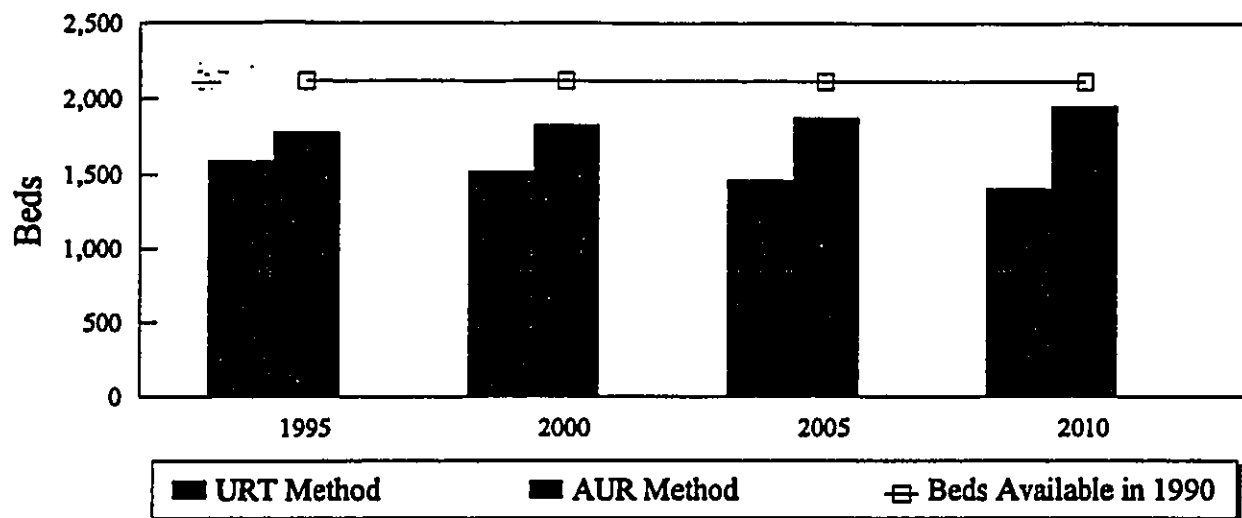
Average Length of Stay (Nights)

<u>Year</u>	<u>Acute Care</u>	<u>Long Term Care</u>
1982	6.6	388
1983	6.3	409
1984	5.9	452
1985	6.5	412
1986	6.8	419
1987	7.1	444
1988	7.1	434
1989	7.2	458
1990	7.3	383
1991	7.2	361
1992	7.4	357
1993	7.2	336

Source: State of Hawaii, State Health Planning and Development Agency

Table V-5

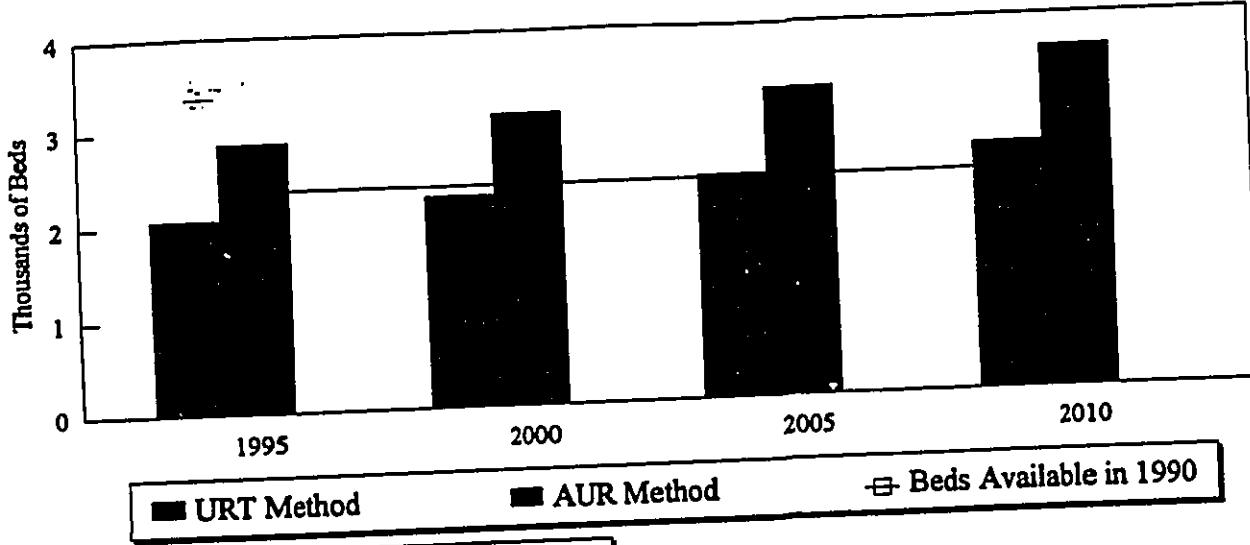
Projected Demand For Acute Care Beds
Oahu, 1995 - 2010



Source: State Health Planning and Development Agency

Table V-6

Projected Demand For Long Term Care Beds
Oahu, 1995 - 2010



Source: State Health Planning and Development Agency

Table V-7

<u>Name</u>	<u>Number of Approved Beds</u>		
	<u>Acute Care</u>	<u>Long-term Care</u>	<u>Total</u>
Aloha Olaloa Healthcare Center	0	130	130
Aloha West Health Care Center	0	200	200
Episcopal Homes	0	60	60
PC Corporation	0	122	122
Regency Care Center of Kahuku	0	80	80
The Queen's Health System	<u>0</u>	<u>180</u>	<u>180</u>
Total	<u>0</u>	<u>772</u>	<u>772</u>

Source: State Health Planning and Development Agency

With the current and projected shortfall of long-term care beds it is not surprising that all of the CONs that have been issued on Oahu for facilities that have not yet been used have been for long-term care beds. It is generally believed that the Department of Health will not be issuing new CONs for acute care beds on Oahu in the near future.

According to interviews, the Aloha Olaloa Healthcare Center and the Episcopal Homes projects have been canceled, and the Queens' Health System project is currently on hold. The Aloha West Health Care Center and the PC Corporation project have both broken ground on their facilities. The PC Corporation facility is located in Pearl City, a few blocks away from the subject property.

Projected Market Support for Medical Development on Oahu

Demand for Additional Long-Term Care Beds by 2010:	1,294
Active Projects with a CON:	<u>582</u>
Projected Shortfall of Beds:	<u>712</u>

CONCLUSION

According to Department of Health analysis, market support for additional long-term care beds currently exists on Oahu. While demand for long-term care beds indicates one possible type of development at the site, it is not the only type of medical facility that could be developed. Another type of development that would be healthcare-related but not regulated by the CON process would include medical office facilities. The market for medical office facilities has previously been addressed, in the office market assessment.

Members of the Pearl City community, at the 13 Pearl City Planning Task Force and community meetings relating to the conceptual master plan, indicated a community desire for additional healthcare services in the area. The area demographics, which indicate a well-established family community with a growing senior population also suggest the need and market support for a variety of healthcare services. In addition to a long-term care facility and medical office building, other potential components of a healthcare campus could include:

- Rehabilitation facilities
- Clinics
- Wellness centers
- Elder care facilities

From the perspective of a developer or provider of these types of services, such a campus would provide an opportunity to locate within an established community with a large and relatively affluent residential base.

**CITY & COUNTY OF HONOLULU
DEPARTMENT OF HOUSING
& COMMUNITY DEVELOPMENT**

**Manana and Pearl City Junction Development
Conceptual Land Use Master Plan
Social Impact Assessment**

January 1996



January 16, 1996

*Represented by
The CPA Consulting Group, Inc.
A Professional Corporation*

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Telephone (808) 521-1021
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Mr. Roland Libby, Director
Dept. of Housing and Community Development
City & County of Honolulu
650 S. King Street
Honolulu, Hawaii 96813

Dear Mr. Libby:

In accordance with your request we have completed our social impact assessment relating to the Manana and Pearl City Junction Development Conceptual Land Use Master Plan.

The conclusions reached are based on our analysis of the social characteristics of the surrounding area and our participation in the community-based planning process that resulted in the Conceptual Master Plan as of the completion of our fieldwork on January 8, 1996.

We have assessed the potential social impacts the implementation of the Conceptual Land Use Master Plan on the surrounding area and its residents. The limitations that apply to this report are included in Exhibit A following this letter.

Very truly yours,

LIMITATIONS OF THE STUDY

1. Management is responsible for disclosure of significant information that might affect the ultimate realization of the projected results.
2. We have no obligation to update our findings regarding changes in market conditions which occur subsequent to the completion of our fieldwork.
3. Our report, and the material submitted, may not be used in any prospectus of printed material used in connection with these sale of securities or participation interests to the public.
4. The scope of our study and reports thereon would not include the possible impact of zoning or environmental regulations, licensing requirements or other such matters unless they have been brought to our attention and are disclosed in the report.
5. Any drafts or preliminary information communicated to you during the course of the assignment are for your internal management use only, and may not be disclosed to any outside third parties without prior written consent.
6. Any changes from the assumptions of estimates used in our study, due to unforeseen economic or other subsequent changes in the environment, may lead to substantial differences in actual results when compared to our report.
7. PKF-Hawaii's maximum liability relating to the consulting services outlined above, regardless of form of action, whether in contract negligence or otherwise, shall be limited to the charges paid to PKF-Hawaii for the portion of its services or work products giving rise to liability. In no event shall PKF-Hawaii be liable for consequential, special incidental punitive loss, damage or expense.

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I. BACKGROUND AND INTRODUCTION

Report Purpose

A Environmental Impact Statement is being prepared in support of the proposed conceptual land use master plan for the Manana and Pearl City Junction Development, 122-acre development in Pearl City on Oahu. The project is comprised of two parcels totalling approximately 108.68 acres of land mauka of Kamehameha Highway in the vicinity of the Waimano Home Road/Kamehameha Highway intersection and a 13.75 acre parcel makai of Kamehameha Highway owned and/or controlled by the City and County of Honolulu pursuant to a Memorandum of Understanding with the U.S. Navy which transfers ownership of the property to the City over a phased three-year acquisition schedule.

Both the Manana and Pearl City Junction parcels are located within the State Land Use Commission's "Urban" district. As such, land uses are controlled by the City's General Plan, Development Plan and Land Use Ordinances. No action from the State Land Use Commission is required to implement the proposed Manana and Pearl City Junction Development.

According to the City's Primary Urban Center Development Plan Land Use Map, both the parcels are presently designated as "Military". The Primary Urban Center Development Plan Public Facilities Map designates both the parcels as Government Building (GB). All military land on Oahu is designated as F-1, Military, by the Land Use Ordinance and zoning maps. Currently, if military land ownership is transferred to City ownership, the F-1 designation automatically reverts to the Preservation zoning classification.

Implementation of the project requires amendments to the Primary Urban Center Development Plan and Public Facilities Map, and zoning amendments to reflect the land uses proposed by the plan. An Environmental Impact Statement (EIS) is being prepared as part of the application process for these amendment requests.

This report contains the social impact assessment (SIA) which was prepared in conjunction with the EIS. The SIA describes the existing social environment, evaluates a no-project scenario, identifies potential social impacts and presents preliminary community issues. The SIA will be summarized in and appended to the EIS.

Basis of Report Preparation

Identification of social and economic impacts on any given proposed development are subjective at best, however, the need for such analysis are desirable and required under current City planning criteria. In light of such objectives, the identification of potential social impacts of a proposed development upon local residents is best addressed by obtaining a good understanding of the area prior to development. This report is intended to provide objective background data which can serve as a starting point for assessment of potential social and cultural impacts.

This presentation was developed systematically with the intent of identifying possible impacts based on empirical and quantitative data. Baseline data for the subject area was recorded through a systematic analysis of available demographic data on socio-economic characteristics in the vicinity. For comparative purposes, Honolulu County statistics were also used as reference. From these statistics, conclusions were drawn from the analysis of these findings with respect to demographic concerns.

The economic aspects of the development were evaluated with respect to the general economic trends which affect the project. Public service evaluation was limited to an overview of existing facilities since public service and facilities planning are usually implemented gradually as needs for specific services arise. Lastly, the physical characteristics of the project were reviewed for any significant impacts resulting from implementation of the project.

Background and Description of the Proposed Plan

Since the military warehouses were originally developed on the project site, the growth of the Pearl City community has entirely surrounded the property with residential and commercial land uses.

Overlooking Pearl Harbor, the site offers excellent visual and development opportunities to establish a clearly defined community core or center for Pearl City. The site's close proximity to Oahu's major airport, surface transportation and military harbor facilities, as well as the shifting of Oahu's future population towards Central Oahu and Ewa, suggests that the site could be much more intensively and efficiently utilized as a master planned community with mixed-use development.

To ensure ~~that~~ future development of the subject property appropriately addressed the urban expansion needs of the Pearl City area, the City and County of Honolulu entered into the aforementioned Memorandum of Understanding agreement with the U.S. Navy to acquire the fee interest in the property for a total purchase price of \$109 million.

Ordinance 91-220, adopted by the City Council on September 11, 1991, authorized the acquisition of the 108.68-acre Manana site for \$94 million and the 13.75-acre Pearl City Junction (PCJ) site for \$15 million from the U.S. Navy. The City took title to the PCJ site on July 29, 1994 and possession, effective, December 12, 1994. At the same time, the City also took possession of Parcel A (approximately 29 acres) of the Manana site, and under a Memorandum of Understanding dated August 9, 1993 between the City and the Navy, will take possession of the remaining Parcel B and C, no earlier than June 1996, unless a 6-month extension option is exercised by the Navy.

On January 25, 1995, the City Council adopted Resolution 94-327 which established a 23-member planning task force (the "Pearl City Planning Task Force") comprised of federal, state and city representatives and residents of the Pearl City and surrounding communities, to study and recommend future development plan land use options for the Manana and PCJ sites. This community-based planning effort was initiated by the Pearl City Neighborhood Board who approved the action at its October 27, 1994 meeting. Former Councilmember Boyd Andrade introduced the measure which was subsequently adopted by full Council.

The adopted resolution provided for a 180-day period ending July 25, 1995, in which the Pearl City Planning Task Force ("PCPTF") was to conduct its study and submit its recommendations to the Mayor and City Council.

The conceptual land use plan for the Manana/PCJ Development, proposed by the Department of Housing and Community Development, is based on the recommendations resulting from the community-based planning efforts of the PCPTF and is described as follows:

<u>Land Use Component</u>	<u>Approx. Acreage</u>
Commercial (Pearl City Junction)	13.8
Light Industrial / Business Park	29.0
Commercial Retail / Office	22.0
Family Entertainment Center	14.0
Medical Services Facilities	8.0
HPTA Bus Facilities	17.0
Board of Water Supply Facilities	5.0
Community Park / Youth Center	8.0
Moanalua Road Extension and Miscellaneous Open Space	<u>7.0</u>
Total acres	<u>123.8</u>

Public Facilities

Several public facility areas are planned for the Manana parcel designed to provide the City with needed maintenance facilities and a park/youth center for use by the surrounding community. Specifically, the proposed public facilities consist of a Honolulu Public Transit Authority (HPTA) bus storage/maintenance facility, a Board of Water Supply (BWS) maintenance yard and a park/youth center. The primary support infrastructure will consist of the proposed Moanalua Extension to provide the needed access into the Manana Parcel. In addition to access, this extension will relieve some of the existing and future congestion at the Waimano Home Road/Kamehameha Highway intersection.

Commercial - Pearl City Junction

Located on the makai side of Kamehameha Highway, this separate parcel of approximately 13.8 acres known as "Pearl City Junction" will likely be developed as a commercial complex and is best suited for business activities that require ample parking and easy access to major transportation corridors.

Commercial Retail/Office

Located mauka of Acacia Road from the Pearl Highlands Center, this expanded commercial area of approximately 22 acres would provide for a broad range of commercial uses to support Pearl City and surrounding communities. Integral to the mixed-use concept is the location of employment centers proximate to surrounding residential areas. For example, employment will be afforded by the medical campus, the public facilities, several commercial clusters, and the business park. Consequently, support commercial/retail businesses and office space will be necessary in the area.

This component of the Manana/PCJ Development would also supplement retail activity at the Pearl Highlands Center to create a critical mass of retail and office space drawing customers from a wider geographic area.

Light Industrial / Business Park

Similar to the positive locational attributes for retail commercial uses, the project is ideally situated to provide for the future light industrial and office space needs of the region. Located proximate to significant military facilities, and at the crossroads of Central Oahu and Ewa, the project can support a wide range of office needs in addition to professional medical services.

Family Entertainment Center

The Family Entertainment Center is characterized by a cluster of uses oriented towards providing a diverse mix of entertainment facilities for the entire family. Located at the intersection of Moanalua Road Extension and Waimano Home Road, the approximately 14-acre use provides for a broad range of commercial activities related to youth and family leisure activities. The plan envisions a multi-themed entertainment complex featuring indoor and outdoor recreation facilities.

Medical Services Facilities

Provided to accommodate a variety of medical related facilities, approximately 8 acres are provided for these types of uses. This land use component serves to focus on the

needs of the elderly and aging by providing a wide diversity of medical education facilities, hospitals, group living and assisted living facilities, etc. on a campus-like setting. In doing so, the medical campus provides vitality to the community while creating a focus for social and cultural life.

The phasing plan for the project is developed around a ten-year schedule which will include all infrastructure, facilities and operational features.

II. PROFILE OF THE EXISTING COMMUNITY

This section establishes the social context for the proposed Manana/PCJ Development land use master plan.

Historic Perspective

The project site is located on the island of Oahu, in the State of Hawaii. The Island of Oahu, which encompasses approximately 595 square miles on which the State's capitol city of Honolulu is located, is the most heavily populated island, accommodating nearly 75 percent of the State's 1,178,600 residents. From a native village based solely on agriculture, Honolulu has grown to become the State's center for business, government and tourism activities.

Description of Existing Condition and Neighborhood

The Manana and PCJ sites are presently improved with military warehouses and open storage facilities. Other improvements on the property include internal roadways, fencing along the property border and administrative buildings. All warehouses range in size from 20,000 to 50,000 square feet, however, their use was largely discontinued during the past ten years. Only short term leasing of warehousing space is conducted within those structures in better condition. For this reason, there has not been any need for public services on the site.

The project site is surrounded by well-established residential and commercial urban areas. Surrounding residential land uses include single-family residential neighborhoods, low- to mid-rise apartments, and a two-tower highrise apartment complex. Commercial uses are primarily retail and services oriented.

Existing facilities which serve adjacent subdivisions and nearby communities are expected to accommodate the project's current needs as public service and facilities planning will be gradually implemented as needs for specific services arise. Public facilities include the Pearl City Civic Center Annex, the Pearl City branch library, a police sub-station, a large park (Pacheco Playground), Pearl City Elementary School, the Pearl City Post Office and Manana Kai Park, a park located on the northeast corner of the site.

Additionally, a large area of undeveloped land to the south of the makai parcel is owned by the University of Hawaii.

Surrounding land uses adjacent to the Manana property are Residential (R-5) to the north and west, Low-Density Apartment (A-1) to the east and west, and Community Business (B-2) to the south. The adjacent land area makai of the Pearl City Junction parcel, owned by the University of Hawaii, is designated AG-1, Restricted Agriculture.

Population

The resident population of the State is estimated at 1,178,600 as of the end of 1994. Population growth has slowed in recent years, with 1993 and 1994 growth rates of 1.1 percent per year, down considerably from the growth rates in the 1950s, 1960s and 1970s that were averaging 2.0 percent per year or more.

Oahu's population is estimated 874,300 as of the end of 1994. In recent years, Oahu's population has grown at a slower rate than the State as a whole. Despite a slower projected population growth rate, Oahu is expected to continue to represent a majority of the State's population.

Table 1 reflects historical and projected population on Oahu by area. For purposes of this analysis, the island of Oahu was divided between the Ewa Census Division, the Honolulu Division and Other Oahu, areas not included in the Ewa and Honolulu divisions.

Table 1 indicates that Honolulu Division is expected to continue to have a greater population than the Ewa and Other Oahu areas through the year 2010. Honolulu is projected to represent a declining share of Oahu's population over the projected period, primarily due to the higher projected population growth in Ewa Division.

Ewa's share of Oahu's population is projected to be 273,900 by 2010, or 29.2 percent of Oahu's population, up from an estimated 28.6 percent in 1995. The population growth of the Ewa District is primarily due to the significant proliferation of housing developments occurring in the area.

Table 1
Population - Oahu and Selected Areas
1970-2010 (1)

Year	Total Oahu Population	Island of Oahu								
		Honolulu (2)			Ewa (3)			Other		
		Population	% of Oahu	Annual Growth	Population	% of Oahu	Annual Growth	Population	% of Oahu	Annual Growth
Historical:										
1970	630,500	324,900	51.5%	--	132,300	21.0%	--	173,300	27.5%	--
1980	764,600	365,000	47.7%	1.2%	191,100	25.0%	3.7%	208,500	27.3%	1.9%
1990	838,200	377,100	45.0%	0.3%	230,200	27.5%	1.9%	230,900	27.5%	1.0%
Projected: (4)										
1995	883,000	382,800	43.4%	0.3%	252,900	28.6%	1.9%	247,300	28.0%	1.4%
2000	896,300	388,600	43.4%	0.3%	258,000	28.8%	0.4%	249,700	27.9%	0.2%
2005	914,400	394,500	43.1%	0.3%	265,800	29.1%	0.6%	254,100	27.8%	0.3%
2010	937,500	402,500	42.9%	0.4%	273,900	29.2%	0.6%	261,100	27.9%	0.5%

NOTE:

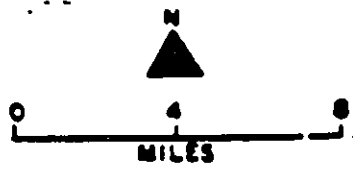
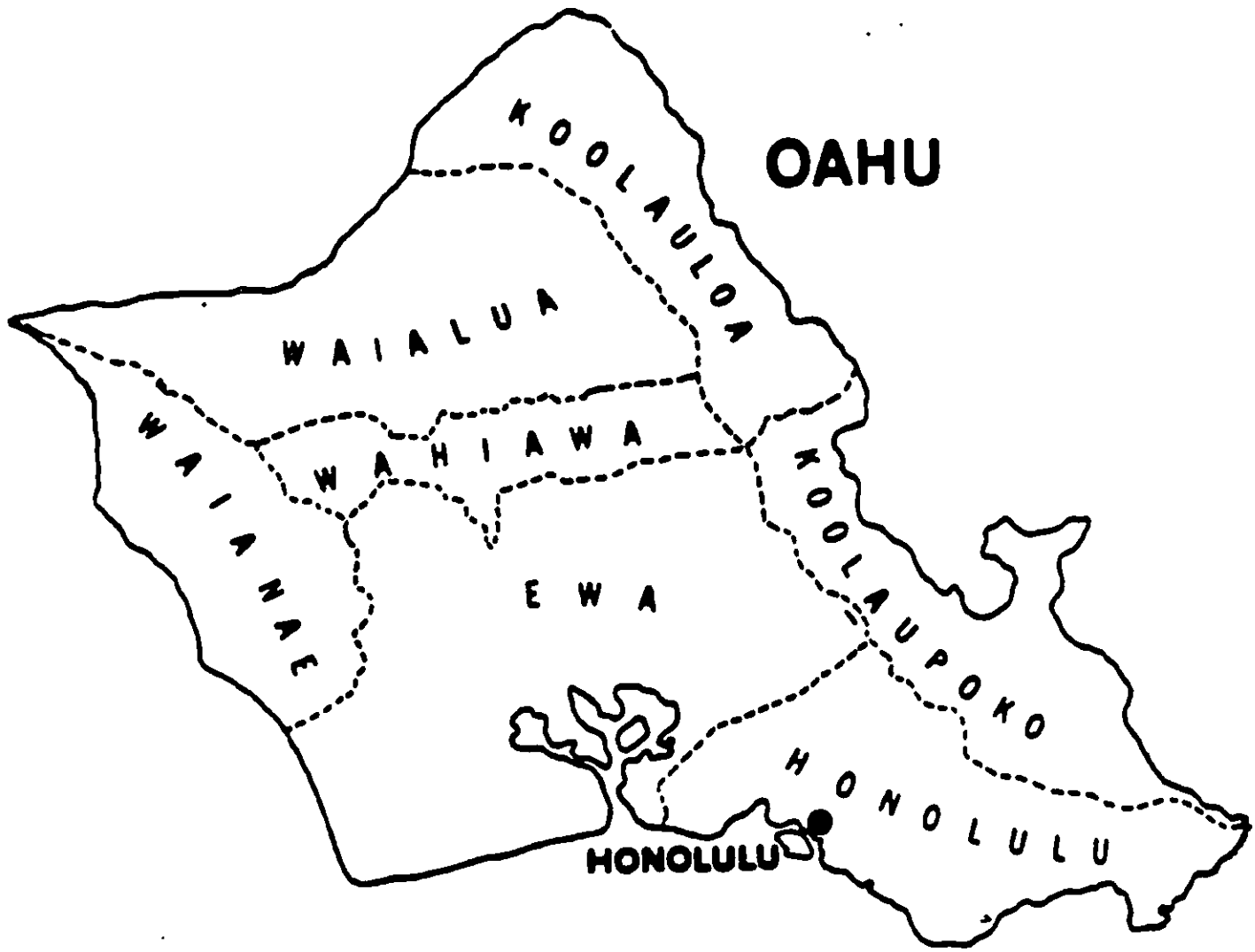
- (1) All figures are as of April 1.
- (2) Kalamia Valley (East Oahu) - Moenalu/Honolulu International Airport
- (3) Red Hill/Hickam Air Force Base - Kaha/Mililani
- (4) PKF-Hawaii projections based on projections by the Department of Planning

SOURCE:

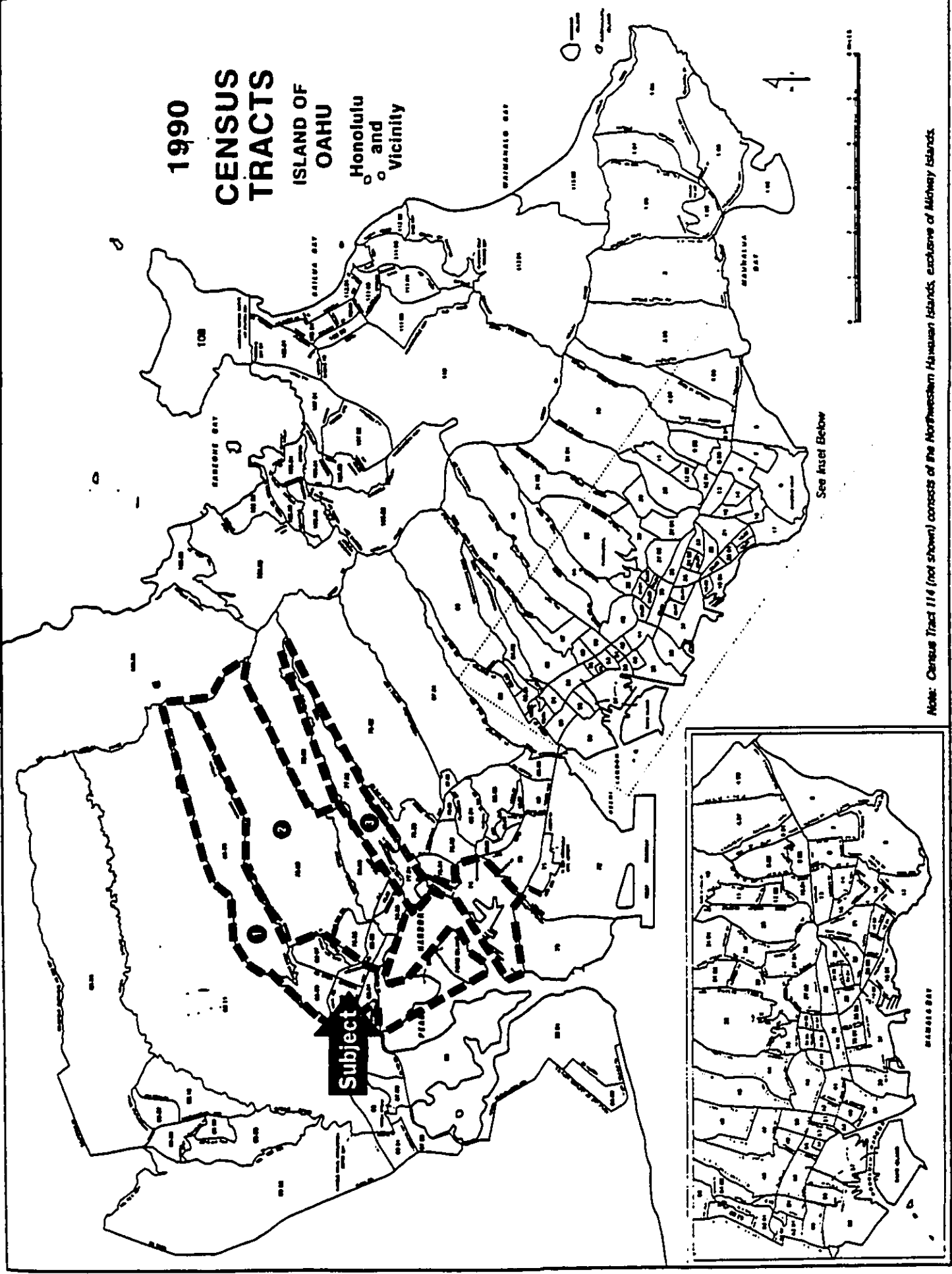
Department of Planning
U.S. Bureau of the Census, 1990 Census of Population and Housing

HONOLULU

CITY AND COUNTY



**1990
CENSUS
TRACTS
ISLAND OF
OAHU
Honolulu
and
Vicinity**



Note: Census Tract 114 (not shown) consists of the Northwestern Hawaiian Islands, exclusive of Midway Islands.

- ① Pearl City
- ② Waimalu
- ③ Aiea

It is estimated that 3,400 residential units will be completed in 1995 and an additional 17,000 residential units are anticipated to be completed between 1996 and the year 2000, thereby adding approximately 3,400 units to the area annually.

The population growth rates employed were based on the State of Hawaii Department of Business, Economic Development and Tourism Series M-K projections. Due to the fact that the Series M-K was last updated in 1988, the projected growth rates were adjusted to reflect the differences between the Series M-K projections and actual population projections used for the years 1995 through 2010. Specifically, Oahu's population growth rates were adjusted downward.

Demographic Characteristics

The proposed Manana/PCJ Development project site is contained within the U.S. Bureau of the Census, tract number 80.01 and 80.03, both of which belonging to the Pearl City CDP (census designated place, an area of 10,000 or more). The Pearl City CDP is one of a number of CDPs belonging to the Census Bureau's Ewa Division statistic.

For purposes of our study of the planning area's demographic characteristics, the Aiea CDP (containing census tracts 14, 11.01 and 77.02) and the Waimalu CDP (containing census tracts 78.03, 78.05, 78.06, 78.07, 78.08, 80.01 and 80.02) along with the Pearl City CDP, were highlighted within the Ewa Division statistics.

As indicated in Table 2, approximately 27.5 percent of Oahu's population or 230,175 people lived in the Ewa Division in 1990. Overall, Ewa residents were significantly younger than their islandwide peers, which would be expected. Within the Planning Area, the average age of the Aiea residents was significantly higher than residents in Waimalu.

The ethnicity of the Ewa Division was similar in makeup with that of the island. However, within the Planning Area, there was a significant higher percentage of people of Japanese ancestry within the Aiea, Pearl City and Waimalu communities.

Table 2
Age and Ethnicity 1990

	Island of Oahu	Honolulu Division	Ewa Division	Ewa Division		
				Aiea	Pearl City	Waimalu
Population	836,231	377,059	230,175	8,906	30,993	29,967
Age						
Less than 5	7.3%	5.7%	8.3%	5.0%	6.8%	6.9%
5 to 17 years	17.1%	14.0%	19.2%	15.0%	17.5%	16.8%
18 to 44 years	46.3%	44.2%	49.0%	39.4%	42.3%	51.6%
45 to 64 years	18.3%	20.6%	17.1%	23.5%	24.7%	18.6%
65 years and over	10.9%	15.4%	6.4%	17.1%	8.7%	6.1%
Mean Age (1)	34.2	38.1	31.0	39.2	34.5	32.4
Ethnicity						
Caucasian	31.7%	27.6%	30.8%	24.6%	21.3%	28.1%
Black	3.1%	1.9%	3.5%	1.0%	2.8%	2.5%
Chinese	7.6%	12.1%	3.9%	6.1%	4.6%	6.5%
Filipino	14.2%	12.3%	21.0%	17.1%	14.5%	12.0%
Japanese	23.8%	28.4%	25.2%	37.5%	41.8%	37.3%
Korean	2.7%	4.0%	2.1%	2.8%	2.0%	3.6%
Hawaiian	10.8%	7.6%	8.0%	9.0%	7.6%	6.2%
Other	6.2%	6.1%	5.5%	1.9%	5.4%	3.8%

(1) Calculated as the weighted average of midpoints in an age range. Top of age range set at 105 years.
Source: U.S. Bureau of the Census, 1990 Census of Population and Housing

Education and Labor Force

As illustrated in Table 3, approximately 18 percent of Oahu residents 18 years and older did not complete high school. In the Ewa Division, this percentage was lower at 15.8 percent. The Ewa Division did have a higher proportion of high school graduates than the island as a whole (32.7 percent versus 30.8 percent), but had a lower proportion of four-year college graduates (19.0 percent versus 21.6 percent).

Labor force statistics for 1990 indicate that the Ewa Division exhibited an unemployment rate similar to that of Oahu, at 2.3 percent and 2.2 percent, respectively. However, a comparison within the Planning Area indicated a relatively low unemployment rate for the Pearl City CDP at 1.7 percent.

The most recent unemployment rate for the island of Oahu is estimated at 4.7 percent in 1994.

When compared to islandwide statistics, the Ewa Division tended to mirror Oahu's occupational pattern with less than two percentage points difference in any of the categories.

As may be expected, Ewa residents tended to spend more time traveling to work than their islandwide peers. The mean travel time to work for Ewa Division residents was 29.3 minutes, for Oahu, 26.9 minutes and for Honolulu Division, 23.5 minutes.

Household and Family Characteristics

The household size for the Ewa Division of 3.54 persons per household was significantly greater than the islandwide statistic of 3.15 persons, as can be seen in Table 4. Residents of the Ewa Division tended to have larger families, 3.66 persons versus 3.27 persons of the Honolulu Division, and also had a higher proportion of family households than their Honolulu Division counterparts.

The Ewa Division's median income level of \$49,369 was significantly higher than Oahu's \$45,313.

Table 3
Education and Labor Force 1990

	Island of Oahu	Honolulu Division	Ewa Division	Ewa Division		
				Aiea	Pearl City	Waimalu
Educational Attainment <i>(for people 18 years and older)</i>						
Less than high school	17.7%	19.2%	15.8%	19.0%	15.3%	11.2%
High school graduate	30.8%	27.2%	32.7%	31.4%	38.3%	26.2%
Some college	29.9%	28.4%	32.5%	25.1%	32.0%	34.2%
Four or more years of college	21.6%	25.1%	19.0%	24.5%	14.4%	28.4%
Labor Force <i>(for people 16 years and older)</i>						
In civilian labor force	62.9%	64.5%	62.9%	61.4%	65.6%	72.6%
In armed forces	8.2%	3.2%	13.1%	3.7%	6.9%	7.9%
Not in the labor force	28.9%	32.3%	24.0%	35.0%	27.5%	19.5%
Unemployed	2.2%	1.9%	2.3%	2.1%	1.7%	1.8%
Occupation of the Civilian Labor Force <i>(for people 16 years and older)</i>						
Managerial and professional	27.7%	29.8%	25.0%	31.1%	22.1%	32.0%
Technical and sales	34.6%	35.2%	35.7%	33.1%	39.6%	35.9%
Service	16.8%	17.7%	15.7%	11.0%	15.5%	13.3%
Farming and fishing	1.5%	1.0%	1.4%	1.6%	1.0%	0.7%
Precision and craft	9.9%	8.0%	11.7%	10.7%	12.2%	11.4%
Operator and laborer	9.5%	8.3%	10.5%	12.5%	9.7%	6.5%
Mean travel time to work (1)	26.9	23.5	29.3	25.8	30.9	30.0

Note: Due to rounding, percentages may not add up to 100%.

(1) Calculated as the weighted average of midpoints in a time range. Top of range set at 109 minutes.

Source: U.S. Bureau of the Census, 1990 Census of Population and Housing

Table 4
Households and Families 1990

	Island of Oahu	Honolulu Division	Ewa Division	Ewa Division		
				Aiea	Pearl City	Waimalu
Households	265,625	138,075	65,029	2,637	8,804	10,381
Percent of family households	75.1%	66.1%	85.2%	83.8%	88.9%	74.7%
Persons per Household	3.15 persons	2.73 persons	3.54 persons	3.38 persons	3.52 persons	2.89 persons
Family Households						
Married couples	81.5%	52.0%	73.2%	70.2%	77.6%	64.8%
With children under 18	39.4%	21.2%	39.9%	25.3%	33.7%	30.9%
Female householder						
With children under 18	13.1% 5.8%	10.2% 4.0%	8.2% 4.2%	8.9% 2.0%	7.8% 3.4%	6.8% 3.5%
Persons per Family	3.50 persons	3.27 persons	3.66 persons	3.58 persons	3.67 persons	3.29 persons
Median Family Income	\$45,313	\$44,143	\$49,369	\$57,378	\$52,879	\$56,359
Percent of families below poverty level	5.4%	5.5%	3.7%	2.3%	2.4%	1.9%
Residence in 1985						
Same house	50.3%	53.3%	46.6%	69.7%	65.3%	46.1%
Same island	25.9%	26.4%	27.3%	18.0%	18.0%	32.4%
Other island	1.1%	1.1%	1.0%	0.8%	1.0%	0.6%
Other state	17.3%	12.7%	20.3%	9.1%	13.1%	17.1%
Abroad	5.3%	6.5%	4.7%	2.4%	2.7%	3.7%

Note: Due to rounding, percentages may not add up to 100%.

Source: U.S. Bureau of the Census, 1990 Census of Population and Housing

Within the Planning Area, the median income of the Aiea CDP, Pearl City CDP and Waimalu CDP were even higher at \$57,378, \$52,879 and \$56,359, respectively.

In terms of residential stability, the Ewa Division was slightly lower than that of the islandwide community as the proportion of families who lived in the same house for at least five years was about 46.6 percent versus Oahu's 50.3 percent.

Table 5 illustrates population by age group for the State and the three designated divisions on Oahu. The most sizable age group is under 25 years representing nearly 40 percent of the Ewa population. This group combined with the 25- to 44-year age group represents nearly 76 percent of the population in the Ewa Division. The data indicates that the Ewa Division is comprised primarily of young families.

Based on the latest census statistics, there were 65,029 households in the Ewa Division. Of these households, 68 percent have two to four persons in the household. Table 6 shows the number of households by householder age and household income for the Ewa Division. Nearly 19 percent of the households earn incomes over \$75,000 and approximately 32 percent earn incomes below \$35,000. The median household income for the Ewa Division was \$47,218, significantly higher than the City and County of Honolulu median household income of \$40,581.

Economic Profile

Selected economic data for Oahu from 1990 through 1994 is presented in Table 7.

Total job count which exhibited strong growth between 1992 and 1990, was off between 1994 and 1992 falling from 443,850 jobs in 1992 to 436,300 in 1994. During the period, the island's unemployment rate increased from 2.4 percent to 4.7 percent.

Much of this coincided with the economic slowdown experienced Statewide due to the prolonged recession on the mainland U.S. and the bursting of the Japanese "bubble" economy.

Table 5
Households by Householder Age
1990 (1)

Age	State of Hawaii	Island of Oahu	Island of Oahu		
			Honolulu Div.	Ewa Division	Other
Under 25 years	14,900	12,300	5,700	3,300	3,300
25 to 44 years	160,600	119,000	55,400	34,200	29,400
45 to 64 years	108,100	81,400	42,100	20,300	19,000
65 years and over	72,700	52,600	34,800	7,300	10,500
Total	356,300	265,300	138,000	65,100	62,200

NOTE:

(1) All figures are as of April 1.

SOURCE:

U.S. Bureau of the Census, 1990 Census of Population and Housing

Table 6
Households by Householder Age and Household Income
Hawaii, Oahu and Selected Areas
1989 (1)

Income	State of Hawaii				Island of Oahu				Island of Oahu				Other			
	Under 25		45 to 64		Under 25		45 to 64		Under 25		45 to 64			65 & over		
	11,900	71,800	33,400	41,200	10,000	52,000	22,600	27,600	4,600	27,200	14,600	18,700				
Under \$35,000	1,800	35,500	19,100	11,600	1,300	26,100	13,900	8,700	700	11,300	7,200	5,500	400	3,300	3,400	26,300
\$35,000 to \$49,999	900	34,600	26,900	11,100	700	26,400	20,900	9,000	300	10,300	8,900	5,700	300	3,500	1,300	11,500
\$50,000 to \$74,999	300	18,600	28,800	8,800	200	14,600	24,000	7,300	100	6,600	11,400	4,900	100	6,700	1,600	13,500
\$75,000 and over	14,900	160,500	108,200	72,700	12,200	119,100	81,400	52,600	5,700	55,400	42,100	34,800	3,300	20,300	7,300	10,900
Total	14,900	175,400	283,600	356,300	14,900	283,600	356,300	265,300	138,000	65,100	62,200	62,200				

Income	Ewa				Aiea				Ewa				Other			
	Under 25		45 to 64		Under 25		45 to 64		Under 25		45 to 64			65 & over		
	2,500	11,600	3,300	3,400	50	200	100	300	300	1,300	500	700				
Under \$35,000	400	8,600	3,500	1,300	50	200	200	200	50	700	600	200	100	500	400	14,550
\$35,000 to \$49,999	300	9,700	6,700	1,600	0	200	300	200	50	800	1,300	300	100	1,000	200	9,500
\$50,000 to \$74,999	100	4,300	6,800	1,000	0	200	400	100	0	300	1,500	200	0	1,200	100	11,950
\$75,000 and over	3,300	34,200	20,300	7,300	100	800	1,000	800	400	3,100	3,900	1,400	600	3,200	800	7,200
Total	3,300	34,200	20,300	7,300	100	800	1,000	800	400	3,100	3,900	1,400	600	3,200	800	43,200
Total Households				65,100				2,700				8,800			10,400	43,200

NOTE:
(1) All figures are as of April 1.

SOURCE:
U.S. Bureau of the Census, 1990 Census of Population and Housing

Table 7
Economic Data for Island of Oahu

	Unit	Period	1990	1992	1994
Total Job Count	Number	Mo. Avg.	435,400	443,850	436,300
Unemployment Rate	Percent	Mo. Avg.	2.4	3.2	4.7*
Gross Business Receipts	\$ Millions	Total	35,510	36,651	38,540
State Tax Collections	\$ Millions	Total	2,256	2,483	2,671
Estimated Westbound Visitors	Thousands	Total	3,171.6	2,534.4	2,395.0
Estimated Eastbound Visitors	Thousands	Total	2,179.3	2,349.8	2,323.9
Construction Put in Place	\$ Millions	Total	3,415	3,343	2,731

*Data for 1994 are based on revised methodology, and are not directly comparable with previous years.

Source: First Hawaiian Bank - Research Department

As seen in the dramatic decline in Oahu's westbound visitor count which fell from 3.2 million in 1990 to approximately 2.4 million in 1994. This sharp decline was also due in part to a greater number of westbound visitors bypassing Oahu and heading directly to the Neighbor Islands.

Another key sector of the island economy exhibiting clear weakness was the construction industry which was fueled in the 1980s to the beginning of 1990s in part by foreign investment interest. With the slowdown of the Japanese economy, a large segment of construction spending was deferred or terminated. Between the years of 1994 and 1990, construction put in place dropped 20 percent falling from \$3.4 billion to \$2.7 billion.

III. POTENTIAL SOCIAL IMPACTS

This section presents potential social impacts resulting from implementation of the proposed Manana/PCJ Development conceptual land use master plan.

Resident Population and Housing

As discussed above, the resident population in the surrounding neighborhood communities are established, with much of the population growth occurring west of the project site in the Ewa. The proposed Manana/PCJ Development land uses reflect no residential development and, accordingly, is not planned to facilitate new population growth in the area through establishment of new residential land uses. However, the project will provide needed services in response to the projected population growth of Central Oahu and Ewa.

Existing Neighborhood

The proposed project's mix of land uses will increase the level of activity in the area and will alter the character of the bordering neighborhood to some extent. The proposed extension of Moanalua Road, envisioned as a landscaped parkway, offers the opportunity to continue the existing circulation pattern through the project area and also serve as an alternate route to Waimano Home Road, thereby reducing the existing congestion at the Kamehameha Highway intersection.

The proposed plan provides for the future connection of the Moanalua Extension Road to Kuahaka Street via the old Cane Haul Road right-of-way to improve access to the Holiday City and surrounding neighborhoods. This extension would also provide relief to the existing congestion at the intersections of Noelani Street and Moanalua Road with Waimano Home Road.

The old Cane Haul Road property will require the displacement of three separate dwellings; two single-family rental dwellings at the Moanalua Road/Waimano Home Road end owned by the Good Samaritan Church (TMK: 9-7-24:26) and one single-family rental dwelling at the Kuahaka Street end owned by a Mr. Butch Burke (TMK: 9-7-74:74). The residents along the property currently enjoy privacy and a general quiet ambience. This roadway improvement will alter this character and even though there may be expectation for change in this area, the actual experience of the increased traffic and activity may be difficult for some residents.

The neighborhoods farther away are not expected to be affected by the project. The new shops, office buildings and other establishments will add to the convenience and services currently enjoyed by community residents.

Public Services and Facilities

Schools

The public schools closest to the project site are: Pearl City and Manana Elementary Schools, Pearl City Highlands Intermediate and Pearl City High School. Employment opportunities generated by the project may encourage the relocation of some new residents to the Pearl City area school system from other areas of Oahu, however, none of the proposed land uses will directly contribute towards an increase in school age population.

According to the Department of Education, their primary concern will focus on the impact of construction on existing schools in the area, especially in terms of mitigation measures available to control dust. Therefore, the City has agreed to coordinate developer activity with Department of Education officials to identify appropriate erosion and dust control measures while school is in session.

Police Protection

The District's police protection services are provided by officers from the Pearl City Police Station located on Waimano Home Road. Due to the close proximity of the Pearl City Police Station, response time to the subject property is relatively prompt and will continue to be so after project development.

As with any higher intensity land use, there will be an occasional and unavoidable demand for police protection services. However, appropriate lighting, security gates and barriers, and other security devices and management practices will be coordinated with the assistance of the Honolulu Police Department.

Fire Protection

The site's fire protection service will be provided by the Pearl City Fire Station located at 866 First Street, approximately 1.5 miles from the subject property.

The neighborhoods farther away are not expected to be affected by the project. The new shops, office buildings and other establishments will add to the convenience and services currently enjoyed by community residents.

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Fire Protection

The site's fire protection service will be provided by the Pearl City Fire Station located at 866 First Street, approximately 1.5 miles from the subject property.

Backup fire protection service is provided by another fire station located approximately 3 miles from the site in Waipahu on Leonui Street and a military fire station is located on property adjacent to the site on Acacia Road. The Waiiau Station is also located on Komo Mai Drive. As such, response times in case of emergency are relatively prompt.

With the construction and development of the proposed plan and , an increased demand for fire protection services should be expected.

Health Care / Hospitals

The 116-bed Kapi'olani Hospital, formerly Pali Momi, is nearest the site approximately 2 miles from Manana in Aiea. Ambulance service to the hospital from the site is therefore sufficient.

A 122-bed long-term care facility located on Lehua Street, a few blocks away from the subject property, was recently completed.

The medical facilities land use component proposed as part of the master plan is expected to attract additional health care providers and services to the area, thus enhancing the degree and level of services available to the surrounding communities.

Recreational Facilities

Existing public recreational facilities in the Pearl City District include Manana Kai Park, Manana Neighborhood Park, Pacheco Playground, Pearl City Recreational Center, Waiiau District Park, Waiiau Park and Pearl Harbor Park.

The proposed plan will expand public recreational opportunities in the Pearl City area by adding approximately 6 to 8 acres of additional park. The Moanalua Extension will allow for improved vehicular traffic to the existing Manana Kai Park which will encourage more efficient use of the existing park facilities. The need for additional vehicular parking servicing the park areas will be determined as plans for the land uses proposed for adjacent properties are finalized during the development process.

Based on the improvements in access to existing facilities and the addition of new park land, the impact on existing recreational resources is expected to be positive. The proposed project will not directly increase the population in the area or the demand for recreational opportunities.

IV. PRELIMINARY COMMUNITY ISSUES

Whereas potential social impacts are changes which are likely to occur due to the proposed project, community issues are people's reactions to the proposed actions. Issues are opinions, and they change over time, as people's priorities and values change.

This section presents preliminary issues related to the Manana/PCJ Development conceptual land use master plan. These issues were identified during the course of the community-based planning effort conducted by City and community officials pursuant to Council Resolution 94-327.

Community-Based Planning Effort

During the months from January 1995 and July 1995, eight task force meetings and four community meetings were conducted by the Pearl City Planning Task Force specifically addressing the Manana/PCJ Development.

Meeting times and dates were publicized through paid advertisement in the local area newspaper, the Leeward Current, the Ka Leo Lalo newsletter, community banners, press advisories and canvassing efforts by members of the PCPTF and the staff of the Department of Housing and Community Development. Community representatives also served as liaisons between their respective community associations and groups to disseminate information obtain at each task force and community meeting.

The PCPTF schedule ran concurrent with the planning timetable of the Department of Housing and Community Development and its consultants, PKF-Hawaii and PBR Hawaii, to allow for a free exchange of information and discussion on significant planning issues.

As part of the community-based planning process, the City Administration established three Development Objectives to serve as the foundation upon which the conceptual land use plan would be based. The Development Objectives read as follows:

To develop the Manana Property in a manner which addresses the needs of the City and Community while maintaining fiscal responsibility.

- The Project must be developed in a fiscally responsible manner.
- At the same time, the Project should address the impacts on its neighboring community and provide social benefits to the community.
- Lastly, the Project should meet the needs of various departments of the City and County of Honolulu (i.e. City Bus Facility, Public Works Facilities, Board of Water Supply, etc.).

In addition to the Development Objectives set forth by the City, the development criteria which would provide the framework on which each proposed land use would be evaluated was embodied in a vision statement developed by the PCPTF. The "Vision Statement" adopted by the PCPTF read as follows:

"The Manana property provides an opportunity for the residents of Pearl City and its surrounding communities to improve their quality of life and establish a positive, unique and long-term identity for the area that they can be proud of. The Pearl City Task Force strives to meet the current and future needs of this neighborhood while also incorporating the requisites of the City and County of Honolulu.

The community-based land use recommendations of the task force should include:

- a public safety component;
- a component that focuses on the needs of the youth of the area;
- an economic development component that does not diminish the growth and health of existing businesses;
- City facilities to serve the general public;
- a component that focuses on the needs of the elderly and aging;
- an education component to support population growth from the newly developed area.

The development of the site should seek to:

- address the transportation impacts of the immediate and surrounding area;
- aesthetically meld into the existing community;
- mitigate the impact of the new development;
- be environmentally safe;
- provide jobs;
- be socially beneficial to the community with the addition of open space and recreational areas.

In the PCPTF's final report, the conceptual land use plan for the Manana/PCJ Development, which provided for a mix of commercial and light industrial uses as the primary land use component, was based on the needs expressed by the community and on the economic feasibility of the potential land uses.

The final report of the Pearl City Planning Task Force was submitted to the City Council on August 30, 1995 by Councilmember Mufi Hanneman. On September 20, 1995, the City Council adopted Resolution 95-301 accepting the recommendations and report of the PCPTF.

Issues and Concerns

As stated above, a series of eight task force meetings and four community meetings were held as part of the community-based planning effort. A detail record of the meetings have been compiled by City officials and Community members of the PCPTF and is an integral part of the PCPTF's final report. Major issues and concerns arising from these meetings are summarized in the discussion below.

Traffic

Traffic has been, is and will be, a significant problem for the area. During the planning process, it became apparent to the community that any development of the Manana and PCJ parcels would create more traffic.

The introduction of the Moanalua Extension by the Pearl City Neighborhood Board No.21 (based on its own three-year study to analyze the increase in roadway traffic volumes due to the opening of the Pearl Highlands Center and other nearby developments, including the eventual development of the Manana and PCJ sites) led to the eventual proposed improvement of the "spine" road through the development to open up the traffic flow to and from the area. The proposed improvement of the "Cane Haul Road" property to a secondary roadway connecting with Kuahaka Street was opposed by the property owners adjacent to the Cane Haul Road property.

Youth and Family

Very strong community emotion was also evident throughout the planning process for the need to address youth issues. General opinion was that with the decrease of parental supervision due to the fact that both parents often need to work to make ends meet, and a lack of youth-oriented facilities and activities, young people fill their free time with unproductive activities such as hanging out at shopping centers. On several occasions youth members of the Pearl City Youth Task Force participated in the PCPTF meetings to express their desire for the development plan to promote activities focussed on youth and family activities.

Community Identity - A "Sense of Place"

Related to this, was the need for the development to create a sense of "place" and "identity" for the community residents. In this light, strong support for the Family Entertainment Center land use was apparent. The location of this land use which abuts existing residential units and at a major intersection for the area, was introduced and promoted by the PCPTF to place it in a highly visible and accessible area of the development. The location of the public park area adjacent to this land use component and the potential development of a Youth Center within the designated Park area also received very strong community support. This entire land use area is expected to develop as a center for family and youth activity thereby lending itself towards becoming somewhat of a "town center" for the community.

Jobs Creation

An issue which gained momentum throughout the process and which worked counter to the traffic situation, was the need for employment options for the area. Once the Task Force and community accepted the traffic impact of the development, more focus was afforded to the importance of attracting jobs to the area. This led to the inclusion of the light industrial/business park and other commercial land uses to the plan.

Elderly Care

The community was also concerned with the needs of its aged and elderly residents and the lack of available service facilities to support the growing needs of this age group. The community felt that the development of a Youth Center facility could also serve as a dual purpose and offer a gathering place for social activities for this group. The initial concept of a large medical campus offering a full spectrum of health and wellness facilities and services covering 30 acres, was eventually scaled down to the proposed 8-acre use to attract services addressing this need. Location of the land use component nearby to the Family Entertainment Center and the Park/Youth Center land uses was preferred by the community members.

Memorial Park

A memorial park land use component which was a part of the Medical Campus concept was eventually dismissed by the community as an unacceptable use, although this land use component was part of one of the two land use plans put up for final vote by the PCPTF at the last Community meeting. Aspects of the land use component which were favored by the community included its relative low traffic impact, its open space and landscaped theme, its relative low noise impact and its low impact on the existing businesses of the area. Unfavorable aspects of the land use centered around the personal and cultural beliefs of the residents of the area. This use also did not address the youth needs of the vision statement and the not create the "sense of place" that the community could accept.

V. CONCLUSIONS

The Ewa Division Planning Area appears to be a homogeneous community with socio-economic characteristics similar to other established bedroom communities. The community is predominantly comprised of established but young families with household sizes larger than the islandwide average. The community is ethnically diverse with the largest segment being of Japanese ancestry.

Median household incomes for the area are higher than the islandwide average and is representative of the middle class status that is reflected in other socio/economic indicators. Employment for the area residents is very high with a larger percentage of those employed working in technical/sales and managerial/professional positions. There is a high percentage of long-time residents to the area indicating a strong and stable community spirit.

The proposed Manana/PCJ Development which is the result of a community-based planning effort will significantly alter the character of the existing community by incorporating 122 acres of land previously off-limits to the surrounding residents. The plan will attract new business development to the area and will serve to invigorate job creation and expansion of services within the community. The improvements and facilities which are a part of the plan will significantly enhance the natural "gathering places" for its residents through the expansion and improved utility of parks and recreational activities.

The plan also establishes significant roadway improvements which serve to address sensitive concerns of residents who have long suffered the hardships of a difficult traffic condition. As the plan continues to evolve, traffic concerns will be a focal point of discussion and analysis for the community, the City and the ultimate developers of the property.

Most importantly, the plan will begin to define the identity for the area which community members of the PCPTF believe to be lacking for its residents. The strong support of those land uses which encouraged family and youth activities provide clear expression of the community's needs and concerns.

**CITY & COUNTY OF HONOLULU
DEPARTMENT OF HOUSING
& COMMUNITY DEVELOPMENT**

**Manana and Pearl City Junction Development
Conceptual Land Use Master Plan
Economic and Fiscal Impact Assessment**

January 1996



HAWAII

January 16, 1996

*Represented by
The CPA Consulting Group, Inc.
A Professional Corporation*

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Honolulu, Hawaii 96813-2833
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FAX (808) 531-2353

Mr. Roland Libby, Director
Dept. of Housing and Community Development
City & County of Honolulu
650 S. King Street
Honolulu, Hawaii 96813

Dear Mr. Libby:

In accordance with your request we have completed our economic and fiscal impact assessment relating to the Manana and Pearl City Junction Development Conceptual Land Use Master Plan.

The conclusions reached are based on our analysis of the various markets, economic conditions and tax rates in Hawaii as of the completion of our fieldwork on January 8, 1996.

We have estimated the fiscal and economic impacts of the Manana and Pearl City Junction Development Conceptual Land Use Master Plan. The limitations that apply to this report are included in Exhibit A following this letter.

Very truly yours,

LIMITATIONS OF THE STUDY

1. Management is responsible for disclosure of significant information that might affect the ultimate realization of the projected results.
2. We have no obligation to update our findings regarding changes in market conditions which occur subsequent to the completion of our fieldwork.
3. Our report, and the material submitted, may not be used in any prospectus of printed material used in connection with these sale of securities or participation interests to the public.
4. The scope of our study and reports thereon would not include the possible impact of zoning or environmental regulations, licensing requirements or other such matters unless they have been brought to our attention and are disclosed in the report.
5. Any drafts or preliminary information communicated to you during the course of the assignment are for your internal management use only, and may not be disclosed to any outside third parties without prior written consent.
6. Since all projections are based on estimates and assumptions which are subject to uncertainty and variation, we do not represent them as results that will actually be achieved.
7. Any changes from the assumptions of estimates used in our study, due to unforeseen economic or other subsequent changes in the environment, may lead to substantial differences in actual results when compared to our report.
8. PKF-Hawaii's maximum liability relating to the consulting services outlined above, regardless of form of action, whether in contract negligence or otherwise, shall be limited to the charges paid to PKF-Hawaii for the portion of its services or work products giving rise to liability. In no event shall PKF-Hawaii be liable for consequential, special incidental punitive loss, damage or expense.
9. The analysis does not in any way purport to be an appraisal of the proposed development and is not necessarily in accordance with the Appraisal Institute.

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EXECUTIVE SUMMARY

This report estimates the economic and fiscal impacts expected to result from the implementation of the Manana and Pearl City Junction Conceptual Master Plan. Specifically, the report estimates the impacts of the development on the economy, with respect to such items as development value, job creation and income generation. The second section addresses estimated impacts of the development on the governments of the City and County of Honolulu and the State of Hawaii, including estimated tax generation and the costs of providing government services to the development area.

The results of the report are summarized as follows:

Estimated Economic Impacts Manana and Pearl City Junction Conceptual Master Plan

	Project Years	
	1 - 5	6 - 10
Development Value	\$208,600,000	\$83,300,000
Employment - Development	820 jobs	480 jobs
Employment - Operations	2,900 jobs	1,800 jobs
Employment Income - Development	\$38,500,000	\$22,500,000
Employment Income - Operations	\$187,680,000	\$572,700,000

**Estimated Fiscal Impacts
Manana and Pearl City Junction Conceptual Master Plan**

	<u>Project Years</u>	
	<u>1 - 5</u>	<u>6 - 10</u>
Real Property Tax Revenues	\$5,180,000	\$11,250,000
Retail General Excise Tax Revenues	\$7,880,000	\$21,920,000
State Income Tax Revenues	\$8,050,000	\$21,190,000
City & County Revenues - Year 10		\$2,430,000
City & County Expenditures - Year 10		\$1,370,000
City & County Loss on Acquisition Cost		\$18,400,000
State of Hawaii Revenues - Year 10		\$9,400,000
State of Hawaii Expenditures - Year 10		\$2,280,000

The implementation of the Manana and Pearl City Junction Conceptual Master Plan is estimated to result in bringing a significant amount of employment to the project area and to create government revenues, in the form of property, excise and income taxes, in excess of the cost of providing additional government services. It does appear, however, that the City and County of Honolulu will realize a loss of more than \$18 million on the acquisition cost of the land and the implementation of the Master Plan.

INTRODUCTION

This report estimates the economic and fiscal impacts expected to result from the implementation of the Manana and Pearl City Junction Conceptual Master Plan located in Pearl City, Oahu. The report contains two sections, the first estimating the impacts of the development on the economy, with respect to such items as development value, job creation and income generation. The second section addresses estimated impacts of the development on the governments of the City and County of Honolulu and the State of Hawaii, including estimated tax generation and the costs of providing government services to the development area.

PROJECT DESCRIPTION AND BACKGROUND

The Manana and Pearl City Junction properties are located in Pearl City in the City and County of Honolulu. The Manana site consists of two parcels totaling approximately 108.5 acres, while the Pearl City Junction site, located on Kamehameha Highway, is 13.8 acres in area. The subject parcels are identified as follows:

<u>Tax Map Key</u>	<u>Acreage</u>
9-7-24:06 (por)	108.0
9-7-24:41	0.5
9-7-23:01	<u>13.8</u>
Total	<u>122.3</u>

The Manana and Pearl City Junction properties are within an established community with existing residential, commercial and civic facilities. The properties currently contain warehouses built by the United States Navy (Navy). Most of the warehouses are no longer in use, although the Navy does continue to use some of the warehouses and a number have been leased on a short-term basis. Pursuant to a Memorandum of Understanding dated August 1993, the Navy agreed to sell the Manana and Pearl City Junction properties to the City and County of Honolulu (City). Ownership of all of the property will transfer to the City by June 1996 unless the Navy exercises its option to extend its use of part of the Manana property for an additional six months.

In order to identify appropriate uses for the Manana and Pearl City Junction properties, the City, through the Department of Housing and Community Development (DHCD), hired PKF-Hawaii as lead consultant on the project. PKF-Hawaii retained PBR Hawaii to assist with the development of a conceptual master plan. The City Council adopted resolution 94-327 establishing the Pearl City Planning Task Force consisting of community members, elected officials and representatives of various City agencies to make recommendations regarding future use of the properties. The resolution provided for a 180-day period ending July 29, 1995, in which the Pearl City Planning Task Force was to submit its recommendations to the Mayor and the City Council.

Between January and August a total of 13 community and task force meetings were held. As a result of this community-based planning process, the Task Force recommended the following land use program for the Manana and Pearl City Junction properties:

<u>Land Use</u>	<u>Acreage*</u>
Commercial (Pearl City Junction)	13.8
Light Industrial/Business Park	29.0
Commercial Retail/Office	22.0
Family Entertainment Center	14.0
Medical Facilities	8.0
Bus/Handi-Van	17.0
Board of Water Supply	5.0
Community Park/Youth Center	8.0
Moanalua Road Extension and Miscellaneous Open Space	<u>7.0</u>
Total	<u>123.8</u>

*Acreages shown here are approximate and are for general planning purposes only.

This economic and fiscal impact assessment addresses the estimated impacts of the anticipated private sector elements of the master plan. Accordingly, the Bus/Handi-Van and Board of Water Supply facilities have not been included in this analysis.

In order to estimate the economic and fiscal impacts of the Manana and Pearl City Junction Conceptual Master Plan, a number of assumptions needed to be made regarding the absorption of the various land uses and the characteristics of the built-out development. This was necessary because the master plan for the properties is a conceptual plan outlining land use rather than the development of specific facilities. The actual development that occurs on the properties will be dictated by prevailing market conditions over the projected seven to ten year absorption period. For the purpose of this analysis, it has been estimated that the Pearl City Junction, Commercial Retail/Office and Family Entertainment Center will each have a ratio of 15,000 square feet of leasable space per acre, while the Light Industrial/Business Park will have 25,000 square feet of leasable building space per acre and the Medical Facilities will have 30,000 square feet of leasable space per acre.

ESTIMATED ECONOMIC IMPACTS

The direct economic impacts of the Manana and Pearl City Junction Conceptual Master Plan during a ten-year period have been estimated. Factors such as development value, employment generation, both during the development phase and the fully built-out operational phase and

employment income have all been considered. All dollar values used in the analysis are stated in current 1995 dollars.

Projected Absorption of Land

The Manana and Pearl City Junction Conceptual Master Plan is projected to be fully absorbed within a ten-year period, as can be seen in Table 1. For the Commercial and Light Industrial uses, the absorptions were based on the 20 percent market capture rates contained in the Market Assessment. The family entertainment center use was assumed to have an annual absorption of three acres per year, similar to that of the commercial component. The medical land was assumed to have a two year absorption period, based on the tight market for medical office space in the area and the need for long-term care facilities.

While most of the land uses in the master plan are expected to be absorbed over a period of several years, the Pearl City Junction property has been assumed to be absorbed in the first year, since the marketing of the site for sale will begin well in advance of the subdivision and sale of the Manana property. Table 2 contains an estimate of the build-out of improved square footage of the master plan, based on the estimated absorption and densities discussed previously.

Development Value

The estimated development value of the Manana and Pearl City Junction Conceptual Master Plan is approximately \$292 million, as shown in Table 3. The market assessment performed for the project previously indicated land values ranging between \$30 and \$40 per square foot for the Manana and Pearl City Junction properties. For the purposes of estimating economic and fiscal impacts, an average land value of \$35 per square foot has been used. In addition to the land values of \$35 per square foot, construction values of \$75 per square foot for the Light Industrial/Business Park and \$100 per square foot for all remaining components have been utilized, based on discussions with various real estate professionals. All amounts are stated in constant 1995 dollars.

Development Period Employment

Table 4 contains an estimate of the employment generated by the build-out of the master plan. Development period employment was estimated by dividing total estimated construction value by a construction value per construction value factor of \$123,000, determined by dividing the 1993 general excise tax base for contracting by the 1993 construction job count, adjusted to 1995 dollars. Through year five of the development, it is estimated that the project will generate a total of 820 construction jobs, or an average of 164 per year. During years six through ten, the project is estimated to generate 480 construction jobs, or an average of 96 per year.

Table 1
Estimated Absorption of Land
Manana and Pearl City Junction Conceptual Master Plan

Component	Total Acreage	Annual Absorption	Absorption Period In Years	Percent Absorbed Years 1 - 5	Percent Absorbed Years 6 - 10	Acres Absorbed Years 1 - 5	Acres Absorbed Years 6 - 10
PCJ	13.8	13.8	1.00	100%	0%	13.8	0.0
Industrial	29.0	4.0	7.25	69%	31%	20.0	9.0
Commercial	22.0	3.0	7.33	68%	32%	15.0	7.0
Family Ent. Ctr.	14.0	3.0	4.67	100%	0%	14.0	0.0
Medical	8.0	4.0	2.00	100%	0%	8.0	0.0
Bus	17.0						
BWS	5.0						
Road/Park	<u>15.0</u>						
Total	123.8						

Source: PKF-Hawaii

Table 2
Estimated Square Footage Build-Out
Manana and Pearl City Junction Conceptual Master Plan

Component	Total Acreage	Improved Square Feet Per Acre	Square Feet Built Out Years 1 - 5	Square Feet Built Out Years 6 - 10	Total Built-Out Square Footage
PCJ	13.8	15,000	207,000	0	207,000
Industrial	29.0	25,000	300,000	425,000	725,000
Commercial	22.0	15,000	135,000	195,000	330,000
Family Ent. Ctr.	14.0	15,000	135,000	75,000	210,000
Medical	8.0	30,000	240,000	0	<u>240,000</u>
Total					<u>1,712,000</u>

Source: PKF-Hawaii

Table 3
Estimated Development Value
Manana and Pearl City Junction Conceptual Master Plan

<u>Component</u>	<u>Construction Value Per Square Foot</u>	<u>Land Value Per Square Foot</u>	<u>Development Value Years 1 - 5</u>	<u>Development Value Years 6 - 10</u>
On-site Infrastructure			\$6,500,000	\$0
PCJ	\$100	\$35	\$41,700,000	\$0
Industrial	\$75	\$35	\$53,000,000	\$45,600,000
Commercial	\$100	\$35	\$36,400,000	\$30,200,000
Family Entert. Center	\$100	\$35	\$34,800,000	\$7,500,000
Medical	\$100	\$35	<u>\$36,200,000</u>	<u>\$0</u>
Period Total			<u>\$208,600,000</u>	<u>\$83,300,000</u>
Cumulative Total				<u>\$291,900,000</u>

Source: PKF-Hawaii

Table 4
Estimated Development Period Employment
Manana and Pearl City Junction Conceptual Master Plan

<u>Component</u>	<u>Construction Value</u> <u>Years 1 - 5</u>	<u>Construction Value</u> <u>Years 6 - 10</u>
On-site Infrastructure	\$6,500,000	
PCJ	\$20,700,000	\$0
Industrial	\$22,500,000	\$31,875,000
Commercial	\$13,500,000	\$19,500,000
Family Entert. Center	\$13,500,000	\$7,500,000
Medical	<u>\$24,000,000</u>	<u>\$0</u>
Total Construction Value	\$100,700,000	\$58,875,000
Construction Value per Construction Job (1)	<u>\$123,000</u>	<u>\$123,000</u>
Total Construction Jobs Generated	<u>820</u>	<u>480</u>
Average Construction Jobs Generated Annually	<u>164</u>	<u>96</u>

**Note: (1) Based on General Excise Tax base for contracting
and contracting employment.**

Source: PKF-Hawaii

Operational Period Employment

Based on the estimated build-out of the Manana and Pearl City Junction Conceptual Master Plan, the project's components are projected to account for 2,900 jobs in the first five years of the development, and an additional 1,800 jobs in years six through ten, for a cumulative total of 4,700 jobs. Table 5 contains the estimated employment within the development.

Employment and Income

As can be seen in Table 6, implementation of the Manana and Pearl City Junction Conceptual Master Plan is projected to generate a total of approximately \$821 million in employment income over the first ten years of the development. Employment income was estimated by multiplying estimated employment by the U.S. Bureau of Labor Statistics 1992 average wages for all Hawaii workers, adjusted to 1995 dollars. This includes both the projected income during the development phase, when the project is expected to be built-out, and the income of persons employed in the project on a fully operational basis. All dollar values are stated in constant 1995 dollars.

ESTIMATED FISCAL IMPACTS

This section estimates the fiscal impacts of the Manana and Pearl City Junction Conceptual Master Plan on the public sector. Specifically, the estimated City and County of Honolulu and State of Hawaii revenues and expenditures associated with implementation of the master plan are considered. Since the Manana and Pearl City Junction properties were previously owned and used by the United States Navy, The City and County of Honolulu and the State of Hawaii neither received revenues from the properties in the form of real property taxes, nor provided services to the properties.

Revenues - City and County of Honolulu

At full buildout, the 86.8 acre Manana and Pearl City Junction project is expected to contain a total of 1,172,000 square feet of improved space, as previously shown in Table 2. Applying the current City and County of Honolulu real property tax rates for commercial and industrial land and improvements of \$8.51 per \$1,000 of assessed value yields estimated real property tax collections of \$5,180,000 in the first five years of the project, and \$11,250,000 in years six through ten, as can be seen in Table 7.

Table 5
Estimated Employment
Manana and Pearl City Junction Conceptual Master Plan

Component	Average Square Footage Per Employee (1)	Employment Generation Years 1 - 5	Employment Generation Years 6 - 10
PCJ	350	590	0
Industrial	450	670	940
Commercial	300	450	650
Family Ent. Ctr.	350	390	210
Medical	300	<u>800</u>	<u>0</u>
Period Total		<u>2,900</u>	<u>1,800</u>
Cumulative Total		<u>2,900</u>	<u>4,700</u>

Note: (1)Based on City & County of Honolulu Department
of General Planning space requirement ratios.

Source: PKF-Hawaii

**Table 6
Employment and Income
Manana and Pearl City Junction Conceptual Master Plan**

<u>Development Phase</u>	Development Phase Employment <u>Years 1 - 5</u>	Development Phase Employment <u>Years 6 - 10</u>
Total Development Employment	820	480
Average Construction Income	<u>\$46,900</u>	<u>\$46,900</u>
Total Development Phase Employment Income	<u>\$38,500,000</u>	<u>\$22,500,000</u>
<u>Operational Phase</u>	Operational Phase Employment <u>Years 1 - 5</u>	Operational Phase Employment <u>Years 6 - 10</u>
Component		
PCJ	590	0
Industrial	670	940
Commercial	450	650
Family Ent. Ctr.	390	210
Medical	<u>800</u>	0
Total Employment Generation	2,900	1,800
Average Annual Employment	<u>1,360</u>	<u>4,150</u>
Average Employment Income	<u>\$27,600</u>	<u>\$27,600</u>
Total Operational Phase Employment Income	<u>\$187,680,000</u>	<u>\$572,700,000</u>
Total Employment Income	<u>\$226,180,000</u>	<u>\$595,200,000</u>

Source: PKF-Hawaii

Table 7
Estimated Real Property Tax Revenues
Manana and Pearl City Junction Conceptual Master Plan

Assessed Values Component	Years 1 - 5			Years 6 - 10		
	Land	Improvements	Total	Land	Improvements	Total
PCJ	\$105,200,000	\$62,100,000	\$167,300,000	\$105,200,000	\$103,500,000	\$208,700,000
Industrial	\$91,480,000	\$45,000,000	\$136,480,000	\$211,920,000	\$219,380,000	\$431,300,000
Commercial	\$68,610,000	\$27,000,000	\$95,610,000	\$160,080,000	\$132,000,000	\$292,080,000
Family Ent. Ctr.	\$67,080,000	\$27,000,000	\$94,080,000	\$106,720,000	\$102,000,000	\$208,720,000
Medical	<u>\$54,890,000</u>	<u>\$60,000,000</u>	<u>\$114,890,000</u>	<u>\$60,980,000</u>	<u>\$120,000,000</u>	<u>\$180,980,000</u>
Total Assessed Value	<u>\$387,260,000</u>	<u>\$221,100,000</u>	<u>\$608,360,000</u>	<u>\$644,900,000</u>	<u>\$676,880,000</u>	<u>\$1,321,780,000</u>
Real Property Tax	<u>\$3,300,000</u>	<u>\$1,880,000</u>	<u>\$5,180,000</u>	<u>\$5,490,000</u>	<u>\$5,760,000</u>	<u>\$11,250,000</u>

Note: Commercial/Industrial rate of \$8.51/\$1,000 of assessed value applied to estimated assessed values.

Source: PKF-Hawaii

Expenditures - City and County of Honolulu

In addition to providing additional real property tax revenues to the City and County of Honolulu, implementation of the master plan will result in the need for additional government services. In estimating the costs to the City and County of Honolulu of providing services to the built-out Manana and Pearl City Junction Conceptual Master Plan, we have driven the estimates based on the project's acreage as a percentage of all urban land in the City and County of Honolulu. These expenditures have been estimated using City and County of Honolulu expenditures from the 1993/1994 fiscal year, as outlined below:

<u>Category</u>	<u>1993/1994 Fiscal Year Expenditures</u>
General Government	\$91,317,839
Public Safety	\$181,037,749
Highways	\$26,497,833
Health & Sanitation	\$107,080,403
Recreation	\$54,309,902
Pension & Retirement	\$57,692,565
Economic & Urban Development	\$25,357,996
Mass Transit	\$79,639,532
Miscellaneous	\$57,741,180
Cash Capital Improvements	\$23,670,479

Source: Government in Hawaii 1994

Excluding agriculture and conservation lands, the City and County of Honolulu covers an area of 44,292 acres. Implementation of the Manana and Pearl City Junction Conceptual Master Plan will effectively increase the area to which the City and County of Honolulu is providing services by 86.8 acres. Table 8 provides an estimate of City and County of Honolulu expenditures to provide services to the project area in year ten of the development. In this analysis, the implementation of the Manana and Pearl City Junction Conceptual Master Plan will result in City and County of Honolulu expenditures of \$1,370,000 in year ten, compared to an estimated \$2,430,000 in annual real property tax revenues.

Estimated Project Loss

To determine the potential loss of the project, estimated gross proceeds from the sale of the land, net of related selling costs, development costs (i.e. demolition of existing warehouse structures, on-site and off-site improvements, consulting fees, surveying and engineering costs), and interest costs related to the general obligation bonds issued to finance acquisition of the land, was

Table 8
Estimated City & County of Honolulu Revenues and Expenditures in Year 10
Excluding Debt Service on Project
Manana and Pearl City Junction Conceptual Master Plan

Estimated Revenues

	<u>Year 10</u>
Real Property Tax Base - Land	\$132,330,000
Real Property Tax Base - Improvements	<u>\$153,080,000</u>
Total Real Property Tax Base	<u>\$285,410,000</u>
Real Property Tax Revenues	<u>\$2,430,000</u>

Estimated Expenditures

	FY 1993/94 Expenditures Per Acre of Urban Land	Commercial/ Industrial Acreage At Manana/PCI	Estimated Expenditure At Manana/PCI In Year 10
General Government	\$2,100	86.8	\$180,000
Public Safety	\$4,100	86.8	\$360,000
Highways	\$600	86.8	\$50,000
Health & Sanitation	\$2,400	86.8	\$210,000
Recreation	\$1,200	86.8	\$100,000
Pension & Retirement	\$1,300	86.8	\$110,000
Economic & Urban Development	\$600	86.8	\$50,000
Mass Transit	\$1,800	86.8	\$160,000
Miscellaneous	\$1,300	86.8	\$110,000
Cash Capital Improvements	\$500	86.8	<u>\$40,000</u>
Total Estimated City & County of Honolulu Expenditures			<u>\$1,370,000</u>

Source: PKF-Hawaii

compared to the City and County of Honolulu's purchase price of \$109,000,000. An estimated project loss of \$18,400,000 at final disposition of the land was computed as follows:

Table 9
Estimated Project Loss
Manana and Pearl City Junction Conceptual Master Plan

Gross proceeds from land sales	\$165,900,000
Less:	
Selling costs at 5% of sales	8,300,000
Development costs	12,000,000
Interest costs	<u>55,000,000</u>
Net proceeds from land sales	90,600,000
Acquisition cost of land	<u>109,000,000</u>
Estimated project profit (loss)	<u>(\$18,400,000)</u>

This project loss represents an estimate of the loss to the City and County of Honolulu on its acquisition of the Manana and Pearl City Junction properties. It does not take into consideration the impact of the increase in the real property tax base or the costs of providing services to the development area. These impacts are assessed separately. Gross proceeds from land sales are estimated based on a land value of \$35 per square foot and 108.8 acres available for sale, which includes the land designated for the Bus and Board of Water Supply facilities.

Development costs include such costs as: preliminary estimated costs for construction of proposed on-site and off-site infrastructure improvements, including the Moanalua Road extension, drainage, utilities such as water and electrical infrastructure, estimated land acquisition and/or condemnation relating to the Old Cane Haul Road property (including relocation and displacement costs), surveying and engineering costs, etc.

Interest costs represent the actual scheduled interest payments on the City and County of Honolulu's \$109,000,000 debt obligation from the date of bond issuance through year in which the land is fully absorbed by the market.

Revenues - State of Hawaii

The State of Hawaii will primarily derive revenues from the Manana and Pearl City Junction project through collections of general excise taxes and income taxes. Table 10 contains estimates

Table 10
Estimated Retail General Excise Tax and Income Tax Revenues
Manana and Pearl City Junction Conceptual Master Plan

Retail General Excise Taxes

<u>Leasable Area</u>	<u>Years 1 - 5</u>	<u>Years 6 - 10</u>
PCJ	621,000	1,035,000
Commercial (1)	203,000	990,000
Family Ent. Ctr.	<u>270,000</u>	<u>1,020,000</u>
Total Leasable Area	1,094,000	3,045,000
Sales Per Square Foot	<u>\$180</u>	<u>\$180</u>
Total Sales	<u>\$196,920,000</u>	<u>\$548,100,000</u>
General Excise Taxes	<u>\$7,880,000</u>	<u>\$21,920,000</u>

State Income Tax

Employment Income - Development	\$38,500,000	\$22,500,000
Employment Income - Operations	<u>\$187,680,000</u>	<u>\$572,700,000</u>
Total Employment Income	<u>\$226,180,000</u>	<u>\$595,200,000</u>
Effective Income Tax Rate (2)	<u>3.56%</u>	<u>3.56%</u>
Income Taxes	<u>\$8,050,000</u>	<u>\$21,190,000</u>
Total General Excise Tax and Income Tax Collections	<u>\$15,930,000</u>	<u>\$43,110,000</u>

Notes: (1) Based on a mix of 75% retail, 25% office.
(2) Based on 1991 personal income and state income tax collections.

Source: PKF-Hawaii

of general excise and income tax collections in the first ten years of the project. Retail sales for the Pearl City Junction, Commercial and Family Entertainment Center have been estimated at \$180 per square foot per year. In addition, a mix of 75 percent retail and 25 percent office space has been assumed for the Commercial component. This analysis concludes that retail sales at the Manana and Pearl City Junction project will generate \$7,880,000 in general excise taxes in the first five years of the development and \$21,920,000 in years six through ten.

Income tax collections have been estimated using the previously estimated employment income from both the development and operations of the built-out project of \$226,180,000 in the first five years and \$595,200,000 in years six through ten. An estimated effective income tax rate of 3.56 percent has been applied to the projected employment income, resulting in State of Hawaii income tax collections totaling \$8,050,000 in the first five years and \$21,190,000 in years six through ten. Estimated retail general excise tax and income tax collections total \$15,930,000 in the first five years of the development and \$43,110,000 in years six through ten.

Expenditures - State of Hawaii

Implementation of the Manana and Pearl City Junction Master Plan will also result in additional government services provided by the State of Hawaii. As was done to estimate City and County of Honolulu expenditures, additional State of Hawaii expenditures were estimated based on recent government expenditures and acreage of the project.

<u>Category</u>	<u>1993/1994 Fiscal Year Expenditures</u>
General Government	\$447,605,842
Public Safety	\$177,054,784
Highways	\$109,088,879
Natural Resources	\$43,042,321
Health & Sanitation	\$193,084,862
Hospitals & Institutions	\$282,110,015
Public Welfare	\$777,641,045
Education	\$1,399,442,206
Recreation	\$42,255,975
Utilities & Other Enterprises	\$312,462,492
Retirement & Pension	\$219,054,894
Unemployment Compensation	\$236,598,382
Urban Redevelopment & Housing	\$108,173,877
Miscellaneous	\$119,810,388
Cash Capital Improvements	\$449,833,831

Source: Government in Hawaii 1994

Table 11 contains an estimate of State of Hawaii expenditures resulting from the implementation of the Manana and Pearl City Junction Master Plan in year ten of the development. Based on the allocation of expenditures per acre of urban land, the project is estimated to result in State of Hawaii expenditures of \$2,280,000 in year ten, compared to \$9,400,000 in retail general excise tax and income tax collections.

Table 11
Estimated State of Hawaii Revenues and Expenditures in Year 10
Manana and Pearl City Junction Conceptual Master Plan

<u>Estimated Revenues</u>		<u>Estimated Revenue At Manana/PCJ In Year 10</u>		
Retail General Excise Tax Base			\$119,610,000	
Retail General Excise Taxes			<u>\$4,780,000</u>	
Employment Income			\$129,790,000	
Effective Income Tax Rate			3.56%	
State Income Tax			<u>\$4,620,000</u>	
Total State Tax Revenue			<u>\$9,400,000</u>	
<u>Estimated Expenditures</u>		<u>FY 1993/94 Expenditures Per Acre of Urban Land</u>	<u>Urban Acreage At Manana/PCJ</u>	<u>Estimated Expenditure At Manana/PCJ In Year 10</u>
General Government	\$2,400	86.8		\$210,000
Public Safety	\$900	86.8		\$80,000
Highways	\$600	86.8		\$50,000
Natural Resources	\$200	86.8		\$20,000
Health & Sanitation	\$1,000	86.8		\$90,000
Hospitals & Institutions	\$1,500	86.8		\$130,000
Public Welfare	\$4,100	86.8		\$360,000
Education	\$7,500	86.8		\$650,000
Recreation	\$200	86.8		\$20,000
Utilities & Other Enterprises	\$1,700	86.8		\$150,000
Retirement & Pension	\$1,200	86.8		\$100,000
Unemployment Compensation	\$1,300	86.8		\$110,000
Urban Redevelopment & Housing	\$600	86.8		\$50,000
Miscellaneous	\$600	86.8		\$50,000
Cash Capital Improvements	\$2,400	86.8		<u>\$210,000</u>
Total Estimated State of Hawaii Expenditures				<u>\$2,280,000</u>

Source: PKF-Hawaii

Botanical Resources Assessment

APPENDIX B

CHAR & ASSOCIATES

Botanical/Environmental Consultants

4471 Puu Panini Ave.
Honolulu, Hawaii 96816
(808) 734-7828

December 1995

BOTANICAL RESOURCES ASSESSMENT STUDY MANANA MIXED USE DEVELOPMENT PROJECT PEARL CITY, O'AHU

INTRODUCTION

The proposed project will be developed on lands occupied by the U.S. Navy's Manana Storage Facility. The facility can be divided into two sections. Mauka of Kamehameha Highway, the Manana section is composed of three adjoining parcels. Parcel A is no longer used for storage and the grounds around the warehouses are overgrown. Parcels B and C are still in use and the grounds are maintained. The Pearl City Junction (PCJ) section, consisting of approximately 13.8 acres, is located makai of the highway and is no longer used for storage. Commercial use is proposed for the PCJ section. Commercial and light industrial uses are the primary land use components for the Manana section.

A botanical assessment study was conducted for the proposed Manana Mixed Use Development site on 13 December 1995. The primary objectives of the study were to describe the vegetation on the proposed development site, and to search for threatened and endangered species as well as rare and vulnerable plants. A walk-through survey method was used. Notes were made on plant associations and distribution, substrate types, topography, past disturbances, etc. Plant identifications were made in the field; plants which could not be positively identified were collected

cumini), octopus tree (Schefflera actinophylla), Christmas berry (Schinus terebinthifolius), avocado (Persea americana), banana (Musa sp.), coconut (Cocos nucifera), etc. A small vegetable garden can be found on Parcel C with yard long beans (Vigna sesquipedalis), okra (Hibiscus esculentus), papaya (Carica papaya), and seequa (Luffa acutangula).

On Parcel A where the grounds have not been maintained for some time, the vegetation is composed largely of dense clumps of Guinea grass, 3 to 5 ft. tall, with scattered koa-haole shrubs (Leucaena leucocephala), 5 to 7 ft. tall. In places where the Guinea grass cover is less dense, such as along the margins of the asphalt-covered roads and along the fencelines, small patches of Chinese violet (Asystasia gangetica), field bindweed (Ipomoea alba), and Natal reedtop grass (Rhynchelytrum repens) are found.

On the PCJ parcel, the vegetation is composed primarily of clumps of Guinea grass with scattered, smaller patches of Natal reedtop grass, pitted beardgrass, and buffelgrass (Cenchrus ciliaris). Again, weedy herbaceous plants tend to be more numerous on the exposed soil areas. One small planting of coconut palms and Ixora hybrid shrubs is found near the main gate.

On all of the fences surrounding the project site, vines of wild bittermelon (Momordica charantia), coccinia (Coccinia grandis), and field bindweed are occasionally encountered. A few scattered clumps of koa-haole shrubs are also found alongside the fencelines.

DISCUSSION AND RECOMMENDATIONS

The vegetation on the lands proposed for the Manana Mixed Use Development project site is dominated by introduced plants such as Guinea grass, pitted beardgrass, koa-haole, etc. Introduced or alien plants are all those species which were brought to the Hawaiian Islands by humans, intentionally or accidentally, after

CORRECTION

THE PRECEDING DOCUMENT(S) HAS
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LEGIBILITY
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IMMEDIATELY FOLLOWING

CHAR & ASSOCIATESBotanical/Environmental Consultants4471 Puu Panini Ave.
Honolulu, Hawaii 96816
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December 1995

**BOTANICAL RESOURCES ASSESSMENT STUDY
MANANA MIXED USE DEVELOPMENT PROJECT
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for later determination in the herbarium (University of Hawai'i, Manoa - HAW), and for comparison with the most recent taxonomic literature. The plant names used in the following discussion follow Wagner et al. (1990) for the naturalized species and St. John (1973) for the cultivated plants.

DESCRIPTION OF THE VEGETATION

The project site and the surrounding lands were formerly used for sugar cane cultivation. Since the mid-1940's, the property was used by the Navy as a storage facility for miscellaneous materials and equipment. Molokai silty clay soil, 3 to 7% slopes, identified as "MuB" on the soil maps (Foote et al. 1972), covers most of the property. These dark reddish-brown colored soils are nearly level to moderately sloping and well-drained.

On Parcels B and C, which are still used for storage, the grounds are actively maintained and mowed. The vegetation consists of grassy lawn areas composed primarily of mats of pitted beardgrass (Bothriochloa pertusa) and Bermuda grass or manienie (Cynodon dactylon), and scattered, low clumps of Guinea grass (Panicum maximum). Scattered through these grassy areas are a number of weedy, mostly herbaceous, species. The weedy species become more numerous on the disturbed portions of the parcels where the soils are exposed. This weedy mixture consists of plants such as coat-buttons (Tridax procumbens), hairy spurge (Chamaesyce hirta), Heliotropium procumbens, cheeseweed (Malvastrum coromandelianum), narrow-leaved plantain (Plantago lanceolata), white-flowered beggar's tick (Bidens alba), etc. 'Uhaloa (Waltheria indica), a native species, is found associated with these exposed soil areas.

There are only a few plantings of trees and shrubs around the warehouses; these include mango (Mangifera indica), African tulip (Spathodea campanulata), Plumeria cultivars, Java plum (Syzygium

cumini), octopus tree (Schefflera actinophylla), Christmas berry (Schinus terebinthifolius), avocado (Persea americana), banana (Musa sp.), coconut (Cocos nucifera), etc. A small vegetable garden can be found on Parcel C with yard long beans (Vigna sesquipedalis), okra (Hibiscus esculentus), papaya (Carica papaya), and seequa (Luffa acutangula).

On Parcel A where the grounds have not been maintained for some time, the vegetation is composed largely of dense clumps of Guinea grass, 3 to 5 ft. tall, with scattered koa-haole shrubs (Leucaena leucocephala), 5 to 7 ft. tall. In places where the Guinea grass cover is less dense, such as along the margins of the asphalt-covered roads and along the fencelines, small patches of Chinese violet (Asystasia gangetica), field bindweed (Ipomoea alba), and Natal redtop grass (Rhynchelytrum repens) are found.

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On all of the fences surrounding the project site, vines of wild bittermelon (Momordica charantia), coccinia (Coccinia grandis), and field bindweed are occasionally encountered. A few scattered clumps of koa-haole shrubs are also found alongside the fencelines.

DISCUSSION AND RECOMMENDATIONS

The vegetation on the lands proposed for the Manana Mixed Use Development project site is dominated by introduced plants such as Guinea grass, pitted beardgrass, koa-haole, etc. Introduced or alien plants are all those species which were brought to the Hawaiian Islands by humans, intentionally or accidentally, after

Western contact, that is, Cook's discovery of the islands in 1778. During the field study, only one native species, the 'uhaloa or hi'aloa (Waltheria indica), was found on the project site.

'Uhaloa is presumed to be an indigenous species, that is, it is native to the Hawaiian Islands and also elsewhere throughout the tropics (pantropical). The Hawaiians used this plant medicinally as a pain killer, especially for sore throat; the bitter inner bark or roots were used (Neal 1965; Wagner et al. 1990).

None of the plants found during the field study is a listed, proposed, or candidate threatened and endangered species (U.S. Fish and Wildlife Service 1994, 1995); nor is any plant considered rare and vulnerable (Wagner et al. 1990). Because the site has been so greatly disturbed by past human activities, there are no remnants of any native plant-dominated vegetation types left on the site.

Given the findings above, the proposed uses for the site will not have a significant negative impact on the botanical resources. There are no botanical reasons to impose any restrictions, conditions, or impediments to proposed project. It is recommended that native dry, lowland species be used for landscaping some of the common areas. Native species which are adapted to drier environments would require less water over the long-term. Some native species which could be used include the native cotton or ma'o (Gossypium tomentosum), the loulu palm (Pritchardia spp.), 'akia (Wikstroemia uva-ursi), 'ilima (Sida fallax), and false sandalwood or naio (Myoporum sandwicense). A number of these species have been incorporated into the xeriscape exhibit at the Board of Water Supply's Halawa facility and the Honolulu Zoo's plantings.

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Faunal Survey Report

APPENDIX C

FAUNAL SURVEY REPORT FOR MANANA AND PEAR CITY JUNCTION
MIXED USE DEVELOPMENT PROJECT, PEARL CITY, HAWAII

Prepared for

PKF Hawaii

by

Phillip L. Bruner
Assistant Professor of Biology
Director, Museum of Natural History
Environmental Consultant - Faunal (Bird & Mammal) Surveys
BYU-Hawaii
Laie, Hawaii

20 December 1995

INTRODUCTION

The purpose of this report is to provide the findings of a one day (14 December 1995) bird and mammal field survey of property for a mixed use development project at Manana and Pearl City Junction (PCJ), Pearl City, Hawaii (Fig. 1). Also included are references to pertinent literature as well as unpublished faunal reports from similar habitat in leeward Oahu. The objectives of the field survey were to:

- 1- Document what bird and mammal species occur on the property or may likely be found there given the type of habitats available.
- 2- Provide some baseline data on the relative (estimated) abundance of each species.
- 3- Determine the presence or likely occurrence of any native fauna particularly any that are considered "Endangered" or "Threatened".
- 4- Locate and note any habitats that might be important to native wildlife.

GENERAL SITE DESCRIPTION

Figure One indicates the location of the project site. The Manana property contains three parcels (A,B,C). These sites are contiguous. Paved roads, buildings, lawns (some mowed, others overgrown in tall grass) and a few scattered trees comprise the habitats available to wildlife. The PCJ property located makai of Kamehameha Highway (Fig. 1) has habitat similar to that found on the Manana site. No wetland habitat was discovered on either property. Residential and urban habitat surrounds these sites.

Weather during the field survey was partly cloudy. The winds were from the east at 5 to 10 mph.

STUDY METHODS

Ponds and paved areas provided easy and thorough access to both the Manana and PCJ sites. Field observations were made with binoculars and by listening for vocalizations. All birds seen or heard were tallied. Mammal observations were limited to visual sightings and tracks. No trapping was attempted nor deemed necessary. The relative (estimated) abundance figures given in this report (Table 1) were derived from the census data. Published and unpublished reports of birds known from this region of the island were also consulted in order to acquire a more complete picture of the possible species

that might be expected Bremer 1987; TGI 1988, Bruner 1989a, 1989b, 1991a 1991b, 1991c, 1993; Pratt et al. 1987; Hawaii Audubon Society 1993).

Scientific names used in this report follow those given in Hawaii's Birds (Hawaii Audubon Society 1993); Field guide to the birds of Hawaii and the tropical Pacific (Pratt et al. 1987) and Mammal species of the World (Honacki et al. 1982).

RESULTS AND DISCUSSION

Resident Endemic (Native) Land Birds:

No endemic land birds were recorded on the survey. The Short-eared Owl or Pueo (Asio flammeus sandwichensis) is the only endemic land bird that on rare occasions occurs in lowland, leeward Oahu (Pratt et al. 1987); Hawaii Audubon Society 1993). Pueo are listed as an endangered species on Oahu by the State of Hawaii Division of Forestry and Wildlife. This species forages in pastures, agricultural fields, second growth and native forest. They are more diurnal than the introduced Common Barn Owl (Tyto alba) with which they are sometimes confused by those unfamiliar with the proper identification of both species. Barn Owls are also more likely than Pueo to occur in urban and residential habitat. Should owls be seen on the Manana and PCJ sites it is highly unlikely they would be the native Pueo.

Resident Endemic (Indigenous) and Vagrant Waterbirds:

No wetland habitat exists on either the Manana or PCJ properties. No waterbirds were recorded nor would any be expected on these sites.

Migratory (Indigenous) Birds:

Migratory shorebirds winter in Hawaii between the months of August through April. Some juveniles will stay over the summer as well (Johnson and Johnson 1993). Of all the shorebirds species which winter in Hawaii, the Pacific Golden-Plover (Pluvialis fulva) is the most abundant. Plover prefer open areas such as exposed intertidal reef, rocky shorelines, mud flats, lawns, plowed fields and pastures. Johnson et al. (1981, 1989) have shown that plover are extremely site-faithful on their wintering grounds and most establish foraging territories which they defend vigorously. Such behavior makes it possible to acquire a fairly good estimate of the abundance of plover in any one area. These populations likewise remain relatively stable over many years (Johnson et al. 1989).

Manana Parcel "A" had six plover, Parcel "B" nine, Parcel "C" ten and four at the PCJ property. These birds were on lawn habitats. Their dispersal pattern suggested they were territorial. This species is not endangered or threatened. The only other migrant which uses lawn habitats and could be seen on these sites is the Ruddy Turnstone (Arenaria interpres). They are not territorial nor are they endangered or threatened.

Resident Indigenous (Native) Seabirds:

No nesting seabirds were observed. The presence of predators such as cats and mongoose make this area unsuitable for nesting or roosting seabirds.

Exotic (Introduced) Birds:

A total of 15 species of exotic birds were recorded during the field survey (Table 1). The most abundant birds were: Spotted Dove (Streptopelia chinensis), Zebra Dove (Geopelia striata), Common Waxbill (Estrilda astrild), Java Sparrow (Padda oryzivora) and House Finch (Carpodacus mexicanus).

Based on the location of the sites and type of habitats available as well as information provided in Bremer 1987; Bruner 1989a, 1989b, 1991a, 1992b, 1991c, 1993; Pratt et al. 1987 and Hawaii Audubon Society 1993, the array of exotic species recorded on this survey conform to expectations.

Feral Mammals:

Three Small Indian Mongoose (Herpestes auropunctatus) and two "feral" cats were observed on the survey. No trapping was conducted in order to assess the relative abundance of mammals.

Records of the endemic and endangered Hawaiian Hoary Bat (Lasiurus cinereus semotus) are sketchy, however, this species has been reported from Oahu (Tomich 1986; Kepler and Scott 1990). No bats were found on this survey and it is unlikely any would utilize these properties.

CONCLUSION

A brief field survey such as this one can provide only a limited perspective of the wildlife which occur in the area. The number and relative abundance of each species may vary throughout the year and from one year to the next due to available food resources and reproductive success. Species which are migratory will normally be found between August and May. Exotic species sometimes prosper only to later disappear or become a less significant part of the ecosystem (Williams 1987; Moulton et al. 1990). Thus only long term studies can provide a comprehensive view of the bird and mammal populations in a particular area. Such intensive surveys are not necessary for these properties. The following comments summarize the findings of this survey:

- 1- The three Manana and one Pearl City Junction site were thoroughly investigated. Habitat choices for wildlife are limited. The properties have been significantly altered by development.
- 2- No endemic birds were found. The Pueo (Short-eared Owl), a species listed by the State of Hawaii as endangered on Oahu, does occur in leeward Oahu but is unlikely to forage at these sites.
- 3- No waterbirds or seabirds were found nor would any be expected at this location.

4- The migratory Pacific Golden-Plover occurs on all the sites. They are territorial. The alteration of the existing lawn habitat will result in the displacement and perhaps loss of these birds.

This is not an endangered or threatened species.

5- Fifteen species of exotic (introduced) birds were accounted for on the survey. They were the common species typical of this habitat in leeward Oahu. None are endangered or threatened species.

6- Observations of feral mammals were limited but comparable to data obtained on other faunal surveys in this sector of the island.

The endangered Hawaiian Hoary Bat was not recorded at this site.

They are rare on Oahu.

7- Habitat similar to that found on these properties occurs widely in leeward Oahu. I would not characterize these sites as unusual or extremely valuable to wildlife. Development will alter the local distribution and abundance of birds presently using the land but should have no measurable effect on the overall relative abundance of these species on Oahu.

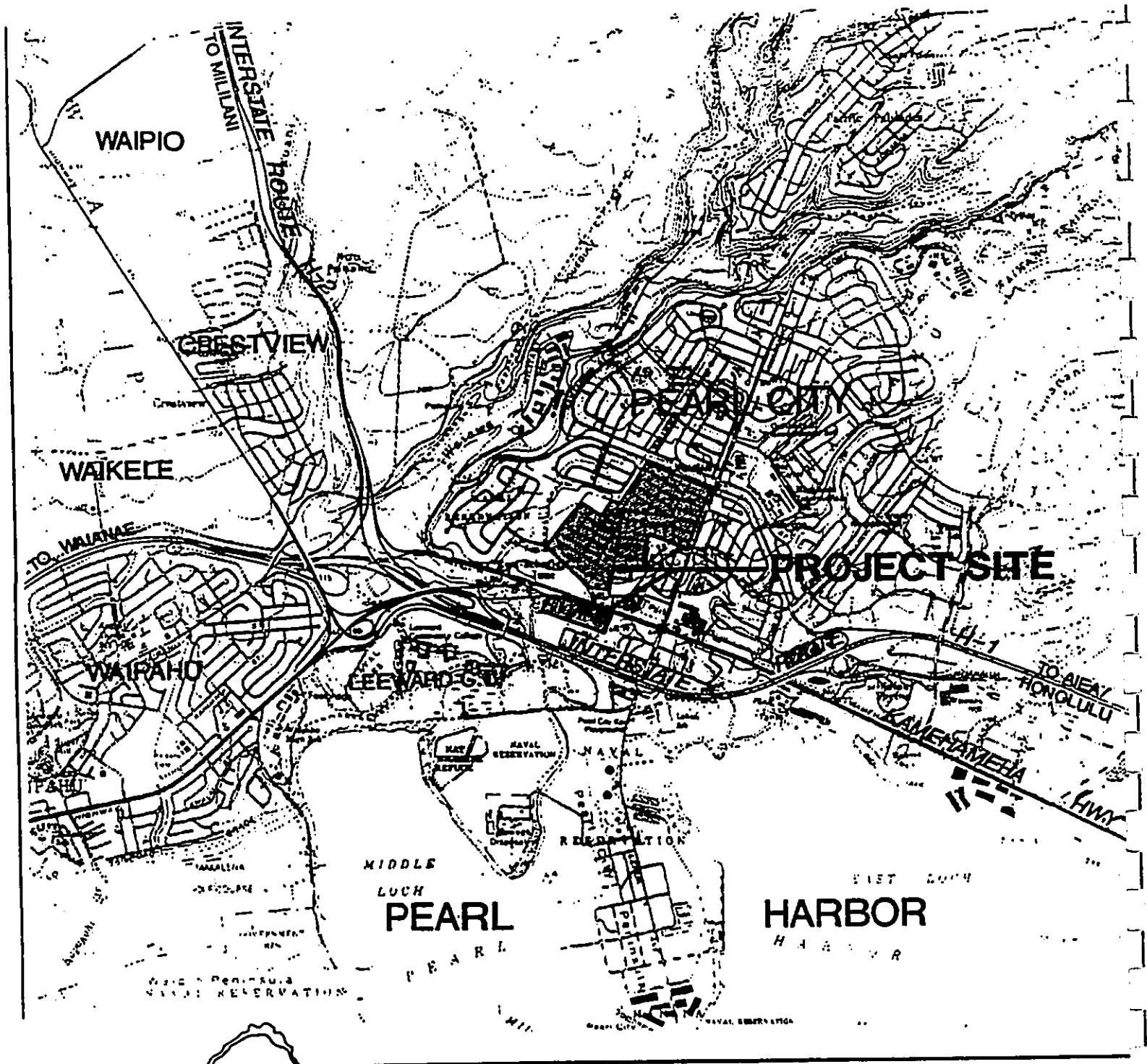
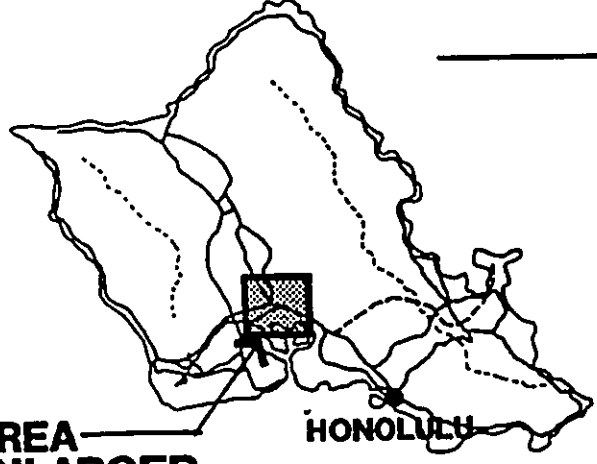


Fig. 1. Location of faunal survey, Manana and Pearl City Junction sites, Pearl City Oahu.



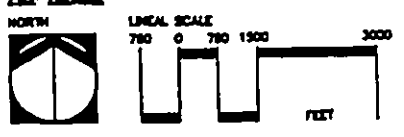
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GENERAL LOCATION MAP
MANANA STORAGE FACILITY
PEARL HARBOR PEARL CITY, OAHU



DATE: 3/76

TABLE 1

Exotic (introduced) birds recorded at the three Manana sites and PCJ property, Pearl City, Hawaii.

COMMON NAME	SCIENTIFIC NAME	RELATIVE ABUNDANCE*
Cattle Egret	<u>Bubulcus ibis</u>	R = 4
Spotted Dove	<u>Streptopelia chinensis</u>	A
Zebra Dove	<u>Geopelia striata</u>	A
Common Myna	<u>Acridotheres tristis</u>	C
Red-vented Bulbul	<u>Pycnonotus cafer</u>	C
Northern Cardinal	<u>Cardinalis cardinalis</u>	U
Red-crested Cardinal	<u>Paroaria coronata</u>	U
Japanese white-eye	<u>Zosterops japonicus</u>	U
Chestnut Mannikin	<u>Lonchura malacca</u>	U
Nutmeg Mannikin	<u>Lonchura punctulata</u>	C
Common Waxbill	<u>Estrilda astrild</u>	A
Red Avadavat	<u>Amandava amandava</u>	U
House Finch	<u>Carpodacus mexicanus</u>	A
House Sparrow	<u>Passer domesticus</u>	U
Java Sparrow	<u>Padda oryzivora</u>	A

*(see page 10) for key to symbols)

KEY TO TABLE 1

Relative abundance (estimate)

- A = abundant (more than 50 birds seen on each site)
- C = common (between 25 and 50 birds recorded for each site)
- U = uncommon (between 5 and 24 birds seen on each site)
- R = recorded (seen on only one or two sites. Number which follows is total recorded)

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Archaeological Assessment

APPENDIX D

**AN ARCHAEOLOGICAL ASSESSMENT OF THE
MANANA AND PEARL CITY JUNCTION SITES
MANANA AND WAIAWA AHUPUA`A, EWA DISTRICT
O`AHU ISLAND, HAWAI`I
[TMK 9-7-24:POR.6, 9-7-23:01]**

Prepared by:
Leann McGerty, B.A.
and
Robert L. Spear, Ph.D
July 1995

Prepared for:
City and County of Honolulu
Department of Housing and Community Development
650 South King Street, 6th Floor
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SCIENTIFIC CONSULTANT SERVICES Inc.



711 Kapiolani Blvd. Suite 777 Honolulu, Hawai`i 96813

ABSTRACT

An archaeological assessment was conducted at the request of the Department of Housing and Community Development by Scientific Consultant Services on two parcels of land in the Manana Pearl City Junction (TMK 9-7-23 and 9-7-24). This assessment included research concerning previous archaeological work in the area, myths and legends, pre-Contact and post-Contact history, and land use. This information indicates that the project area was used for traditional crops and habitation in pre-Contact times. Post-Contact impact included activities such as rice growing, sugar cane, and military use of the area. Based on the findings of the assessment no significant historic sites are believed to be in the project area.

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INTRODUCTION

At the request of the Department of Housing and Community Development, Scientific Consultant Services, under the direction of Dr. Robert L. Spear, recently completed an archaeological assessment of the Manana and Pearl City Junction Sites (TMK 9-7-23 and 9-7-24) located on the Island of O`ahu, District of `Ewa, *ahupua`a* of Manana and Waiawa (Figures 1 and 2).

The purpose of the assessment was to evaluate the potential for significant archaeological sites in the proposed project area. A field inspection of the project area was completed on June 22, 1995.

ENVIRONMENTAL SETTING

The project area is comprised of approximately 138.50 acres. Located between 40 and 80 feet above mean sea level, it is bi-sected by Kamehameha Highway. The upper parcel is bounded on the west by Hale Ola, Holiday City sub-divisions and Manana-Kai Park site; on the north by Cane Haul Road; on the east by Waimano Home Road and Kauhale Manana subdivision; and on the south by Kamehameha Highway. The lower parcel is bounded on the north by Kamehameha Highway; to the east and west by cleared lots; and to the south, land belonging to the University of Hawai`i (Figures 3 & 4).

Vegetation

Located on the dry leeward side of the island of O`ahu, the project area falls within Ripperton and Hosaka (1942:23) Vegetation Zone B, with rainfall averaging between 20 to 40 inches per year. Lowland shrub types dominate the landscape. The field check confirmed the xerophytic nature and alien origin of the plants now present. African tulip (*Spathodea campanulata*), koa haoli (*Leucaena leucocephala*), plumeria (*Plumeria* spp.), mango (*Mangifera indica*), octopus tree (*Schefflera actinophylla*), pua kalaunu (*Calotropis gigantea*), a clump of panini (*Opuntia ficus-indica*), and various grasses sporadically appear (Figures 5 and 6).

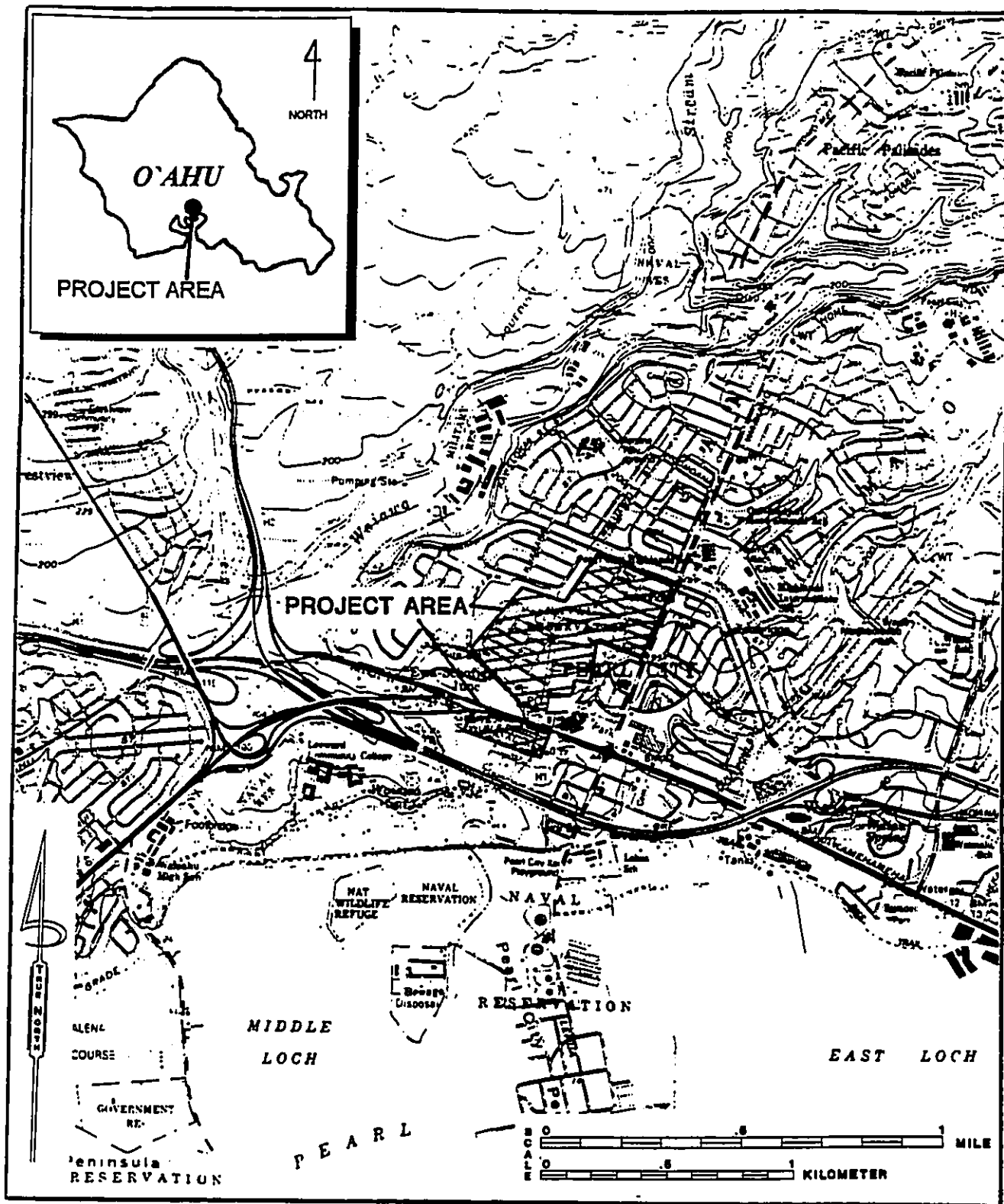


FIGURE 1: USGS WAIPAHU QUADRANGLE SHOWING PROJECT AREA.

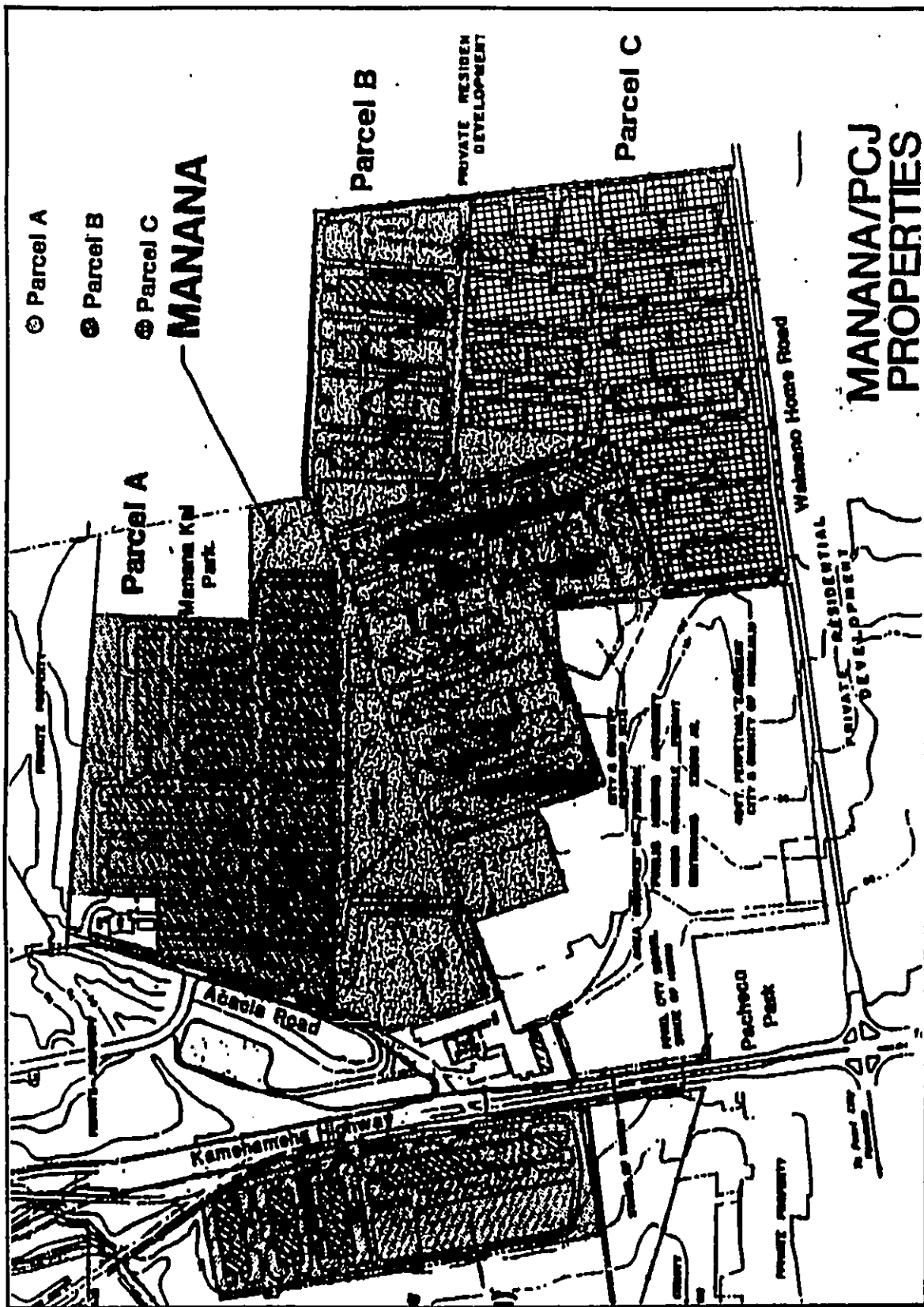


FIGURE 2 : PROJECT AREA MAP SHOWING PARCELS A, B, C, AND PCJ IN MANANA.
(FROM A MAP PROVIDED BY DEPT. OF HOUSING AND COMM. DEV.)



FIGURE 3: GENERAL VIEW OF PROJECT AREA SHOWING MILITARY WAREHOUSES *MAUKA* OF KAMEHAMEHA HWY. VIEW TO NORTHEAST.

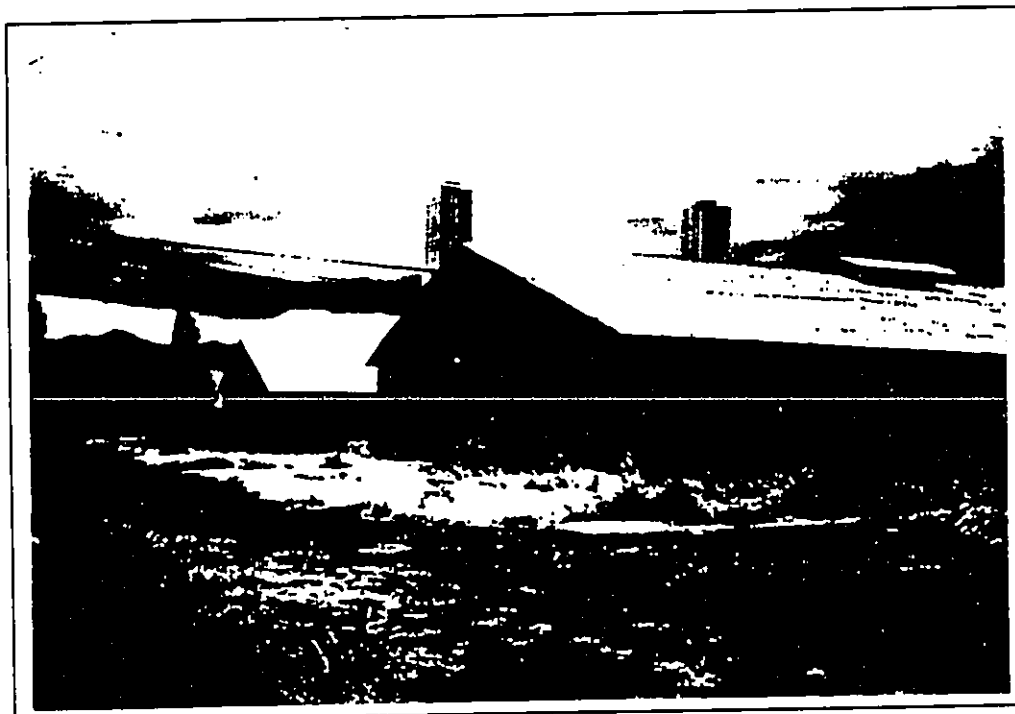


FIGURE 3: GENERAL VIEW OF PROJECT AREA PARCEL A MILITARY WAREHOUSES *MAKAI* OF KAMEHAMEHA HWY. VIEW TO NORTH.



FIGURE 5: GENERAL VIEW OF PROJECT AREA PARCEL B.
VIEW TO NORTHEAST.



FIGURE 6: GENERAL VIEW OF PROJECT AREA PARCEL B.
VIEW TO NORTH.

Fauna consisted of commonly seen introduced birds, the most noticeable being the Saffron finch (*Sicalis flaveola*).

Soils

There are three soil regimes in the project area (Foote et al. 1972: Map sheet 53). The Molokai Series of silty clay loam, found on 3 to 7 percent slopes and developed in material weathered from basic igneous rock, covers the majority of the property. Soils in this series are well-drained with slow to medium runoff and a slight to moderate erosion hazard (ibid:96). Kawaihapai clay loam, on 0-2 percent slopes, consisting of well-drained soils are also present. These are found in drainage, alluvial fans and on coastal plains and are formed in alluvium derived from basic igneous rock in humid uplands (ibid:64).

The third category is Waipahu silty clay, commonly on 0-2 percent slopes. These well-drained soils, found on marine terraces, are developed in old alluvium derived from basic igneous rock. Runoff is slow and the erosion hazard slight (ibid:134).

All three regimes are used for pineapple, sugarcane, pasture, wildlife habitats, and homesites.

PREVIOUS ARCHAEOLOGY

No previous archaeology has been done in the project area. Archaeological research has been conducted on several parcels beginning with an around the island reconnaissance survey in the 1930's by McAllister. Known sites in the *ahupua`a* or in the vicinity of the project area include:

Site 121. Puoiki heiau, at the juncture of Mánana Stream, which flows into Waiawa gulches. The *heiau* crowned the top of a small oval knoll which is about 50 feet high by 100 wide and 200 feet long. The sides of the knoll are perpendicular except for a steep and narrow neck on the mountain side. During the ceremonies the people are said to have been at the foot of the knoll and surrounding the *heiau*. There are no remains.

Land for Mánana Kai park (TMK 9-7-24:40), boarding the present Project Area, was surveyed in 1980 by Robert D. Connolly for the City and County of Honolulu, Department of

Parks and Recreation with no surface cultural features reported.

David Tuggle did an archaeological survey for the Manana Marine housing project (T.M.K. 9-7-24:6) in 1982. Research of archaeological reports and SHPD files showed no known sites in the general vicinity. A survey map prepared in 1800 by Monsarrat (State survey map #2081), showed no occupation around the present Project Area. The only feature reported by Tuggle was a deteriorated portion of a canal, thought to be historic. Research done in 1985 by Martha Yent for the State Parks at Hale Mohalu (T.M.K. 9-7-19:35) indicated lands in that particular section had been divided between L.C.A.'s, Grants, and the Government. L.C.A.'s were claimed as kalo and kula lands. Testing was done with no definitive results.

In 1991, the Applied Research Group, of the Bishop Museum located two formal platforms, some terraces, and a pit at the base of a ridge, above the confluence of Manana Stream and Waiawa Gulch. On top of the ridge was an area enclosed by a piled stone wall constructed of basalt cobbles and boulders enclosing a pie-shaped section containing a small terrace paved with water worn pebbles. This feature, associated with others in the vicinity were thought to be the remnants of Puoiki *heiau*.

MYTHS AND LEGENDS

Although stories pertaining to the `Ewa District are extensive, references specific to the *ahupua`a* of Manana and Waiawa are few. The only reference found is in Sites of O`ahu (1978:16-17) recounting the Legend of the Eel boy of Pilimoo, a pool in Pearl City, told by Makahonu Naumau. The pool had a tunnel leading to the sea:

For a long time there was no danger to the children that came to swim in the pool until the man-eating shark discovered the tunnel and slipped in and out at will.

The story continues as a boy swimming in the pool is taken by the gods and changed into a small eel so he can lie in the depths of the pool and warn the other children of danger. The father of the child waits by the pool until he hears a whistle very much like that of his son but it is the small eel. The eel boy explains to his father what has happened and told him to tell the other children when they hear him whistle they must leave immediately or be eaten by the

shark. "So it was ever after, a whistle was a signal that danger was near."

Sites of O`ahu (ibid:17) also recounts the story of the supernatural stone of Pearl City which was moved from its original spot to make room for the Pearl City Mormon Church and the ensuing consequences to the man that moved it.

Both Manana and Waiawa are mentioned in a chant for Kualii recorded in Fornander (1917:Vol IV, Part II):

O Kawelo-e, e Kawelo-e,
O Kaeloiki puu oioi
Puu o Kapolei-e--
Uliuli ka poi e piha nei--o Honouliuli
Aeae ka paakai o Kahuaiki--Hoeae,
Pikele ka ia e Waikele--o Waikele;
Ka hale pio i Kauamo--o Waipio;
E kuu kuu i ka loko awa--o Waiawa;
Mai hooManana ia oe--o Manana.
O Kawelo! Say, Kawelo!
Kawloiki, the sharp-pointed hill,

Hill of Kapolei.
Blue is the poi which appeases [the hunger]
of Honouliuli;
Fine the salt of Kahuaike--Hoeae;
Slippery the fish of Waikele--Waikele;
The arched house at Kauamo--Waipio;
Let us cast the net in the awa-pond--of
Waiawa;
Do not stretch yourself at--Manana.

PRE-CONTACT HISTORY

According to Fornander (1980, Vol 2: 47), in the early to middle part of the eleventh century, Maweke, a direct lineal descendant of the illustrious Nanaulu (the founder of Hawaiian royalty [ibid:168 Vol I]), was a chief on O`ahu. The second of his three sons, Keaunui, became the head of the powerful `Ewa chiefs and tradition reports his cutting of a navigable channel allowing access to the Pearl River by canoe (ibid:48). His son, Lakona, became the progenitor of the `Ewa chiefs. The line continues to Elani, a powerful `Ewa chief at the time of Kahekili, and his son Kahahana, the ruler of O`ahu in the late 1700's (ibid:217). Kahekili's treachery toward Kahahana provoked a rebellion of O`ahu chiefs, resulting

ultimately in the almost complete annihilation of the Island's aristocracy. Oral tradition records that the stream of Hoaiiai in `Ewa was choked with the bodies of slain men, women and children (ibid:224-226, Kamakau 1961:138). With the demise of the Island's *ali`i* went much of our knowledge of the history of the District's individual *ahupua`a*.

HISTORICAL FRAMEWORK

The `Ewa District was one of the largest of the six districts on the Island of O`ahu. The districts (*moku`aina*) were further divided into sub-districts (*ahupu`a*), the most important land unit, ideally spreading from the ocean to the mountains, thus, incorporating a variety of resources (Lyons 1875). The boundary line between the *ahupua`a* Waiawa and Manana, two of `Ewa's 13 *ahupua`a*, bisects the project area. Handy reports (1940:81) "This narrow *ahupua`a* was called Manana-iki in its lower portion and Manana-nui in the mountains where it broadens and includes Manana Stream, which flows into Waiawa. There are a few terraces seaward, irrigated by Waiawa Stream."

The past significance of `Ewa is not easily seen today as one drives through its streets. However, this *moku`aina* provided ideal circumstances for traditional food production. At least twenty-six fishponds and many fishtraps were established by the *ali`i* at various points around Pearl Harbor providing much needed protein to the rulers of `Ewa (McAllister 1933:101-109). Stocked with mullet and other varieties of fish, these ponds were not the only marine resource. Edible shellfish, the Hawaiian pearl oyster, *pipi*, and other bivalves, eaten both raw and cooked, were found extensively (Handy and Handy 1978:471).

The streams of Waikele, Waipi`o, Kamanaki, Kalauao, Waimalu, Waimano, Manana and Waiawa, as well as, several springs (Waipi, Waiiau, and Waipahu) provided ample year round fresh water for irrigation of the many *taro* (*kalo*, *Colocasia esculenta*) *lo`i* (wetland plantations) covering the coastal lands (ibid:470).

Archibald Campbell (1967:103-4) recounts his visit to Pearl River in 1809:

In the month of November the king was pleased to grant me about sixty acres of land, situated upon the Wymumme, or Pearl-water, an inlet of the sea about twelve miles to the west of Hanaroora. . . We passed by footpaths, winding through an extensive and fertile plain, the whole of which was in a high state of cultivation. Every stream was carefully embanked, to supply water for the taro beds. Where there was no water,

land was under crops of yams and sweet potatoes. The roads and numerous houses are shaded by cocoa-nut trees, and the sides of the mountains covered with wood to a great height. . . There were three houses on my property: but I found it most agreeable to line with one of my neighbors, and get what I wanted from my own land.

Trails through the *ahupua`a* are well documented by John Papa `I`i, who was raised in `Ewa:

The trail went down to the stream and up again, then went above the taro patches of Waiau, up to the *maika* field, to Waimano, to Manana, and to Waiawa; then to the stream of Kukehi and up to two other *maika* fields Pueohulunui and Haupuu (1973:96).

`Ewa was famous for its `awa, *mamaki*, and for a variety of *kalo* called *kal*. In wet lowlands in the immediate vicinity of the project area, it was planted in mounds, a method called *pu`epu`e* (ibid:471)

As one went upland, bananas (*mai`a*, *Musa* sp.) and yams (*uhi*, *Dioscorea alata*) were grown on the *kula* land and in the lower sections of the valleys. `Awa (*Piper methysticum*) would have been cultivated deeper in the valleys along with *olona* for cordage. Birds, valued as food (Malo 1951:38-40) and for their feathers, would have covered the extensive lowland forest. A large area was set aside for growing *wauke* and *mamaki* (Handy 1978:469). So productive was this *moku`aina* that the *ali`i* established there residence on the point of Waipi`o peninsula giving rise to some of the most powerful chiefs on O`ahu (Fornander 1980, Vol 2).

LAND TENURE

With the introduction of Western culture in 1778, came, among many things, a change in values. Westerners recognized the importance of Hawai`i in the middle of the Pacific, half way between the east and west, as an ideal place for rest and recreation. Goods, were loaded and unloaded, quickly changing Hawai`i's subsistence economy to a market economy. The concept of private ownership was introduced and soon demands of land reforms were pressed upon the King (Kaoikeaouli) by his western advisors, foreign residents, and their governments. Adjustments were made producing a major land division known as the Great Mahele of 1848 (Daws 1982:124). After the land was divided between the King, the Government and his Chiefs, native tenants were allowed, if they had the correct documentation, to claim their own parcels (*kuleana*) of land. (For an in depth discussion of the Mahele, see Chinen 1958).

In 1848, the following claims were submitted for lands in and around the project area in Manana and Waiawa (Figure 2).

L.C.A. in or near Project Area:

<u>Project area</u>				
<u>No.</u>	<u>Awardee</u>	<u>Location</u>	<u>R.P.#</u>	<u>Nat. Reg.</u>
7732:2	Manuiki for Kapae	Mananaiki, `Ewa	871	448 V.5
<u>In vicinity</u>				
9320:3	Keoho	Waiawa, `Ewa	209	436 V.4
7713:48	Kamamalu	Waiawa, `Ewa	4475	438 V.5
7723:1	Hopee/Hopoe	Mananaiki, `Ewa	6240	447 V.5
9372:1-2	Keiki	Waiawa, `Ewa	207	450 V.4
9376:1,2	Kupihea for kumaihiwa	Waiawa, `Ewa	875/5311	451 V.4
9377:1-2	Lio	Waiawa, `Ewa	208	452 V.4
9378:2	Homaiikawaa	Mananaiki `Ewa	820	452 V.4
9320:1-3	Keoho	Waiawa, `Ewa	209	436 V.4

7732:2 `ili of Kaakai, ahupua`a of Mananaiki, District of `Ewa, O`ahu. I the one whose name is below, have four lo`i. A house lot is in another place.

9320:3 I, Keoho, am claimant of a mo`o in the `ili of Kapalaoa, Waiawa, Ewa, O`ahu. Its name is Aipuhi and it is as follow: on the north is Kapuili. on the south is Namu, on the West is a muliwai, on the east is kula . . .

7713:48 Kekuanao`a claims a lands for his royal children in January of 1848: there are presented the lands of my royal children, Victoria Kamamalu etc. . . their lands which remain from the Division of the Mo`i. . .

7723:1 `ili of Kaakai, ahupua`a of Mananaiki, District of `Ewa, O`ahu. I . . . have 5 lo`i, also a kula and a house lot, at Kapalaoa . . . Jan. 28, 1848. . .

9372:1-2 I, Keiki, am a claimant of a mo`o in the `ili of Kapalaoa, ahupua`a, Waiawa, `Ewa, O`ahu. Its name is Kukuaeelele-nui and it is bounded on the north by Haleaha, on the south by Mooiki, on the west by Kukuaeelele-iki, on the east by Kaakau . . .

9376:1,2 claimant of a mo`o in the `ili of Kapalaoa, ahupua`a of Waiawa, `Ewa, O`ahu. The name is Kupilea . . . bounded on the north by Keoho's (land), on the south by ko`ele, on the west by Namu and Kumuhahane, on the east by a kula to kalaulapalapa . .

9377:1-2 I, Lio, am claimant of land in the `ili of Kapalaoa, ahupua`a of Waiawa, `Ewa, O`ahu. Its name is Kumuhahane and it is bounded on the north by Kanamu, on the south by Mooiki, on the east by Kupihea, on the west by muliwai. I have a claim for a house site at Haleaha . . .

9378:2 I, Homaiikawaa, claimant of a mo`o in the `ili of Kaokai, ahupua`a of Manana, `Ewa, O`ahu. Its name is Kahui and it is bounded on the north by Kapouwela, on the south by Kumuhahane, on the east by Kapouwela, on the west by Kaokai . . .

9320:1-3 I, Keoho, am claimant of a mo`o in the `ili of Kapalaoa, Waiawa, `Ewa, O`ahu. Its name is Aipuhi and it is as follows: on the north is Kapuili, on the south is Namu, on the west is Muliwai, on the east is kula . . .

It is evident from these Awards that land was being cultivated for dryland (*kula*) crops such as yams, sweet potatoes, and others. Pondfields (*lo`i*) were also established utilizing the water from Waiawa stream and in the marshy areas, mounds were constructed for more *kalo* crops. House lots were also claimed and plots were worked for the chiefs (*ko`ele*) are also mentioned.

Sometime in the 1800s, some lands previously used for *kalo* were converted to rice production. Figure 7 shows the co-utilization of these fields for rice along with traditional *kalo*.

By 1899, sugar had become a profitable venture and large tracts of land in `Ewa were purchased by the Honolulu Plantation. Parts of fields 26, 27, and 42 cover the Manana Pearl City Junction Sites (Figure 8).

During World War II, the U.S. Government confiscated approximately 13 tracts of Honolulu Plantation sugar land, including the project area for military purposes. This reduced sugar production by almost 50% leading to the eventual failure of the company and their selling off the remaining lands to O`ahu sugar in 1947 (pers comm. Ann Marsteller, Hawaiian Sugar Planters Association). Sections A, B, and C on project site map have remained under their control to the present day.

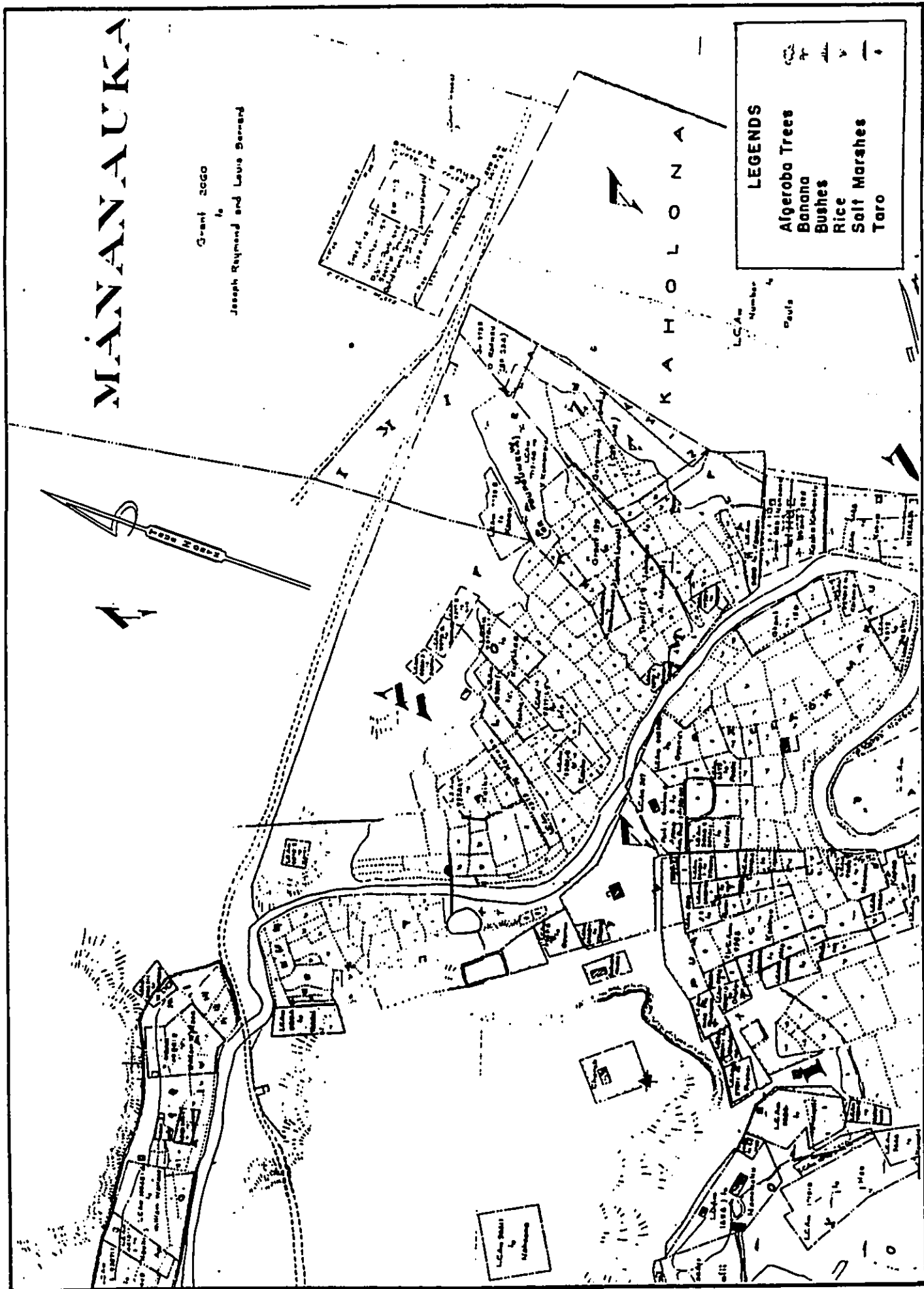


FIGURE 7: 1887 HAWAII TERRITORY SURVEY MAP OF MANANAUKA SHOWING LCAs AND RICE, BANANA, AND TARO BEING CULTIVATED NEAR THE PROJECT AREA.

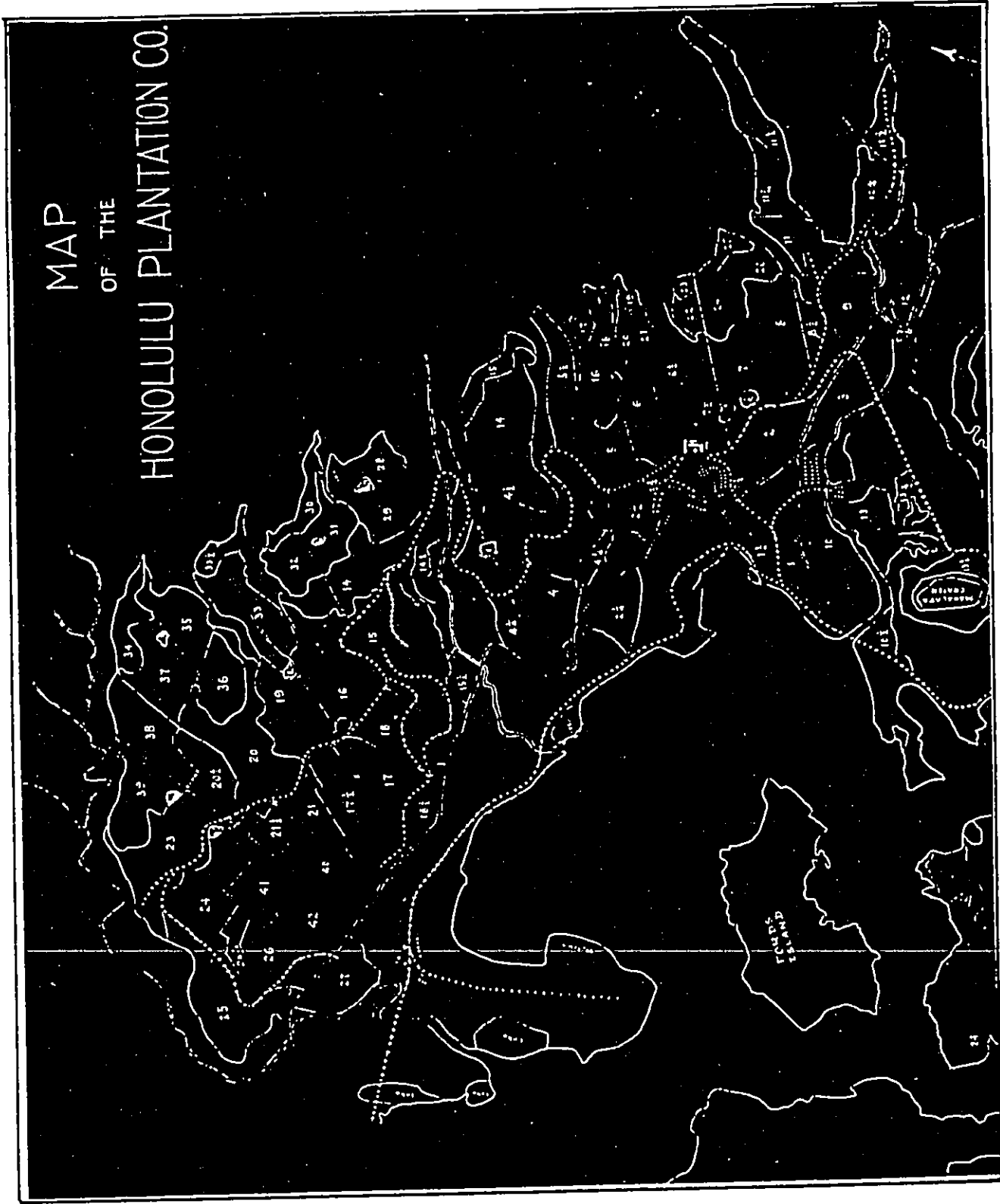


FIGURE 8: 1924 HONOLULU PLANTATION COMPANY MAP SHOWING SUGARCANE FIELDS.
CURRENT PROJECT AREA IS IN POR.s OF 26, 27, AND 42.

CONCLUSION AND ASSESSMENT

Based on the information from the previous archaeology, myths and legends, oral history, and historical documents, the pre-Contact use of the project area was for *kula*, *lo`i*, and habitation. Post-Contact impact to the land included rice crops, sugar cane, and finally, military activities. Because of these activities, there is little reason to believe significant historic sites remain in the project area. A field inspection of the project area was conducted to determine if there might be any areas, such as gullies, that might not have been affected by post-Contact activities. No such areas were identified during the field check.

The findings of this assessment indicate no significant historic sites are present in the project area and it is recommended that no further archaeological work be required for this property.

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Preliminary Traffic Impact Analysis Report

APPENDIX E

**PRELIMINARY TRAFFIC IMPACT ANALYSIS REPORT
FOR THE PROPOSED**

**MANANA AND PEARL CITY JUNCTION
DEVELOPMENT**

PREPARED FOR

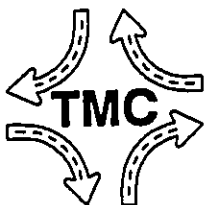
PKF Hawaii

DECEMBER 29, 1995

PREPARED BY

THE TRAFFIC MANAGEMENT CONSULTANT

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**TRAFFIC IMPACT ANALYSIS REPORT
FOR THE PROPOSED
MANANA AND PEARL CITY JUNCTION
DEVELOPMENT**

I. Introduction

A. Purpose of Study

The purpose of this study is to identify and analyze the traffic impacts resulting from the development of the proposed Manana and Pearl City Junction (PCJ) Development in Pearl City, Oahu, Hawaii. The report also recommends roadway improvements that would mitigate the traffic impacts identified in this study. This report presents the findings and recommendations of the study.

B. Scope of the Study

1. Description of the study area and existing uses in the project vicinity.
2. Analysis of existing roadway and traffic conditions.
3. Estimation and assessment of future traffic demands without the project.
4. Evaluation of circulation patterns of background traffic under the proposed improvements.
5. Development of trip generation characteristics for the proposed project.
6. The identification and analysis of traffic impacts resulting from the proposed project.
7. Recommendation of improvements that would mitigate the traffic impacts identified in this study.

C. Project Description

1. Location and Access

The proposed Manana and Pearl City Junction Development is proposed on two separate parcels. The 13.8-acre PCJ site, identified as Tax Map Key 9-7-23:01, is located on the makai (south) side of Kamehameha Highway, opposite its intersection with Acacia Road. The larger 108.5-acre Manana site is identified as Tax Map Key 9-7-24: Por. of 6 & 41. The Manana site is located on the mauka (north) side of Acacia Road and on the Ewa (west) side of Waimano Home Road, extending in the mauka direction to Moanalua Road. Figure 1 depicts the vicinity of the project.

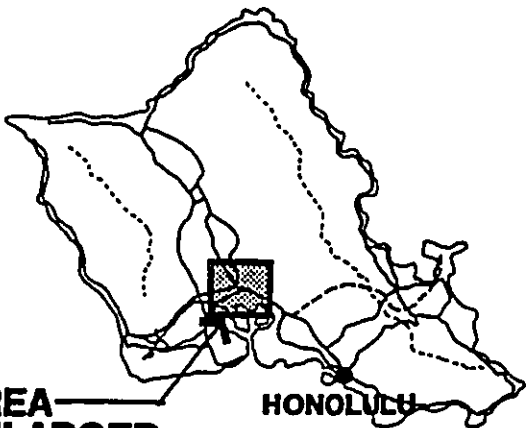
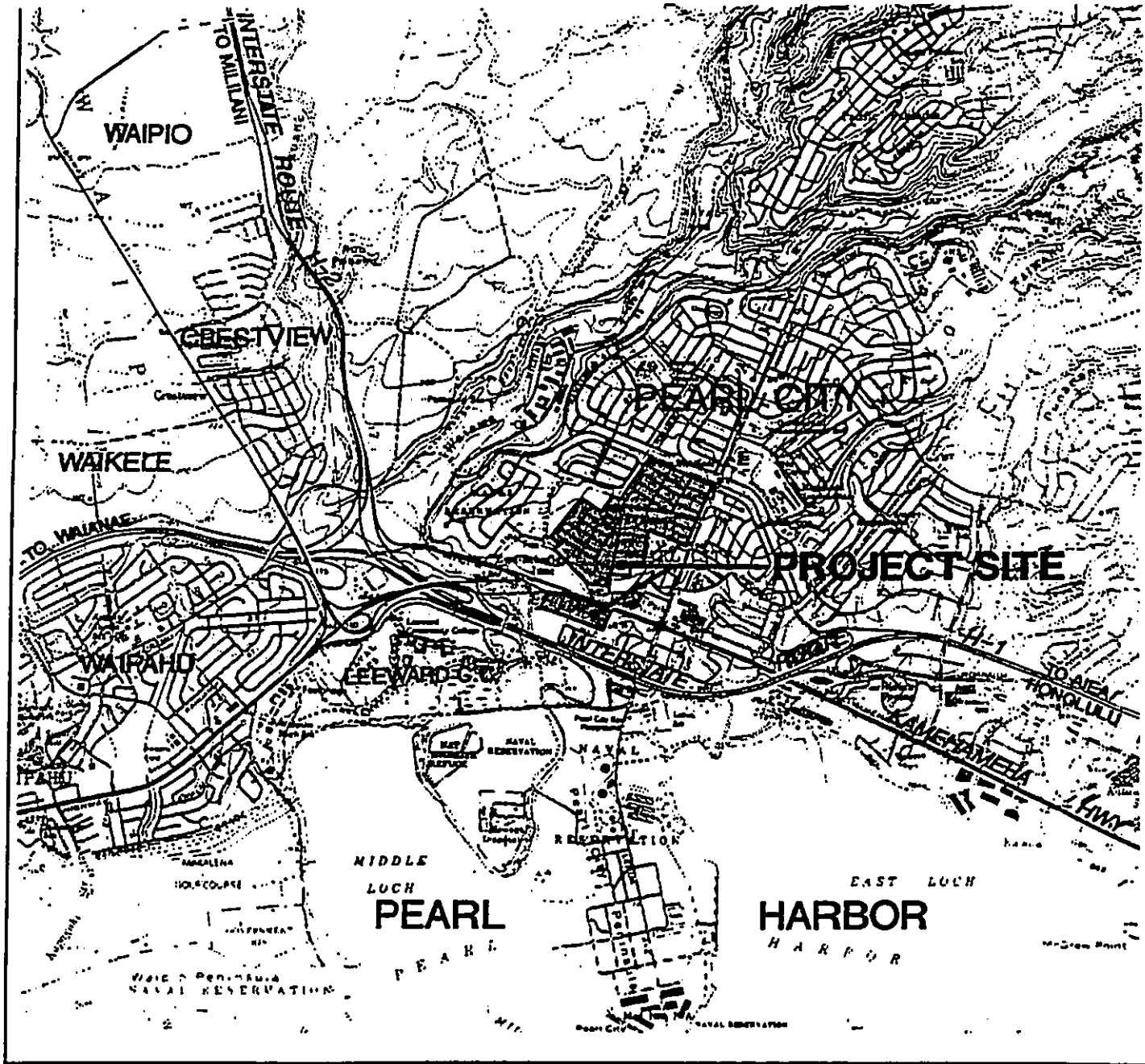
Site access to the PCJ parcel is proposed on Kamehameha Highway, opposite Acacia Road. Site access to the Manana parcel is proposed along a new roadway referred to herein as the "Spine Road". The Spine Road would begin on Waimano Home Road, opposite Moanalua Road, and extend in the Ewa-makai direction to Acacia Road, opposite Kuala Street. Limited project access also is proposed along Waimano Home Road and Acacia Road. Figure 2 illustrates the proposed land use plan.

2. Land Use Plan

a. Background

The proposed master plan for the Manana and Pearl City Junction Development is a community-based plan, which was developed by the "Pearl City Task Force" (PCTF) over an eight-month period. The PCTF consisted of elected officials, City and County of Honolulu agency representatives, and Pearl City residents, representing a broad range of community groups.

The land use concept is envisioned as a mix of commercial retail uses, office space, light industrial activities, public service facilities, open space, and recreational improvements. While the exact form and extent of the land use activities has yet to be determined, this traffic impact analysis is based upon the conceptual plan, developed by the PCTF, and various land use assumptions made for the purpose of this analysis.



AREA
ENLARGED
ABOVE

HONOLULU

NO SCALE

Figure 1. Project Vicinity

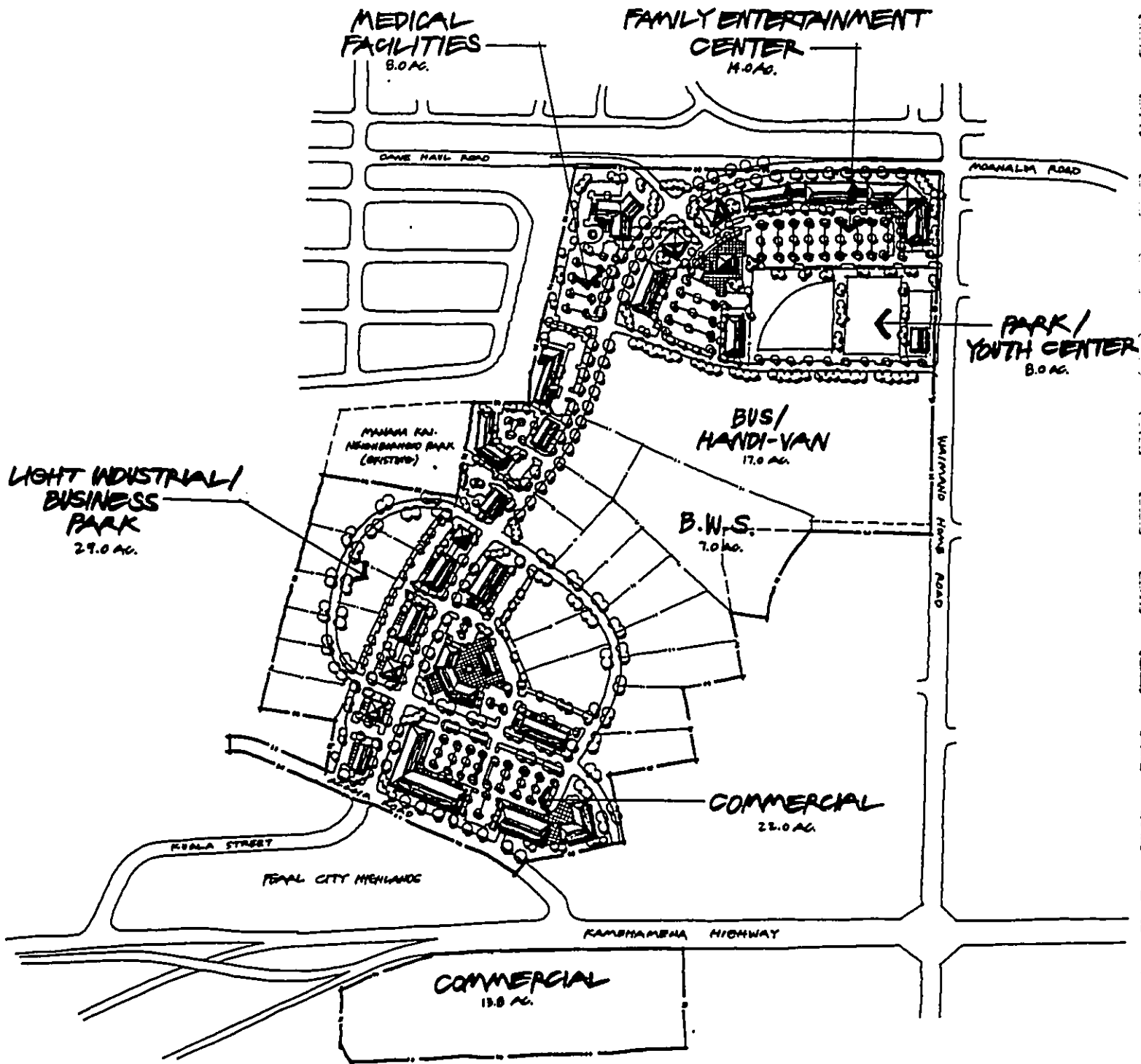


Figure 2. Proposed Land Use Plan

b. Pearl City Junction Commercial Development

The PCJ site would primarily be comprised of retail activities, requiring high visibility, easy access, and ample parking. The PCJ site would be comparable to the Pearl City Shopping Center in terms of development density.

c. Town Center

Twenty-two acres on the Manana site are proposed to be developed into commercial uses, including both retail and office activities. The "Town Center" would be located along Acacia Road, opposite the Pearl Highlands Center.

d. Light Industrial/Business Park

A light industrial/business park would be the largest component of the Manana site, covering about 29 acres. Potential activities at the business park include warehousing and distribution, research and development, light manufacturing, and data processing.

e. Public Facilities

The existing 2-acre Board of Water Supply (BWS) baseyard would be expanded to 7-acres. The existing access to the BWS baseyard on Hoomalu Street would be maintained.

A 17-acre TheBus/Handi-Van facility is proposed between Waimano Home Road and the Spine Road. TheBus facility would house an expanded bus fleet, servicing Central and West Oahu. A separate environmental assessment will be prepared for TheBus/Handi-Van facility.

f. Medical Facilities

A medical complex is proposed on an 8-acre parcel on the Manana site. The medical-related activities include long term and intermediate care facilities, medical clinic and physicians' offices, elderly housing, and rehabilitation facilities.

g. Recreational Improvements

An 8-acre Park and Youth Center is proposed along Waimano Home Road. The City park would provide active sports fields and a youth center. The internal road system of the Manana site also would provide vehicular access to the existing Manana Kai Neighborhood Park.

h. Family Entertainment Center

The Family Entertainment Center would provide a diversity of indoor and outdoor recreation and entertainment activities for the entire family. The Family Entertainment Center is proposed on a 14-acre parcel, located at the intersection of Waimano Home Road and the Spine Road. Table 1 summarizes the land use program.

Table 1. Land Use Summary	
Land Use Program	Acres
Commercial (Pearl City Junction)	13.8
Commercial Retail/Office (Town Center)	22.0
Light Industrial/Business Park	29.0
TheBus/Handi-Van	17.0
Board of Water Supply	5.0
Medical Facilities	8.0
Family Entertainment Center	14.0
Community Park/Youth Center	8.0
Spine Road and Miscellaneous Open Space	7.0
Total	123.8

D. Study Area

The study area includes intersections in the project vicinity that are expected to be the most significantly affected by the proposed project. The study area includes the following intersections:

1. Kamehameha Highway and Acacia Road
2. Kamehameha Highway and Kuala Street
3. Acacia Road and the Post Office Driveway
4. Acacia Road and Kuala Street
5. Kamehameha Highway and Waimano Home Road/Lehua Street
6. Waimano Home Road and Hoolaulea Street
7. Waimano Home Road and Hoomalu Street
8. Waimano Home Road and Moanalua Road
9. Waimano Home Road and Noelani Street

II. Existing Conditions

A. Existing and Anticipated Future Development

The project site is occupied by vacant warehouse structures, constructed and operated by the United States Navy. Some buildings are being leased to private individuals for storage purposes.

The Pearl Highlands Center is located between the Manana and PCJ sites. The primary tenant at the Pearl Highlands Center is the Sam's Club discount store. About one half the remaining floor area was vacant at the time of this study.

B. Roadway System

Kamehameha Highway is a two-way, six-lane, divided, major arterial highway between the Waiawa Interchange and the Honolulu International Airport area. Farrington Highway, Kamehameha Highway, and off ramps from Interstate Routes H-1 and H-2 feed into the Koko Head bound lanes of Kamehameha Highway. The Ewa bound lanes of Kamehameha Highway connect to Farrington

Highway and the on ramps to Interstate Routes H-1 and H-2. Kamehameha Highway is signalized at its intersections with Acacia Road and Waimano Home Road.

Acacia Road is a two- to four-lane roadway, which provides access to the Pearl Highlands Center, the Post Office and the Manana Naval Quarters. Acacia Road forms a signalized T-intersection with Kamehameha Highway. Acacia Road becomes a private roadway within the Navy housing area.

Kuala Street is a two-way, two-lane roadway between Kamehameha Highway and Acacia Road. Kuala Street provides access to the Pearl Highlands Center and the Century Park Plaza Condominium. Kuala Street forms a stop-controlled T-intersection with Acacia Road. Kuala Street also forms a stop-controlled T-intersection with Kamehameha Highway. On-street parking is permitted on the mauka side of Kuala Street and prohibited on the makai side of street.

Waimano Home Road is a four-lane, undivided collector, which extends from Kamehameha Highway through the Pearl City Uplands. Waimano Home Road is traffic signalized at its intersections with Kamehameha Highway, Hoolaulea Street, Moanalua Road, and Noelani Street. Waimano Home Road continues makai of Kamehameha Highway as Lehua Street.

Hoolaulea Street and Hoomalu Street are residential collector roadways. Hoomalu Street and Hoolaulea Street are used as bypass routes between Moanalua Road and Waimano Home Road, primarily in the Ewa bound direction. Hoolaulea Street forms a signalized T-intersection at Waimano Home Road. Hoomalu Street is stop-controlled at Waimano Home Road and provides access to the existing BWS baseyard located on the project site.

Moanalua Road is a four-lane arterial roadway between Pearl City and Aiea. Moanalua Road provides access to Interstate Route H-1 at the Moanalua Interchange, located east of the project site. Moanalua Road terminates at its signalized T-intersection with Waimano Home Road.

Noelani Street is a two lane, two way residential street, which forms a four-legged, traffic signalized intersection with Waimano Home Road.

C. Existing Traffic Volumes and Operating Conditions

1. General

a. Field Investigation

The field investigation was conducted during the AM and PM peak periods of weekday traffic between May 16, 1995 and May 24, 1995 at the following intersections:

- Kamehameha Highway and Acacia Road
- Kamehameha Highway and Kuala Street
- Acacia Road and the Post Office Driveway
- Acacia Road and Kuala Street
- Kamehameha Highway and Waimano Home Road/Lehua Street
- Waimano Home Road and Hoolaulea Street
- Waimano Home Road and Hoomalu Street
- Waimano Home Road and Moanalua Road
- Waimano Home Road and Noelani Street

b. Capacity Analysis Methodology

The highway capacity analysis, performed in this study, is based upon procedures presented in the "Highway Capacity Manual" (HCM), Special Report 209, Transportation Research Board, 1985 as amended, and the "Highway Capacity Software", Federal Highways Administration.

Level of Service (LOS) is defined as "a qualitative measure describing operational conditions within a traffic stream". Several factors are included in determining LOS such as: speed, delay, vehicle density, freedom to maneuver, traffic interruptions, driver comfort, and safety. LOS "A", "B", and "C" are considered satisfactory levels of service. LOS "D" is generally considered a "desirable minimum" operating level of service. LOS "E" is an undesirable condition and LOS "F" is an unacceptable condition.

"Volume-to-capacity" (v/c) ratio is another measure indicating the relative traffic demand to the road's traffic carrying ability. A v/c ratio of 0.50 indicates that the traffic demand is utilizing 50% of the roadway's capacity.

2. Existing AM Peak Hour Traffic Analysis

The AM peak hour of traffic in the vicinity of the project occurs between 7:00 AM and 8:00 AM. The "commuter" peak hour occurs earlier, between 6:00 AM and 7:00 AM, when traffic primarily flows in the Koko Head bound direction. However, the 7:00 AM to 8:00 AM peak hour is selected for use in this study, since it is the more critical of the two peak hours and it is more consistent with the trip generation characteristics of the land uses anticipated for the proposed project.

The study intersections operate reasonably well during the existing AM peak hour of traffic. The intersection of Kamehameha Highway and Waimano Home Road operates at an overall LOS "D" and a v/c ratio of 0.92. The critical traffic movement is the makai bound right turn movement from Waimano Home Road to Ewa bound Kamehameha Highway, which operates at LOS "E". The intersection of Moanalua Road and Waimano Home Road operates at an overall LOS "D" and a v/c ratio of 0.87, during the existing AM peak hour of traffic. LOS "E" conditions exist on the makai bound left turn movement from Waimano Home Road to Koko Head bound Moanalua Road and on the mauka bound through/right turn movement on Waimano Home Road. Figures 3 and 4 depict the existing AM peak hour traffic and results of the capacity analysis.

3. Existing PM Peak Hour Traffic Analysis

The PM peak hour of traffic occurs between 3:30 PM and 4:30 PM. The PM peak period continues through the commuter peak hour, when traffic primarily flows in the Ewa bound direction. However, the more critical PM peak hour occurs during the 3:30 PM to 4:30 PM period, when traffic flows are heavy in both the Koko Head bound and Ewa bound directions.

Ewa bound traffic on Kamehameha Highway typically backs up from the Acacia Road intersection, reaching Waimano Home Road. Periodic queuing also occurs in the Koko Head bound direction of Kamehameha Highway at Waimano Home Road, however it is less pronounced. Queuing also occurs in the right lane of makai bound Waimano Home Road from Kamehameha Highway beyond Hoolaulea Street.



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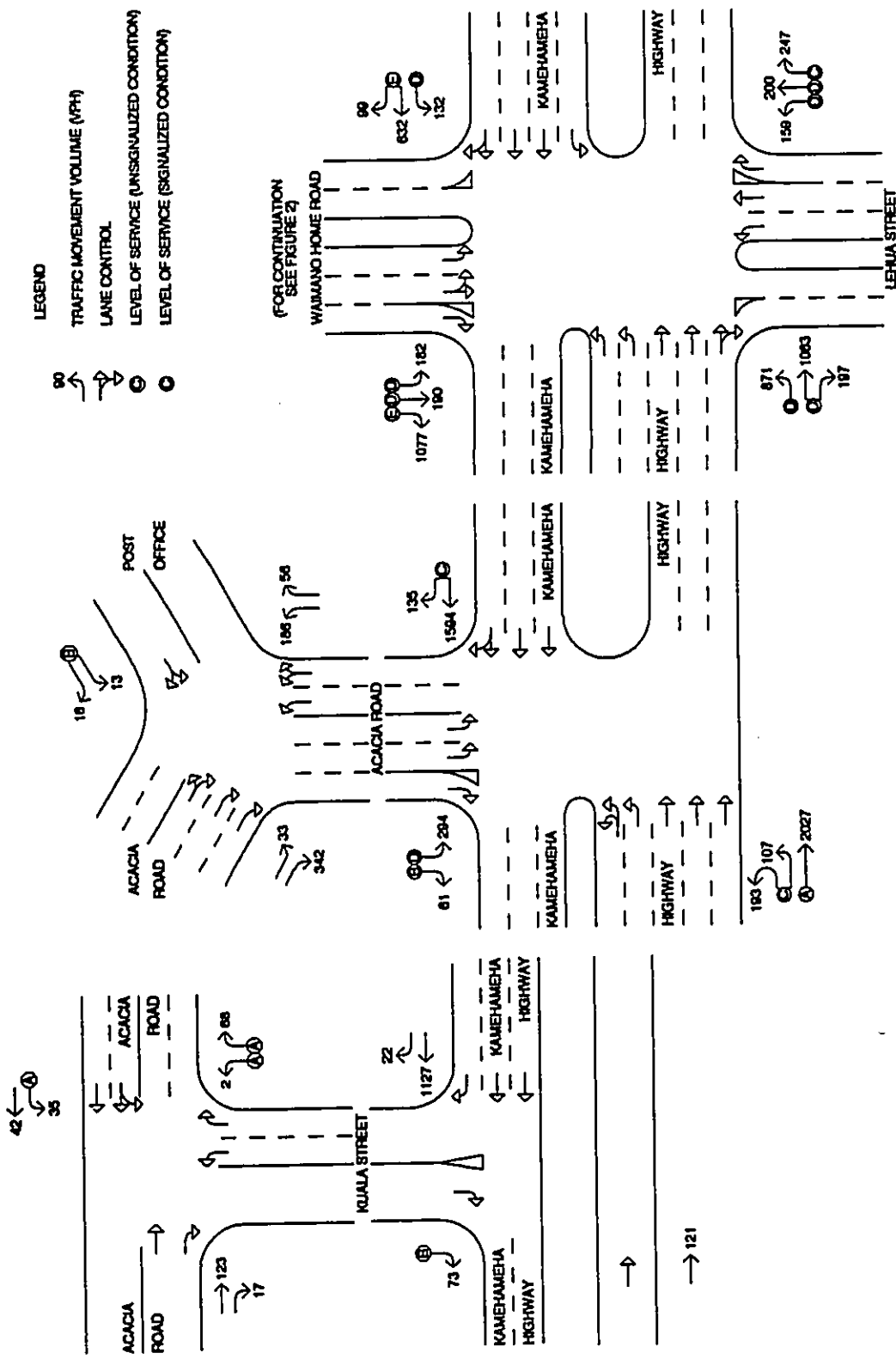


Figure 3. Existing AM Peak Hour Traffic - Kamehameha Hwy

The intersection of Kamehameha Highway and Waimano Home Road operates at an overall LOS "E", however the critical traffic movements at the intersection operate at LOS "F". These include the Koko Head bound through/right turn movement and Ewa bound left turn movement on Kamehameha Highway and the makai bound through movement on Waimano Home Road and the left turn movement on mauka bound Lehua Street. The intersection of Kamehameha Highway and Waimano Home Road operates at capacity during the existing PM peak hour of traffic, with a v/c ratio of 0.99.

The intersection of Kamehameha Highway and Acacia Road operates at an overall LOS "D" and a v/c ratio of 0.85. The left turn movement from makai bound Acacia Road to Koko Head bound Kamehameha Highway operates at LOS "E". Figures 5 and 6 depict the existing PM peak hour traffic volumes and results of the capacity analysis.

III. Projected Traffic

A. Site Traffic

1. Trip Generation Methodology

The trip generation methodology, used in this study, is based upon generally accepted techniques developed by the Institute of Transportation Engineers (ITE) and published in the "Trip Generation", 5th Edition. ITE trip rates are developed by correlating the total vehicle trip generation data with various land use characteristics, such as the gross floor area and acres of land area.

The total trips generated by a land development can be defined as driveway trips, i.e., traffic entering and exiting the project site. A portion of the trips, generated by retail activities, can be considered "pass-by" trips, i.e., traffic already on the road stopping at a "secondary" destination. The remainder of the trips generated are considered "new" trips, i.e., trips whose primary destination would be the proposed project. Based upon travel surveys compiled by ITE, the percentages of pass-by trips are correlated with the sizes (floor areas) of their respective commercial destinations. ITE estimates that during the PM peak hour of traffic, about 34 percent of the total trips, generated by the retail uses, are expected to be pass-by trips.



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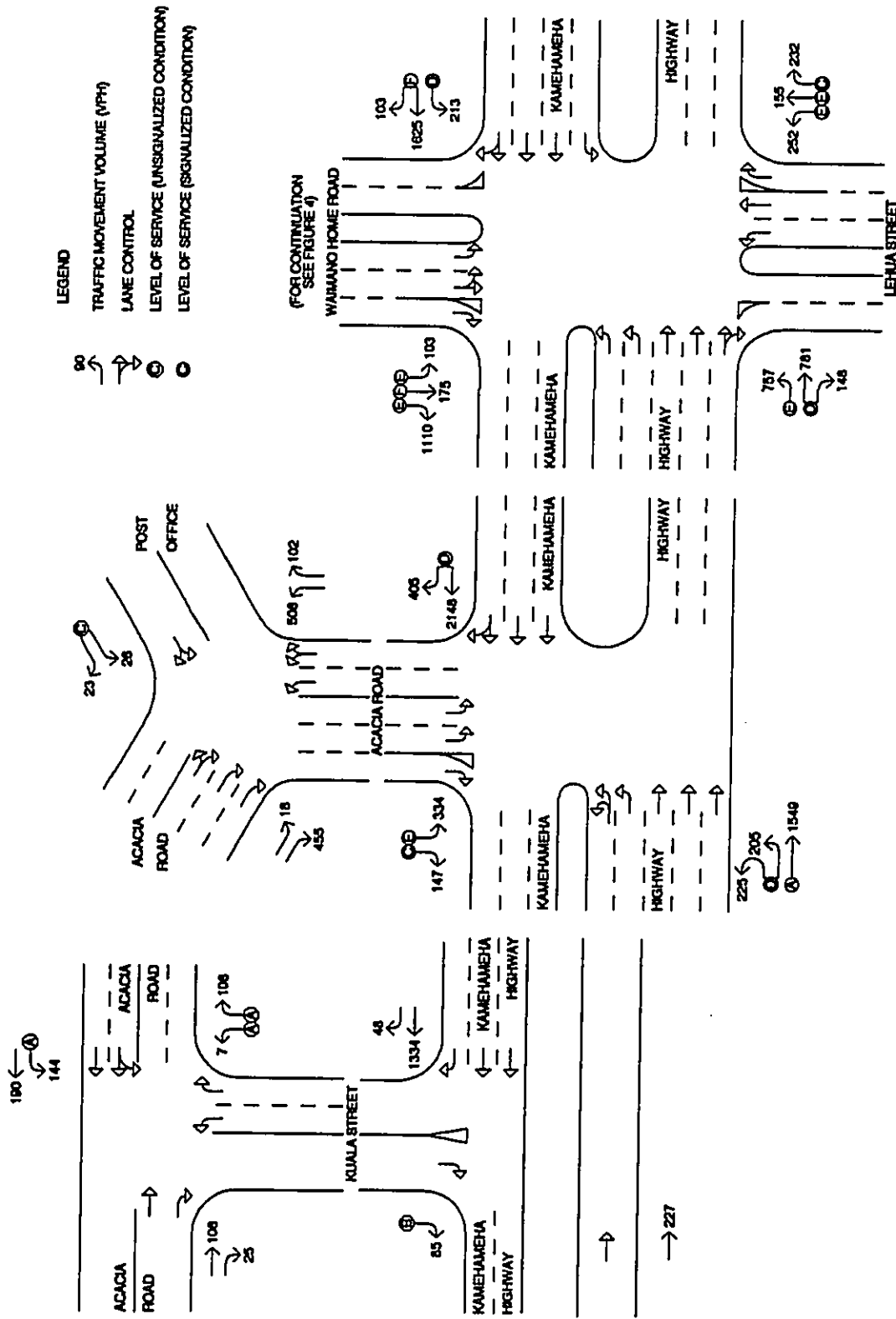


Figure 5. Existing PM Peak Hour Traffic - Kamehameha Hwy

2. Trip Generation Characteristics

The density for the commercial uses on the PCJ site and the Town Center is assumed to be 15,000 square feet of gross floor area (GSF) per acre. This is comparable to the density in the nearby Pearl City Shopping Center. The assumed density is only about one half the density of the Pearl Highlands Center. PCJ site would be occupied by about 207,000 GSF of retail space. The Town Center would be occupied by about 330,000 GSF of commercial space. The Town Center commercial space is expected to be comprised of 75 percent retail uses and 25 percent general office uses, based upon marketing estimates. The trip generation characteristics for shopping center and general office are used to analyze their respective uses at the PCJ site and Town Center.

The medical complex may contain several uses, however for the purpose of this study, the traffic impact analysis is based upon two primary trip generators; a 40,000 GSF medical office building and a 120,000 GSF nursing home.

The ITE trip rates for light industrial uses are used for the light industrial/business park. ITE trip rates for an amusement park are used for the family entertainment center. The neighborhood parks are analyzed, using the ITE rates for County parks. The BWS baseyard is analyzed, using the ITE trip rates for utilities.

Based upon discussions with the transit authority, the trips generated by TheBus Facility are expected to occur well before the AM peak hour of analysis. Therefore, the trip generation for TheBus facility is not included in the AM peak hour analysis. During the PM peak hour, TheBus facility is analyzed, using ITE rates for general light industrial uses.

The trip generation characteristics are summarized in Table 2.

Land Use Activity	Land Use Intensity	AM Peak Hour Traffic (vph)			PM Peak Hour Traffic (vph)		
		Enter	Exit	Total	Enter	Exit	Total
PCJ Commercial	207,000 GFA	157	92	249	522	522	1,044
Town Center Commercial	247,500 GFA	118	69	187	276	276	552
Town Center General Office	82,500 GFA	146	18	164	27	134	161
Light Industrial/ Business Park	29 Acres	184	38	222	27	297	224
TheBus/Handi-Van Facility	17 Acres	0	0	0	17	128	145
BWS Baseyard	7 Acres	11	1	12	1	6	7
Family Entertainment Ctr	14 Acres	3	0	3	34	22	56
Medical Office Building	40,000 GFA	81	24	109	47	109	156
Nursing Home	120,000 GFA	30	18	48	18	24	42
County Park	8 Acres	17	6	23	9	16	25
Totals		736	265	1,001	1,113	1,564	2,677

During the AM peak hour, the proposed project is expected to generate a total of 1,001 vehicles per hour (vph), 736 vph entering the site and 265 vph exiting the site. During the PM peak hour, the project is expected to generate 1,113 vph entering the site and 1,564 vph exiting the site. Of the total 2,677 vph, generated during the PM peak hour, 2,039 vph are expected to be new trips and the remaining 638 vph are expected to be pass-by traffic, i.e., traffic already on the roadways, diverted to the project.

B. External Traffic

1. General

The purpose of analysis of projected traffic conditions, without the proposed project, is to establish the base line conditions from which to measure the traffic impacts directly attributable to the proposed project. The Year 2006 is selected as the planning horizon corresponding to expected date for full build-out and occupancy of the proposed project.

The State Department of Transportation (DOT) is expected to improve Waimano Home Road at Kamehameha Highway by converting the center lane on the makai bound approach from a shared left turn/through lane to a shared left turn/through/right turn lane. This improvement is expected to increase the right turn capacity on makai bound Waimano Home Road. The following analysis includes DOT's proposed traffic mitigation and adjustments to existing signal timings to minimize traffic delays.

2. Through Traffic

A growth factor of 8.25 percent is used to estimate the growth in background traffic from the existing conditions to the Year 2006. The growth factor was derived from traffic projections presented in the ongoing Oahu Regional Transportation Plan, prepared by the Oahu Metropolitan Planning Organization.

3. Future Off-Site Traffic In Study Area

The Pearl Highlands Center is an existing development, however it was not fully occupied at the time of this study. The traffic, generated by full-occupancy of the vacant floor space, is superimposed over the background growth in traffic to estimate the future traffic conditions without the proposed Manana and Pearl City Junction Development.

4. Year AM 2006 Peak Hour Traffic Analysis Without Project

By the Year 2006, the AM peak hour traffic conditions, without project, can be expected to worsen at the intersection of Kamehameha Highway and Waimano Home Road. The intersection is expected to operate at LOS "E" and the projected traffic demand is expected to exceed the intersection's carrying capacity.

The projected traffic along Waimano Home Road is expected to approach capacity conditions at the Hoolaulea Street and Moanalua Road intersections. Figures 7 and 8 depict the Year 2006 AM peak hour traffic and results of the capacity analysis.

5. Year PM 2006 Peak Hour Traffic Analysis Without Project

The Year 2006 PM peak hour traffic demands at Kamehameha Highway intersections with Acacia Road and Waimano Home Road are expected to exceed the respective intersection capacities, operating at LOS "E" and LOS "F", respectively. The critical traffic movements at the intersection of Kamehameha Highway and Waimano Home Road/Lehua Street are expected to operate at LOS "F". These include the makai bound through movement, the Koko Head bound left turn movement, the Ewa bound through/right turn movement, and the mauka bound left turn and through movements. Figures 9 and 10 depict the Year 2006 PM peak hour traffic without project.

IV. Traffic Impact Analysis

A. Proposed Improvements

The site-generated traffic is added to the projected Year 2006 peak hour traffic. The circulation of background traffic is redistributed to the proposed Spine Road and other improvements proposed as part of this project. In addition to the Spine Road, several roadway improvements, associated with the project, are proposed.

1. Spine Road

The Spine Road would begin along the former cane haul road, turning makai and intersecting Acacia Road opposite Kuala Street. The Spine Road is envisioned to be a four-lane, divided parkway with an 80 foot-wide right-of-way. Exclusive left turn lanes would be provided at internal roadway intersections and at major driveways. The Spine Road would require the acquisition of the former cane haul road right-of-way, which is occupied by two dwelling units at the Waimano Home Road end of the alignment.

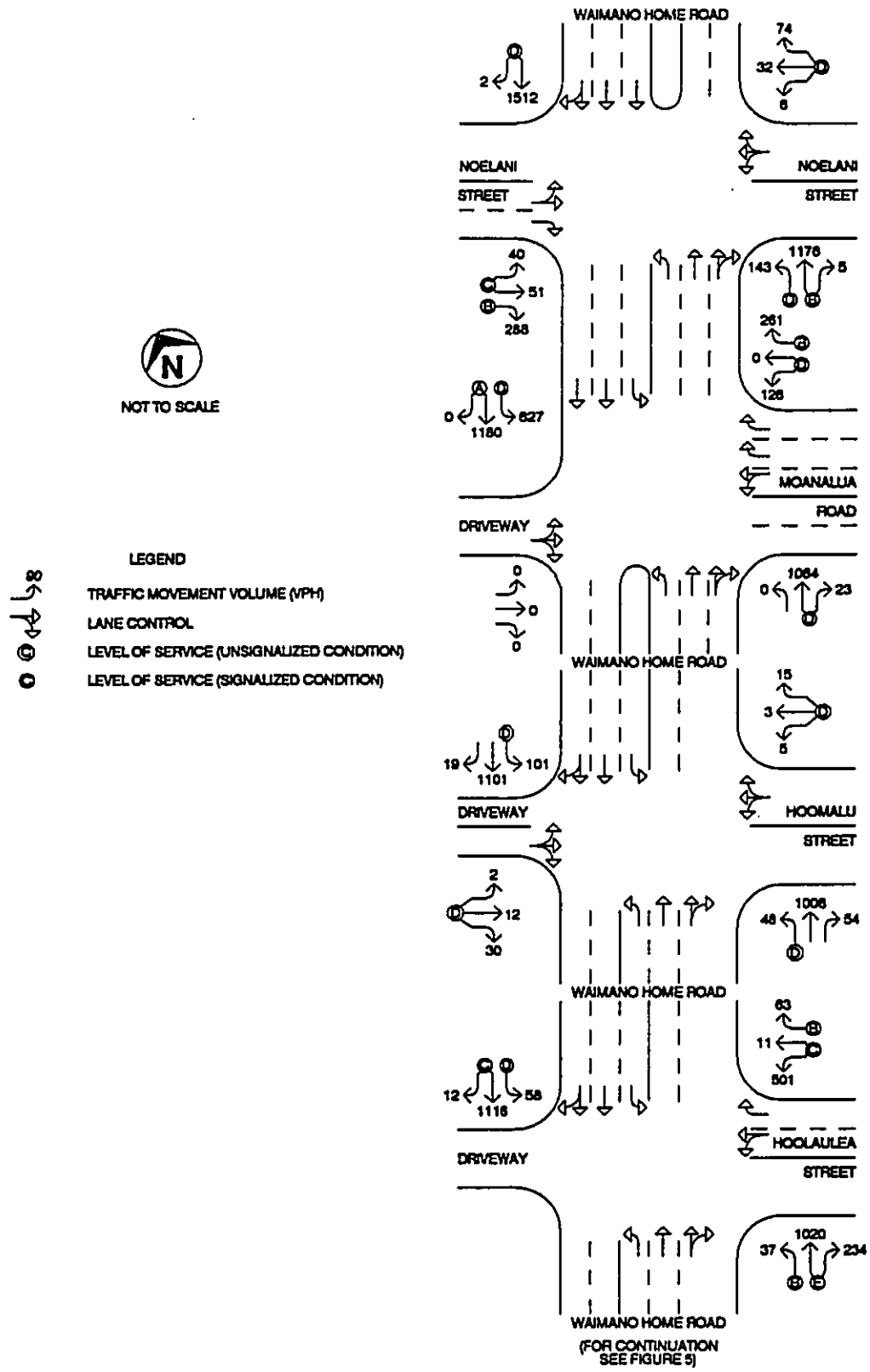


Figure 8. 2006 AM Peak Hr W/O Project - Waimano Home Road



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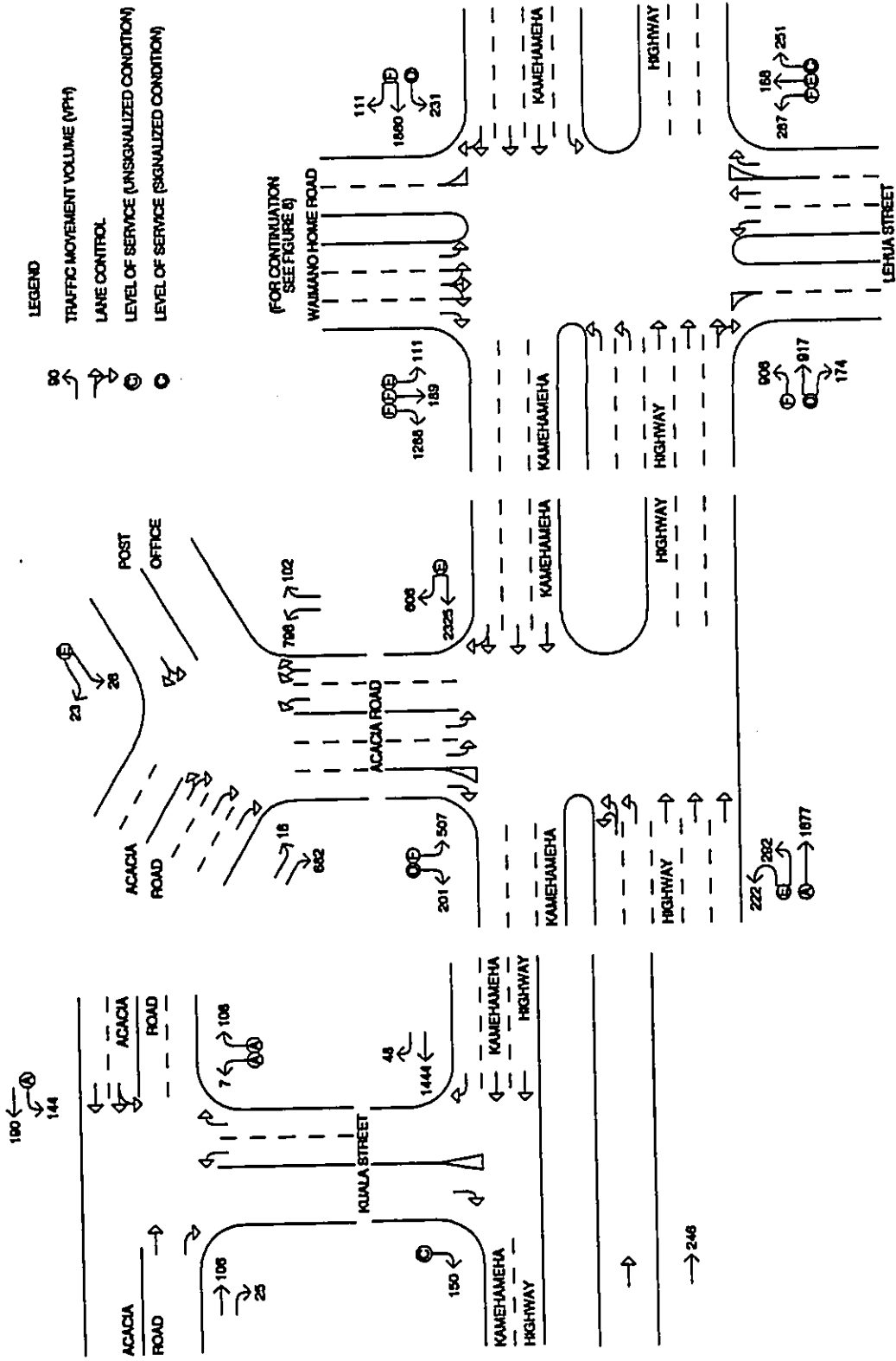


Figure 9. 2006 PM Peak Hr W/O Project - Kamehameha Hwy

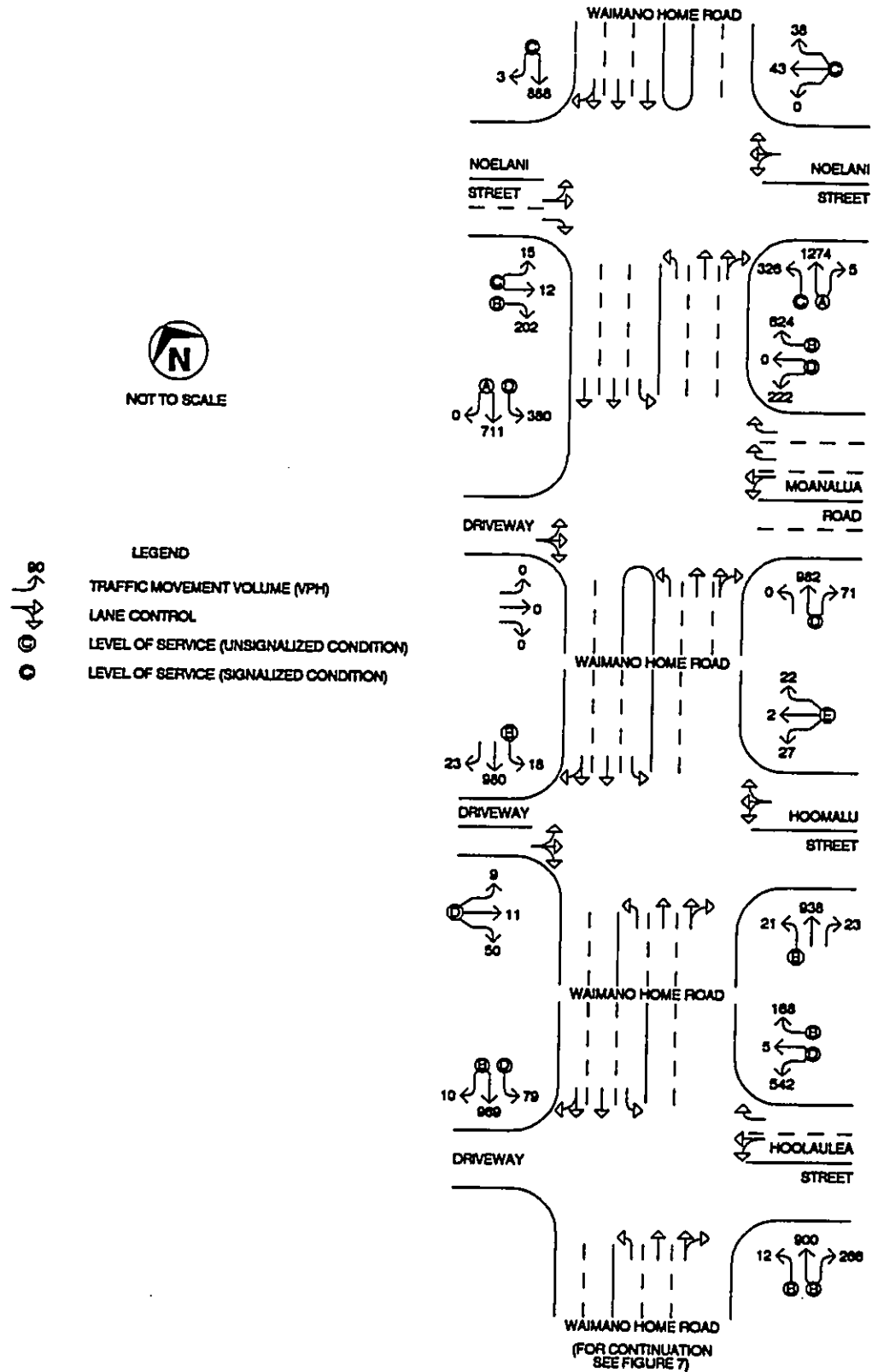


Figure 10. 2006 PM Peak Hr W/O Project - Waimano Home Road

2. Cane Haul Road

It is further proposed that the section of the former cane haul road between Kuahaka Street and the Spine Road should be developed into a connecting roadway between the two roadways. The connector roadway would intersect the Spine Road at a stop-controlled T-intersection. The Cane Haul Road is proposed as the alignment for the future extension of Moanalua Road to Central Oahu/Waipahu. The Moanalua Road Extension is an alternative improvement contained in the long range land transportation plan for Oahu. If Moanalua Road is extended beyond Kuahaka Street in the future, the intersection between the Cane Haul Road and the Spine Road can be realigned so that the Spine Road would be stop-controlled at a T-intersection with the Moanalua Road Extension.

3. Intersection of Waimano Home Road and Moanalua Road/Spine Road

In order to accommodate the Spine Road at the intersection of Waimano Home Road and Moanalua Road, several modifications to the intersection are required. The traffic signals are proposed to be upgraded to an eight-phase system, providing protected left turn phases in the mauka-makai directions and protected-permissive left turn phases in the east-west directions.

The Ewa bound approach of Moanalua Road at Waimano Home Road is proposed to be improved from a three-lane approach to a four-lane approach, providing an exclusive right turn lane, two through lanes, and an exclusive left turn lane. The two lanes in the Koko Head bound direction would be maintained. This can be accomplished by restriping the roadway within the existing cross-section, reducing the curb lane widths to accommodate the additional Ewa bound lane.

4. Intersection of Waimano Home Road and Noelani Street

Under the projected AM peak hour traffic demands, the intersection of Noelani Street and Waimano Home Road does not meet the minimum requirement for the peak hour volume traffic signal warrant, according to the "Manual on Uniform Traffic Control Devices for Streets and Highways" (MUTCD), published by the Federal Highways Administration, U. S. Department of Transportation. During the PM peak hour, the projected

traffic demand on Noelani Street just meets the minimum threshold volume for a minor street approach. Under these conditions, it is recommended that the traffic signals at the intersection of Noelani Street and Waimano Home Road should be removed and Noelani Street should be stop-controlled at Waimano Home Road. It is further recommended that Noelani Street should be restricted to right-turn-in and right-turn-out movements only. The existing through and left turn movements on Noelani Street are relatively low and can be diverted to alternate routes.

5. Intersection of Spine Road/Kuala Street and Acacia Road

The Spine Road is proposed to intersect Acacia Road, opposite Kuala Street forming a four-legged intersection. The makai bound approach on the Spine Road is proposed to provide an exclusive left turn lane, a shared left turn/through lane, and a shared right turn/through lane. The other approaches are proposed to be restriped to provide a shared left turn/through lane and an exclusive right turn lane. Finally, the intersection of Acacia Road and the Spine Road/Kuala Street is proposed to be signalized.

6. Kuala Street

Kuala Street is proposed to be restriped to provide two through lanes in the makai bound direction between Acacia Road and Kamehameha Highway. On street parking on the mauka side of Kuala Street is proposed to be prohibited during the PM peak period of weekday traffic to accommodate the two through traffic lanes.

7. Intersection of Kamehameha Highway and Kuala Street

A right turn acceleration lane should be provided on Kamehameha Highway to facilitate the makai bound right turn movement from Kuala Street to Ewa bound Kamehameha Highway. In the future, the intersection of Kamehameha Highway and Kuala Street may require traffic signalization.

8. Intersection of Kamehameha Highway and Acacia Road

The PCJ site access is proposed on the makai side of Kamehameha Highway, opposite Acacia Road, forming a four-legged intersection. The traffic signals will have to be modified to a six-phase operation to

accommodate the mauka bound approach. The PCJ driveway should provide two lane inbound and three lanes outbound; an exclusive left turn lane, a shared left turn/through lane, and an exclusive right turn lane.

Acacia Road is proposed to be widened to provide an additional lane for a total of four makai bound lanes; an exclusive left turn lane, a shared left turn/through lane, a shared through/right turn lane, and an exclusive right turn lane. The two existing mauka bound lanes would be maintained. Right-of-way acquisition may be required to accommodate the additional makai bound lane.

Ewa bound Kamehameha Highway is proposed to be widened to provide an exclusive left turn lane to the PCJ site, which can be accommodated within the existing median. Furthermore, Ewa bound Kamehameha Highway is proposed to be widened to provide an exclusive right turn lane to Acacia Road, which also can be accommodated within the existing right-of-way.

B. AM Peak Hour Traffic Impact Analysis With Project

Figures 11 and 12 depict the AM peak hour traffic with the proposed project, under the proposed improvements discussed previously. The AM peak hour traffic operation at the intersection of Kamehameha Highway and Waimano Home Road is improved from LOS "E" without the project to LOS "D" with the site-generated traffic and the proposed improvements associated with the proposed project. The v/c ratio is reduced from 1.08 without the project to 0.78 with the project. The intersection of Kamehameha Highway and Acacia Road is expected to operate at LOS "D" and a v/c ratio of 0.79.

Side street and driveway access along Waimano Home Road is also expected to be improved due to the lower through volumes, resulting from traffic being diverted to the Spine Road. The intersection of Moanalua Road and Waimano Home Road is expected to operate at LOS "D" and a v/c ratio of 0.89, during the AM peak hour of traffic with the proposed project.

C. PM Peak Hour Traffic Impact Analysis With Project

Figures 13 and 14 depict the PM peak hour traffic with the proposed project. The traffic operation at the intersection of Kamehameha Highway is expected to continue to operate at LOS "F" with the proposed project, however the v/c ratio is reduced from 1.33 without the project to 1.07 with the project. The traffic

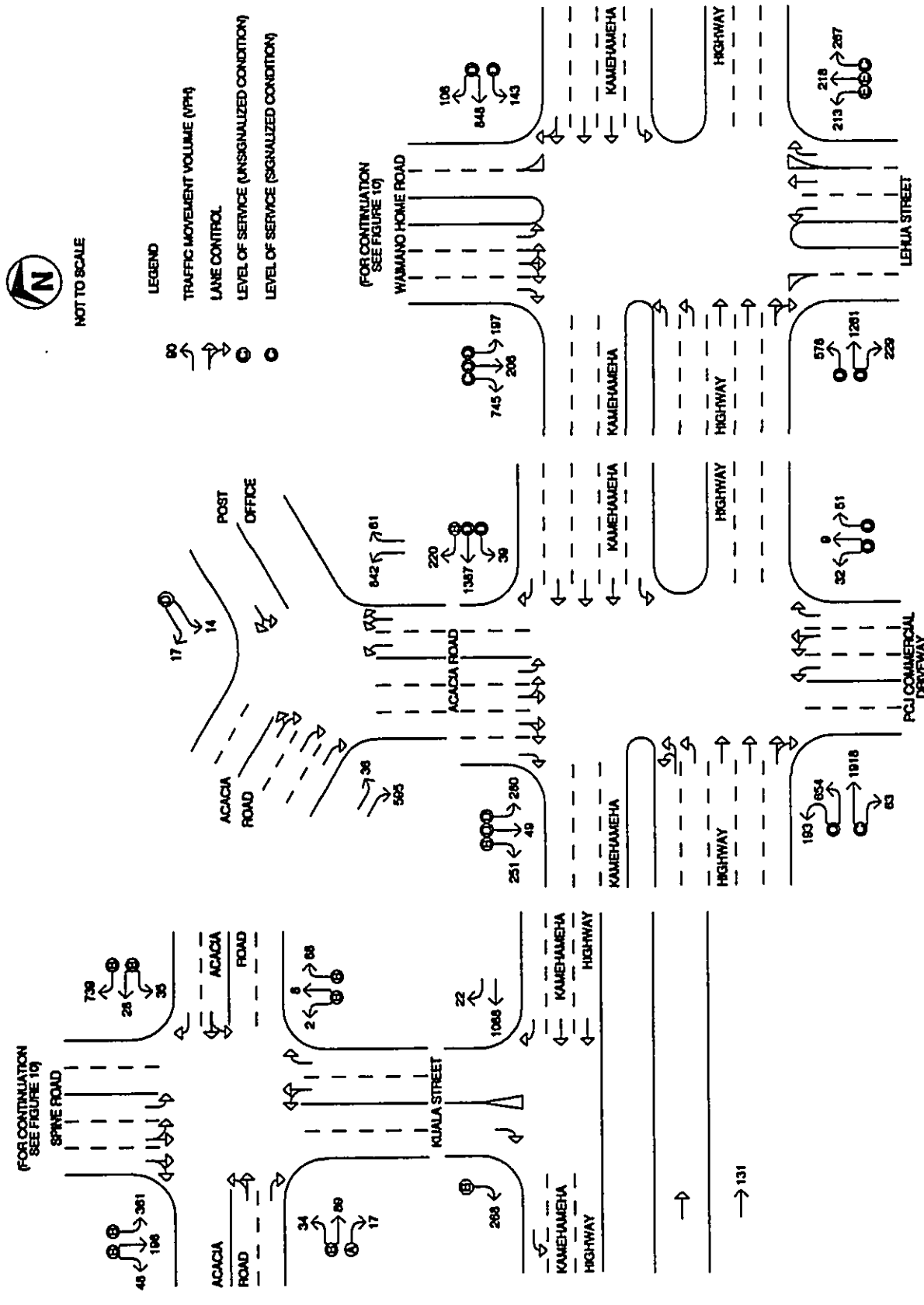


Figure 11. 2006 AM Peak Hr W/Project - Kamehameha Hwy

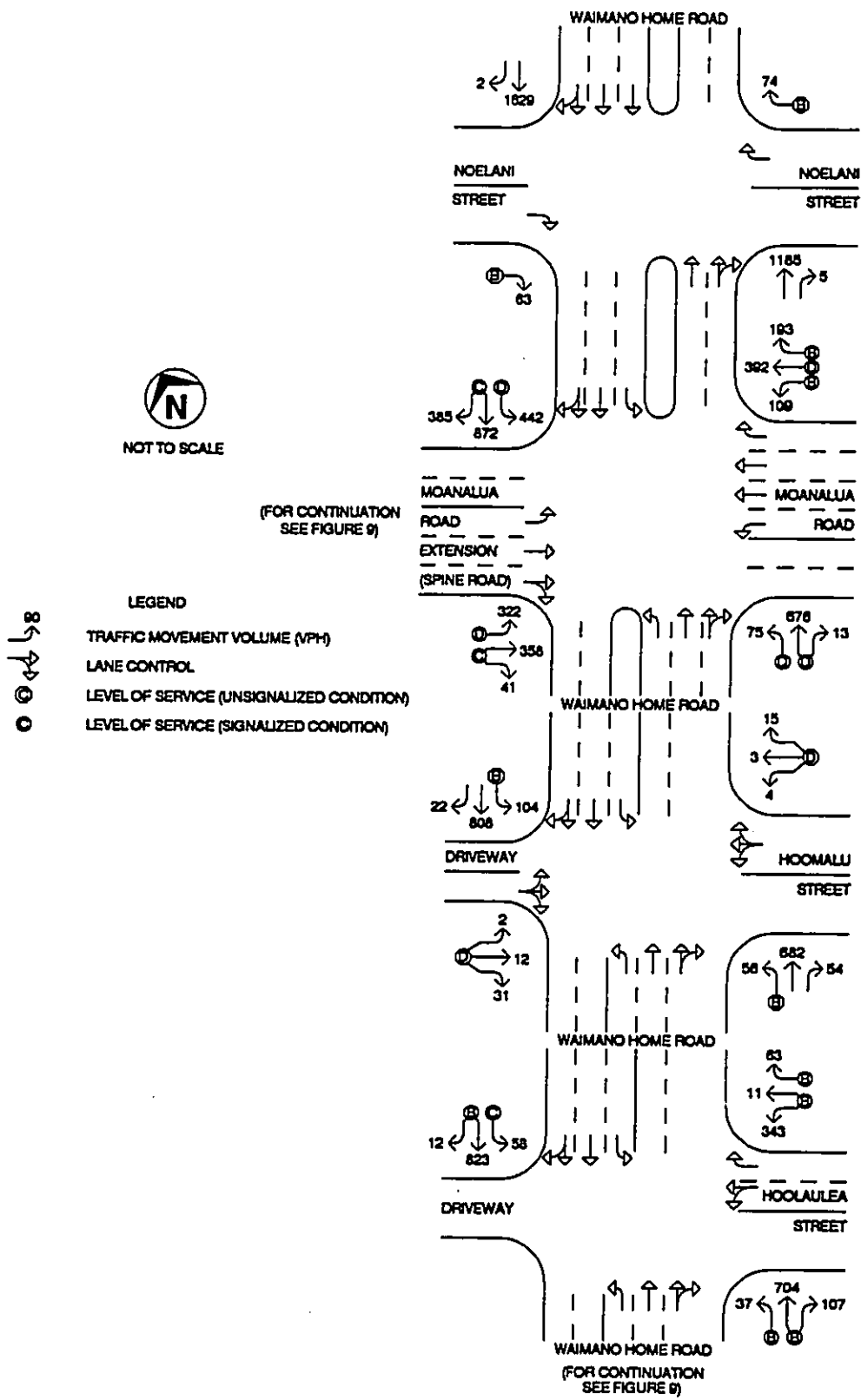


Figure 12. 2006 AM Peak Hr W/Project - Waimano Home Road

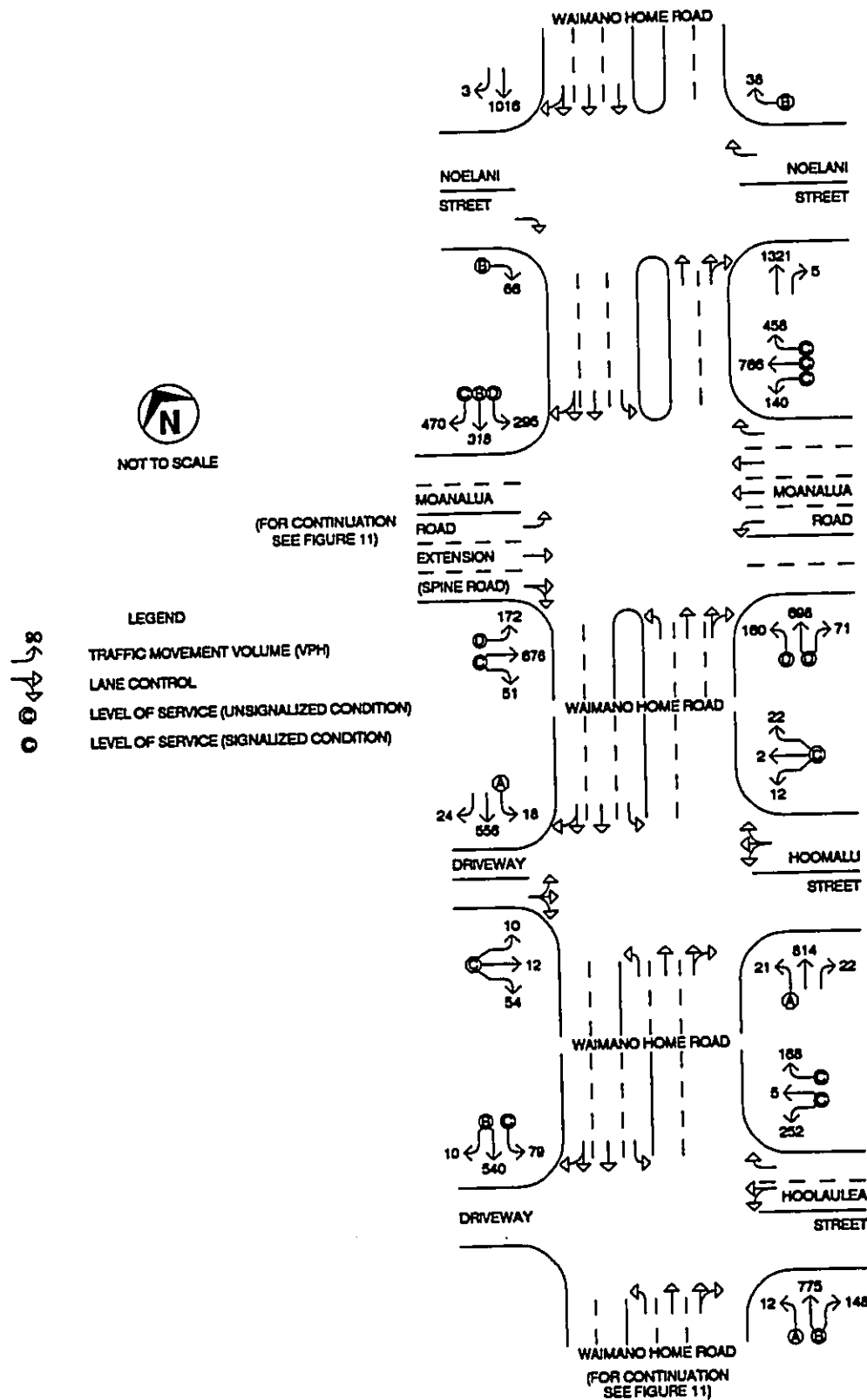


Figure 14. 2006 PM Peak Hr W/Project - Waimano Home Road

operations at the intersection of Kamehameha Highway and Acacia Road are expected to remain at LOS "E", however the v/c ratio is expected to be reduced from 1.03 without the project to 0.98 with the proposed project.

The Spine Road is expected to divert a significant amount of traffic bound for Ewa bound Interstate Route H-1 and northbound Interstate Route H-2 to Kuala Street. The right turn movement from Kuala Street to Kamehameha Highway is expected to operate at LOS "E".

Table 3 summarizes the the LOS and v/c ratios at major intersection in the study area under the various scenarios analyzed in this study.

Table 3. Traffic Impact Analysis Summary							
Intersection	LOS v/c	AM Peak Hour			PM Peak Hour		
		Existing	Without Project	With Project	Existing	Without Project	With Project
Kamehameha Hwy at Acacia Rd	LOS	B	C	D	D	E	E
	v/c	0.71	0.77	0.79	0.86	1.03	0.98
Kamehameha Hwy at Waimano Home Rd	LOS	D	E	D	E	F	F
	v/c	0.93	1.08	0.78	0.99	1.33	1.07
Moanalua Road at Waimano Home Road	LOS	D	C	D	C	C	C
	v/c	0.87	0.94	0.89	0.77	0.84	0.88

V. Recommended Road Improvements

A. Spine Road

1. The Spine Road is proposed as a four-lane, divided parkway with an 80 foot-wide right-of-way.
2. Exclusive left turn lanes should be provided at major driveways and at internal roadway intersections.

B. Cane Haul Road

1. The former cane haul road between Kuahaka Street and Spine Road should be developed into a connecting roadway between the two roadways.
2. The connector roadway should intersect the Spine Road at a stop-controlled T-intersection.

C. Intersection of Waimano Home Road and Moanalua Road/Spine Road

1. The traffic signals should be upgraded to an eight-phase system, providing protected left turn phases in the mauka-makai directions and protected/permissive left turn phases in the east-west directions.
2. The Ewa bound approach of Moanalua Road at Waimano Home Road is proposed to be improved from a three-lane approach to a four-lane approach, providing an exclusive right turn lane, two through lanes, and an exclusive left turn lane, and maintaining the two lanes in the Koko Head bound direction.

D. Intersection of Waimano Home Road and Noelani Street

1. The traffic signals at the intersection of Noelani Street and Waimano Home Road should be removed and Noelani Street should be stop-controlled at Waimano Home Road.
2. Noelani Street should be restricted to right-turn-in and right-turn-out movements only.

E. Intersection of Spine Road/Kuala Street and Acacia Road

1. The Spine Road should intersect Acacia Road, opposite Kuala Street forming a four-legged intersection.
2. The makai bound approach on the Spine Road should provide an exclusive left turn lane, a shared left turn/through lane, and a shared right turn/through lane.
3. The other approaches should be restriped to provide a shared left turn/through lane and an exclusive right turn lane.
4. The intersection of Acacia Road and the Spine Road/Kuala Street should be signalized.

F. Kuala Street

1. Kuala Street should be restriped to provide two through lanes in the makai bound direction between Acacia Road and Kamehameha Highway.
2. On street parking on the mauka side of Kuala Street should be prohibited during the PM peak period of weekday traffic to accommodate the two through traffic lanes.

G. Intersection of Kamehameha Highway and Kuala Street

1. A right turn acceleration lane should be provided on Kamehameha Highway to facilitate the makai bound right turn movement from Kuala Street to Ewa bound Kamehameha Highway.
2. In the future, the intersection of Kamehameha Highway and Kuala Street should be considered for traffic signalization, when it becomes warranted.

H. Intersection of Kamehameha Highway and Acacia Road

1. The PCJ driveway should access Kamehameha Highway, opposite Acacia Road, forming a four-legged intersection. The PCJ driveway should provide two lanes inbound and three lanes outbound; an exclusive left turn lane, a shared left turn/through lane, and an exclusive right turn lane.
2. The traffic signals should be modified to a six-phase operation.
3. Acacia Road should be widened to provide an additional lane for a total of four lanes; an exclusive left turn lane, a shared left turn/through lane, a shared through/right turn lane, and an exclusive right turn lane.
4. Ewa bound Kamehameha Highway should be widened to provide an exclusive left turn lane to the PCJ site.
5. Ewa bound Kamehameha Highway should be widened to provide an exclusive right turn lane to Acacia Road.

VI. Conclusions

The peak hour traffic, generated by the proposed Manana and Pearl City Junction Development, is not expected to directly impact the "commuter" peak hour traffic. The proposed project would be an employment center where the peak hours

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PEARL CITY JUNCTION DEVELOPMENT

PRELIMINARY - 12/29/95

occur around the starting and ending times of the normal workday. The peak hours of traffic in the region generally occur earlier in the morning and later in the evening on weekdays.

EA Proposed Spine Road is expected to relieve some of the existing peak period traffic congestion between the Moanalua Interchange and Kamehameha Highway. The Spine Road provides a continuous route from Moanalua Road to Kamehameha Highway. The Spine Road also is expected to improve access to the Pearl Highlands Center and the Manana Naval Quarters as well as the Manana project site. The Spine Road and the proposed improvements associated with project are expected to improve the overall traffic conditions within the study area during the AM and PM peak hours of traffic, as well as mitigate the traffic impacts resulting from the development of the Manana and Pearl City Junction Development.

of traffic occur around the starting and ending times of the normal workday. The commuter peak hours of traffic in the region generally occur earlier in the morning and later in the evening on weekdays.

The proposed Spine Road is expected to relieve some of the existing peak period traffic congestion between the Moanalua Interchange and Kamehameha Highway. The Spine Road provides a continuous route from Moanalua Road to Kamehameha Highway. The Spine Road also is expected to improve access to the Pearl Highlands Center and the Manana Naval Quarters as well as the Manana project site. The Spine Road and the proposed improvements associated with project are expected to improve the overall traffic conditions within the study area during the AM and PM peak hours of traffic, as well as mitigate the traffic impacts resulting from the development of the Manana and Pearl City Junction Development.

Environmental Noise Impact Assessment

APPENDIX F

D.L. ADAMS ASSOCIATES, LTD.
dba



#95-45

**ENVIRONMENTAL NOISE IMPACT ASSESSMENT
MANANA AND PEARL CITY JUNCTION DEVELOPMENT**

December 29, 1995

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1.0 SUMMARY

- 1.1 The project site is currently exposed to daytime equivalent sound levels, L_{eq} , ranging from 43.6 dBA near Manana Kai Park to 65.6 dBA at Pearl City Junction (PCJ) along Kamehameha Highway.
- 1.2 The proposed project will reduce traffic noise levels along Waimano Home Road and Kamehameha Highway in the vicinity of the project with the exception of the Ewa portion of the PCJ which will experience a slight increase.
- 1.3 The Federal Highway Administration's (FHWA) recommended maximum exterior L_{eq} for Category B land uses will be met for buildings along Moanalua Road Extension located 50 feet beyond the roadway ROW.
- 1.4 The proposed light industrial/business park may include activities which could impact existing, adjacent residences. Noise mitigation measures should be implemented to prevent such impacts, such as creating a buffer zone, including restrictions on excessive noise producing activities on sale and lease documents or installing mufflers on and/or erecting barriers around noisy equipment.
- 1.5 The proposed Bus/Handi-Van maintenance and storage facilities may also impact nearby existing residences. Noisy maintenance activities and access and circulation roadways for the buses and vans should be kept away from existing nearby residences.
- 1.6 The dominant noise sources during project construction will probably be earth moving equipment, such as bulldozers and diesel-powered trucks. Any noise impact from such activities on the existing nearby residences, however, should be relatively short term.

2.0 PROJECT DESCRIPTION

The Manana and Pearl City Junction Development consists of two parcels Ewa of Waimano Home Road. The larger parcel of approximately 109 acres is mauka of Kamehameha Highway and primarily borders residential properties to the north, east and west and commercial property to the south. The remaining parcel, known as Pearl City Junction, is approximately 14 acres and borders agricultural land to the south, east and west and Kamehameha Highway to the north (Figure 1).

Currently, 38 military warehouses and ten open storage areas occupy the larger parcel and the Pearl City Junction is developed with four military warehouses. Both parcels are zoned F-1, Military and Federal, with the warehouses in better condition currently being used for storage.

The conceptual land use plan defines eight major land uses for the project (Figure 2). For the larger parcel, the following uses are envisioned:

- Family Entertainment Center
- Park/Youth Center
- Medical Facilities
- Light Industrial/Business Park
- Commercial Retail Offices
- Bus/Handi-Van Facility
- Board of Water Supply Baseyard

The Pearl City Junction will likely be developed as a large retail space with, for example, automobile sales and eating establishments.

Primary vehicular access to and circulation within the larger parcel will be via an arterial created by extending Moanalua Road from Waimano Home Road to Acacia Road opposite Kuala Street. The PCJ parcel will be accessed from Kamehameha Highway.

3.0 EXISTING ACOUSTICAL ENVIRONMENT

Traffic and ambient noise measurements were made at and in the vicinity of the project site on the morning and afternoon of December 5, 1995. Noise levels were sampled for 10-minute time periods using a Larson-Davis Laboratories, Model 700, Sound Level Meter. The specific measurement locations, depicted in Figure 3, are described below:

1. Within the mauka parcel between warehouses 12 and 13.
2. Within the PCJ parcel, about 50 feet makai from the center of the large warehouse which is parallel to Kamehameha Highway.
3. Within the PCJ parcel near the entrance from Kamehameha Highway and about 50 feet from Kamehameha Highway.
4. At the sidewalk of Waimano Home Road on the Diamond Head side between Hoomalu and Moanalua Road.

The weather conditions during the measurements were sunny skies, with a temperature of about 88° and winds at 0-5 mph. The results of the measurements are presented in Table 1.

4.0 NOISE STANDARDS AND GUIDELINES

Standards and guidelines promulgated by the various local, state and federal agencies use different noise descriptors to express noise levels. To better understand the many noise descriptors used, a list of some common acoustical terminology is presented as Appendix A.

4.1 State Department of Health

The Hawaii Department of Health (DOH) regulations [Reference 1] specify allowable noise levels in terms of the A-weighted sound levels that may not be exceeded for more than 10% of any 20-minute period. The DOH regulations for Oahu are presented in Figure 4. The DOH also specifies the following with respect to adjacent zoning and order of precedence.

"Where the allowable noise level between two adjacent zoning districts differ, the lower allowable noise level shall be used. For example, the allowable noise level for the residential district shall be used at the property line between residential and business districts.

The limits specified in the allowable noise levels table shall apply subject to the order of precedence in which uses were initiated after the effective date of this rule; provided that a new order of precedence is established when any use is discontinued. The initiation of use shall be measured by the date of rezoning. For example, if agricultural or industrial operations are conducted next to a lot used as residence, the agricultural or industrial limits would apply if the building permit for the residence was obtained after agricultural or industrial operations had been initiated after the effective date of this rule. Residential limits would apply if the building permit for the residence was obtained before agricultural or industrial operations had been initiated."

4.2 City and County of Honolulu Land Use Ordinance

The City and County of Honolulu Land Use Ordinance (LUO) [Reference 2] noise regulations differ from the DOH noise regulations in that the maximum permissible octave band sound pressure levels are specified instead of A-weighted sound pressure levels and order of precedence does not dictate the allowable sound level. Where non-

residential districts abut residential districts, the residential maximum sound levels shall apply. Also, there is no specified period of time associated with the exceedence of these levels. Figure 5 presents the LUO allowable noise levels.

4.3 State of Department of Transportation - Airports Division

The Hawaii Department of Transportation (DOT) Airports Division recommended local use compatibility guidelines [Reference 3] are expressed in terms of yearly day-night average sound levels, L_{dn} , due to aircraft operations. These guidelines permit an L_{dn} of up to 60 dBA for land uses as listed in Section 2.0 without incorporating additional Noise Level Reduction (NLR) measures into the building constructions. Commercial uses such as retail shops, restaurants, shopping centers, etc. are compatible with L_{dn} levels up to 65 dBA without any mitigation measures. With noise mitigation measures implemented, such commercial uses are allowed in areas exposed to an L_{dn} as high as 75 dBA.

4.4 U.S. Federal Highway Administration

The Federal Highway Administration (FHWA) has established a set of design goals for traffic noise exposure [Reference 4]. The FHWA defines four land use categories and assigns corresponding maximum hourly equivalent sound levels, L_{eq} . For example, Category B, defined as picnic and recreation areas, parks, residences, motels, hotels, schools, churches, libraries and hospitals has a corresponding maximum exterior L_{eq} of 67 dBA and a maximum interior L_{eq} of 52 dBA.

4.5 U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) has identified a range of yearly day-night average sound levels, L_{dn} , sufficient to protect public health and welfare from the effects of environmental noise [Reference 5]. The EPA has established a goal to reduce exterior environmental noise to an L_{dn} not exceeding 65 dBA and a future goal to further reduce exterior environmental noise to an L_{dn} not exceeding 55 dBA. Additionally, the EPA states that to protect against hearing damage, one's 24-hour equivalent sound level exposure $L_{eq(24)}$ at the ear should not exceed 70 dBA. The EPA emphasizes that these goals are not intended as regulations as they have no authority to regulate noise levels, but rather that these goals are intended to be viewed as levels below which the general population will not be at risk from any of the identified effects of noise.

4.6 U.S. Department of Defense

The Department of Defense (DOD) recommended outdoor allowable noise levels [Reference 6] are expressed in terms of day-night average sound levels. Below L_{dn} 65, the DOD does not recommend restrictions for any major categories of land use, which include the subject project.

5.0 Potential Noise Impacts and Recommended Noise Impact Mitigation

5.1 Traffic Noise

Traffic counts were taken during the noise measurements at Locations 3 and 4 to allow calibration of the Federal Highway Administration's (FHWA) Traffic Noise Prediction Model [Reference 7]. Once calibrated, the FHWA noise model was used to project future peak hour traffic noise using data provided by the traffic engineer [References 8, 9, 10 & 11]. This data consisted of existing and future traffic volumes with and without the project for the year 2006. The change in future traffic noise from existing levels for the locations depicted in Figure 6 are presented in Table 2. Table 3 lists the future peak hour traffic noise levels at 50 feet from the proposed Moanalua Extension Road ROW, locations 5 and 6 of Figure 6.

As indicated in Table 2, the proposed redevelopment of the subject property will result in an increase in the traffic noise along the Ewa portion of the PCJ parcel bordering Kamehameha Highway. However, the proposed redevelopment will not increase, and at some locations will reduce, the traffic noise along the Diamond Head portion of the PCJ parcel and along Waimano Home Road in the vicinity of, and adjacent to the project site. The maximum calculated increase in the traffic noise levels, due to proposed project, which occurs at Location 5 is 1.8 dB. Noise level increases of this magnitude are generally considered insignificant. The maximum calculated decrease in the traffic noise levels due to the proposed project is 2.7 dB which occurs at Location 3.

Table 3 lists the projected traffic noise levels at two locations along the proposed Moanalua Road Extension. As can be seen, buildings located beyond 50 feet of the Moanalua Road ROW will be exposed to traffic noise level, L_{eq} , of less than 67 dBA. Such traffic noise levels will comply with the FHWA's recommendation for Category B land uses.

5.2 Aircraft Noise

The proposed project site is approximately four to five miles north-northwest of Honolulu International Airport (HIA). Figure 7, taken from the *Honolulu International Airport Master Plan* [Reference 3] is a map with 1992 L_{dn} contours due

to aircraft operations. This map indicates that the project site lies well outside of the L_{dn} 55 contour; the minimum sound level for which the L_{dn} contour is plotted. Figure 8 also taken from the same source indicates a reduction in the land area encompassed by the L_{dn} 55 contour for the year 2007.

5.3 Proposed Light Industrial/Business Park

A 29-acre portion of the re-development is proposed for light industrial and office space with possible activities to include:

- Wholesale and Distribution
- Warehouse and Storage
- Motion Picture and Television Production Studios
- Research and Development Facilities
- Light Manufacturing, Processing and Packaging
- Data Processing and Storage

The DOH maximum allowable property line noise level for industrially zoned districts is 70 dBA during both daytime and nighttime hours. This could significantly impact the existing adjacent noise sensitive residential and apartment areas, and perhaps, the proposed adjoining areas designated for medical facilities and commercial use. However, as discussed in Section 4.1, the DOH requires that the lower allowable sound levels limits would apply if the building permit for any residence was obtained before industrial operations had been initiated or if no order of precedence exists. Therefore, any industrial uses within the industrial area would be subject to a maximum allowable noise level of 55 dBA daytime and 45 dBA nighttime at the adjacent residential property lines, and 60 dBA daytime and 50 dBA nighttime at the adjacent apartment property line. In Hawaii, where natural ventilation is common, light industrial uses such as those mentioned above could typically produce noise levels which exceed the maximum allowable noise levels at the adjacent residential and apartment area property lines.

In order for the industrial area to be acoustically compatible with the adjacent residential and apartment areas and the proposed medical facilities and commercial area, noise mitigation measures should be implemented. Typical noise mitigation for stationary equipment, such as air-conditioning and ventilation equipment, refrigeration units, compressors, etc., includes mufflers, silencers, acoustic enclosures, noise barrier walls, etc. However, other industrial noise sources may include non-stationary equipment, such as trucks, forklifts and other light manufacturing equipment. Mitigation measures may include allowing only "quiet" industrial uses and only daytime operations at industrial areas abutting noise sensitive areas. These restrictions would form a buffer zone which could potentially shield noise sensitive areas from other noisier industrial operations. Alternately, restrictions may need to be placed on

all industrial uses allowed within the industrial area, in order to strictly control development of potential noise producing industries. For example, sale and lease documents for the industrial property should disclose and emphasize the significance of the DOH noise regulations with respect to the abutting noise sensitive areas and require compliance with the same.

5.4 Bus/Handi-Van Facility

Seventeen acres of the proposed re-development is planned to house an expanded bus fleet and provide for the growing regional facility requirements of the Handi-Van. These facilities are to be located within the central portion of Manana and will not abut existing residential or apartment areas.

Noise from the Handi-Van Facility which may intrude on nearby residences can further be reduced by the layout of the repair/maintenance areas. For example, the buildings which have repair bays should be oriented so that the repair bays face away from noise sensitive areas and require compliance with the same.

Also, when buses accelerate, decelerate or use air brakes, they typically radiate higher sound levels than when cruising. Therefore, circulation within the facility and access to and from Waimano Home Road should be away from nearby residences.

5.5 Construction Noise

The various construction phases of the project may generate significant amounts of noise which may impact nearby residential areas. The actual noise is dependent upon the methods employed during each stage of the construction process. Typical ranges of construction equipment noise are shown in Figure 9. Earth moving equipment, such as bulldozers and diesel-powered trucks, will probably radiate the highest sound levels during construction.

In cases where construction noise exceeds or is expected to exceed, the DOH's allowable property line limits, a permit must be obtained from the DOH to allow the operation of 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 am and after 6:00 pm of the same day."

"No permit shall allow construction activities which emit noise in excess of ninety-five dB(A)...except between 9:00 am and 5:30 pm 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 which exhaust gas or air must be equipped with mufflers. Also, construction vehicles using traffic-ways must satisfy the DOH's vehicular noise requirements [Reference 12].

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1. *Chapter 43, Community Noise Control for Oahu*, Department of Health, State of Hawaii, Administrative Rules, Title 11, November 6, 1981.
2. *Section 3.100-2 and Table A, Noise Regulations*, Land Use Ordinance, City and County of Honolulu, December, 1993.
3. *Honolulu International Airport Master Plan Update and Noise Compatibility Program*, State of Hawaii Department of Transportation, Airports Division, Vol. 2, December 1989.
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5. *Toward a National Strategy for Noise Control*, U.S. Environmental Protection Agency, April 1977.
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8. Facsimile Transmittal, The Traffic Management Consultant, December 15, 1995.
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12. *Chapter 42, Vehicular Noise Control for Oahu*, Department of Health, State of Hawaii, Administrative Rules, Title 11, November 6, 1981.

TABLE 1

NOISE LEVEL MEASUREMENTS FOR
MANANA/PCJ DEVELOPMENT

<u>Location*</u>	<u>L_{eq} (dBA)</u>	<u>Comments</u>
1	43.6	Wind in foliage and birds dominant noise sources.
1	50.6	Several aircraft flyovers.
2	60.8	H-1 traffic noise dominant noise source.
3	65.6	FHWA Traffic Noise Prediction Model Calibration Measurement for Kamehameha Highway.
4	72.1	FHWA Traffic Noise Prediction Model Calibration Measurement for Waimano Home Road.

* As depicted in Figure 3.

TABLE 2

CHANGE FROM EXISTING TRAFFIC NOISE LEVELS (dB)
FOR THE YEAR 2006 FOR MANANA/PCJ DEVELOPMENT

<u>Location*</u>	<u>Time</u>	<u>2006 wo/Project</u>	<u>2006 w/Project</u>
1	AM	0.4	2.0
1	PM	0.4	2.2
2	AM	0.4	- 1.6
2	PM	0.5	- 1.1
3	AM	0.7	- 2.0
3	PM	0.4	- 1.4
4	AM	0.7	0.0
4	PM	0.4	- 0.4

* As depicted in Figure 6.

TABLE 3

PROJECTED PEAK HOUR TRAFFIC NOISE LEVELS FOR
THE YEAR 2006 AT 50 FEET FROM MOANALUA EXTENSION
ROAD R.O.W. FOR MANANA/PCJ DEVELOPMENT

<u>Location*</u>	<u>Time</u>	<u>L_{eq} (dBA)</u>
5	AM	63.4
5	PM	65.7
6	AM	64.0
6	PM	66.8

* As depicted in Figure 6.

APPENDIX A
ACOUSTICAL TERMINOLOGY

Sound Pressure Level

Sound or noise consists of minute fluctuations in atmospheric pressure capable of evoking the sense of hearing. It is measured in terms of decibels (dB) using precision instruments known as sound level meters. Noise is defined as "unwanted" sound.

Technically, sound pressure level (SPL) is defined as:

$$\text{SPL} = 20 \log (P/\text{Pref}) \text{ dB}$$

where P is the sound pressure fluctuation (above or below atmospheric pressure) and Pref is the reference pressure, 20 micropascals, which is approximately the lowest sound pressure that can be detected by the human ear. For example, if P is 20 micropascals, then SPL = 0 dB, or if P is 200 micropascals, then SPL = 20 dB. The relation between sound pressure in micropascals and sound pressure level in decibels (dB) is shown in Figure A-1.

The sound pressure level that results from a combination of noise sources is not the arithmetic sum of the individual sound levels, but rather the logarithmic sum. For example, two sound levels of 50 dB produce a combined level of 53 dB, not 100 dB; two sound levels of 40 and 50 dB produce a combined level of 50.4 dB.

Human sensitivity to changes in sound pressure level is highly individualized. Sensitivity to sound depends on frequency content, time of occurrence, duration, and psychological factors such as emotions and expectations. However, in general, a change of 1 or 2 dB in the level of a sound is difficult for most people to detect. A 3 dB change is commonly taken as the smallest perceptible change and a 5 dB change corresponds to a noticeable change in loudness. A 10 dB increase or decrease in sound level corresponds to an approximate doubling or halving of loudness, respectively.

A-Weighted Sound Level

The human ear is more sensitive to sound in the frequency range of 250 Hertz (Hz) and higher, than in frequencies below 250 Hz. Due to this type of frequency response, a frequency weighting system, was developed to emulate the frequency response of the human ear. This system expresses sound levels in units of A-weighted decibels (dBA). A-weighted sound levels de-emphasizes the low frequency portion of the spectrum of a signal. The A-weighted level of a sound is a good measure of the loudness of that sound. Different sounds having the same A-weighted sound level are perceived as being about equally loud. Typical values of the A-weighted sound level of various noise sources are shown in Figure A-1.

Statistical Sound Levels

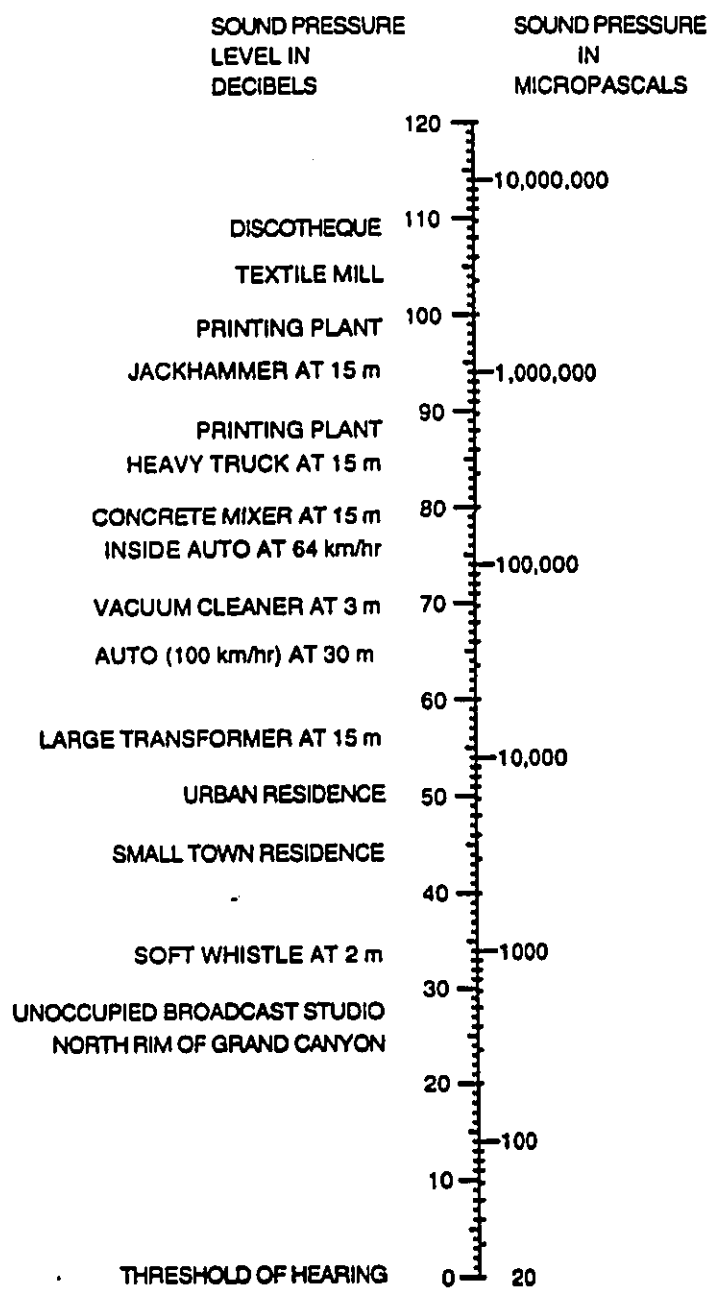
The sound levels of long-term noise producing activities, such as traffic movement, aircraft operations, etc., can vary considerably with time. In order to obtain a single number rating of such a noise source, a statistically-based method of expressing sound or noise levels developed. It is known as the Exceedence Level, L_n . The Exceedence Level, L_n , represents the sound level which is exceeded for n% of the measurement time period. For example, $L_{10} = 60$ dBA indicates that for the duration at the measurement period, the sound level exceeded 60 dBA 10% of the time. Commonly used Exceedence Levels include L_1 , L_{10} , L_{50} , and L_{90} , which are widely used to assess community and environmental noise. Figure A-2 illustrates the relationship between selected statistical noise levels.

Equivalent Sound Level

The Equivalent Sound Level, L_{eq} , represents a constant level of sound having the same total acoustic energy as that contained in the actual time-varying sound being measured over a specific time period. L_{eq} is commonly used to describe community noise, traffic noise, and hearing damage potential. It has units of dBA and is illustrated in Figure A-2.

Day-Night Equivalent Sound Level

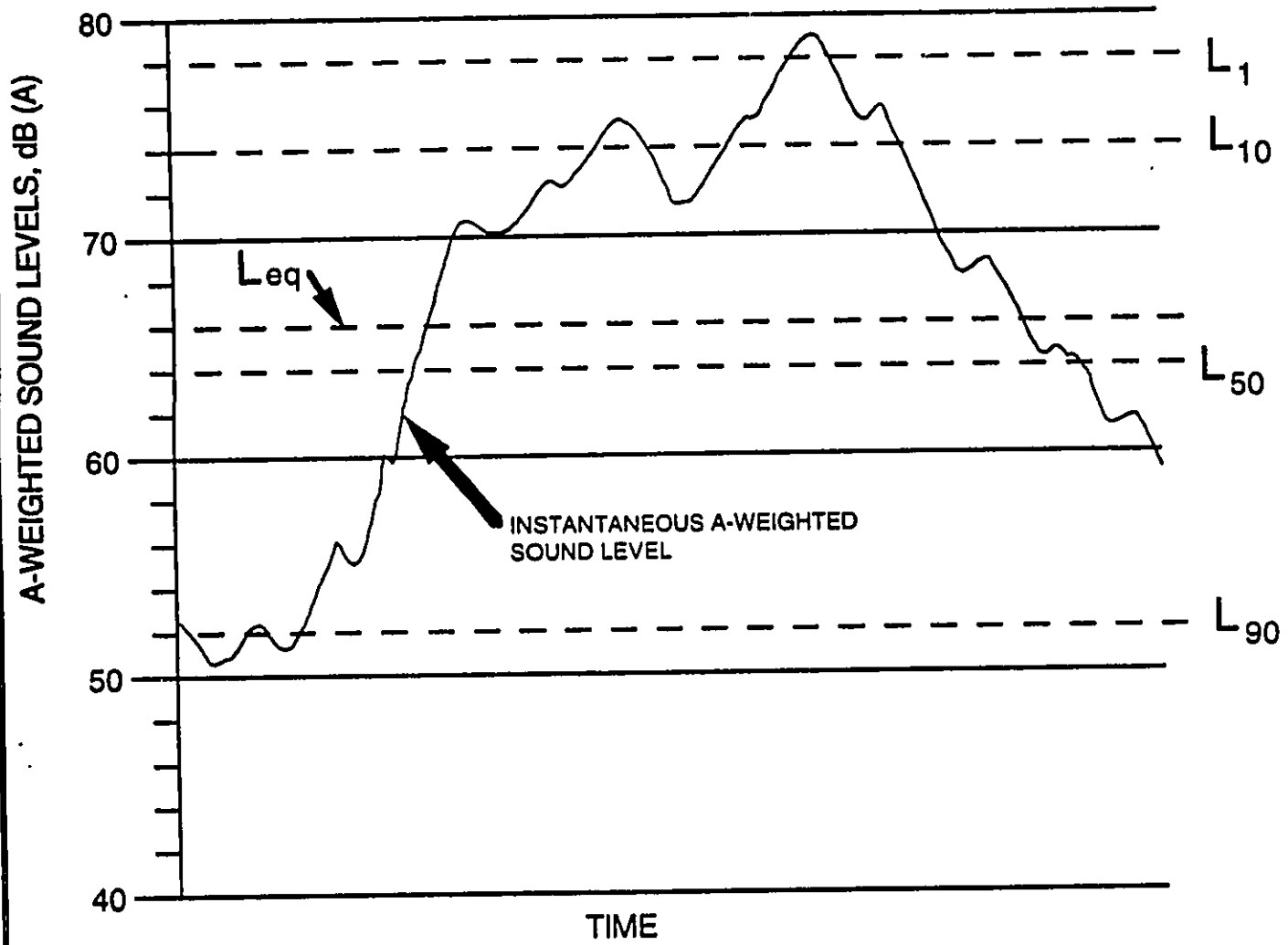
The Day-Night Equivalent Sound Level, L_{dn} , is the Equivalent Sound Level, L_{eq} , measured over a 24-hour period. However, a 10 dB penalty is added to the noise levels recorded between 10 pm and 7 am to account for people's higher sensitivity to noise at night when the background noise level is typically lower. The L_{dn} is a commonly used noise descriptor in assessing land use compatibility, and is widely used by federal and local agencies and standards organizations. Qualitative descriptions, as well as local examples of L_{dn} , are shown in Figure A-3.



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FIGURE A-1 THE RELATION BETWEEN SOUND PRESSURE, P, AND SOUND PRESSURE LEVEL, SPL. ALSO SHOWN ARE TYPICAL VALUES OF A-WEIGHTED SOUND LEVELS OF VARIOUS NOISE SOURCES.



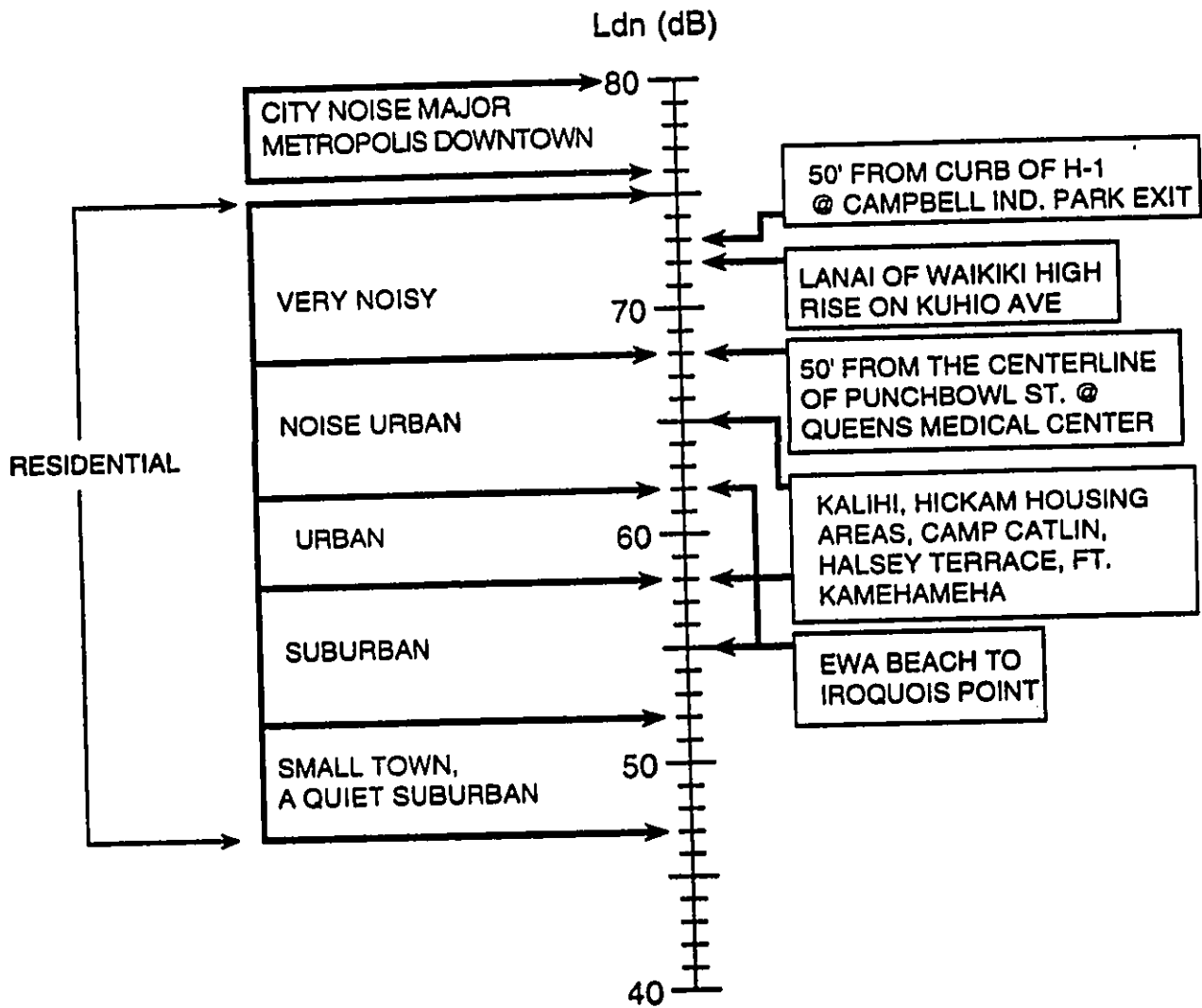
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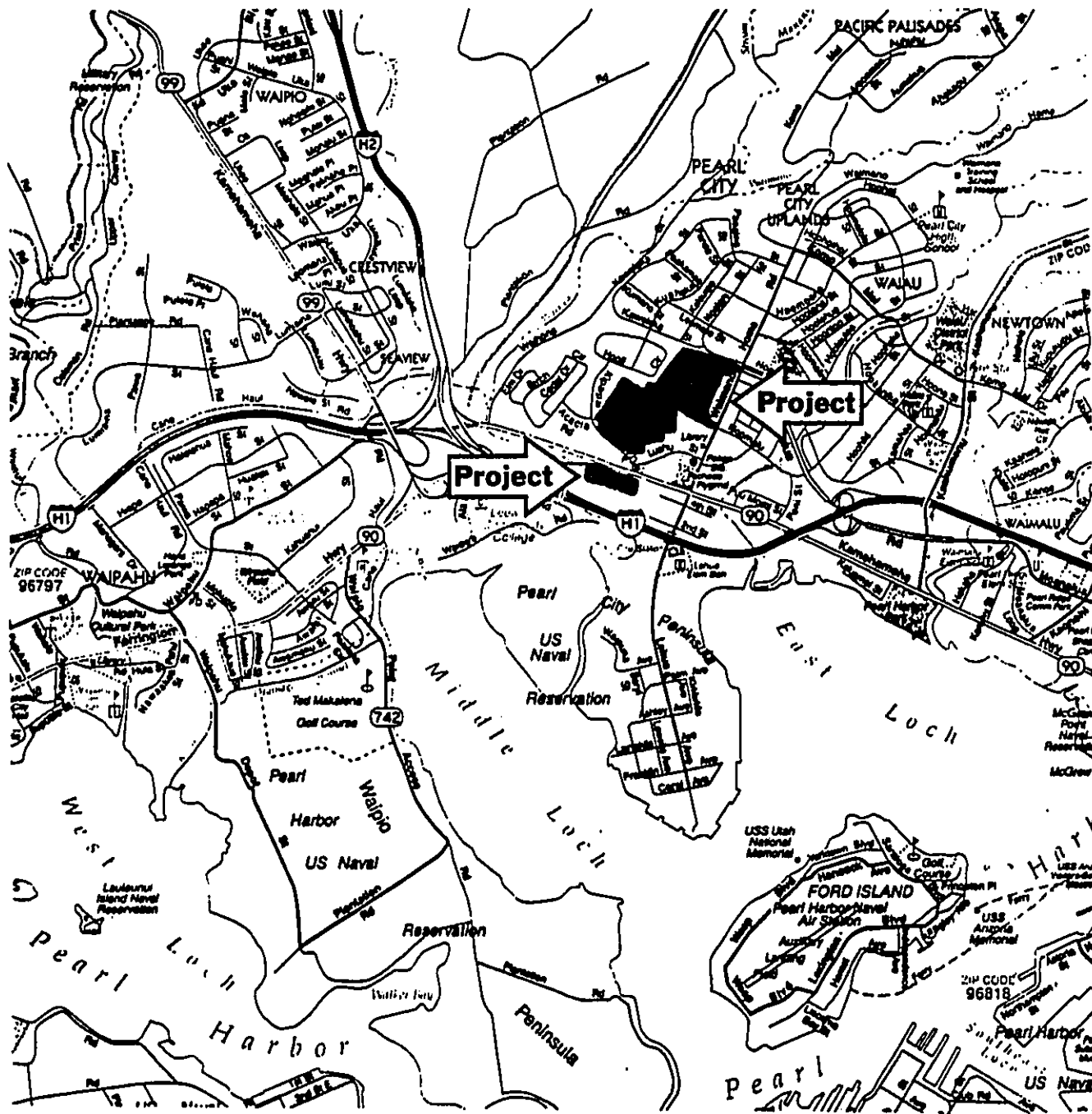
FIGURE A-2 COMPARISON OF AN INSTANTANEOUS SOUND LEVEL AND THE CORRESPONDING STATISTICAL SOUND LEVELS



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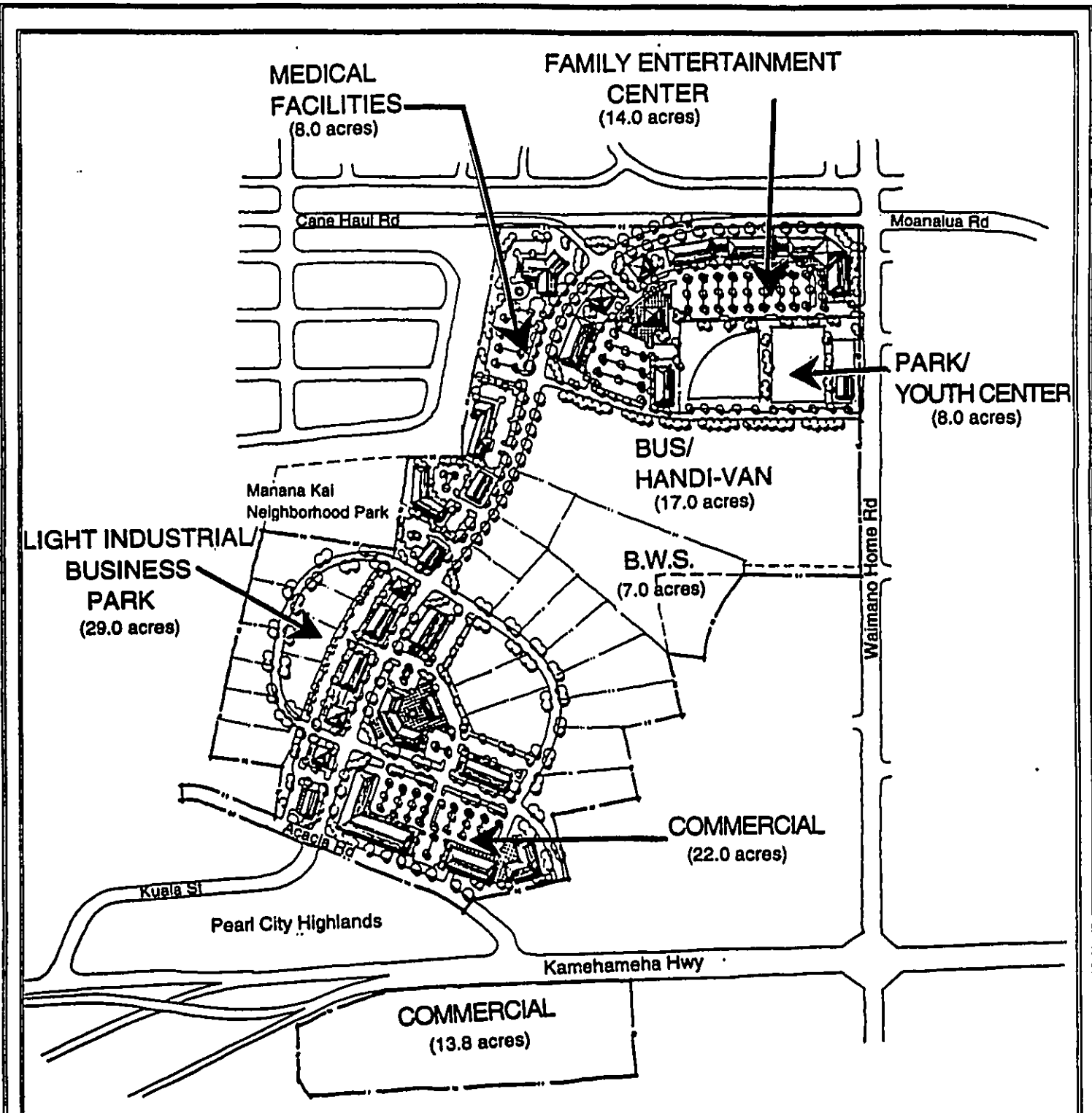
FIGURE A-3 QUALITATIVE DESCRIPTION OF THE DAY-NIGHT SOUND LEVELS (Ldn) AND EXAMPLE Ldn's AT SELECTED LOCATIONS ON OAHU



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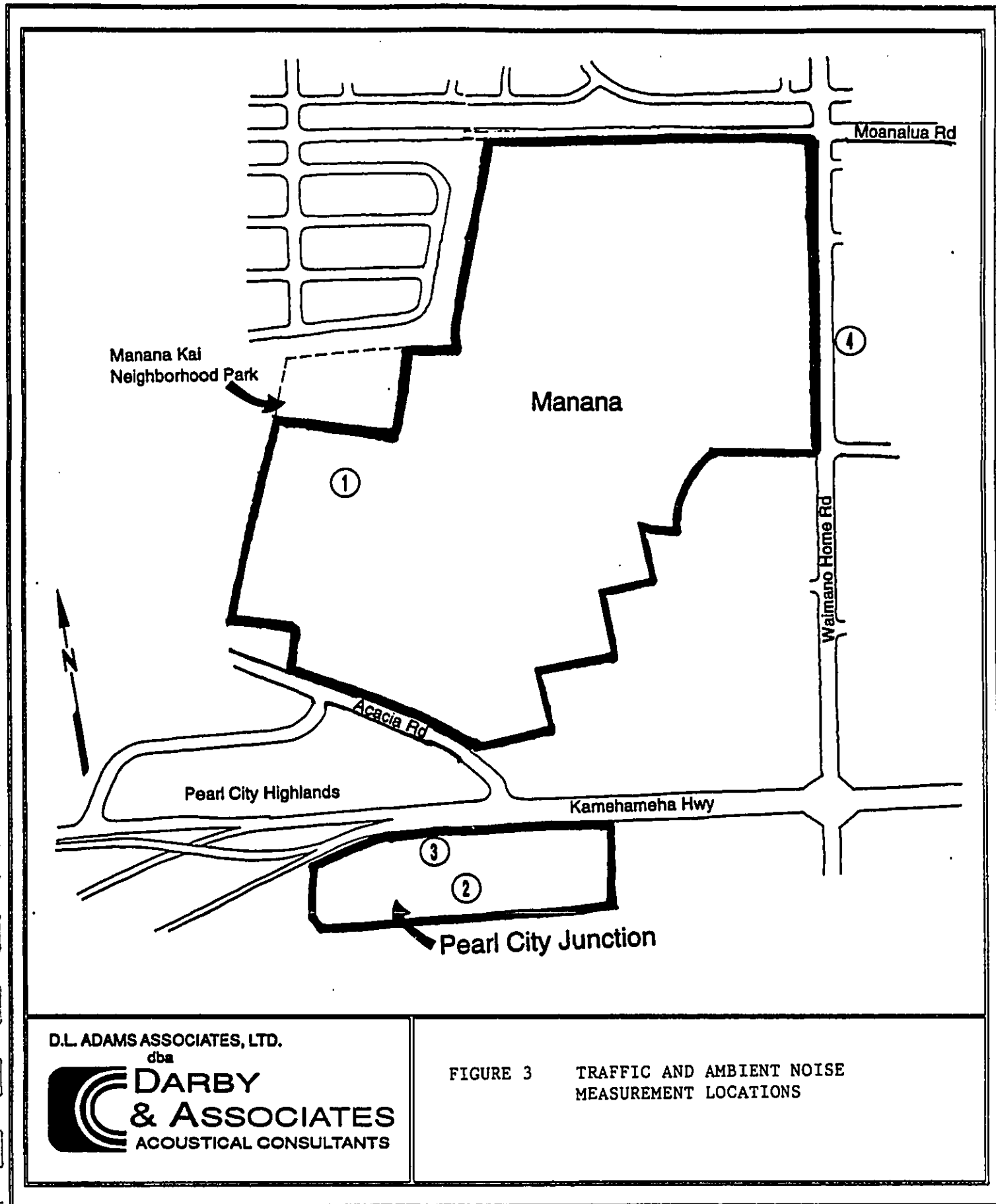
FIGURE 1 PROJECT SITE AND VICINITY



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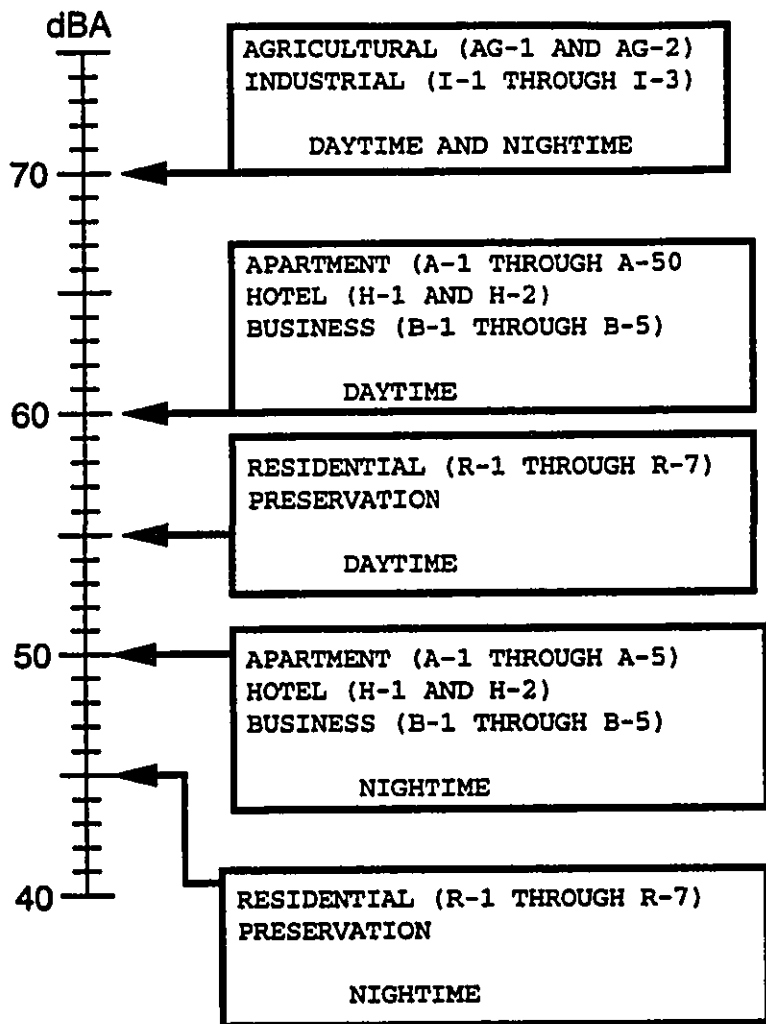
FIGURE 2 MANANA AND PEARL CITY JUNCTION PROPOSED LAND USES



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FIGURE 3 TRAFFIC AND AMBIENT NOISE MEASUREMENT LOCATIONS

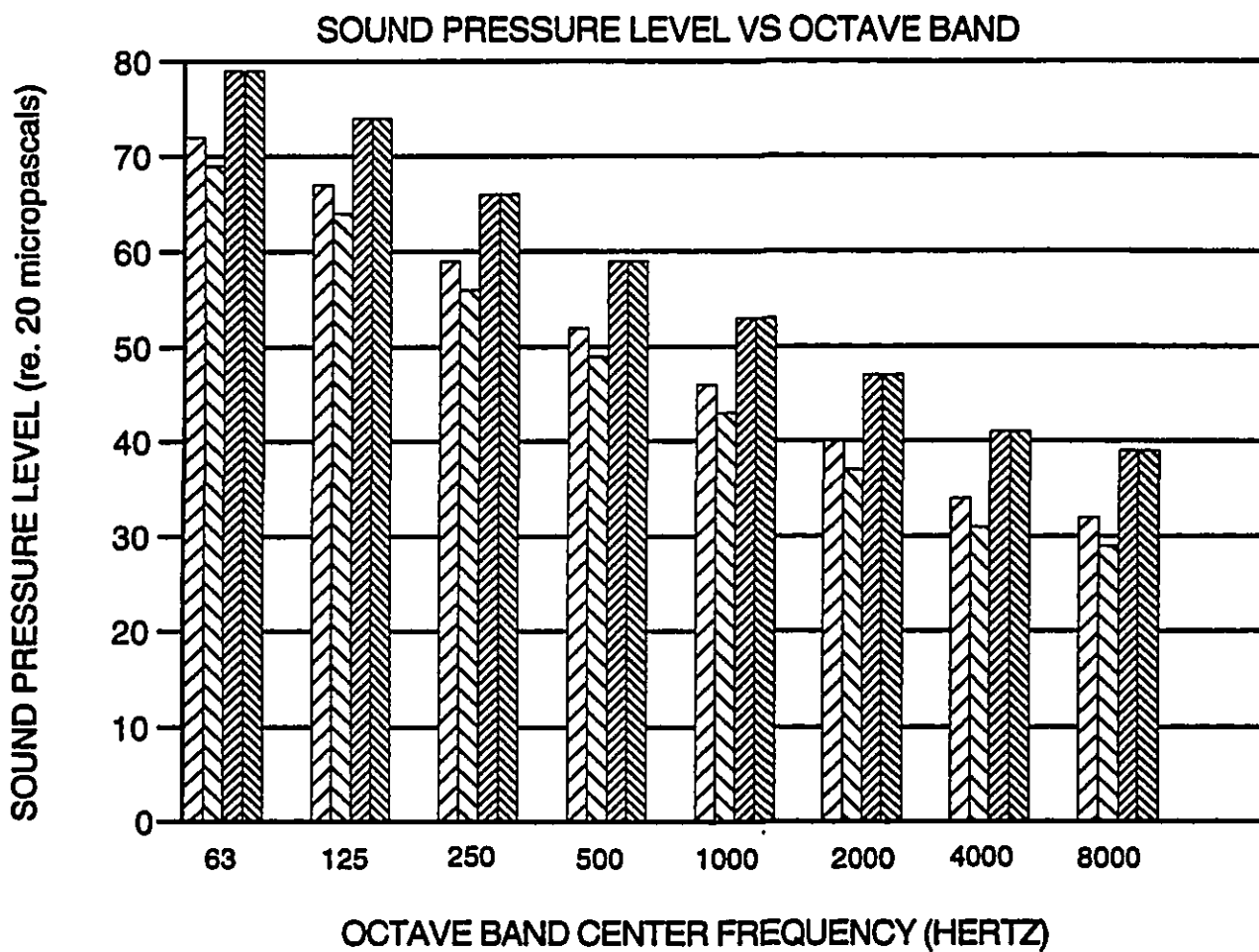


NOTE: THE REGULATION STATES THAT THE ALLOWABLE LEVELS SHALL NOT BE EXCEEDED FOR TEN PERCENT OF THE TIME WITHIN ANY TWENTY MINUTE PERIOD.

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FIGURE 4 ALLOWABLE NOISE LEVELS FOR VARIOUS ZONING DISTRICTS; COMMUNITY NOISE CONTROL FOR OAHU; STATE OF HAWAII, DEPARTMENT OF HEALTH

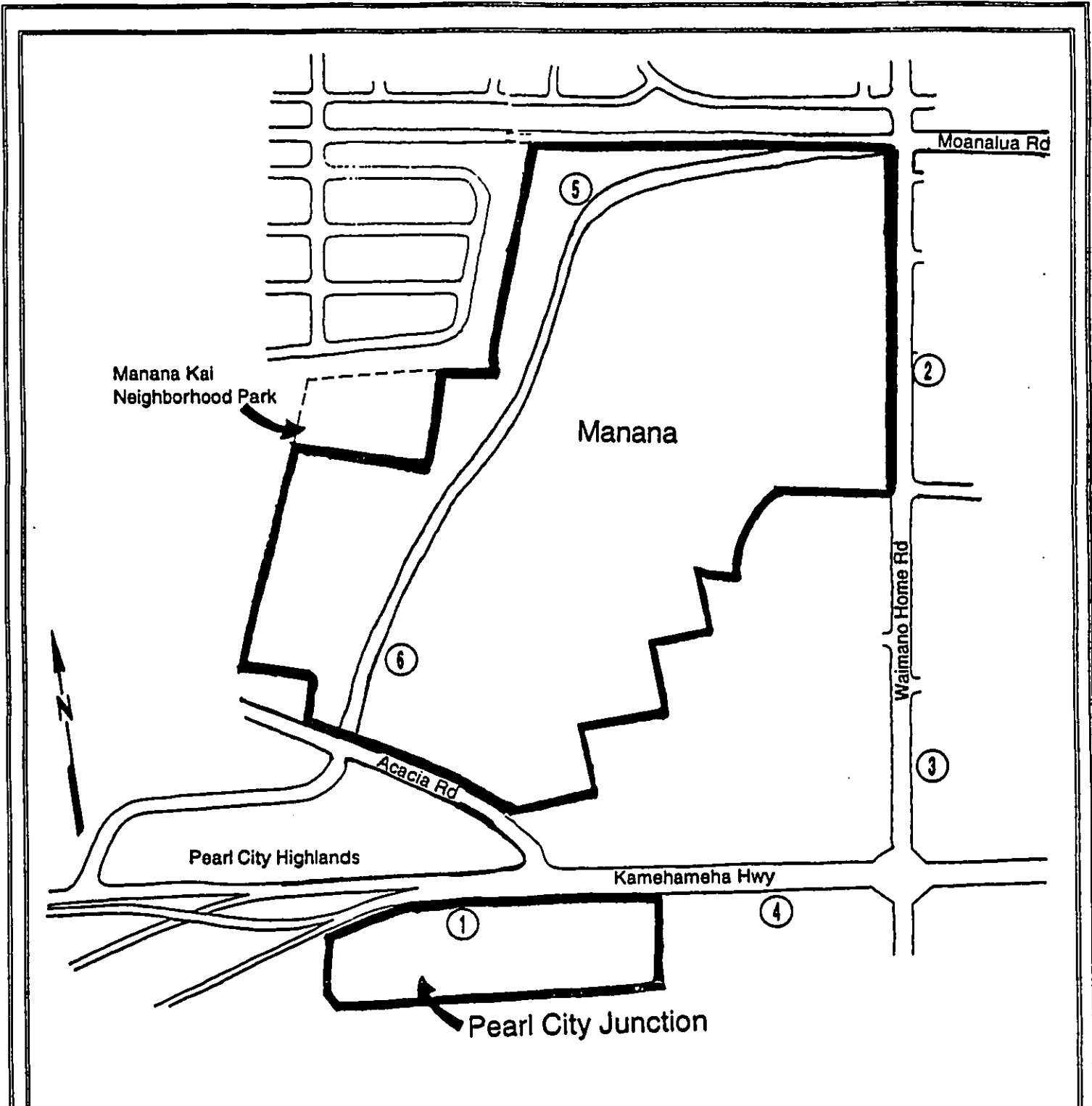


 RESIDENTIAL, DAYTIME	 NON-RESIDENTIAL, DAYTIME
 RESIDENTIAL, NIGHTTIME	 NON-RESIDENTIAL, NIGHTTIME

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FIGURE 5 MAXIMUM ALLOWABLE NOISE LEVELS VS OCTAVE BAND CENTER FREQUENCIES:
CITY AND COUNTY OF HONOLULU
LAND USE ORDINANCE



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FIGURE 6 LOCATIONS OF CALCULATED FUTURE
PEAK HOUR TRAFFIC NOISE LEVELS

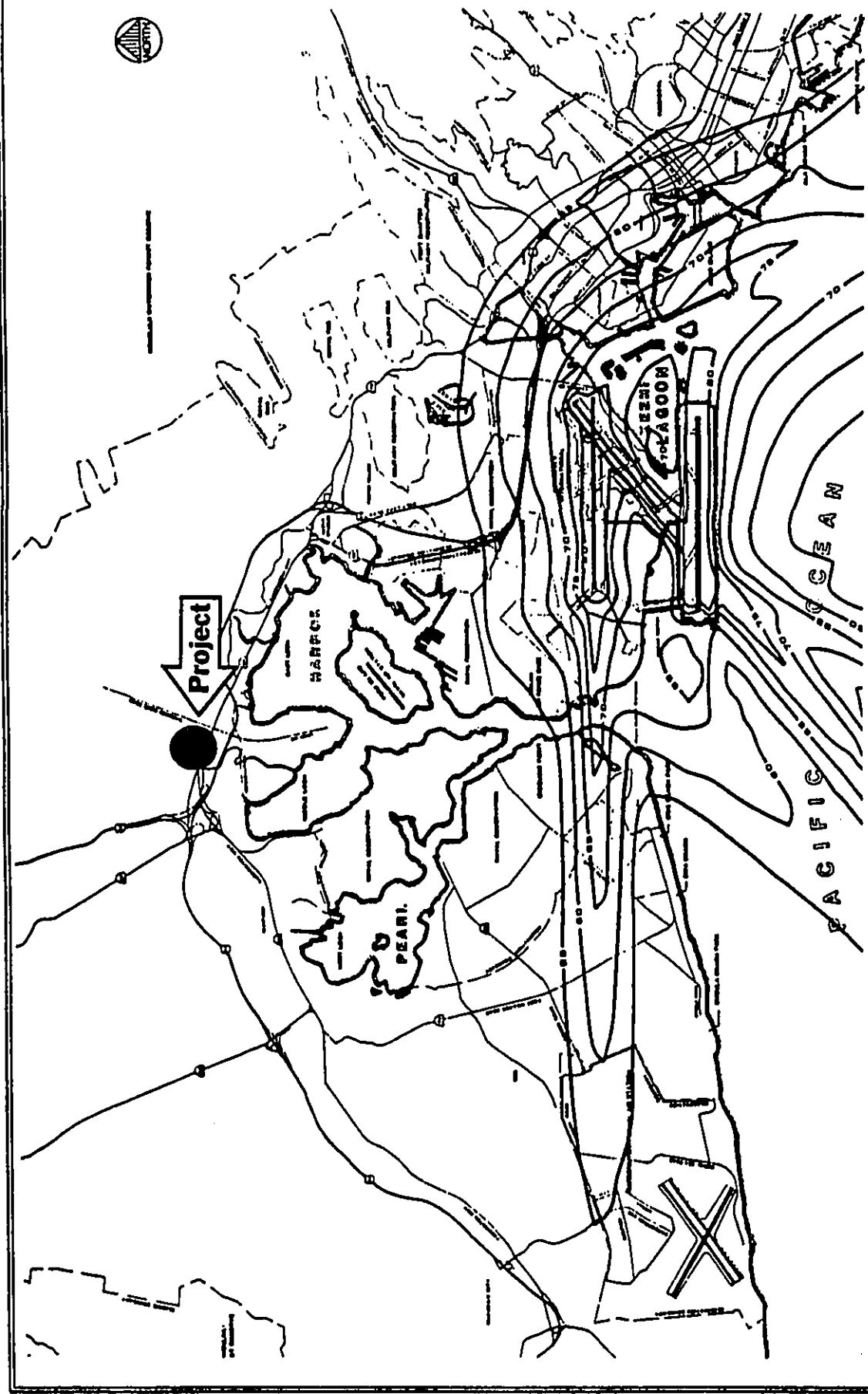


FIGURE 7 HONOLULU INTERNATIONAL AIRPORT Ldn CONTOURS FOR 1992

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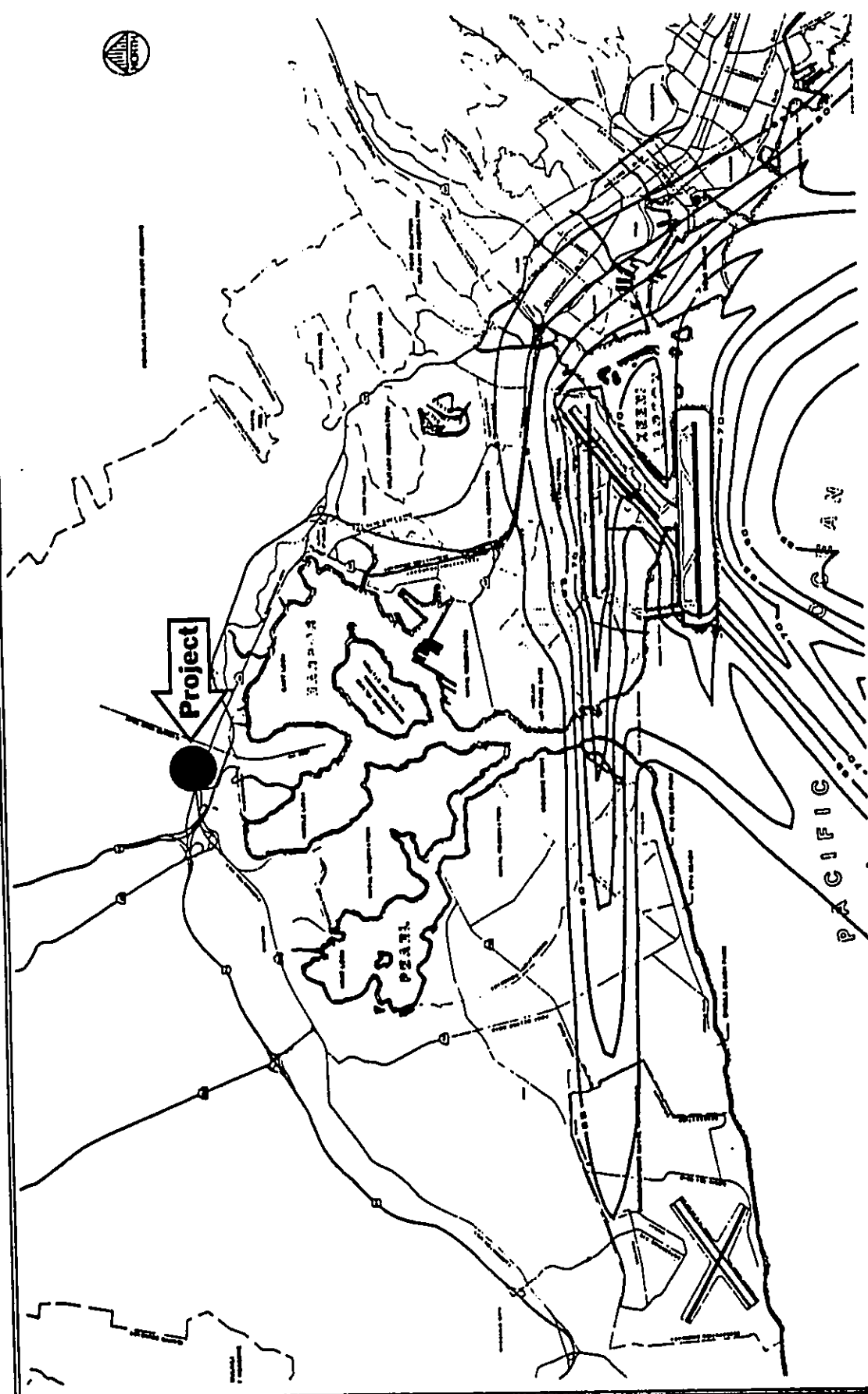
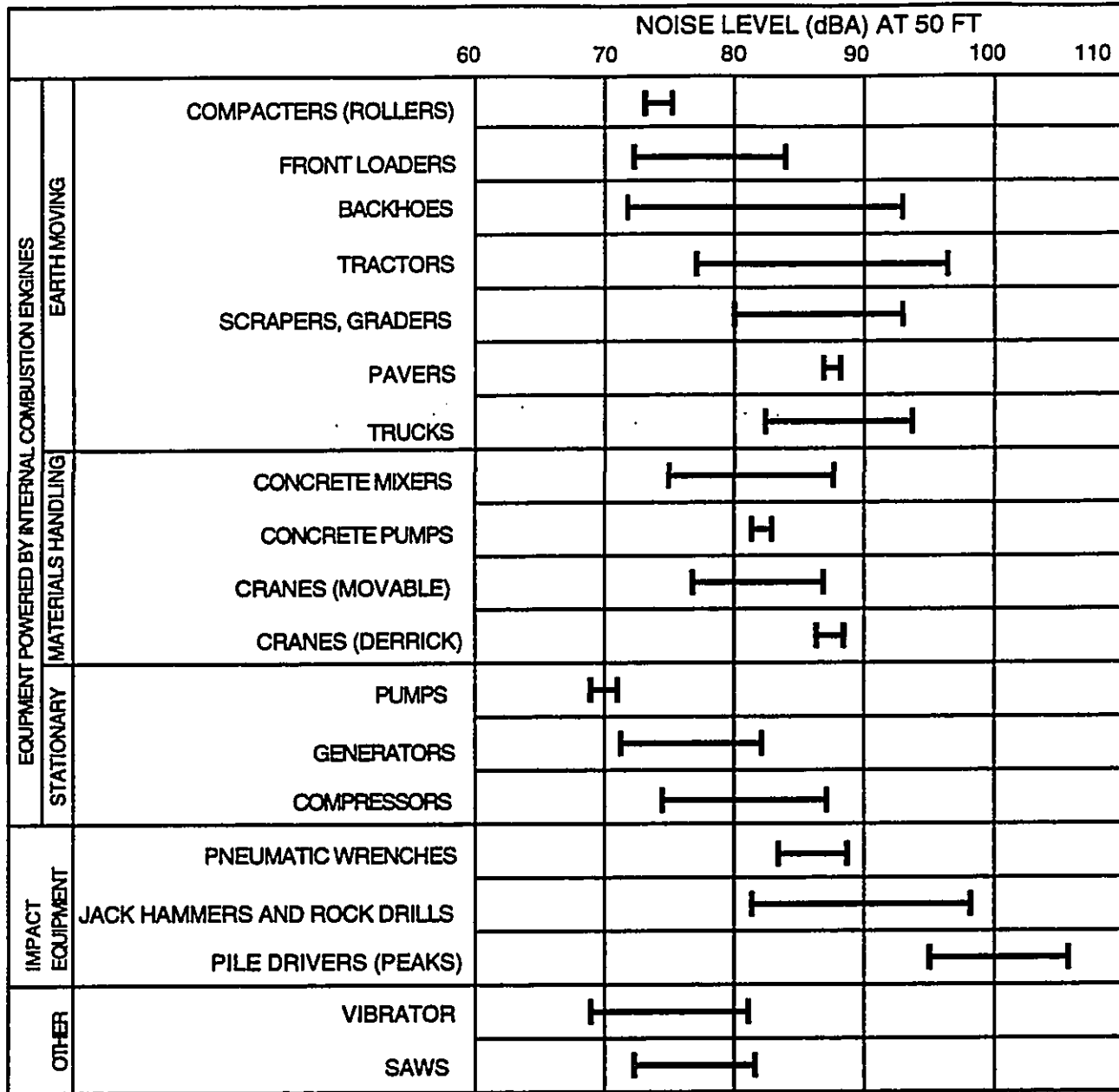


FIGURE 8 HONOLULU INTERNATIONAL AIRPORT Ldn CONTOURS FOR 2007

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Note: Based on Limited Available Data Samples

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FIGURE 9 TYPICAL NOISE LEVEL RANGES FOR CONSTRUCTION EQUIPMENT

SOURCE: U.S. ENVIRONMENTAL PROTECTION AGENCY 1972

Air Quality Impact Report

APPENDIX G

AIR QUALITY IMPACT REPORT (AQIR):

MANANA AND PEARL CITY JUNCTION DEVELOPMENT

8 JANUARY 1996

PREPARED FOR:

PKF HAWAII

PREPARED BY:

**J. W. MORROW
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3	Air Monitoring Data, Department of Health Building, 1988 - 1990
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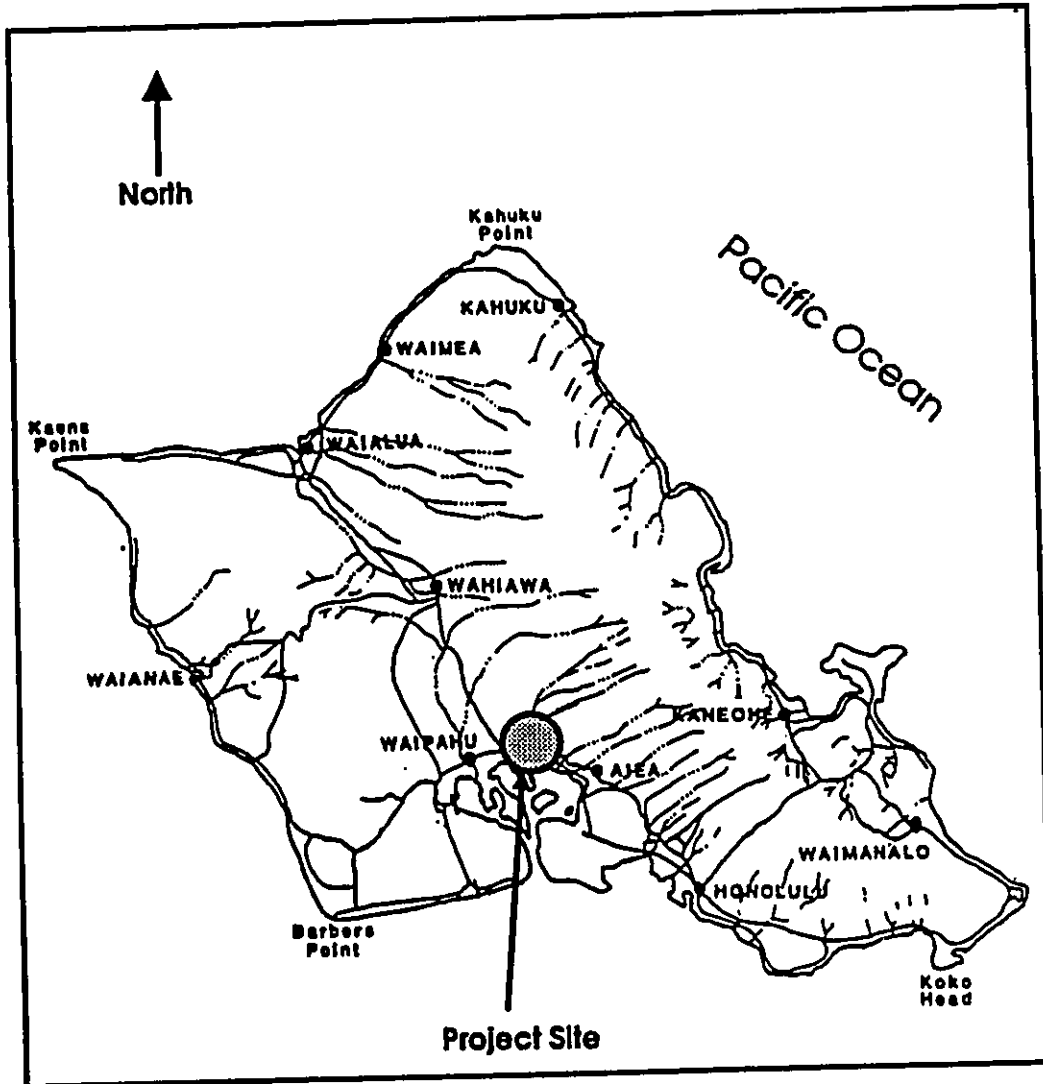
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1. INTRODUCTION

The City and County of Honolulu Department of Housing and Community Development is proposing to develop two parcels of land currently occupied by the U.S. Navy but scheduled to be transferred to the City during 1996. The property is located at Pearl City on the Island of Oahu (Figure 1) and has been used for many years as a warehouse area by the Navy and other subtenants (Figure 2).

The proposed land use program incorporates a variety of valuable public facilities and services and is summarized in Table 1. For the purposes of this analysis and report, completion of the various projects is assumed to occur by the year 2006.

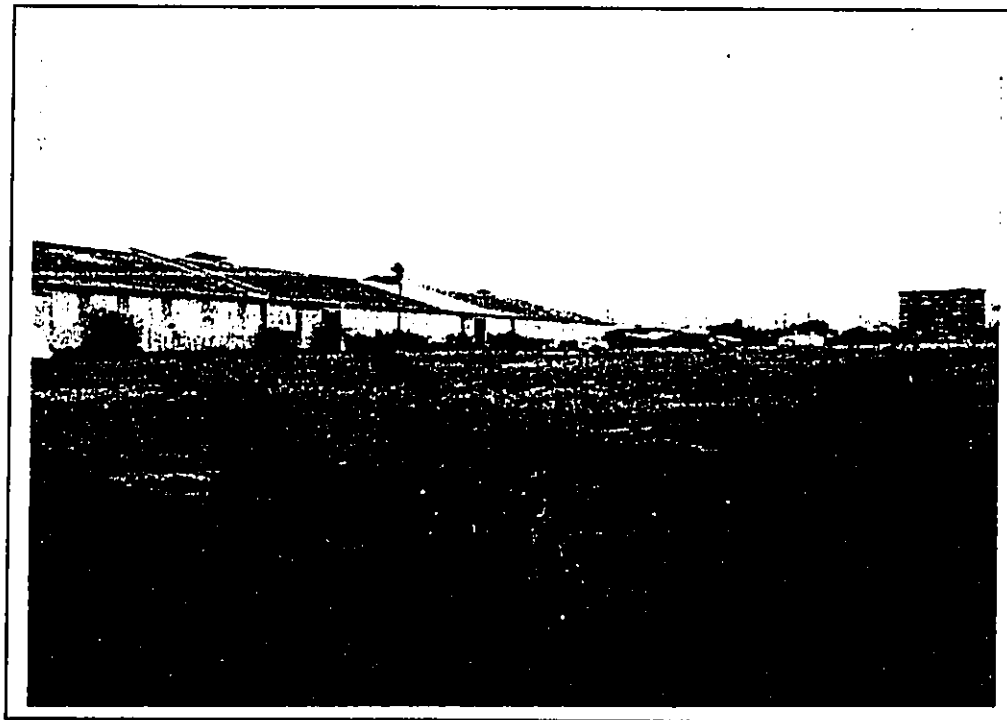
FIGURE 1
PROJECT LOCATION



J. W. MORROW

FIGURE 2
EXISTING SITE CONDITIONS
DECEMBER 1995

Existing warehouses on mauka parcel (facing west across Waimano Home Road)



Existing warehouses on makai parcel (facing southeast)

TABLE 1
PROPOSED LAND USES

Land Use	Acreage (Approx.)
Light Industrial/Business Park	29
Commercial Retail/Office	22
Family Entertainment Center	14
Commercial (Pearl City Junction)	13.8
Medical Facilities	8
Bus/Handi-Van Facilities	17
Board of Water Supply	5
Community Park/Youth Center	8
Moanalua Road and Miscellaneous Open Space	7
Total	123.8

The purpose of this report is to assess the impact of the proposed development on air quality on a local and regional scale. The overall project can be considered an "indirect source" of air pollution as defined in the federal Clean Air Act [1] since its primary association with air quality is its inherent attraction for mobile sources, i.e., motor vehicles. Much of the focus of this analysis, therefore, is on the project's ability to generate traffic and the resultant impact on air quality. As noted above, air quality impact was evaluated for the year 2006 with and without the project.

A project such as this will also result in a long-term increase in emissions at offsite locations. The sources of these emissions have been addressed in the report.

Finally, during construction of the various buildings and facilities air pollutant emissions will be generated onsite and offsite due to vehicular movement, grading, concrete and asphalt batching, and general dust-generating construction activities. These impacts have also been addressed.

2. AIR QUALITY STANDARDS

A summary of State of Hawaii and national ambient air quality standards is presented in Table 2 [2, 3]. Note that Hawaii's standards are not divided into primary and secondary standards as are the federal standards.

TABLE 2

SUMMARY OF STATE OF HAWAII AND FEDERAL
AMBIENT AIR QUALITY STANDARDS

POLLUTANT	SAMPLING PERIOD	NAAQS PRIMARY	NAAQS SECONDARY	STATE STANDARDS
PM ₁₀	Annual	50	50	50
	24-hr	150	150	150
SO ₂	Annual	80	---	80
	24-hr	365	---	365
	3-hr	---	1,300	1,300
NO ₂	Annual	100	---	70
CO	8-hr	10	---	5
	1-hr	40	---	10
O ₃	1-hr	235	---	100
H ₂ S	1-hr	---	---	35
Pb	Calendar Quarter	1.5	---	1.5

KEY: TSP - total suspended particulate matter
 PM₁₀ - particulate matter < 10 microns
 SO₂ - sulfur dioxide
 NO₂ - nitrogen dioxide
 CO - carbon monoxide
 O₃ - ozone
 Pb - lead

All concentrations in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)
 except CO which is in milligrams per cubic meter (mg/m^3).

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 [4].

Some of Hawaii's standards (CO, NO₂, and O₃) 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 November 1993, the Governor signed amendments to Chapter 59, Ambient Air Quality Standards [3], adopting the federal standard for particulate matter equal to or less than 10 microns in diameter (PM₁₀). Since measurement data in Hawaii indicate that PM₁₀ comprises about 50% of total suspended particulate matter (TSP), the adoption of that federal standard with a numerical value equal to the original state TSP standard of 150 µg/m³ represents a substantial relaxation of the standard (approximately doubling it).

In the case of the automotive pollutants [carbon monoxide (CO), oxides of nitrogen (NO_x), 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 [5].

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 [1]. The last such review resulted in the relaxation of the oxidant standard from 160 to 235 micrograms per cubic meter (µg/m³) [6]. The carbon monoxide (CO), particulate matter, sulfur dioxide (SO₂), and nitrogen dioxide (NO₂) standards have been reviewed, but no new standards were proposed.

Finally, the State of Hawaii also has fugitive dust regulations for particulate matter (PM) emanating from construction activities [7]. There simply can be no visible emissions from fugitive dust sources.

3. EXISTING AIR QUALITY

3.1 General. The State Department of Health (DOH) maintains a limited network of air monitoring stations around the state to gather data on the following regulated pollutants:

- particulate matter ≤ 10 microns (PM₁₀)
- total suspended particulate matter (TSP)

- sulfur dioxide (SO₂)
- carbon monoxide (CO)
- ozone (O₃)

In the case of PM₁₀ 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. It should also be noted that the majority of these pollutants are monitored only in Honolulu.

3.2 Department of Health Monitoring. There is an air monitoring site in the Pearl City area, but only particulate matter (PM₁₀) is measured. A summary of the most recent published data from that site is presented in Figure 3. Particulate matter levels are well below the 50 µg/m³ annual and 150 µg/m³ twenty-four hour standards.

The summary of monitoring results from the Department of Health building in downtown Honolulu presented in Table 3 also indicates compliance with standards. Air quality at the project area should be comparable or perhaps somewhat better given the site's somewhat lower density of development.

FIGURE 3
MONTHLY PM₁₀ AVERAGES
PEARL CITY
1990

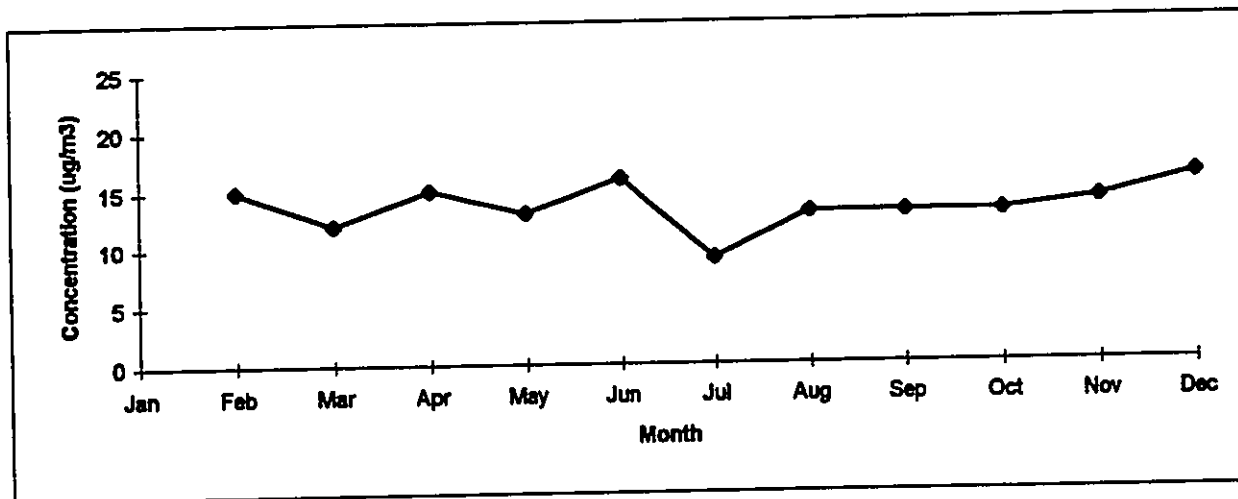


TABLE 3
 AIR MONITORING DATA
 DEPARTMENT OF HEALTH BUILDING¹
 1988 - 1990

POLLUTANT	Concentration ($\mu\text{g}/\text{m}^3$)		
	1988	1989	1990
Total Suspended Particulate Matter (TSP)	15 - 45 26	6 - 48 29	13 - 47 30
Particulate Matter < 10 microns (PM ₁₀) ²	9 - 25 17	10 - 33 16	8 - 36 15
Sulfur Dioxide (SO ₂)	<5 - <5 <5	<5 - 8 <5	<5 - <5 <5
Carbon Monoxide ³ (CO)	0.2 - 10.3 1.7	0.3 - 9.7 1.9	0.1 - 7.1 1.5
Ozone (O ₃) ⁴	0 - 92 14	0 - 94 15	4 - 116 36
Lead (Pb)	0 - 0.1 0	0 - 0.1 0	0 - 0 0
Notes:	1. Values indicate range and annual mean. 2. PM ₁₀ data are from the Liliha site. 3. CO values are mg/m^3 . 4. O ₃ data are from the Sand Island site.		

3.3 Onsite Carbon Monoxide Sampling. In conjunction with this study, air sampling was conducted in December 1995, at the Waimano Home Road intersection with Kamehameha Highway in Pearl City. In each case the sampling site was within 10 meters of the road edge. A continuous carbon monoxide (CO) instrument was set up and operated during the a.m. and p.m. peak traffic hours. An anemometer and vane were installed and operated to record onsite surface wind conditions during the sampling. A simultaneous manual count of traffic was also performed. The variability of each of the parameters measured during the peak hours is clearly seen in Figures 4 and 5.

Onsite weather during the morning of 12 December 1995 included light (<5 mph) westerly winds switching slowly to more northerly, and neutral atmospheric conditions. Traffic volume at the sampling location was about 18% higher than the peak values reported in the latest traffic assessment [8]. CO concentrations were of the same order of magnitude as the computer-generated estimates presented in Section 6 of this report.

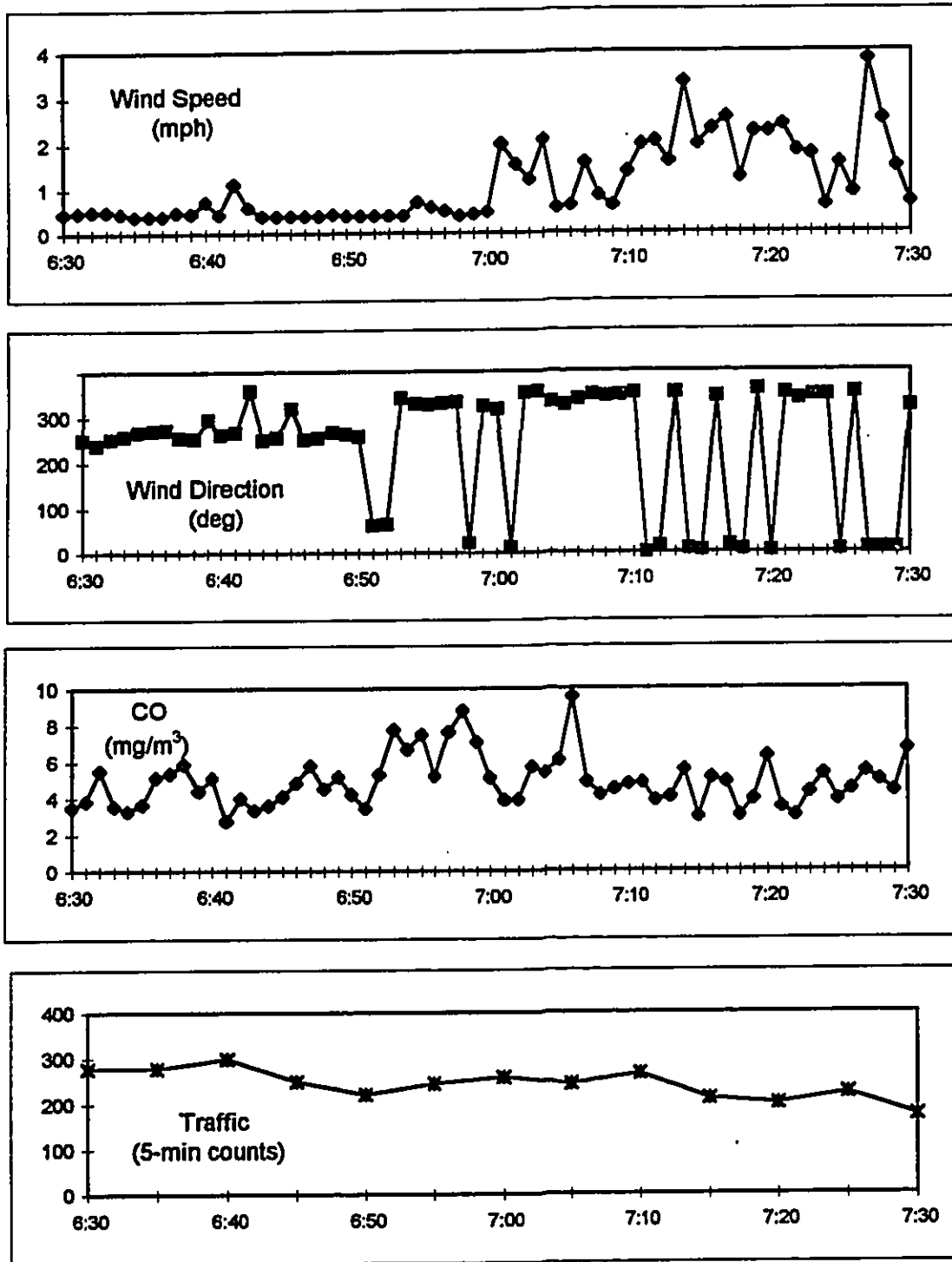
During the afternoon of 12 December 1995, winds were light northeasterlies initially became more variable as time went on. Skies were clear and the atmosphere was moderately unstable contributing to greater dispersion of the CO emissions. Traffic volume in the vicinity of the sampler was about 4% lower than that reported in the traffic assessment [8]. CO concentrations were lower than the morning due to the brisker winds and unstable conditions.

4. CLIMATE AND METEOROLOGY

4.1 Temperature and Rainfall. Temperatures in the project area are expected to be similar to those found elsewhere in Hawaii. The nearest long-term weather station operated by the National Weather Service is located at the Honolulu International Airport. In an annual summary for that station, the National Climatic Center has summarized Honolulu's temperature regime as follows:

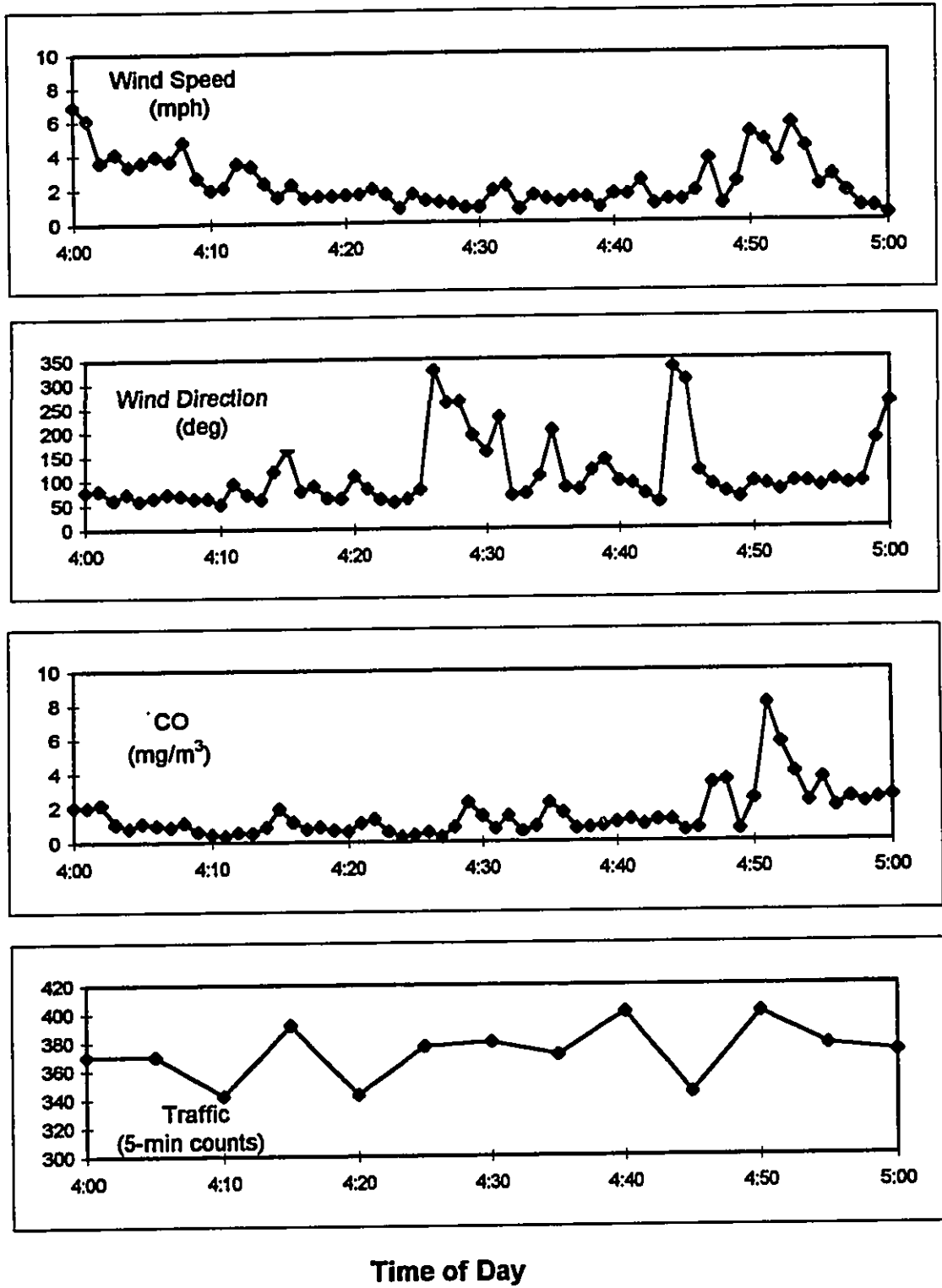
Hawaii's equable temperatures are associated with the small seasonal variation in the amount of energy received from the sun and the tempering effect of the surrounding ocean. The range of temperatures averages only 7 degrees between the warmest months (August and September) and the coolest months (January 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 [9].

FIGURE 4
A.M. PEAK HOUR CONDITIONS
KAMEHAMEHA HIGHWAY AT WAIMANO HOME ROAD
12 DECEMBER 1995



Time of Day

FIGURE 5
P.M. PEAK HOUR CONDITIONS
KAMEHAMEHA HIGHWAY AT WAIMANO HOME ROAD
12 DECEMBER 1995



Historical rainfall data from the Honolulu International Airport indicate an annual average of 23 inches. Based on this average and in accordance with Thornwaite's scheme for climatic classification, the area is considered semi-arid [10].

4.2 Surface Winds. Meteorological data records were reviewed from the nearby Honolulu International Airport and Hickam Air Force Base. The annual prevalence of northeast trade winds is clearly shown in Table 4. A closer examination of the data, however, indicates that low velocities (less than 10 mph) occur frequently and that the "normal" northeasterly trade winds tend to break down 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 easily contrasted by comparing August and January wind roses (Figures 4 and 5).

Of particular interest from an air pollution standpoint were the stability wind roses prepared for Hickam Air Force Base [11]. These data indicated that stable conditions, i.e., Pasquill-Gifford stability categories E and F [12], occur about 28% of the time on an annual basis and 36% of the time during the peak winter month (January). It is under such conditions that the greatest potential for air pollutant buildup from groundlevel sources, e.g., motor vehicles, exists.

5. SHORT-TERM IMPACTS

5.1 Onsite Impacts. The principal source of short-term air quality impact will be construction activity. Construction vehicle activity will increase automotive pollutant concentrations along the existing roadways as well as on the project site itself. The additional construction vehicle traffic should not exceed street capacities although the presence of large trucks can reduce a roadway's capacity as well as lower average travel speeds.

The site preparation and earth moving will create particulate emissions as will building and onsite road construction. Construction vehicles movement on unpaved on-site roads will also generate particulate emissions. EPA studies on fugitive dust emissions from construction sites indicate that about 1.2 tons/acre per month of activity may be expected under conditions of medium activity, moderate soil silt content (30%), and a precipitation/evaporation (P/E) index of 50 [10,13].

Onsite soils are predominantly silty clay loams which suggests silt content of about 55% [14], significantly greater than the "moderate" silt content cited above. In conjunction with the semi-

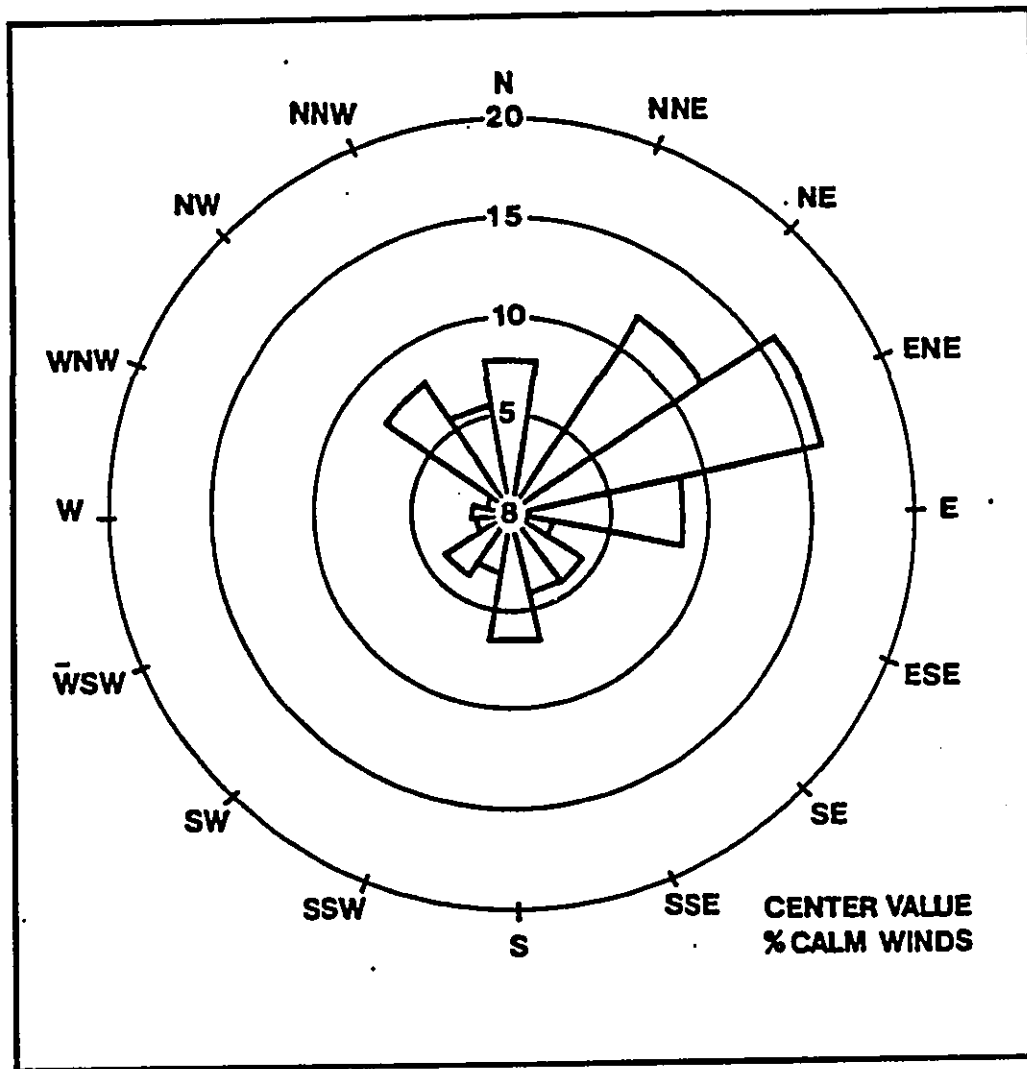
TABLE 4

**ANNUAL JOINT FREQUENCY DISTRIBUTION
OF WIND SPEED AND DIRECTION
HONOLULU INTERNATIONAL AIRPORT**

Direction	Wind Speed (kts)						Total
	0-3	4-7	8-12	13-18	19-24	>24	
N	.0149	.0261	.0075	.0020	.0002	.0000	.0506
NNE	.0114	.0219	.0106	.0046	.0005	.0000	.0490
NE	.0114	.0449	.0829	.0853	.0204	.0018	.2466
ENE	.0088	.0637	.1559	.1209	.0224	.0014	.3731
E	.0039	.0179	.0329	.0210	.0023	.0001	.0782
ESE	.0021	.0056	.0050	.0015	.0003	.0001	.0146
SE	.0021	.0059	.0091	.0049	.0006	.0002	.0228
SSE	.0023	.0074	.0123	.0038	.0008	.0002	.0268
S	.0025	.0104	.0127	.0033	.0005	.0003	.0296
SSW	.0011	.0041	.0053	.0017	.0003	.0000	.0125
SW	.0007	.0031	.0058	.0022	.0003	.0001	.0122
WSW	.0006	.0017	.0031	.0022	.0005	.0001	.0082
W	.0019	.0030	.0021	.0009	.0002	.0001	.0082
WNW	.0027	.0051	.0012	.0003	.0001	.0000	.0094
NW	.0084	.0153	.0031	.0008	.0003	.0000	.0279
NNW	.0087	.0166	.0041	.0012	.0002	.0000	.0308
Total	.0835	.2527	.3534	.2567	.0496	.0043	1.0002

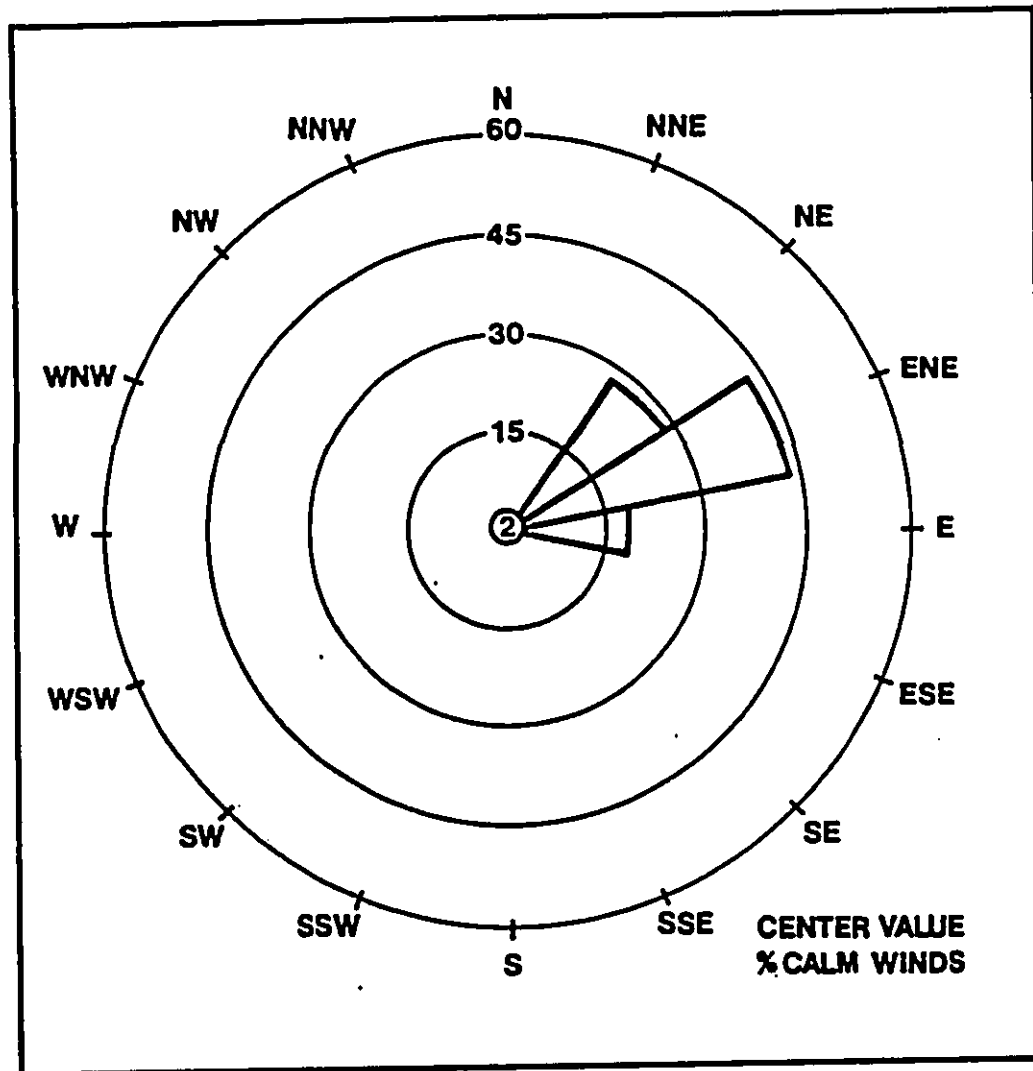
SOURCE: National Weather Service
Historical Records, 1940-67

FIGURE 6
JANUARY WIND ROSE
HONOLULU INTERNATIONAL AIRPORT



SOURCE: National Weather Service
Historical Records, 1940-67

FIGURE 7
AUGUST WIND ROSE
HONOLULU INTERNATIONAL AIRPORT



SOURCE: National Weather Service
Historical Records, 1940-67

arid local climate (P/E Index 28.9), this suggests a potential for greater fugitive dust emissions than estimated by the EPA.

5.2 Offsite Impacts. In addition to the onsite impacts attributable to construction activity, there will also be offsite impacts due to the operation of concrete and asphalt batching plants needed for construction. Such plants routinely emit particulate matter and other gaseous pollutants. It is too early, however, to identify the specific facilities that will be providing these materials and thus the discussion of air quality impacts is necessarily generic. The batch plants which will be producing the concrete for foundations, curbing, etc. and the asphalt for roadways must be permitted by the Department of Health Clean Air Branch pursuant to state regulations [7]. In order to obtain these permits they must demonstrate their ability to continuously comply with both emission [7] and ambient air quality [3] standards. Under the recently promulgated federal Title V operating permit requirements [15], now incorporated in Hawaii's rules [7], air pollution sources must regularly attest to their compliance with all applicable requirements.

6. MOBILE SOURCE IMPACTS

6.1 Mobile Source Activity. The traffic assessment prepared for the proposed project served as the basis for this mobile source impact analysis [8]. Traffic projections for the year 2006 with and without the project were provided for the major intersections serving the project area.

6.2 Emission Factors. Automotive emission factors for carbon monoxide (CO) were generated for calendar years 1996 and 2006 using the Mobile Source Emissions Model (MOBILE-5A) [16]. To localize the emission factors as much as possible, the March 1992 age distribution for registered vehicles in the City & County of Honolulu [17] was input in lieu of national statistics. That same age distribution was the basis for the distribution of vehicle miles traveled as well.

6.3 Modeling Methodology. Due to the present state-of-the-art in air quality modeling, analyses such as this generally focus on estimating concentrations of non-reactive pollutants. For projects involving mobile sources as the principal source, carbon monoxide is normally selected for modeling because it has a relatively long half-life in the atmosphere (ca. 1 month)[18], and it comprises the largest fraction of automotive emissions.

Using the available traffic data, modeling was performed for the following intersections (see Figures 8 & 9):

- Kamehameha Highway @ Waimano Home Road
- Kamehameha Highway @ Acacia Road
- Kamehameha Highway @ Kuala Road
- Waimano Home Road @ Moanalua Road

Because of the residential nature of the area, a stable atmosphere (Category "F") [19] was assumed for the morning and a neutral atmosphere (Category "D") for afternoon peak hours. A 1 meter per second (m/sec) wind speed was also assumed as worst case meteorological conditions.

The EPA guideline model CAL3QHC [20,21] was employed to estimate near-intersection carbon monoxide concentrations. An array of 48 receptor sites at distances of 10 meters from the road edge were input to the model. A background CO concentration of 1.0 milligram per cubic meter (mg/m^3) was assumed.

The model uses an iterative process to identify the wind direction producing the maximum CO concentration at each receptor location.

6.4 Results: 1-Hour Concentrations. The results of this modeling are presented in Figures 8 - 11. Each figure depicts the locations of the 48 receptor sites around the respective intersections. Maximum estimated concentrations in milligrams per cubic meter (mg/m^3) for each of the evaluated scenarios are also presented along with the particular receptor location at which they were predicted. No exceedances of state or federal 1-hour CO standards were predicted.

6.5 Results: 8-Hour Concentrations. Estimates of 8-hour concentrations can be derived by applying a "persistence" factor to the 1-hour concentrations. This "persistence" factor accounts for the fact that the worst case 1-hour meteorology and traffic volumes do not persist for 8 hours. EPA recommends calculation of a persistence factor based on actual 1-hour and 8-hour CO measurements. This was done for a recent Hawaii project [22] and yielded an average persistence factor of 0.5. Applying this factor to the maximum 1-hour estimates again indicates compliance with both state and federal 8-hour standards.

7. OFFSITE IMPACTS

7.1 Electrical Generation. The annual electrical demand of all the project facilities will necessitate the generation of electricity by power plants. Currently, most of Oahu's electrical energy is generated by Hawaiian Electric Company's oil-fired plants at Kahe Point and Waiiau. These units fire low sulfur (0.5%) fuel oil. The emissions from this fuel burning and the resulting

FIGURE 8

WAIMANO HOME ROAD INTERSECTIONS WITH
KAMEHAMEHA HIGHWAY AND MOANALUA ROAD

Kamehameha Highway
approach to Waimano
Home Road (facing west)

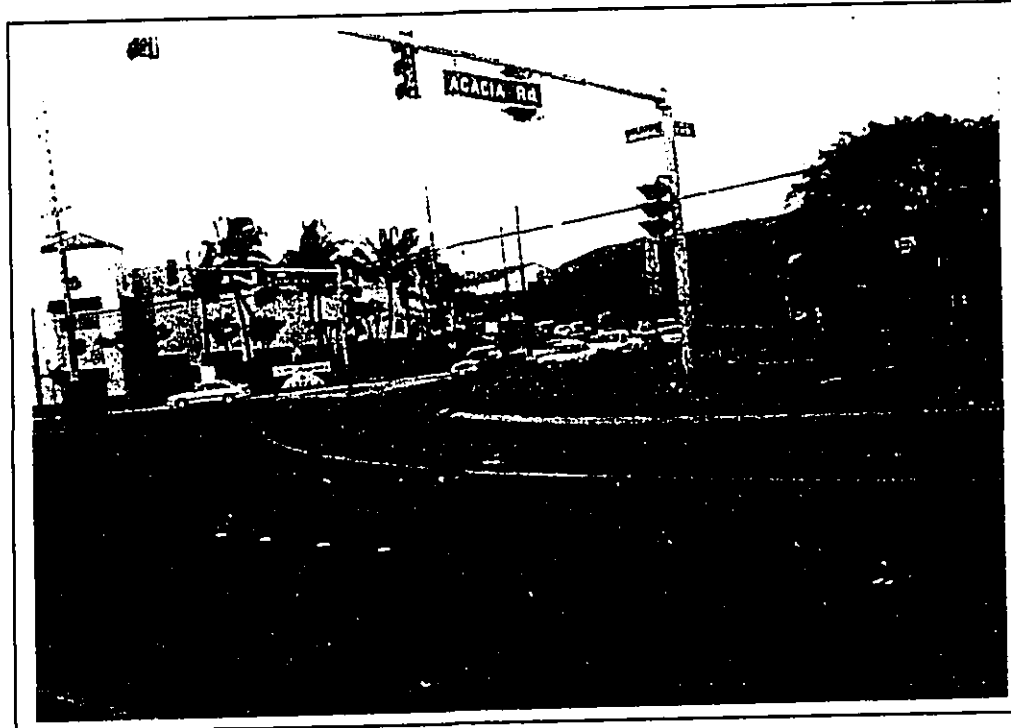


Waimano Home Road at Moanalua
Road (facing north)

FIGURE 9

KAMEHAMEHA HIGHWAY INTERSECTIONS WITH
ACACIA ROAD AND KUALA STREET

Acacia Road approach to
Kamehameha Highway
(facing northwest)



Kamehameha Highway approach to
Kuala Street (facing west)

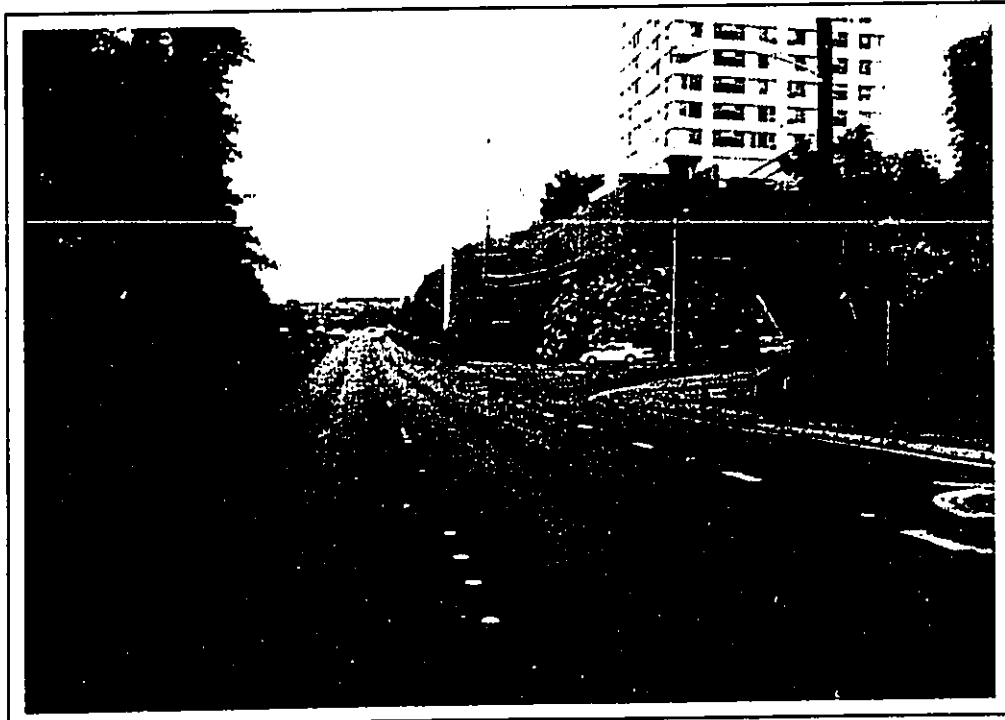
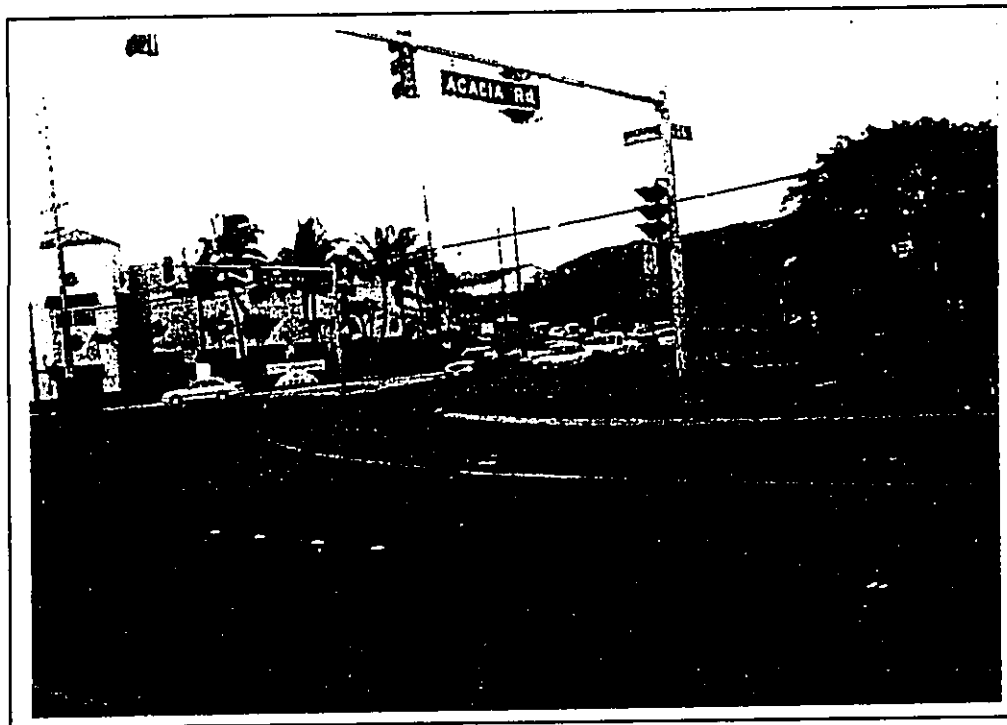
CORRECTION

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

FIGURE 9

KAMEHAMEHA HIGHWAY INTERSECTIONS WITH
ACACIA ROAD AND KUALA STREET

Acacia Road approach to
Kamehameha Highway
(facing northwest)



Kamehameha Highway approach to
Kuala Street (facing west)

ambient impact have already been accounted for in the permits to operate held by the utility which must demonstrate continuous compliance with state and federal ambient air quality standards.

7.2 Solid Waste Disposal. The refuse generated by the project facilities and their users will require disposal. It is expected that most of this material will be reduced in volume by combustion prior to landfilling. Combustion will be accomplished at the existing resource recovery facility (HPOWER) located at the Campbell Industrial Park southwest of the project site. Just as with the utility, emissions and air quality impact resulting from the combustion process have been accounted for in the facility's air permit which was granted and maintained on the premise of continuous compliance with standards.

8. DISCUSSION, CONCLUSIONS AND MITIGATION

8.1 Short-Term Impacts. Since as noted in Section 5, there is a potential for fugitive dust due to the dry climate and fine soils, it will be important for adequate dust control measures to be employed during the construction period. Dust control could be accomplished through frequent watering of unpaved roads and areas of exposed soil. The EPA estimates that twice daily watering can reduce fugitive dust emissions by as much as 50% [13]. Accelerated landscaping of completed areas will also help.

8.2 Mobile Source Impacts. As noted in Section 6, no exceedances of state or federal carbon monoxide standards are predicted for 2006 with the project. In fact, predicted concentrations decline slightly with the project as compared to without it due to redistribution of traffic volumes.

8.3 Electrical Generation. The proposed project will increase electrical demand which in turn will cause more fuel to be burned and more pollutants to be emitted into Oahu's air. Until other nonpolluting means of generating electricity are developed or higher efficiency control technologies are applied, such increases in emissions are inevitable. Electrical demand, fuel consumption, and emissions can be reduced by energy conservation measures such as use of solar water heaters, heat pumps, proper design of buildings to reduce air conditioning needs, etc. For the present and future, the HECO facilities providing the power must demonstrate compliance with all applicable ambient air quality standards and control regulations in order to retain their operating permits.

8.4 Solid Waste Disposal. The proposed project will contribute additional solid waste which must be disposed of. The combustion facility itself must at all times meet state and federal ambient air quality standards as well as emission limitations in its operating permit. The proposed project can reduce solid waste generation by encouraging recycling of materials and composting of

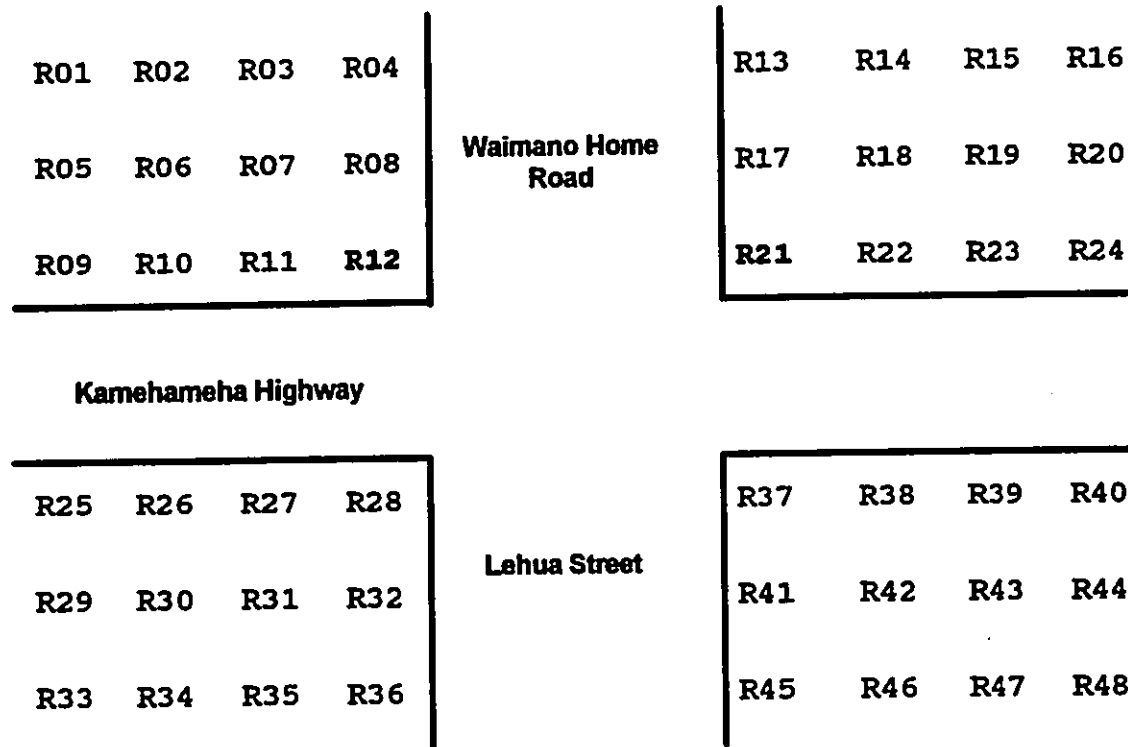
AQIR: MANANA/PCJ DEVELOPMENT

8 JANUARY 1996

operating permit. The proposed project can reduce solid waste generation by encouraging recycling of materials and composting of yard waste and other natural organic materials. Recycling and composting could be made an integral part of the project.

FIGURE 10

ESTIMATES OF MAXIMUM 1-HOUR
CARBON MONOXIDE CONCENTRATIONS
Kamehameha Highway at Waimano Home Road
Peak Traffic Hours
2006



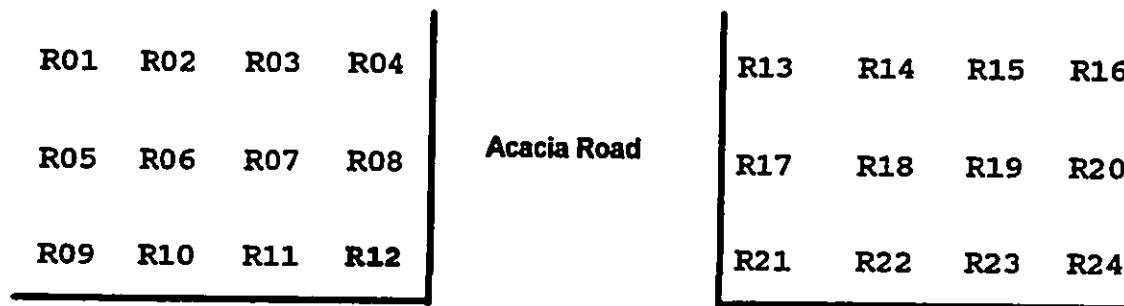
Receptor Spacing
= 10 meters

Estimated Maximum Concentrations
(mg/m³)

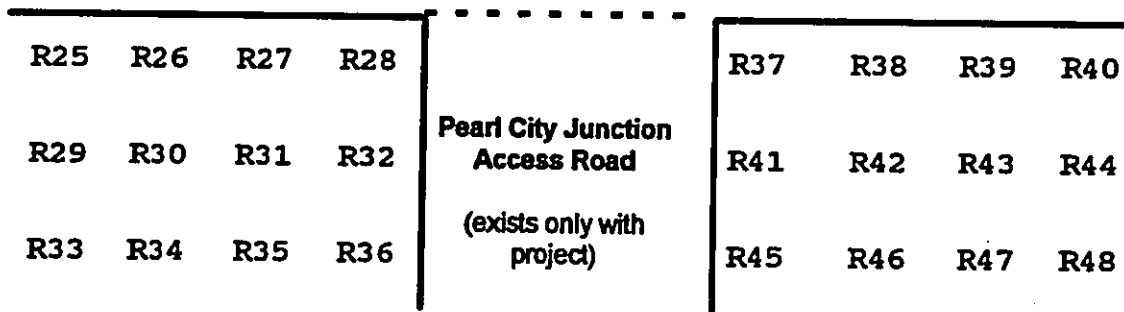
<u>Period</u>	<u>Existing</u>	<u>Without Project</u>	<u>With Project</u>
A.M	9.1	10.0	9.6
	R12	R12	R12
P.M	7.6	8.4	8.5
	R12	R21	R21

FIGURE 11

ESTIMATES OF MAXIMUM 1-HOUR
CARBON MONOXIDE CONCENTRATIONS
Kamehameha Highway at Acacia Road
Peak Traffic Hours
2006



Kamehameha Highway



Receptor Spacing
= 10 meters

Estimated Maximum Concentrations
(mg/m³)

<u>Period</u>	<u>Existing</u>	<u>Without Project</u>	<u>With Project</u>
A.M	9.3	10.0	9.9
	R12	R12	R12
P.M	9.6	10.0	9.3
	R12	R12	R12

FIGURE 12

ESTIMATES OF MAXIMUM 1-HOUR
CARBON MONOXIDE CONCENTRATIONS
Kamehameha Highway at Kuala Street
Peak Traffic Hours
2006



Kamehameha Highway



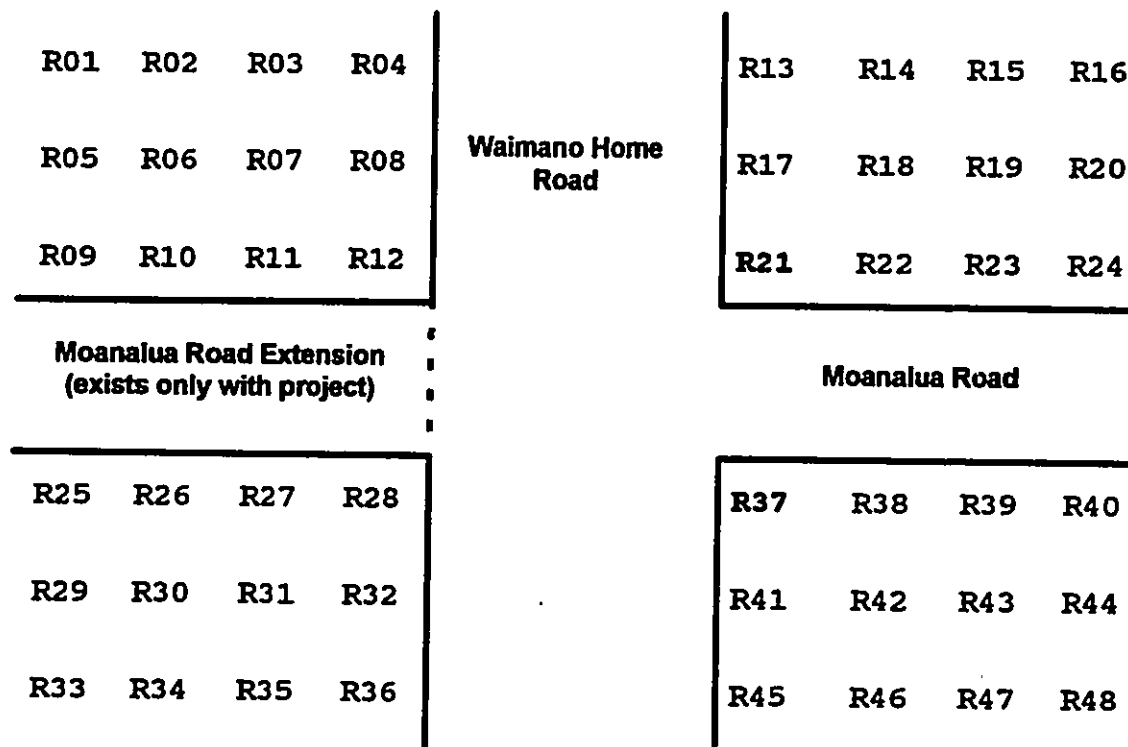
Receptor Spacing
= 10 meters

Estimated Maximum Concentrations
(mg/m³)

<u>Period</u>	<u>Existing</u>	<u>Without Project</u>	<u>With Project</u>
A.M	4.6	3.9	4.0
	R12	R23	R22
P.M	3.1	3.3	4.6
	R21	R24	R28

FIGURE 13

ESTIMATES OF MAXIMUM 1-HOUR
CARBON MONOXIDE CONCENTRATIONS
Waimano Home Road at Moanalua Road
Peak Traffic Hours
2006



Receptor Spacing
= 10 meters

Estimated Maximum Concentrations
(mg/m³)

<u>Period</u>	<u>Existing</u>	<u>Without Project</u>	<u>With Project</u>
A.M	6.7	7.1	7.6
	R37	R37	R37
P.M	4.0	4.3	6.2
	R37	R37	R21

8 JANUARY 1996

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Preliminary Engineering Report

APPENDIX H

PRELIMINARY ENGINEERING REPORT
FOR
MANANA AND PEARL CITY JUNCTION DEVELOPMENT

PREPARED FOR
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

DECEMBER 1995

PREPARED BY
COMMUNITY PLANNING, INC.
745 FORT STREET, SUITE 400
HONOLULU, HI 96813

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FIGURE 1, GENERAL LOCATION MAP

FIGURE 2, FLOOD INSURANCE RATE MAP

FIGURE 3, EXISTING STORM DRAIN SYSTEM

FIGURE 4, PROPOSED WASTEWATER IMPROVEMENTS

FIGURE 5, PROPOSED WATER IMPROVEMENTS

FIGURE 6, ELECTRICAL MASTER PLAN

FIGURE 7, TELEPHONE MASTER PLAN

FIGURE 8, CATV MASTER PLAN

EXHIBIT A, ESTIMATED WASTEWATER FLOW

I. GENERAL PURPOSE

This preliminary engineering study is prepared to analyze and report on the impact of the proposed Manana Mixed Use Development on the existing storm drainage, water, wastewater, electric and communication systems. Also, if required, proposed storm runoff and utility improvements will be described and construction cost estimated.

A separate report by another consultant will address engineering requirements for the anticipated impact of the project on existing transportation facilities.

II. PROJECT LOCATION AND DESCRIPTION

The site consists of two parcels totaling approximately 108 acres of land mauka of Kamehameha Highway in the vicinity of the Waimano Home Road/Kamehameha Highway intersection (see FIGURE 1), and a makai parcel owned by the City known as "Pearl City Junction" is approximately 14 acres.

The project site is surrounded by well-established residential and commercial urban area with a high level of existing services. Surrounding residential land uses include single-family residential neighborhoods, low- to mid-rise apartments, and a two-tower high-rise apartment complex.

The mauka site is flat to gently sloping from north to south or from the former cane haul road to Kamehameha Highway. The makai site also gently slopes in the same direction from Kamehameha Highway to a large area of undeveloped land to the south which is owned by the University of Hawaii.

The mauka parcel of approximately 108 acres is currently developed with military warehouses and open storage areas. The parcel makai of Kamehameha Highway (known as Pearl City Junction) is also used for warehousing by the Navy and City. Use of the existing structures is largely discontinued with short-term leasing of only better conditioned warehouses. Other improvements on the property include internal roadways, overhead power/communication lines, and underground storm drainage, water and sewer pipeline systems.

III. INFRASTRUCTURE REQUIREMENTS

A. Storm Drainage System

1. Existing Conditions

a. General

Based on the Flood Insurance Rate Map, the project site is designated in Zones D (area in which flood hazards are undetermined) and X (areas determined to be outside the 500-year floodplain) as shown on FIGURE 2, FLOOD INSURANCE RATE MAP.

Existing storm drainage improvements which presently serve the mauka project site are shown on FIGURE 3, EXISTING STORM DRAIN SYSTEM. The project site presently drains to two storm drainage tributary basins which discharge into West and Middle Loch of Pearl Harbor via the Waiawa and Waimano Streams.

b. Waiawa Drainage Basin

The makai Pearl City Junction parcel and about 80 acres of the mauka parcel are tributary to the Waiawa Drainage Basin.

About 60 acres or a major portion of the mauka site drain off to the west side into existing drain ditches, channels and pipeline systems located in adjoining Holiday City and Hale Ola residential developments and Acacia Road.

Storm runoff collected by these systems is eventually transported by the 12-foot x 9-foot drain box culvert which traverses the Pearl City Highlands commercial development area and discharged into Waiawa Stream as shown on FIGURE 3, EXISTING STORM DRAIN SYSTEM.

The remaining mauka area tributary to the Waiawa Basin of about 20 acres flows to the south and into two existing pipeline systems in the Kauhale Subdivision. The systems cross Kamehameha Highway in 36- and 48-inch culverts and discharge into a concrete ditch which eventually empties into Waiawa Stream.

c. Waimano Drainage Basin

Two existing pipeline systems in Waimano Home Road serve the mauka project site as shown on FIGURE 3, EXISTING STORM DRAIN SYSTEM. Both

pipeline systems are extended to connection with the Waimano Drain Channel which crosses Kamehameha Highway and discharges into an unlined drainageway which empties into Pearl Harbor.

The drain pipeline system which crosses Waimano Home Road at the Hoomalu Street intersection only collects and transports storm runoff from the project site. Based on design information for the earlier widening of Waimano Home Road, that system is extended onto the former Navy storage site and collects storm runoff from an area of about 17 acres. That system, which is not interconnected to the Waimano Home Road drain pipeline system, consists of 36-inch pipelines in the roadway and 48-inch culvert through the adjoining residential subdivision.

The other drain pipeline system, which extends across the southern portion of the shopping center site, collects storm runoff from Waimano Home Road as well as adjoining areas on the west side of the road right-of-way. Existing drain pipelines on the former Navy storage site are connected to the catchbasins and manholes in the upper portion of Waimano Home Road. Design information for the road drain system indicates that storm runoff from about 11 acres of the former Navy site is served by this system.

2. Proposed Improvements

a. General

In general, development of the project site as shown on FIGURE 3, EXISTING STORM DRAIN SYSTEM, may slightly increase the area of impermeable hard surfaces (pavement, walkways, buildings, etc.) beyond the present condition of the former Navy storage area. However, the resultant minor increase in storm runoff can be offset on-site by reducing the pavement area and/or slightly depressing some of the open areas (park, landscaping, parking lot) to create storm water retention/detention basins.

The magnitude of the storm runoff increase, if any, can be determined later when plans are finalized for each project site and appropriate measures designed at that time to maintain the present rate of storm water discharge into existing drain systems.

The existing drainpipe systems as well as the concrete ditch along the common boundary with Holiday City as shown on FIGURE 3, EXISTING STORM DRAIN SYSTEM, were designed to accommodate a runoff rate of about 3 cubic feet per second (cfs) per acre for a 10-year storm event. The 12-foot x 9-foot box culvert traversing the Pearl City Highlands commercial development area, on the other hand, is designed to accommodate a runoff rate of about 5.3 cfs per acre or adequate to accommodate a 50-year storm event.

Based on City and County Storm Drainage Standards, the existing off-site storm drainage facilities are adequate to accommodate the proposed Manana Mixed Use Development.

b. Waiawa Drainage Basin

1) Pearl City Junction Makai Parcel

As shown on FIGURE 2, FLOOD INSURANCE RATE MAP, the makai development parcel is just north of the Waiawa Stream flood area and, therefore, no extensive off-site storm drainage system improvements are required. However, since some of the adjacent flood area is used by the University of Hawaii for agriculture purposes, it is recommended that the majority of the project site's storm runoff be collected and conveyed for discharge into Waiawa Stream at the southwest corner of the property.

Again, on-site measures may be required to retain/detain the increase of storm runoff due to the development. Assuming that the present 10-year storm runoff rate is about 3 cfs per acre and proposed after-development rate is about 3.5 cfs per acre, the anticipated increase in runoff is only about 7 cfs for the 13.8-acre parcel.

2) Manana Mauka Parcel

Storm runoff from a major portion of the mauka parcel, about 60 acres, drains to the existing 12-foot x 9-foot box culvert located in the Pearl City Highlands commercial development area as shown on FIGURE 3, EXISTING STORM DRAIN SYSTEM. Drainage records for Holiday City indicate that about 29 acres of the former Navy storage area drains about 87 cfs of storm

runoff into the existing concrete ditch located along the common boundary. Records for the adjoining Hale Ola residential project indicate that about 45 acres of the former Navy storage area are included in the design of the 18-foot x 7-foot drain channel. However, except for the Holiday City concrete ditch, available construction drawings do not indicate how the storm runoff from the lower portion of the former Navy storage site is transported to the Hale Ola drain channel. Also, it is estimated that 15 acres of the lower portion of the project site sheet flow to Acacia Road and into drainage catchbasins at the Kamehameha Highway intersection.

Consequently, since no major drains presently collect and convey storm runoff from the project site to the 12-foot x 9-foot box culvert, project development should include construction of a storm drainage system in the proposed spine road to collect street runoff as well as storm runoff from the individual development parcels. The drain pipeline system should be extended down into Kuala Street and connected to the existing 12-foot x 9-foot box culvert. That system should be designed according to City and County Drainage Standards to accommodate a 10-year storm event for the tributary 60 acres less the upper project area which can be directed to the existing Holiday City concrete ditch.

The remaining 20 acres which are also tributary to the Waiawa Basin presently drain to inlets connected to the existing drain pipeline systems located in the adjoining Kauhale Subdivision as shown on FIGURE 3, EXISTING STORM DRAIN SYSTEM. Records indicate that these systems are adequate to accommodate a storm runoff rate of about 3 cfs per acre. Based on the present development plan for this area, the existing systems appear to be adequate to accommodate runoff from a 10-year storm event and, therefore, no improvements to the existing system are anticipated. However, proposed lots mauka of the existing drain inlets should be sloped to drain to the proposed project road to assure that storm runoff in excess of the

10-year event will not flow into the Kauhale Subdivision.

Again, on-site measures may be required to retain/detain the increase of storm runoff due to the development. Assuming that the present 10-year storm runoff rate is about 3 cfs per acre and proposed after-development rate is about 3.5 cfs per acre, the anticipated increase in runoff is only about 40 cfs for the 80-acre portion of the mauka project site.

c. Waimano Drainage Basin

The drain pipeline systems in Waimano Home Road presently accommodate runoff for a 10-year storm event from about 28 acres of the project site located above the Hoomalu Street intersection in accordance with City and County Storm Drainage Standards.

Since an 8-acre park/youth center is located in this 28-acre tributary area, it is anticipated that the after-development hard surface area should be equivalent to or less than the present condition of the existing Navy storage area. Consequently, storm runoff from this area should not increase after development.

If calculations based on final development plans reveal an increase, measures may be employed to retain/detain that additional storm runoff. Consequently, no improvements to the existing storm drainage system on Waimano Home Road are anticipated.

3. Potential Impacts and Mitigation

a. Potential Impacts

Proposed urban-type improvements normally increase the amount of storm runoff to existing storm drainage systems and receiving waters and, therefore, may have an adverse impact on their capacity. Unless the present system is adequate to accommodate the increased runoff, flooding and damage to existing improvements may occur.

The proposed development also increases the potential of silt, debris, oil and other waste material being conveyed and deposited in culverts, channels and Pearl Harbor. Water

quality of Pearl Harbor may also be adversely impacted.

b. Mitigation Measures

Since the project site was formerly used as a Navy storage warehouse facility with significant hard surface coverage (buildings, paving, etc.), no significant increase in storm runoff; if any, is anticipated due to the proposed development. However, if an increase is anticipated based on final site development plans, measures should be employed to retain/detain the additional storm runoff.

For control of pollutants from the proposed paved parking areas, drain collection inlets and catchbasins should be designed to separate oil and grease from storm runoff for appropriate handling and discharge.

4. Construction Cost Estimate

The estimated cost for construction of the proposed storm drainage improvements in the spine road including extension and connection to 12-foot x 9-foot box culvert in Kuala Road is \$600,000. The estimate excludes cost for drainage improvements for the Industrial Park loop roads and on-site systems for individual lots since these improvements may vary based on the final development plan.

B. Wastewater System

1. Existing Conditions

Existing major municipal wastewater improvements which are located in the vicinity of the project site are shown on FIGURE 4, PROPOSED WASTEWATER IMPROVEMENTS. The existing 10-inch Navy sewer pipeline which presently serves the project site is also indicated on FIGURE 4.

Wastewater collected in the Manana-Pearl City area is conveyed to the municipal Pearl City Wastewater Pump Station as also shown at the bottom of FIGURE 4. The station, which receives wastewater from a tributary area extending from Waiawa to Halawa, pumps the sewage to the Honouliuli Wastewater Treatment Plant in Ewa. After treatment, the effluent is discharged by deepwater outfall into the Pacific Ocean.

Discussions with representatives of the City's Department of Wastewater Management reveal that the existing sewer line in Waimano Home Road and a portion of the trunk (18 inch) and interceptor (42 inch) sewer lines (indicated on FIGURE 4) are at capacity and, therefore, cannot accommodate the additional wastewater generated by the project development.

On the other hand, the Pearl City Wastewater Pump Station has adequate capacity and the Honouliuli Treatment Plant should be able to accommodate the additional sewage flow after completion of a secondary treatment system scheduled for October, 1996.

Present limited use of the project site generates wastewater which is discharged into the municipal 21-inch sewer trunk main located along the southern boundary of the makai parcel, Pearl City Junction parcel. However, since this present flow is probably very small, this study assumes that the flow is negligible and, therefore, its elimination will not alter the present capacity of the municipal sewer system.

2. Proposed Improvements

The proposed mixed use development as shown on FIGURE 4 is anticipated to generate an average daily sewage flow of 1.0 million gallons as tabulated on EXHIBIT A, ESTIMATED WASTEWATER FLOW.

Based on the present land use plan and the existing inadequate sewer line on Waimano Home Road, wastewater generated by the project should be collected and conveyed to a new transmission pipeline system to discharge into the existing 21-inch municipal trunk sewer main located along the southern boundary of the Pearl City Junction parcel. The routing of the proposed sewer trunk main is shown on FIGURE 4, PROPOSED WASTEWATER IMPROVEMENTS:

A portion of the existing municipal trunk sewer main, indicated on FIGURE 4, however, is at capacity and, therefore, should be modified to increase its capacity. A 15- or 18-inch sewer pipeline should be installed along the route of the existing sewer mains as shown on FIGURE 4 to provide capacity for the additional flow. The relief sewer would have an approximate length of 600 feet.

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3. Potential Impact and Mitigation

a. Potential Impact

On-site underground pipeline systems will be constructed by the individual lot developers to collect and convey wastewater to the proposed sewer transmission main to be installed in the project's new spine road.

The project's additional sewage flow, however, will have an adverse impact on a portion of the municipal trunk line system which is already at capacity.

b. Mitigation Measures

The project developer proposes to fund and construct improvements to increase the capacity of the municipal trunk line system to accommodate the additional sewage flow.

In addition, the developer will pay the prevailing Department of Wastewater Management facility charge for transmission and treatment at the Honouliuli Wastewater Treatment Plant.

4. Construction Cost Estimate

The estimated cost for construction of the proposed wastewater system improvements is as follows:

Spine road sewer main with extension to connection with 21-inch sewer	\$700,000
Relief sewer line	<u>200,000</u>
Total wastewater improvement estimate	<u>\$900,000</u>

The estimate excludes cost for wastewater improvements for the Industrial Park loop roads and on-site systems for individual lots since these improvements may vary based on final development plans.

C. Water System

1. Existing Conditions

The existing major municipal water improvements which are located in the vicinity of the project site are shown on FIGURE 5, PROPOSED WATER IMPROVEMENTS. All of the water mains shown on

FIGURE 5 provide water from the Board of Water Supply (BWS) 285-Foot System.

The project site, having elevations of 40 to 145 feet, lies within the service limits of the BWS 285-Foot System.

Water service for the project site was formerly provided by the Navy's private water system. This study assumes that use of the Navy water system will be discontinued and project water will be provided by the Honolulu BWS.

The existing municipal water system has adequate capacity to accommodate the water requirements of the proposed project.

2. Proposed Improvements

The proposed mixed use development as shown on FIGURE 5 is anticipated to have an average daily water demand of 0.4 million gallons.

Based on the present land use plan and existing municipal water system, domestic water and fire protection for the project's mauka parcel can be provided by installation of a 12-inch water main with fire hydrants along the proposed spine road and Industrial Park loop roads as shown on FIGURE 5, PROPOSED WATER IMPROVEMENTS.

For individual lot service, laterals can be extended from the new 12-inch water mains to proposed fire detection and domestic water meters to be located in the spine road sidewalk area. The size of these laterals and meters can be determined later based on the requirements of each lot.

For the makai parcel, Pearl City Junction parcel, a lateral can be extended from the existing 12-inch water main in Kamehameha Highway to meters installed in an accessible easement off the highway.

3. Potential Impact and Mitigation

a. Potential Impact

Discussions with representatives of the BWS reveal that the present municipal water system is adequate to accommodate the water demands of the proposed project. However, use of this additional water will reduce or impact the capacity of the present municipal system.

The project will also increase the demand for water from the Pearl Harbor aquifer. The State Water Commission has allocated the available aquifer water source to several present users including the BWS and Navy.

b. Mitigation Measures

The reduction in capacity of the present municipal water system due to the project's water demand will be mitigated by the developer by payment of facility charges. Charges for source development, storage and transmission mains will be paid based on prevailing BWS rates prior to installation of water meters. These revenues normally are used by BWS to offset its cost of constructing the facilities or to construct additional improvements to replace the capacity.

The project's demand on the Pearl Harbor aquifer, on the other hand, should be offset by some reduction in the Navy's water use since the project site was formerly serviced by the Navy's water system. However, the Navy has probably reallocated the water use to one of its new developments. Consequently, the developer will request that the BWS provide the project water from its present Pearl Harbor aquifer allocation.

4. Construction Cost Estimate

The estimated cost for construction of the 12-inch water main and fire hydrants in the spine road is \$600,000. The estimate does not include the cost for the water main in the loop roads and individual lot laterals since these may vary based on the final development plan.

D. Electrical and Communication Systems

1. Existing Facilities

a. Electric

Underground and overhead lines run along Kamehameha Highway and overhead lines run along Waimano Home Road. The existing military housing west of the project site is fed from an overhead line which comes through the Pearl City Highlands property.

b. Telephone

A manhole and conduit system runs along both Kamehameha Highway and Waimano Home Road. There is also an overhead and underground line running along the Cane Haul Road. These lines serve the subdivision west of the project site.

c. CATV

An overhead line runs along Acacia Road and along Waimano Home Road. The existing military housing west of the project site is fed from an overhead line along Acacia Road.

2. New Facilities

The new facilities are based upon the conceptual master plan completed by PBR Hawaii. This plan was provided to the utility companies. The land uses and acreage are as shown on FIGURES 6, 7 and 8.

a. Electric

A HECO. 46 kV primary system will serve the project. This system will consist of two feeders. One will come from the west side of the project. The other may come from either the Waimano Substation or from a circuit along Kamehameha Highway. The conduit and manhole requirements are as shown on FIGURE 6.

A substation will be required for this development. The approximate size of this substation is 15,200 square feet. This substation should be located near Acacia Road. Four switching stations will also be required for this development. Exact easement locations and requirements will need to be coordinated with HECO. when exact lot and load requirements are set.

b. Telephone

The telephone system service will come from Waimano Home Road and will be extended throughout the project. The conduit and manhole or handhole sizes are as shown on FIGURE 7.

HTCo. may require two switching stations. The exact easement locations and requirements for these stations will need to be coordinated with HTCo. when exact lot and telephone line requirements are set.

c. CATV

The CATV system service will come from Waimano Home Road and will be extended throughout the project to Acacia Road. The 3-inch conduit and 2-foot x 4-foot handhole locations are as shown on FIGURE 8.

3. Construction Cost Estimate

The estimated cost for construction of the proposed electrical and communication system improvements is as follows:

Electrical improvements	\$ 970,000
Telephone improvements	630,000
CATV improvements	<u>130,000</u>
Total estimate for electrical and communication improvements	<u>\$1,730,000</u>

The estimate excludes cost for improvements for the Industrial Park loop roads, traffic light signals and on-site systems for individual lots since these improvements may vary based on final development plans.

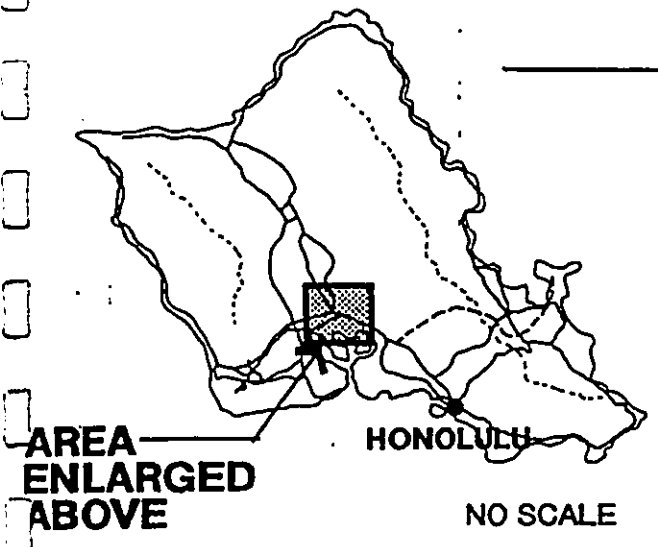
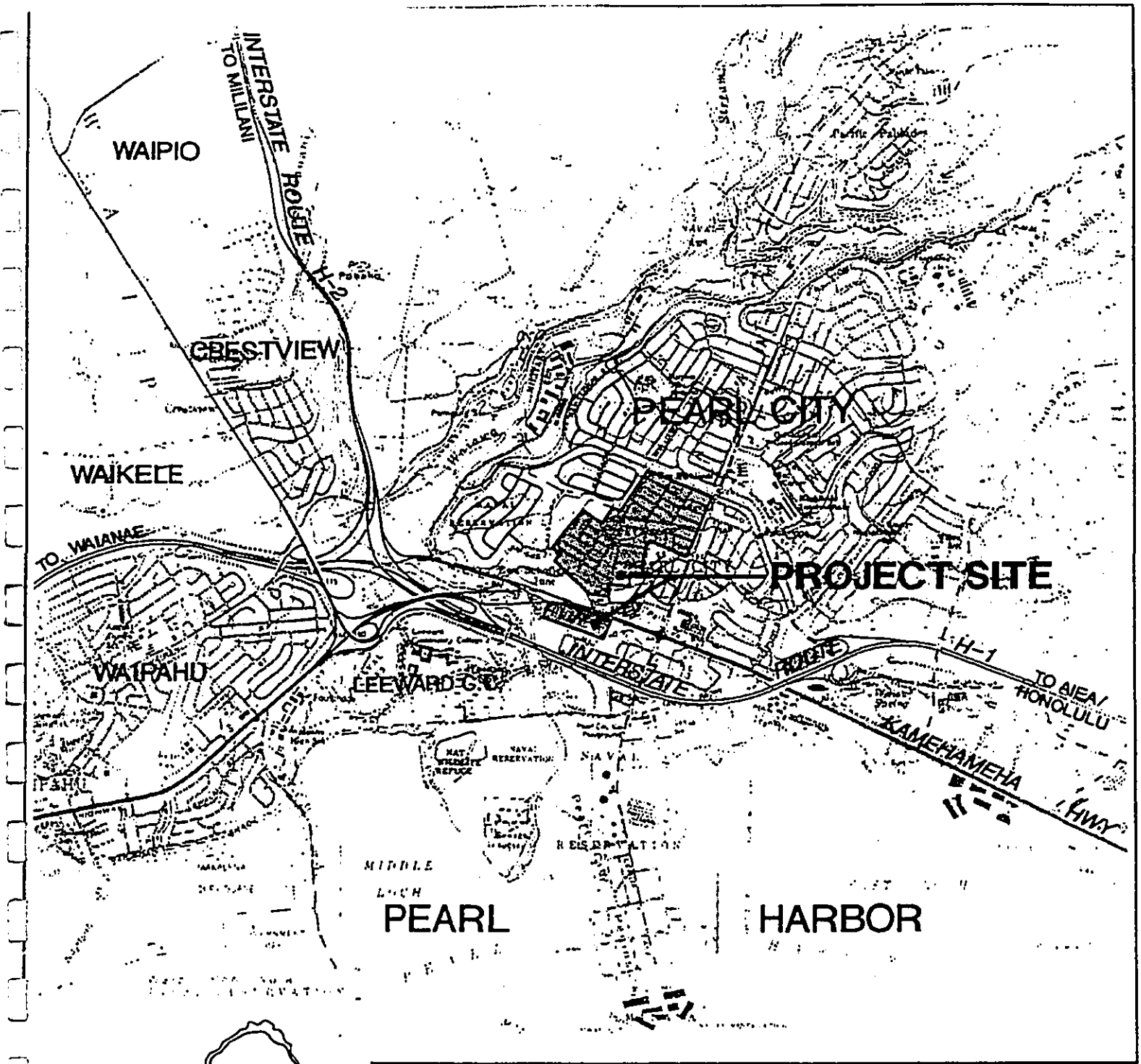
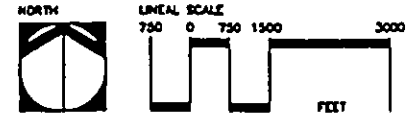
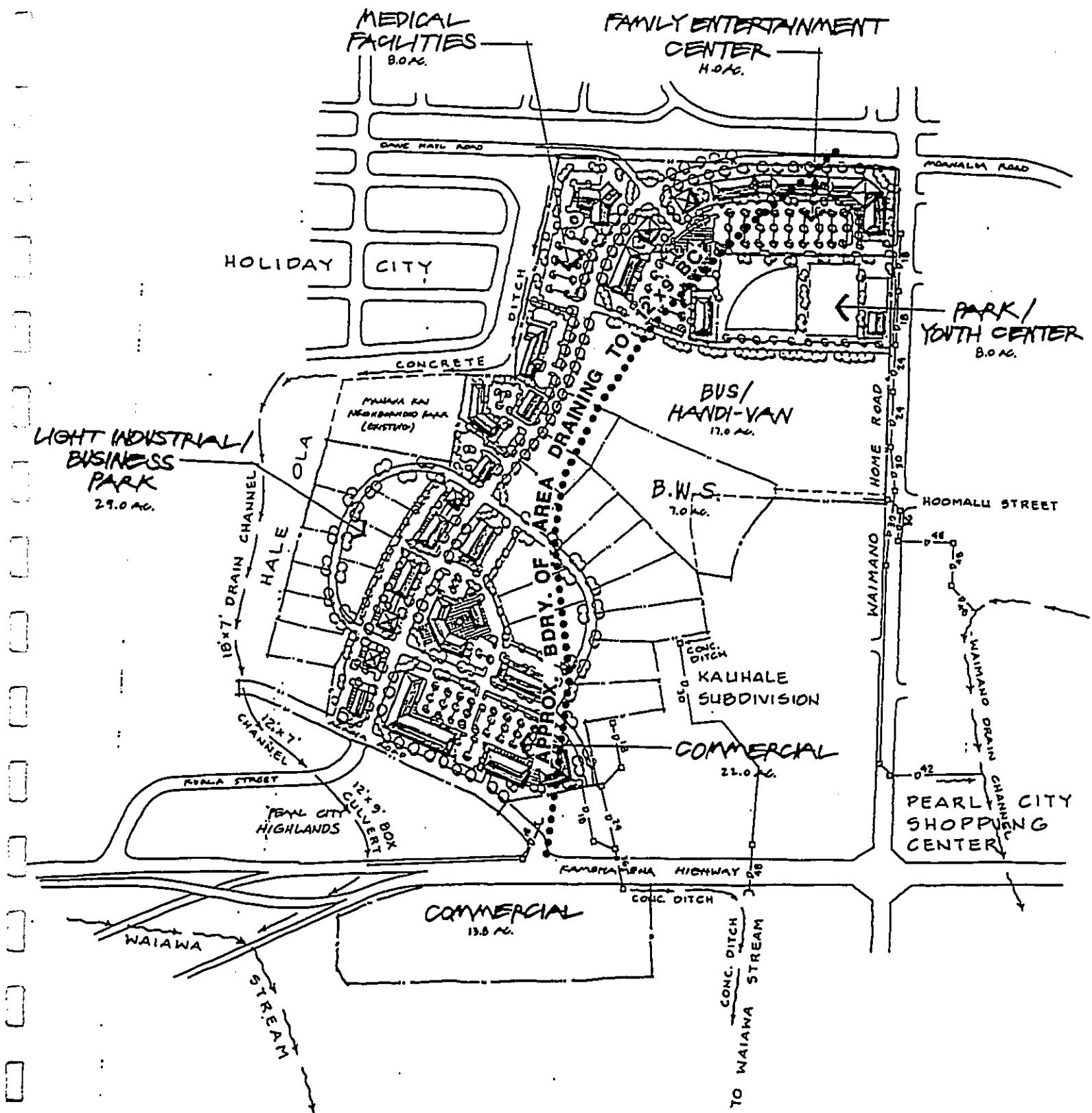


FIGURE 1
GENERAL LOCATION MAP
MANANA STORAGE FACILITY
 PFC HAWAII PEARL CITY, OAHU



PBR
 HAWAII
 DATE: 3/95



**FIGURE 3-EXIST. STORM DRAIN SYSTEM
CONCEPTUAL MASTER PLAN
MANANA/PCJ DEVELOPMENT**

CITY & COUNTY OF HONOLULU

ISLAND OF OAHU

NORTH

LINEAL SCALE (FEET)



DATE: 11/16/90

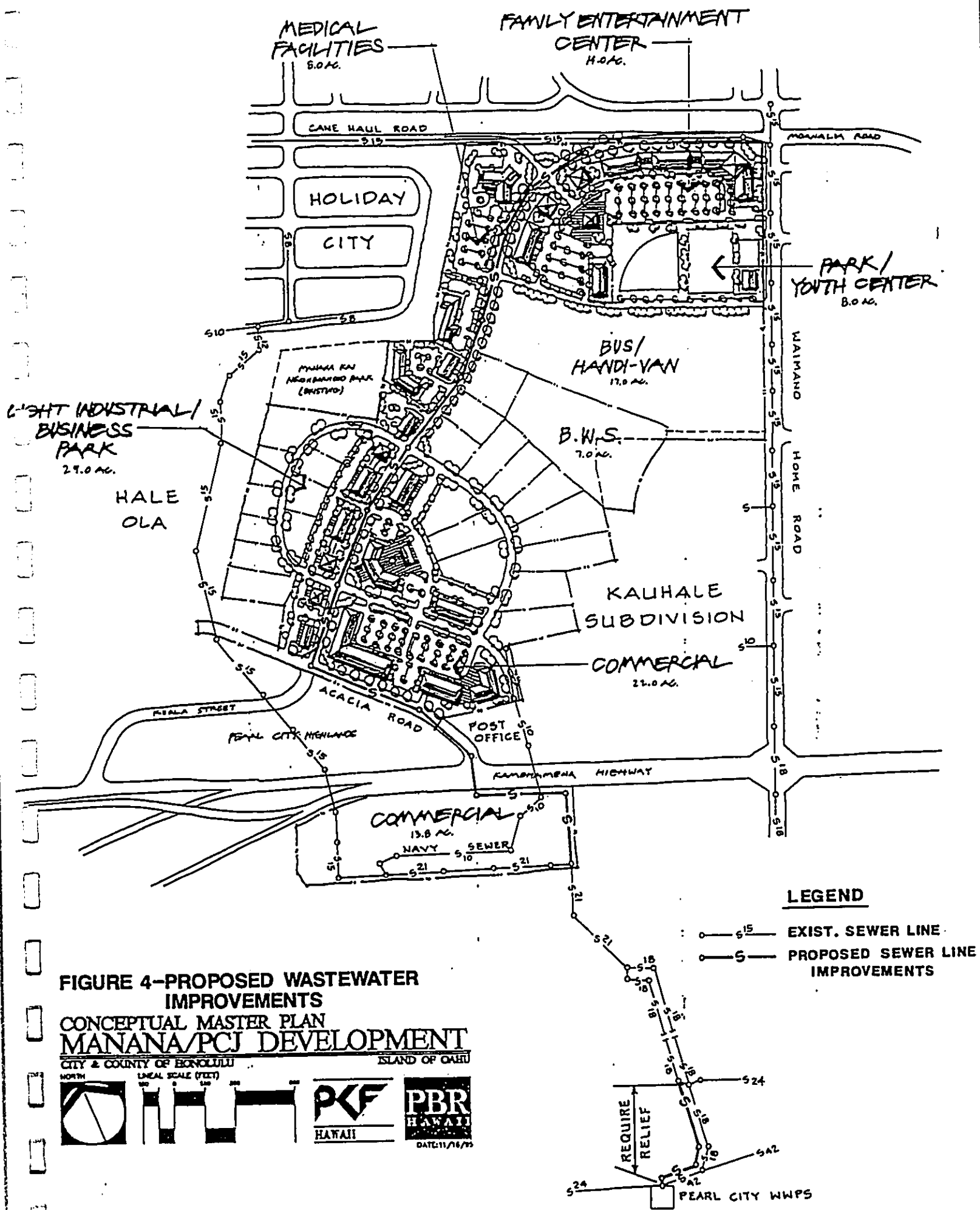


FIGURE 4-PROPOSED WASTEWATER IMPROVEMENTS
CONCEPTUAL MASTER PLAN
MANANA/PCJ DEVELOPMENT
 CITY & COUNTY OF HONOLULU ISLAND OF OAHU

NORTH

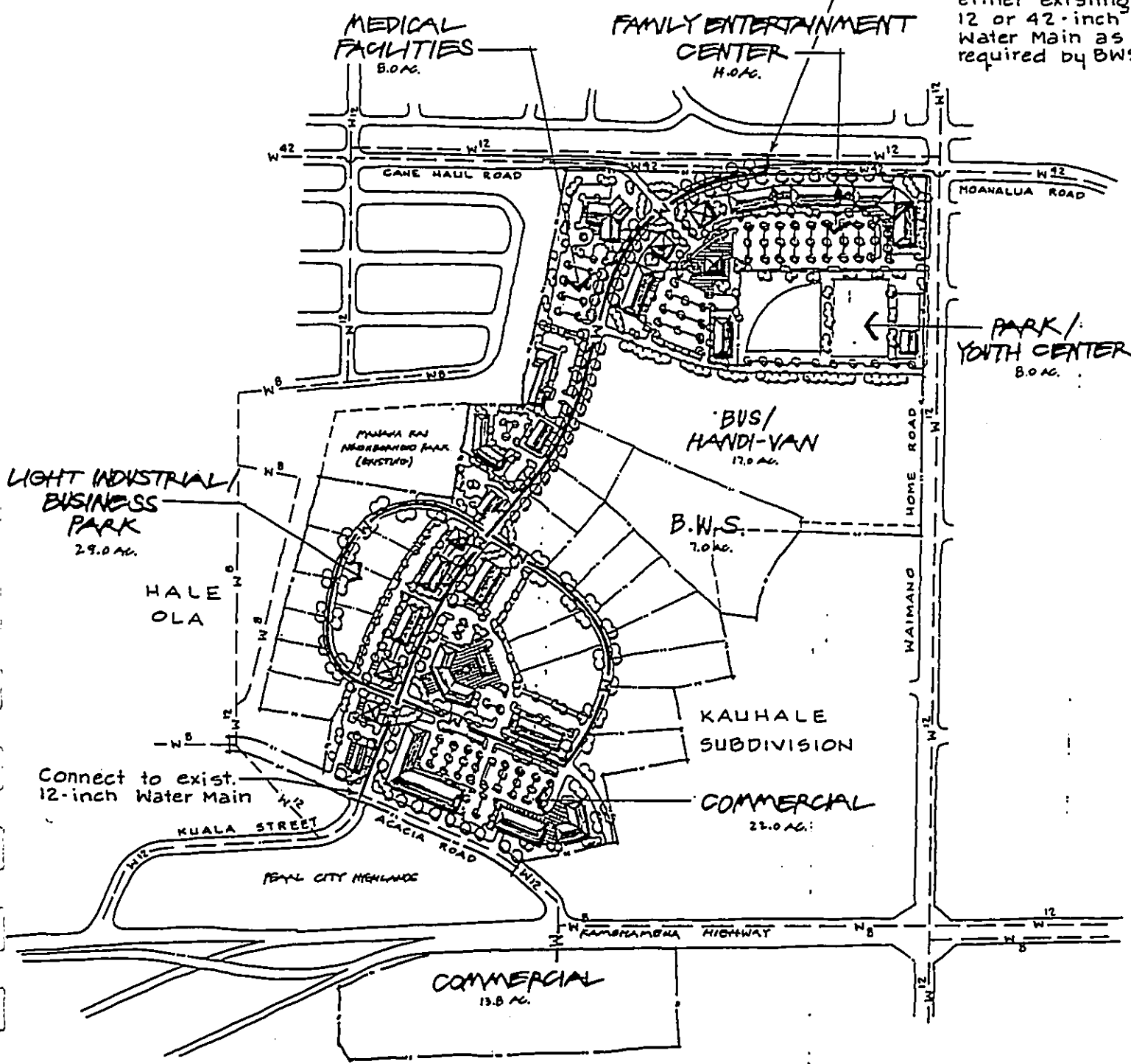
LINEAL SCALE (FEET)

0 100 200 300 400

PCF
HAWAII

PBR
HAWAII
DATE: 11/14/75

either existing
12 or 42-inch
Water Main as
required by BWS

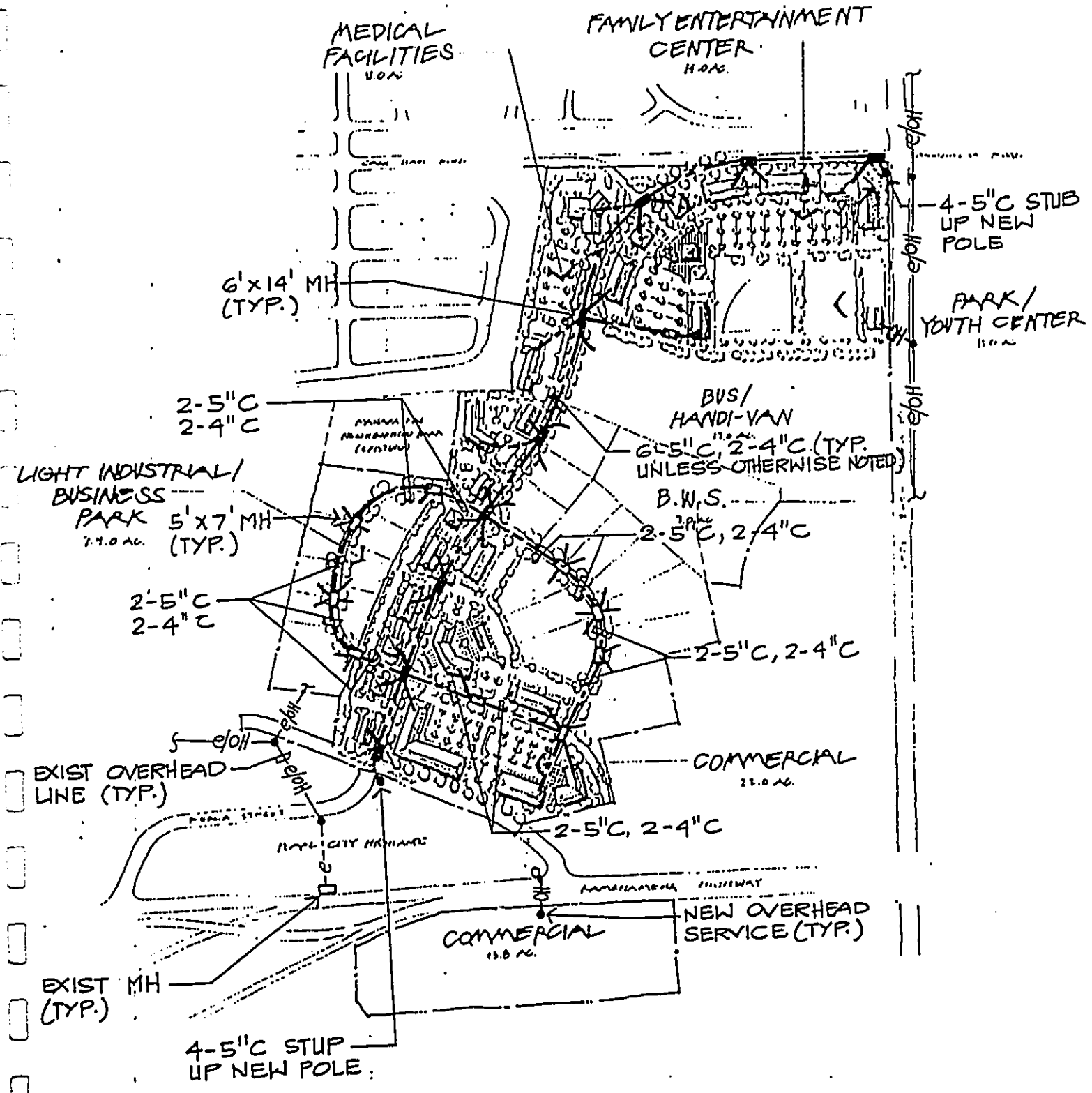


NOTE:
ALL WATER SYSTEM IMPROVEMENTS
ARE IN THE BWS '285' SYSTEM.

LEGEND
--- W12 --- EXIST. WATER MAIN
— W — PROPOSED WATER MAIN

FIGURE 5-PROPOSED WATER IMPROVEMENTS
CONCEPTUAL MASTER PLAN
MANANA/PCJ DEVELOPMENT

CITY & COUNTY OF HONOLULU ISLAND OF OAHU
NORTH LINEAL SCALE (FEET)



NOTE: 15,200 SQ FT SUBSTATION
REQUIRED IN DEVELOPMENT.

FIGURE 6
ELECTRICAL MASTER PLAN
MANANA/PCJ DEVELOPMENT

CITY & COUNTY OF HONOLULU
ISLAND OF OAHU
NORTH
LINEAL SCALE (FEET)

PCF HAWAII
PBR HAWAII
DATE: 11/14/92

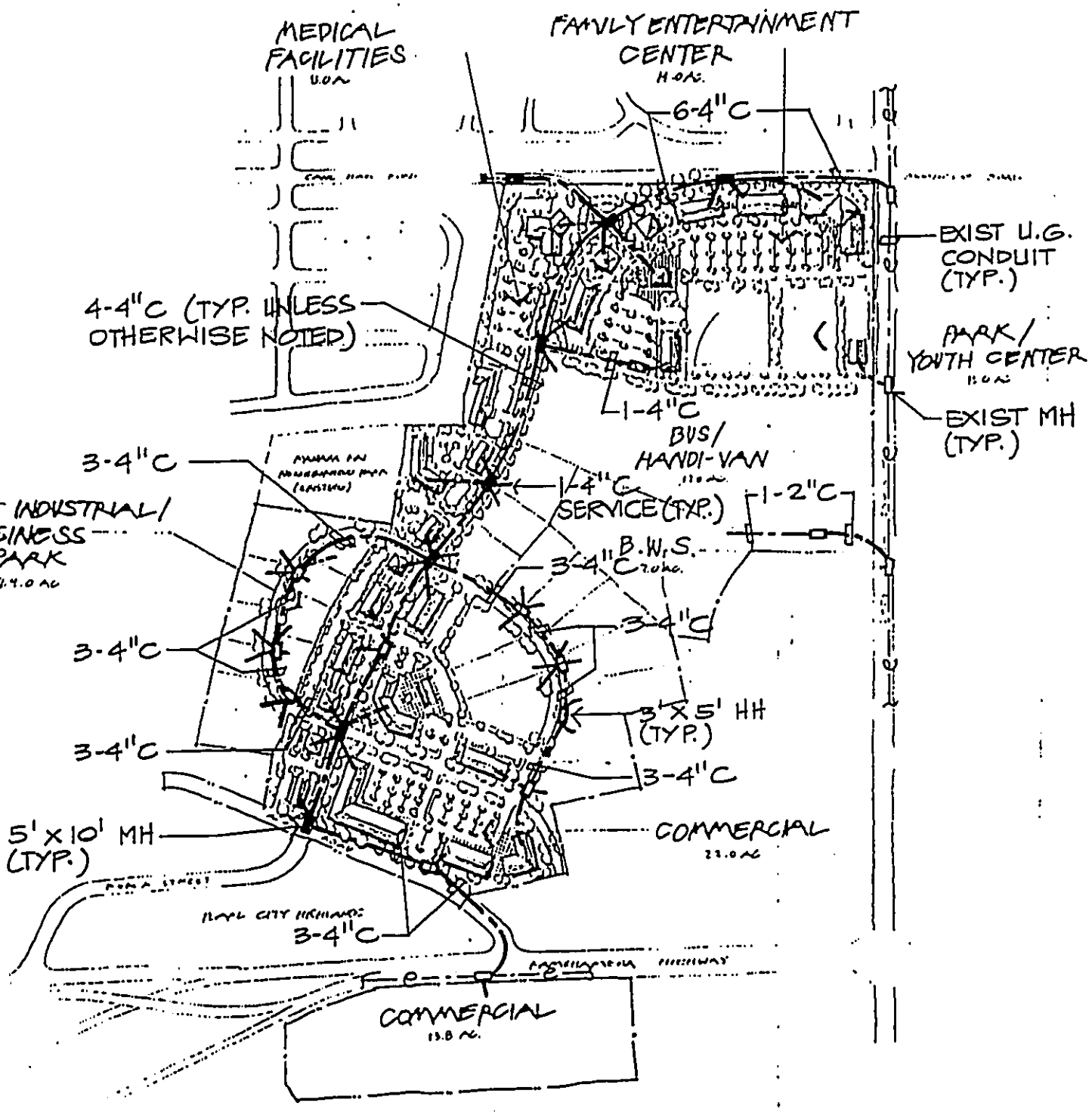


FIGURE 7
TELEPHONE MASTER PLAN
MANANA/PCJ DEVELOPMENT

CITY & COUNTY OF HONOLULU
ISLAND OF OAHU

NORTH

LINEAL SCALE (FEET)

PCF HAWAII

PBR HAWAII

DATE: 11/14/93

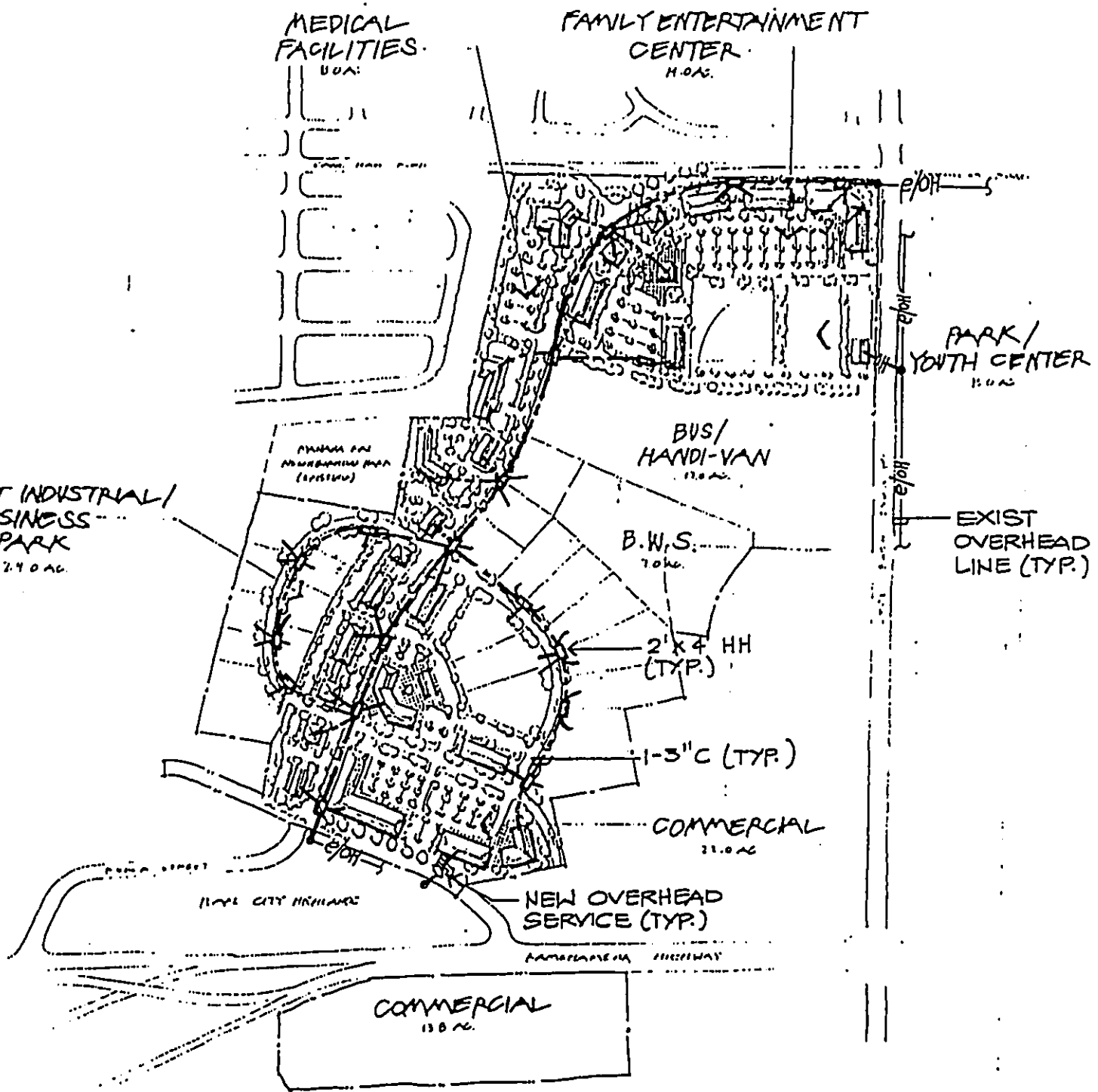


FIGURE 8.
 CATV MASTER PLAN
 MANANA/PCJ DEVELOPMENT

CITY & COUNTY OF HONOLULU ISLAND OF OAHU

NORTH

GRAPHIC SCALE (FEET)

PKF HAWAII

PBR HAWAII

DATE: 11/26/72

MANANA MIXED USE DEVELOPMENT
ESTIMATED WASTEWATER FLOW

December 11, 1995

MAUKA PARCEL

Family Entertainment Center (14 acres)	700 people	
Medical Facilities (8 acres @ 140 cpa)	1,120 people	
Park/Youth Center (8 acres)	100 people	
Bus/Handi-Van (17 acres)	450 people	
BWS (5 acres)	100 people	
Light Industrial (29 acres @ 100 cpa)	2,900 people	
Commercial (22 acres @ 200 cpa)	<u>4,400</u> people	
		9,700 people

MAKAI PARCEL

Commercial (13.8 acres @ 200 cpa)	<u>2,760</u> people	
		<u>12,530</u> people

Average day flow = 12,530 @ 80 gpd = 1.00 mgd

EXHIBIT A

Pearl City Task Force

APPENDIX I

RESOLUTION

ACCEPTING THE RECOMMENDATIONS AND REPORT OF THE PEARL CITY TASK FORCE AND COMMENDING THE TASK FORCE MEMBERS FOR THEIR EFFORTS.

WHEREAS, on January 25, 1995, the City Council adopted Resolution 94-327, CD1, FD1, establishing a Pearl City Planning Task Force for the purpose of developing community-based land use recommendations for the Pearl City Junction and Manana Warehouse land parcels; and

WHEREAS, the task force, presently known as the Pearl City Task Force ("Task Force"), was comprised of the following:

1. Ex-officio members (non-voting): Councilmember Mufi Hannemann, Congressman Neil Abercrombie, State Senator David Ige, State Senator Cal Kawamoto, State Representative Mark Takai, State Representative Nobu Yonamine, State Representative Roy Takumi.
2. City Agency Representatives (voting): Cheryl Soon, Planning Department; Patrick Onishi, Department of Land Utilization; Ronald Lim, Department of Housing and Community Development; Charles Swanson, Department of Transportation Services; and Howard Takara, Honolulu Public Transit Authority.
3. Community Representatives (voting): Yolanda Domingo, Hale Ola Association; Donna Gomes, Century Park Plaza Association; Gregory Gonsalves, Manana Community Association; Breene Harimoto, Momilani Community Association; Thomas Kam, Pearl City Neighborhood Board; Bob Kubo, Pearl City Community Association; Terry Lovvorn, Wailuna Recreation Association; Nelson Moriwaki, Pearl City Neighborhood Board; Nan Nintzel, Pacific Palisades Community Association; James O'Leary, Aiea & Pearl City Business Association; Jerry Souza, Pearl City Neighborhood Board; Dennis Yuen, Newtown Community Association;

and

WHEREAS, the Task Force has submitted its recommendations to the City Council in a report entitled Pearl City Task Force Final Report: Recommended Land Use Alternative for the Manana and Pearl City Junction Properties; now, therefore,

BE IT RESOLVED by the Council of the City and County of Honolulu that it accept the report submitted by the Task Force; and

RESOLUTION

BE IT FURTHER RESOLVED that the members of the Task Force be, and they hereby are, commended for their outstanding public service and thanked for their diligent efforts on behalf of the people of the City and County of Honolulu; and

BE IT FURTHER RESOLVED that the Council, on behalf of the community, thanks Mayor Harris and his administration for their strong participation and interaction during the process; and

BE IT FURTHER RESOLVED that the Council urges Mayor Harris to also accept the Task Force Report; and

RESOLUTION

BE IT FINALLY RESOLVED that copies of this Resolution be transmitted to the Mayor and to the members of the Task Force.

INTRODUCED BY:

Mark Jam

Councilmembers

DATE OF INTRODUCTION:

AUG 30 1995

Honolulu, Hawaii

(OCS/081795/pn)

-3-

CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

I hereby certify that the foregoing RESOLUTION was adopted by the COUNCIL OF THE CITY AND COUNTY OF HONOLULU on the date and by the vote indicated to the right.

ATTEST:

GENEVIEVE G. WONG
CITY CLERK

JOHN DeSOTO
CHAIR AND PRESIDING OFFICER

Dated _____

ADOPTED MEETING HELD			
	AYE	NO	A/E
BAINUM			
FELIX			
HANNEMANN			
HOLMES			
KIM			
MANSHO			
MIRIKITANI			
YOSHIMURA			
DeSOTO			

Reference

Report No.

Resolution No.
95-301

DATES FOR PEARL CITY TASK FORCE MEETINGS

January 23	Community Meeting
February 15	Task Force Meeting
March 15	Task Force Meeting
March 29	Community Meeting
April 5	Task Force Meeting
May 4	Task Force Meeting
May 17	Supplemental Task Force Meeting
May 23	Community Meeting
June 7	Task Force Meeting
July 5	Task Force Meeting
July 12	Special Task Force Meeting
July 20	Community Meeting
August 8	Task Force Meeting

**PEARL CITY TASK FORCE
FINAL REPORT**

*Recommended Land Use Alternative
for the Manana and Pearl City Junction Properties*

I. EXECUTIVE SUMMARY

The City Council authorized the acquisition of both the Manana Warehouse (Manana) and Pearl City Junction (PCJ) properties from the U.S. Navy in September 1991. The Council subsequently adopted a resolution that established a 23-member task force of federal, state, and city representatives and residents of the Pearl City and surrounding communities to formulate a recommended land use alternative for the Manana and PCJ properties. The task force faced a July 25, 1995 deadline to submit its recommendations to the Mayor and the City Council and held eight task force meetings and four community meetings between January and July in order to meet this deadline.

The PCTF schedule ran concurrent with the planning timetable of the Department of Housing and Community Development (DHCD) and its consultants, PKF-Hawaii and PBR-Hawaii.

The PCTF began its work by formulating a vision statement to be used as a guideline throughout the six month planning process. The main goal of the task force, as outlined in the vision statement, read, "The Manana property provides an opportunity for the residents of Pearl City and its surrounding communities to improve their quality of life and establish a positive, unique and long-term identity for the area that they can be proud of. The Pearl City Task Force strives to meet the current and future needs of this neighborhood while also incorporating the requisites of the City and County of Honolulu."

Meanwhile, the City Administration's development objectives for the properties were similar to those of the task force; to develop the two properties in a manner which addressed the needs of the City and community while maintaining its fiscal responsibility to recoup the City's initial investment.

At the Mayor's instruction, the DHCD conducted a search of City agencies that were interested in locating any operations at the Manana or PCJ properties and could provide solid funding mechanisms for the move within the next two years. The DHCD concluded that the BWS and the HPTA were able to expend funds under a timeframe that met the City's objectives. Other agencies were omitted from further planning discussions because there was no committed funding source.

A market study for the properties was conducted by PKF - Hawaii, consultants for the DHCD. The study confirmed the general softness in all sectors of the market and an economic outlook which at best in the short-term looked dismal, in the intermediate term looked lukewarm and in the long-term questionable. It was determined that commercial and industrial land use components, with land values ranging between \$30 and \$35 per square foot, would provide the City its best opportunity to recoup its investment. It was further concluded that a mixed-use scheme incorporating many different uses would be necessary due to the general softness of all sectors of the market and to allow for quicker absorption of the properties.

Several land use components were evaluated by the task force including a family entertainment center concept, light industrial/business park, medical center or campus, commercial town center, memorial park, Bus/Handi-van facility, Board of Water Supply baseyard, and community park/youth center. During the planning process, the task force reviewed ten different land use alternatives which grouped the land use components in various formations. The recommended land use alternative ultimately represents an accumulation and synthesis of the task force's suggestions and ideas.

Guiding the PCTF's efforts throughout the six-month process was the need to develop a feasible plan which would attempt to meet the fiscal objectives established by the Administration. However, it appears that the recommended land use alternative currently falls short of accomplishing this goal.

The PCTF recommended a land use alternative for the Manana Storage Facility that is based on a "business park" concept. The alternative provides for a mix of commercial and light industrial uses as primary land use components. It was also the expressed desire of the task force that an eight acre community park/youth center be included. Other components in the alternative are a family entertainment center, medical facilities, a Bus/Handi-van facility, and a Board of Water Supply baseyard.

The Pearl City Junction parcel of approximately 13.8 acres is planned for commercial use and will be developed independently of the mauka lands. The DHCD is currently drafting a request for proposals (RFP) to solicit bids for the purchase and development of this parcel by the private sector which should be disbursed later this year.

II. INTRODUCTION

Ordinance 91-220, adopted by the City Council on September 11, 1991, authorized the acquisition of both the Manana Warehouse (Manana) and Pearl City Junction (PCJ) properties from the U.S. Navy. The Manana parcel is located mauka of Acacia Road and Kamehameha Highway and fronts Waimano Home Road. PCJ is located makai of Kamehameha Highway and extends west from the Kamehameha Highway-Acacia Road intersection. (See Exhibit A)

The total land area under the sale agreement is approximately 123 acres, 109 mauka of the highway and 14 acres makai. The cost to acquire the properties was \$109 million - \$94 million for the Manana site and \$15 million for PCJ. State land use designation is urban, and Land Use Ordinance zoning is F-1 (Federal). Its current development plan designation is military and federal preservation.

The City and County of Honolulu took title to PCJ on July 29, 1994 and possession, effective December 12, 1994. At that time, the City also took possession of Parcel A of the Manana site totalling 29 acres (See Exhibit A). Under the Memorandum of Understanding (MOU) dated August 9, 1993 between the City and the Navy, Parcels B and C (totalling 80 acres) will be occupied by the Navy through June 1996, with an option to extend the MOU an additional six months.

III. PEARL CITY TASK FORCE

The Honolulu City Council adopted Resolution 94-327 (Exhibit B) on January 25, 1995 that established a 23-member task force of federal, state, and city representatives and residents of the Pearl City and surrounding communities to recommend a development plan for the Manana Warehouse and Pearl City Junction properties. The community-based group was initiated by the Pearl City Neighborhood Board who approved it unanimously at its October 27, 1994 meeting. Former Councilmember Boyd Andrade introduced the measure which was subsequently adopted by the full Council on January 25, 1995. Councilmember Mufi Hannemann served as the Chair of the task force. Exhibit C lists the members.

The task force faced a July 25, 1995 deadline for submitting its recommendations to the Mayor and the City Council. Eight task force meetings and four community meetings were held between January and July (Exhibit D). Meetings were publicized through the Leeward Current, the Ka Leo Lalo newsletter, community banners, press advisories and canvassing efforts by members of the task force. Members were also responsible to serve as liaisons between their associations and the task force. Exhibit E includes copies of all publicity.

IV. PLANNING PROCESS

The PCTF schedule ran concurrent with the planning schedule of the Department of Housing and Community Development (DHCD) and its consultants, PKF-Hawaii and PBR-Hawaii. Table 1 below is a comparison of phases within the planning schedules of the task force and of the DHCD. Exhibit F further illustrates the parallel planning processes.

TABLE 1: PCTF vs. DHCD Planning Schedules		
DATE	TASK FORCE	DHCD
COMMUNITY MEETING NO. 1 January 23, 1995	Acquaint Pearl City residents with members of the City's master planning team and other City and State representatives. Proceed with the establishment of the Pearl City Task Force.	Phase I - Reconnaissance and baseline information. Review of physical site features and existing and proposed land use and development programs.
TASK FORCE MEETING NO. 1 February 5, 1995	Introduce members, review the purpose of the task force, and draft the vision statement.	Phase I - Reconnaissance and baseline information. Data summary and identification of opportunities and constraints of the properties.
TASK FORCE MEETING NO. 2 March 15, 1995	Review preliminary market research findings and list of City agencies interested in utilizing property.	Phase II - Inventory analysis and program development. Identify development issues and establish goals and objectives.
COMMUNITY MEETING NO. 2 March 29, 1995	Present the task force vision statement, development objectives of the City, DHCD's planning process, and a site analysis of the property.	Phase II - Inventory analysis and program development. Conduct a preliminary planning program, land development schedule and community needs assessment.
TASK FORCE MEETING NO. 3 April 5, 1995	Review economic analysis of market assessment results, land circulation concepts, land use considerations.	Phase II - Review inventory analysis and land use economic compatibility analysis. Begin to develop land use alternatives.
TASK FORCE MEETING NO. 4 May 4, 1995	Review land use alternatives for feasibility and impact. Discuss and prioritize alternatives.	Phase II - Refine land use alternatives incorporating task force suggestions.
TASK FORCE MEETING NO. 5 May 17, 1995	Review and discuss refined land use alternatives. Select preferred alternative to present to the community.	Phase II - Refine land use alternatives and incorporate circulation patterns.

TABLE 1: PCTF vs. DHCD Planning Schedules		
DATE	TASK FORCE	DHCD
COMMUNITY MEETING NO. 3 May 23, 1995	Present preferred land use alternative and circulation pattern alternatives.	Phase III - Alternative master plan concepts. Design land use/circulation alternatives.
TASK FORCE MEETING NO. 6 June 7, 1995	Further refinement of preferred alternative. Develop variations of preferred alternative.	Phase III - Feasibility assessment of preferred alternative. Further refinement incorporating task force recommendations.
TASK FORCE MEETING NO. 7 July 5, 1995	Final review of preferred land use alternative options.	Phase III - Refine land use alternative and circulation patterns.
TASK FORCE MEETING NO. 8 July 12, 1995	Discuss land use alternatives for presentation at final community meeting. Review financial analysis for alternatives.	Phase III - Refine land use alternatives incorporating task force recommendations.
COMMUNITY MEETING NO. 4 July 20, 1995	Present proposed land use alternatives to the community. Select recommended land use alternative to be presented to the Mayor and the City Council.	Phase III - Review and evaluate selected land use alternative.
TASK FORCE MEETING August 8, 1995	Review and revise final report of the task force.	Phase IV - Finalize development plan. Initiate environmental impact statement process.

V. PLANNING PROCESS

Vision Statement

During its first meeting, the task force set out to generate ideas to include in its vision statement. The brainstorming session was conducted to initiate discussion among community representatives and unify the desires of the members. The agreed-upon statement is as follows:

VISION STATEMENT OF THE PEARL CITY TASK FORCE

The Manana property provides an opportunity for the residents of Pearl City and its surrounding communities to improve their quality of life and establish a positive, unique and long-term identity for the area that they can be proud of. The Pearl City Task Force strives to meet the current and future needs of this neighborhood while also incorporating the requisites of the City and County of Honolulu.

The community-based land use recommendations of the task force should include:

- *a public safety component;*
- *a component that focuses on the needs of the youth of the area;*
- *an economic development component that does not diminish the growth and health of existing businesses;*
- *City facilities to serve the general public;*
- *a component that focuses on the needs of the elderly and aging;*
- *an education component to support population growth from the newly developed area.*

The development of the site should seek to:

- *address the transportation impacts of the immediate and surrounding area;*
- *aesthetically meld into the existing community;*
- *mitigate the impact of the new development;*
- *be environmentally safe;*
- *provide jobs;*
- *be socially beneficial to the community with the addition of open space and recreational areas.*

City Development Objectives

The City Administration set development objectives for the Manana and PCJ properties. As a top priority of the City, the main goal is to develop the properties in a manner which addresses the needs of the City and community while recouping its initial investment in the property.

The following specific objectives were presented to the task force and the community at large:

- The project must be developed in a fiscally responsible manner;
- At the same time, the project should address the impacts on its neighboring community and provide social benefits to the community;
- The project should meet the needs of various departments of the City and County of Honolulu.

City Agencies Interested in Property

At the Mayor's instruction, the DHCD contacted all City agencies to determine which agencies would be interested in relocating all or part of their operations to the property. Table 2 describes the eight departments who responded.

TABLE 2: CITY AGENCIES INTERESTED IN MANANA/PCJ PROPERTIES		
DEPARTMENT	REQUEST	FUNDING SOURCE
Board of Water Supply (BWS)	7.5 acre base yard	FY 96 CIP includes study for a future corporation yard.
Department of Parks and Recreation (DPR)	1.0 acre base yard	CIP Funding
Department of Transportation Services (DTS)	2,820 square feet of storage space	CIP Funding
Honolulu Fire Department (HFD)	1 acre for the relocation of the Pearl City Fire Station	CIP Funding (In the HFD six-year CIP plan)
Department of Health (DOH)	14,351 square feet plus 34 parking stalls	Undetermined
Honolulu Public Transit Authority (HPTA)	17 acre bus facility	Federal funding for 80% of cost. HPTA funding for 20%
Honolulu Police Department (HPD)	60,000 square feet of storage space	Undetermined
Department of Wastewater Management (DWWM)	1.5 acres for Central water quality lab and maintenance facility	Undetermined

The DHCD interviewed all eight agencies to determine their ability to subsidize the requested acreage. Subsequently, the DHCD evaluated each respondent's funding capability relative to other land use options.

The DHCD concluded that the BWS and the HPTA were able to expend funds under a timeframe that met the City's objectives. Other agencies were omitted from further planning discussions because there was no committed funding source.

Land Use Components

Table 3 outlines the various land use components reviewed by the task force.

TABLE 3: LAND USE COMPONENTS REVIEWED	
LAND USE COMPONENT	DESCRIPTION
Family entertainment center	A themed multi-use entertainment facility which could include movie theaters, simulation rides, a teen night club, dance and music studios, karaoke establishments, restaurants, specialty shops, video arcades, interactive sports facilities, mini-golf courses, golf driving range, batting cages, bowling alley, ice skating/rollerblading rink.
Light Industrial/Business Park	An employment base which could include wholesale/retail businesses, corporate headquarters, distribution service centers, research and development facilities, motion picture and television production studios, light manufacturing, processing and packaging centers, data processing and storage areas, warehouses, etc.
Medical Center or Campus	A multi-use center containing various health-related facilities including a long-term care hospital, medical office buildings, a wellness center, rehabilitation centers, and assisted-living facilities.
Commercial Town Center	Convenience retail businesses serving the surrounding communities. These include dry cleaners, video rental outlets, hair salons, a post office, casual dining establishments, convenience stores, etc.
Memorial Park	Open green space with level headstones, landscaped roadways and heavy buffering from other land uses. 20-acre parcel could include 30,000 to 35,000 plots. Would not include a mortuary or a columbarium.
Bus/Handi-Van Facility	Facility to house and maintain bus fleet of approximately 100 buses that service the Ewa and West Oahu routes.
Board of Water Supply base yard	Facility to house an automotive shop, open storage areas, and the corporation yard of BWS currently located at Halawa.
Community Park/Youth Center	Public facility geared toward the youth. Could include baseball, football and soccer fields, basketball and volleyball courts, etc. Youth center would include recreation center, classrooms and studios, weight room, social hall.

During the planning process, the task force reviewed ten different land use alternatives which grouped these components in various forms. The recommended land use alternative ultimately represents an accumulation and synthesis of the task force's suggestions and ideas.

Market Study

The market study confirmed the general softness in all sectors of the market and an economic outlook which at best in the short-term looked dismal, in the intermediate term looked lukewarm and in the long-term questionable. The commercial and residential markets were

studied to determine market pricing and absorptions. Pricing information from both the perspective of buyers as well as developers was considered.

The City's purchase price of the 109 acre mauka parcel and the 13.8 acre PCJ parcel translated into \$21 per square foot. With the initial results of the market study, the task force quickly came to the realization that a mixed-use program dominated by commercial use would be required to obtain the City's fiscal objectives of recouping its \$109 million investment.

Early on in the planning process a residential land use option was ruled out, first because of its pricing (approximately \$10-\$15 per square foot for 20 plus acre parcels), and also because of the community's unwillingness to accept the higher densities which would allow for more feasible residential development.

It was determined that commercial and industrial land use components, with land values ranging between \$30 and \$35 per square foot, would provide the City with its best opportunity to recoup its investment. However, it was concluded that a mixed-use scheme incorporating as many different uses to allow for higher absorptions would be necessary due to the general softness of all sectors of the market.

Through the market study, the PCJ site, initially proposed as a possible location for the Bus facility, proved to be an attractive location for a "big box" retailer because it offered frontage along Kamehameha Highway, high visibility from the H-1 Freeway and close proximity to the Pearl Highlands Center and Sam's Club.

In addition to the PCJ site, the land bordering Acacia Road across from Pearl Highlands was also seen as a favorable location for retail development although access would have to be improved.

With the PCJ site earmarked for commercial use, the bus facility was relocated to a 17-acre parcel within the Manana property with minimal frontage on Waimano Home Road and the "spine road". Although community members on the task force indicated their apprehension of a bus barn near a residential area, full disclosure of anticipated bus operations during the planning process and potential employment opportunities helped to win its support.

The other quasi-public land use request under consideration was from the Board of Water Supply who plans to purchase five acres adjacent to its existing two acre base yard located southeast of the Manana parcel.

The market study identified the growing popularity of retail developments known as urban entertainment centers which focus retail activities principally around amusement activities. Although many commercial developments on the island have an entertainment component, there are currently no facilities on Oahu geared exclusively towards entertainment and recreation. In

most cases, theaters are retro-fitted into existing retail developments or added on as an appendage to a structure already in place. A well-known example of a urban entertainment center is Nike Town.

The family entertainment center, a land use component based on the urban entertainment center concept, was initially introduced as a significant aspect of the properties due to its focus on the needs of youth and families of the area. As Table 3 indicates, it could feature large outdoor rides such as those found at amusement parks. Due to extensive market study results and comments of the task force, the recommended land use alternative includes a 14-acre family entertainment center which is a smaller-scale multi-themed development featuring both indoor and outdoor recreation facilities.

The medical facilities use provided a component that focuses on the needs of the elderly and aging as outlined in the task force's vision statement. The market study also identified a need for facilities and services directed toward this segment of the population. Early in the planning process a larger scale medical campus was presented which centered around a wellness theme and incorporated a "cradle to grave" spectrum of services; however, the concept was reduced to approximately eight acres that features long-term or intermediate facilities, medical clinics and physician office buildings, vocational schools, assisted-living facilities, day-care and pre-school facilities.

The memorial park land use option was a conducive use to the medical facility. Direct interest, even at competitive commercial prices, was noted from operators due to the attractive location of the site. Although the task force initially rejected the concept, the use received quite a bit of discussion on its attributes. Specifically discussed were the park's ability to provide open space in what could prove to be a very dense commercial development, generate minimal traffic, not directly compete with existing businesses in the area, and preserve a historical record of the residents of Pearl City for future generations.

Although renewed interest surfaced for a memorial park land use component, during the final community meeting, opposition to the memorial park resulted in its replacement with light industrial/business park use.

VI. RECOMMENDED LAND USE ALTERNATIVE

The PCTF's recommended land use alternative for the Manana Storage Facility is based on a "business park" concept for the project area. As depicted in Exhibit G, the PCTF recommended land use alternative provides for a mix of commercial and light industrial uses as primary land use components. It was the expressed desire of the task force to also include an eight acre community park/youth center. Refinements to the alternative include retaining the existing Manana Kai Neighborhood Park with the stipulation that if the ultimate development plan permitted, improved access to the park would be provided.

The Pearl City Junction parcel of approximately 13.8 acres is planned for commercial use and will be developed independently of the mauka lands. The DHCD is currently drafting a request for proposals (RFP) to solicit bids for the purchase and development of this parcel by the private sector. The RFP is expected to be released later this year.

For the mauka portion of the Manana Storage Facility, the recommended land use alternative includes the following traffic circulation and land use elements.

Traffic Circulation

A proposed extension of Moanalua Road from Waimano Home Road through the project area to Acacia Road at the Kuala Street intersection was included in the recommended land use alternative as the primary access to the project area. The extension, also referred to as the "spine road", is envisioned as a landscaped parkway that would provide access to the project area; in addition, it would serve as an alternate route for those traveling between Waimano Home Road and Kamehameha Highway thus reducing traffic congestion at the Waimano Home Road/Kamehameha Highway intersection.

To serve the business/industrial park areas, potential secondary roadways could also be developed. From these roadway systems, improved ingress and egress to and from the post office at the intersection of Acacia Road and Kamehameha Highway, and roadway access to Manana Kai Neighborhood Park could be provided.

To mitigate the traffic impacts of the proposed development, the traffic impact assessment for the development has identified preliminary recommendations to mitigate projected traffic at three intersections: Moanalua Road/Waimano Home Road, the "spine road"/Acacia Road/Kuala Street, and Acacia Road/Kamehameha Highway.

The recommended land use alternative also provides for the potential future connection of Moanalua Road to Kuahaka Street via the Old Cane Haul Road right-of-way to improve access to Holiday City and surrounding neighborhoods. This extension could allow more direct access to the proposed "spine road" from Moanalua Road thereby alleviating congestion at the intersections of Noelani Street and Moanalua Road with Waimano Home Road.

Many members of the task force desired to mitigate the major traffic congestion occurring at key intersections near the property. While mindful of the need to not increase traffic in the area as a result of future plans of the property, it was also understood that the project's focus was to develop a recommended land use alternative for the property - not to resolve larger transportation issues of the community.

Land Use Concept

The major land use components of the recommended land use alternative are summarized as follows:

Light Industrial/Business Park: To provide for a mix of business and light industrial uses, a Light Industrial Business Park for approximately 29 acres would be developed in a manner that would provide for a wide range of uses consistent with the guidelines set in the Land Use Ordinance under Business Mixed Use or Industrial Mixed Use. Provisions for landscape setbacks and treatments along the roadway corridors are desired as well as additional landscape buffers to shield the surrounding residential areas from the effects of industrial uses.

Consistent with the task force's vision statement, the master plan should include "... an economic development component that provides jobs and which does not diminish the growth and health of existing businesses...". Table 3 describes activities within this component.

Commercial Retail/Offices: Located across Acacia Road from the Pearl Highlands Center, this expanded commercial area of approximately 22 acres would provide for a broad range of commercial uses to support Pearl City and its surrounding communities. To supplement retail activity at the Pearl Highlands Center, Manana would create a critical mass of retail and office space, drawing customers from a wider geographic area. These commercial facilities would be oriented primarily toward the "spine road" with adequate landscaping to create a commercial town center/business district as the focal point of the project.

Family Entertainment Center: Located at the intersection of Moanalua Road Extension and Waimano Home Road, the 14 acre family entertainment center would provide for a broad range of commercial activities related to youth and family leisure activities. The proposed multi-themed entertainment development featuring indoor and outdoor recreation facilities is detailed in Table 3.

Medical Facilities: Provided to accommodate a variety of medical related facilities, approximately 8 acres are provided for these types of uses. Due to its close proximity to a residential neighborhood, adequate landscape buffers would be provided. Facilities that could be accommodated within this component are outlined in Table 3.

Community Park/Youth Center: With access provided from the Moanalua Road Extension via the family entertainment center and direct access to Waimano Home Road, the eight acre community park would provide for active sports field uses including baseball, soccer and other athletic activities. As requested by the task force, the community park/youth center is planned adjacent to the family entertainment center to provide a multitude of activities to meet the youth and family needs of the Pearl City area in one central area.

In addition, a youth center could be developed within the park to support the youth activities and provide a multi-use community facility for the community. The ultimate park master planning and development would be directed by the City and County Department of Parks and Recreation.

Bus/Handi-Van Facility: The 17 acre Bus/Handi-Van Facility is immediately adjacent to the community park and family entertainment center and provides access on both Waimano

Home Road and the Moanalua Road Extension. This facility is planned to house an expanded bus fleet to service the Central, Ewa and West Oahu areas.

The Handi-van facility would provide for the expanded needs of the Handi-van system that services this region. Located within the central portion of Manana and not contiguous to any existing residential uses, this site provides the greatest opportunity to buffer and mitigate potential noise or visual impacts of the facility on residential neighborhoods. Provisions for landscaping would be included within the design of the Bus/Handi-van facility to minimize visual impacts and mitigate noise and light concerns relating to the operation of the facility.

Board of Water Supply Base Yard: The Board of Water Supply currently has a two acre base yard facility adjacent to the Manana property that, under the recommended land use alternative, would be expanded by five acres to create a seven acre facility abutting the Bus/Handi-van facility. The base yard would be internalized with access provided via an existing roadway off Waimano Home Road opposite Hoomalu Street.

Land Use Summary

The land use program for the recommended land use alternative is summarized as follows:

<u>Land Use Program</u>	<u>Approximate Acres</u>
Commercial (Pearl City Junction)	13.8
Light Industrial/Business Park	29.0
Commercial Retail/Office	22.0
Family Entertainment Center	14.0
Medical Facilities	8.0
Bus/Handi-Van	17.0
Board of Water Supply (added to 2 acres existing)	5.0
Community Park/Youth Center	8.0
Moanalua Road Extension and Open Space	7.0
	=====
TOTAL ACREAGE:	123.8

Financial Analysis

The task force decided on a recommended land use alternative for the Manana Storage Facility based on a business park concept. This conceptual plan was chosen over a similar land use alternative referred to as the memorial park concept.

As shown in Exhibit H, the results of a preliminary financial analysis on both alternatives indicated that both land use schemes resulted in projected cash flow losses with projected revenues from the sale of land, net of estimated development costs, unable to fully pay off related debt obligations. The memorial park plan, however, provided for a mixed use program

which could potentially better meet the fiscal objectives of the City while best meeting the development criteria established by the task force's vision statement. The financial analysis prepared for the memorial park concept indicated a projected cash flow loss close to "break even" over the projected 7-year absorption period, while the business park concept projected a cash flow loss of approximately \$10 to \$20 million over the projected 10-year absorption period.

A financial analysis of the recommended land use alternative indicates a cash flow loss of approximately \$15 to \$25 million over the projected 9-year absorption period. Although the projected cash flow losses are based on assumptions by PKF-Hawaii which could change as additional studies are performed, it appears the plan being recommended currently falls short of accomplishing the fiscal objective established by the City for the Manana/PCJ development project.

VII. FUTURE ACTIONS

The DHCD initiated an environmental assessment in April 1995. Other future steps the DHCD is planning are the preparation of parcel and topographic maps of the Manana property, finalization of the environmental impact study, and the formation of RFP's for the Manana property.

The Traffic Management Consultant recently commenced a traffic study of the Pearl City locale. Final results will be included in the environmental impact statement scheduled to be completed early next year. Preliminary findings of the study were disclosed, at the request of the task force, during the May 17th and July 12th meetings.

Development Plan and zoning amendment procedures will be initiated following the acceptance of the recommended land use alternative by the City Council and Mayor.

The DHCD is currently preparing a request for proposals (RFP) on the 14-acre PCJ property which has been recommended as a commercial use site. Furthermore, the DHCD is coordinating with the Environmental Restoration Branch Pacific Division Naval Facilities Engineering Command on the Navy's clean up efforts. The Navy has agreed that Parcels B and C will be cleaned of all hazardous waste materials and turned over to the City by the end of 1996.

EXHIBITS A, B, C, D, E, F, G, H, AND I, OF THE PEARL CITY TASK FORCE FINAL
REPORT, ARE AVAILABLE ON REQUEST FROM THE DEPARTMENT OF HOUSING
AND COMMUNITY DEVELOPMENT

END

CERTIFICATION

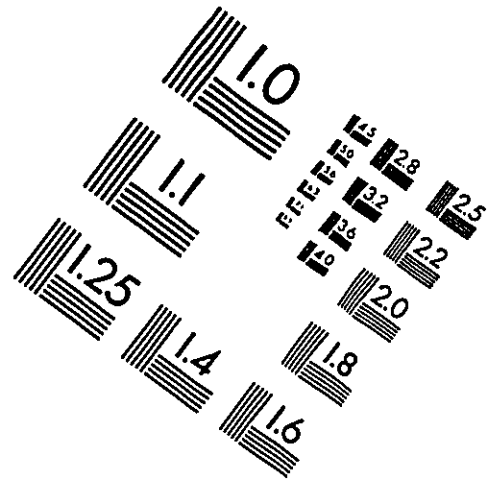
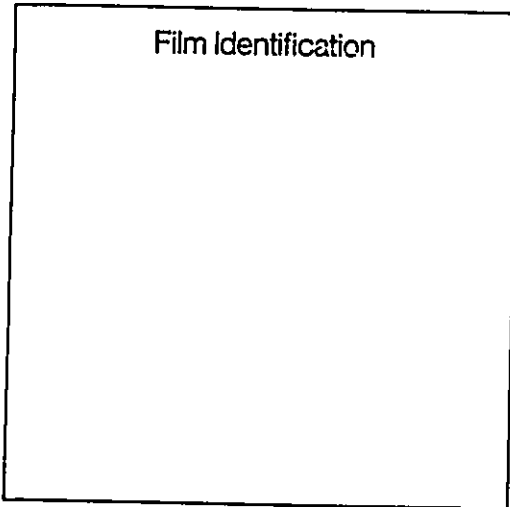
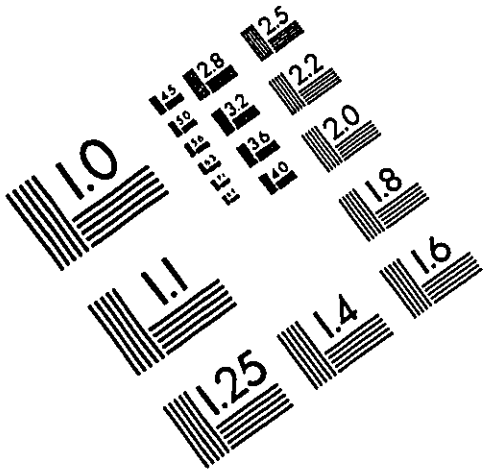
I HEREBY CERTIFY THAT THE MICROPHOTOGRAPH APPEARING IN THIS REEL OF
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2006

DATE

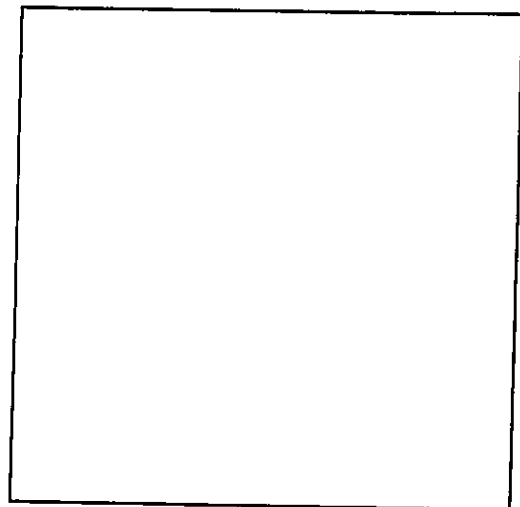
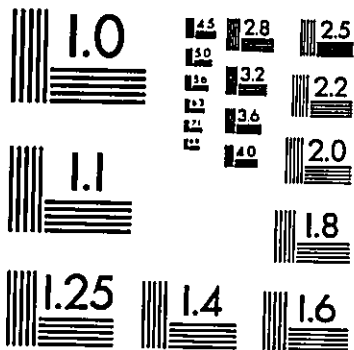
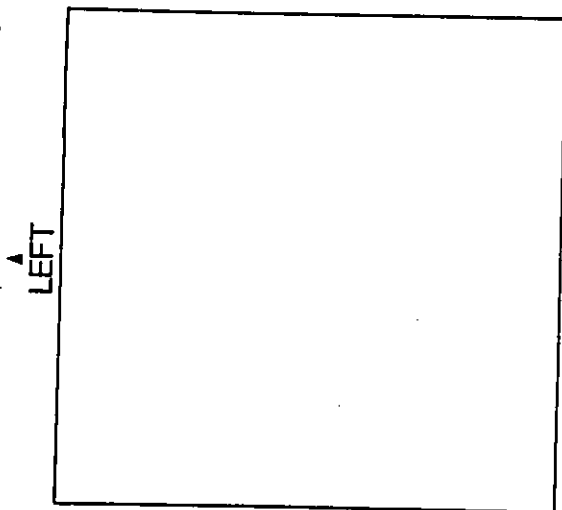
Catharina Mijashiro
SIGNATURE OF OPERATOR

TOP



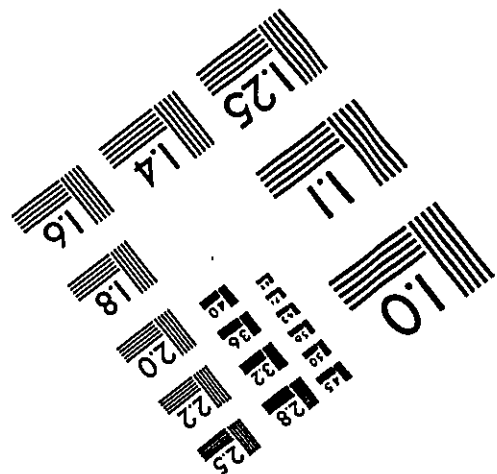
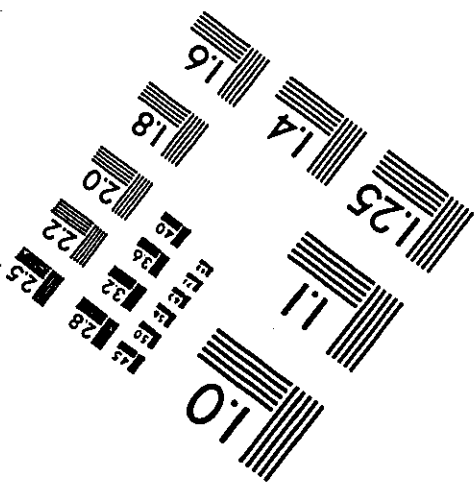
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PRECISIONSM RESOLUTION TARGETS



150 MM

6"



PA-3 8½"x11" PAPER PRINTED GENERAL TARGET

DENSITY TARGET



ADVANCED MICRO-IMAGE SYSTEMS HAWAII