2000-10-23-HI-FEA-

Final Environmental Assessment
And Finding Of No Significant Impact (FONSI)

Hilo Judiciary Complex

Kaiko'o Mall Site (proposed)
TMK (3) 2-2-15:76
South Hilo District, Island of Hawai'i

Applicant:

The Department of Accounting and General Services
State of Hawai'i

DAGS Job No. 11-21-7091

Prepared By:

Group 70 International, Inc.
Architecture • Planning • Interior Design • Environmental Services
Honolulu, HI

October 2000

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This environmental document is prepared in accordance with the requirements of Chapter 343, HRS and Hawai'i Administrative Rules, Title 11, Department of Health.

Proposing Agency:
The Department of Accounting and General Services
State of Hawai'i

Accepting Authority:
Governor, State of Hawai'i

Responsible Official: Raymond H. Sato, Comptroller — Date: 10/10/00

Prepared By:
Group 70 International, Inc.
Architecture • Planning • Interior Design • Environmental Services
925 Bethel Street, 5th Floor
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October 2000

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Section 1.0
Introduction

1.0 INTRODUCTION

The State of Hawai'i Department of Accounting and General Services (DAGS), on behalf of The State Judiciary, is proposing to build a new Judiciary Complex in Hilo for the East Hawai'i Service Area of the Third Judicial Circuit which comprises the entire Island of Hawai'i. Public Capital Improvement Program (CIP) appropriations from the State Legislature are likely to fund the construction of the new Hilo Judiciary Complex.

The proposed site being reviewed in this Environmental Assessment is identified as Tax Map Key (3) 2-2-15:76 and is situated at Kaiko'o Mall Shopping Center, 777 Kilauea Avenue, City of Hilo, Island of Hawai'i. The new Hilo Judiciary Complex will consolidate current operations into one building. Plans include an approximately 130,000 gross square foot facility which will provide spaces for Judicial operations including: seven courtrooms to be allocated amongst Circuit, Family and District Courts; judges' chambers; conference rooms and public waiting areas; Family Court Services and social worker offices; probation services; driver education; central holding cells; a law library; and administrative and support spaces. Parking spaces will be provided to accommodate public, employee and official State vehicles.

This Environmental Assessment (EA) has been prepared in accordance with the requirements of Chapter 343, Hawai'i Revised Statutes and Hawai'i Administrative Rules, Title 11, Department of Health, as the proposed action involves the use of public administered funds.

1.1 PROJECT INFORMATION SUMMARY

Type of Application:	Environmental Assessment (EA)
Applicant:	Raymond H. Sato, Comptroller Department of Accounting and General Services State of Hawai'i, Honolulu, Hawai'i 96813 Contact: Ralph Yukumoto (808) 586-0488
Accepting Authority:	Office of the Governor
Planning Consultant:	Group 70 International, Inc. 925 Bethel Street, 5th Floor Honolulu, Hawai'i 96813 Contact: Jeffrey Overton, AICP (808) 523-5866
Name of Action:	Hilo Judiciary Complex
Class of Action:	Use of State Funds
Project Location:	777 Kilauea Avenue (Figure 2-2) Hilo, Island of Hawai'i

Tax Map Key:	3-2-2-015:076	(Figure 2-3)
Existing Use:	Kaiko'o Mall Shopping Center	
Land Area:	348,480 Sq. Ft. (8 Acres)	
Landowner:	The Harry & Jeanette Weinberg Foundation Inc. 3660 Waialae Avenue #400 Honolulu, Hawai'i 96816-3260	
State Land Use District:	Urban	
Hawai'i County General Plan:	High Density Urban	
Hawai'i County Zoning:	CG-7.5 General Commercial 7,000 sq. ft. minimum lot size	(Figure 3-1)
SMA:	Not in SMA	(Figure 3-1)
Flood Zone:	FIRM Zone X (outside the 500 year flood plain) Community Panel #155166 0880 C	
Tsunami Zone:	Outside tsunami inundation zone May be affected by tsunami run-up In tsunami evacuation zone	(Figure 3-3)
Special Designations:	Downtown Hilo Redevelopment Plan Kaiko'o Urban Renewal Plan: "Elevated Area"	
Other Permits Required:	Plan, Building Plan, Building, Electrical, Plumbing, Outdoor Lighting, Sewer, County Roads, Grubbing and Grading, Sidewalk, Driveway, Air Conditioning / Ventilation.	
Anticipated Determination:	Finding Of No Significant Impact (FONSI)	

1.2 BACKGROUND ON THE STATE JUDICIAL SYSTEM

The following is an overview of the structure of the State's judicial system and the role of the Courts of the Third Circuit within the system. The organization and function of the various courts are explained and the location, number and type of existing Judiciary facilities on the Island of Hawai'i are identified in the following sections.

1.2.1 The State Judicial System

The Judiciary of the State of Hawai'i is comprised of the following major courts: the Supreme Court, the Intermediate Court of Appeals, the Circuit Courts, the Family Courts and the District Courts. This report focuses on the Courts of the Third Judicial Circuit which encompasses the Island of Hawai'i. Figure 1-1 depicts the current overall organization of the State's court system in relationship to the Third Judicial Circuit.

There are four judicial circuits in the State of Hawai'i:

First Judicial Circuit	Island of O'ahu*
Second Judicial Circuit	Islands of Maui, Moloka'i* and Lāna'i
Third Judicial Circuit	Island of Hawai'i
(Fourth Judicial Circuit	This was incorporated into the Third Circuit in 1943.)
Fifth Judicial Circuit	Island of Kaua'i

(* The settlement of Kalawao on the Island of Moloka'i is a part of the First Judicial Circuit.)

Circuit Court System

All jury trials are held in the Circuit Courts, which have general jurisdiction in civil and criminal cases. They also have exclusive jurisdiction in probate, guardianship and criminal felony cases, as well as civil cases where the contested amount exceeds $20,000. Circuit Courts share concurrent jurisdiction with District Courts in civil non-jury cases that specify amounts between $10,000-$20,000. Additional cases dispensed by the Circuit Courts include mechanics' liens, naturalization proceedings, and misdemeanor violations that are transferred from the District Courts for jury trials.

Family Court System

The Family Courts were established by statute in 1965 to deal with virtually all legal problems impinging on Hawai'i's families and children. The jurisdictional sweep of the Family Court is the widest of any such court in the country. The Family Court rules on all legal matters confronting children, such as delinquency, waiver, status offenses, abuse and neglect, termination of parental rights, adoption, guardianships, and detention. The Family Court also hears traditional domestic relations cases, including divorce, nonsupport, paternity, uniform child custody jurisdiction cases, and miscellaneous custody matters.

Domestic violence is a top priority with the Family Court. These important cases include requests for civil restraining orders involving family members, persons charged with the offense

of abuse of family and household members, and felony charges limited to parent/child offenses. The Family Court also hears civil commitment cases, guardianships of adults, and adult abuse cases.

District Court System
The District Courts have exclusive jurisdiction over traffic cases, petty misdemeanors, and all civil cases in which the contested amount is less than $5,000, except when there is a right to a jury trial. The District Courts have concurrent jurisdiction with the Circuit Courts for misdemeanors and civil matters where the amount in controversy is between $10,000 and $20,000.

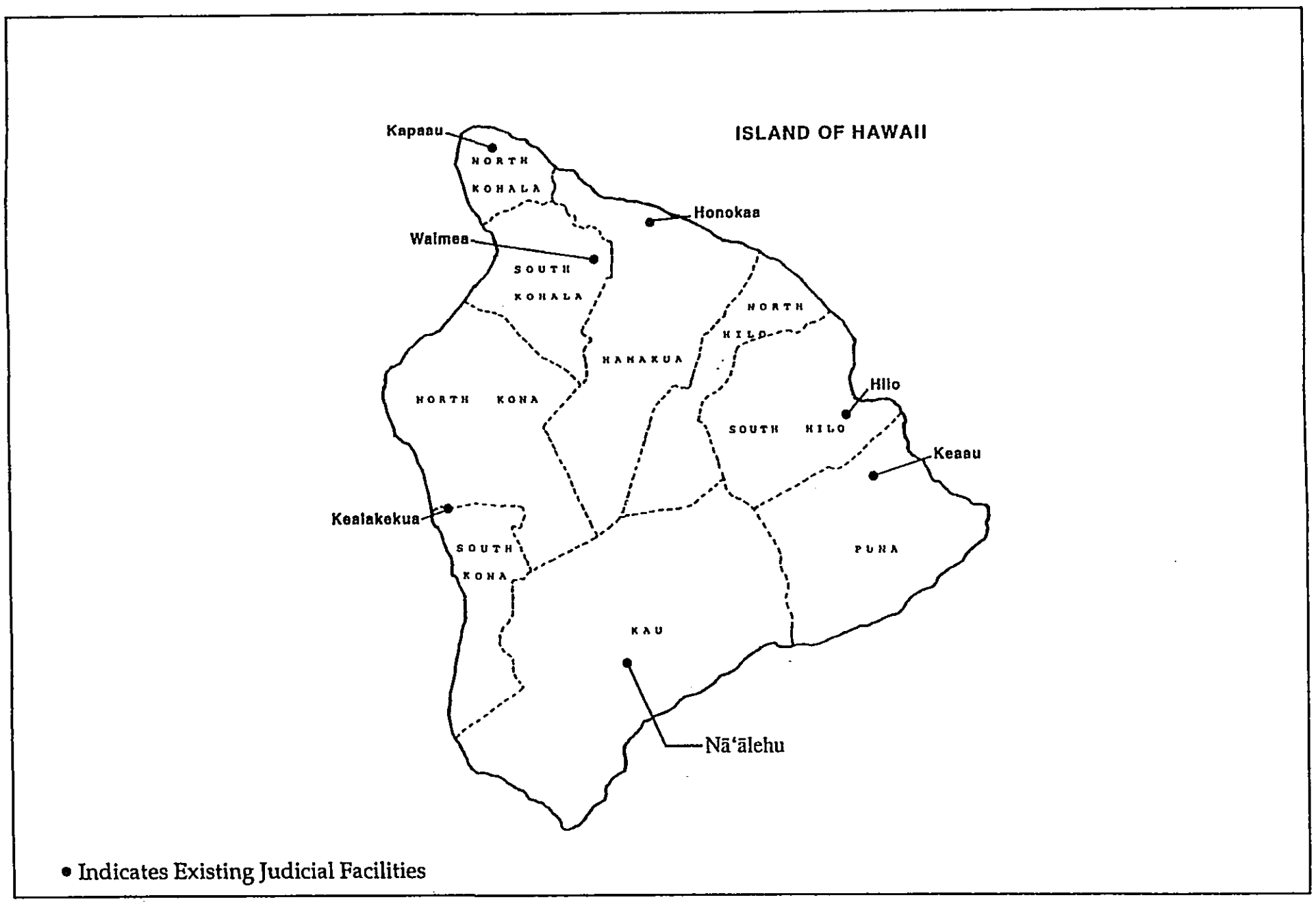
1.2.2 Existing Operations of the Third Judicial Circuit

The Third Judicial Circuit exercises jurisdiction over the Island of Hawai'i and has court facilities throughout the island. Circuit Court operations take place in Hilo and Kealakekua (Kona); Family Court operations are held in Hilo, Kealakekua and South Kohala (Waimea); and District Court operations take place in the Districts of South Hilo, Puna, Kona, South Kohala (Waimea), North Kohala, Ka'ū, and Hāmākua. The location of existing judicial facilities are shown in Figure 1-2.

The following is an overview of the existing operations, personnel and facilities of the Third Judicial Circuit on the Island of Hawai'i.

Circuit Court Operations
The Circuit Court's responsibilities are to adjudicate cases through motions, hearings and trials; sign court orders and legal documents required for interpretation and enforcement of the law; conduct legal research; and to reach settlements. The Third Circuit's Chief Clerk is responsible for the Legal Documents and Estate and Guardianship operating sections, in addition to duties as the Chief Administrator of the Court, coordinate jury operations of the Circuit Court, and is the Fiscal Officer of the Third Circuit proper. There are just under 80 employees in the Circuit Court system on the Big Island who carry out judicial, administrative and adult probation functions. There are a total of three judges for the Circuit Courts, two located in Hilo and one servicing Kona.

The existing facilities of the Circuit Court, as summarized in Table 1-1, are located in Hilo, Kealakekua and a small space in Waimea. In Hilo, the courtrooms and administrative functions occupy approximately 14,346 square feet on the second floor of the State Office Building. The Adult Probation and Small Estates operations are located in approximately 5,000 square feet of space in a small office building on Kilauea Avenue. Due to the lack of storage space within the State Office Building, a portion of the court files must be stored with a private storage company. The Kona facility provides approximately 13,641 gross square feet for office and administrative use, one courtroom and related space, and storage areas. The Keakealani Building, the old Kona Hospital, was renovated in 1984 for court operations.

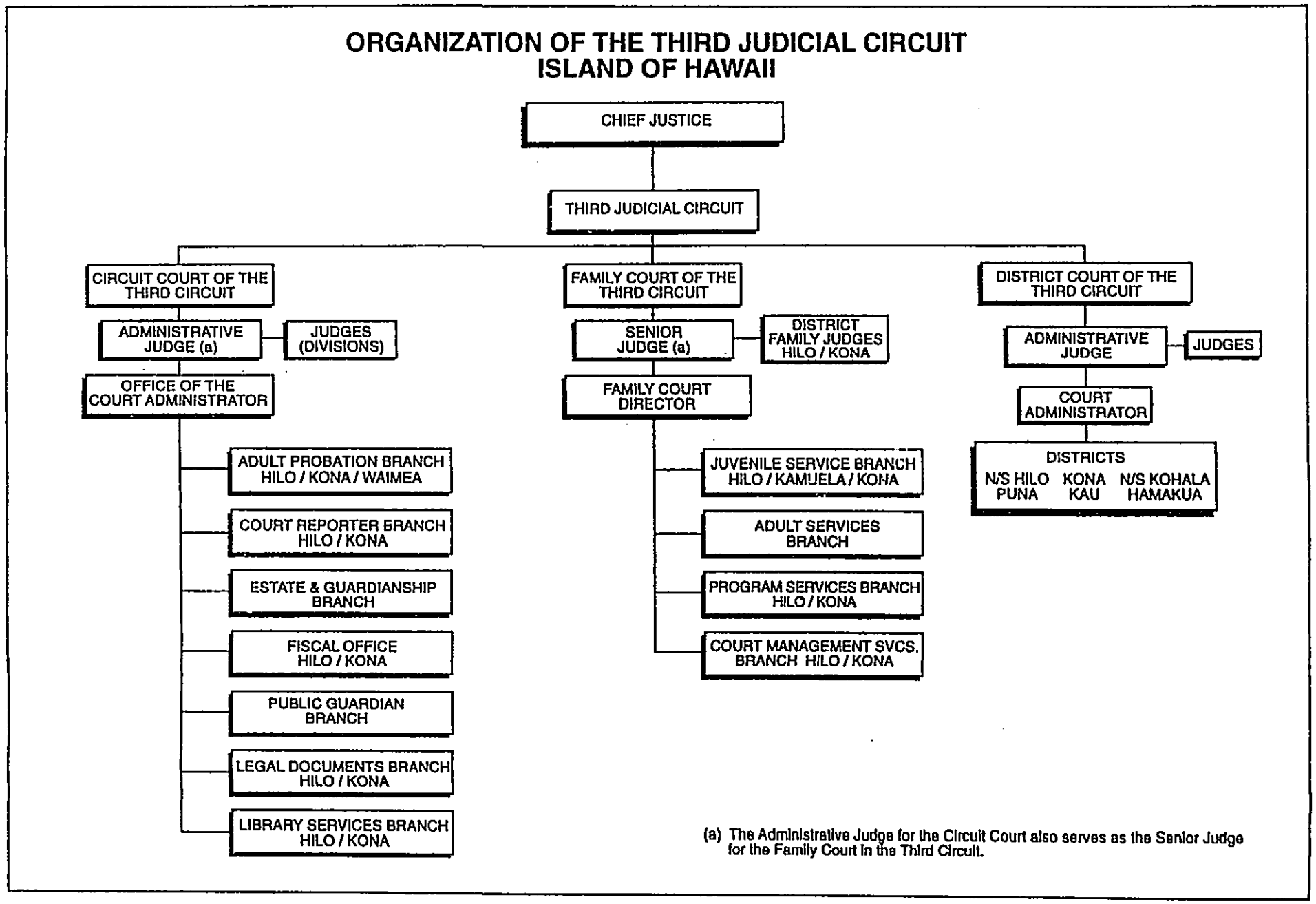


Source: Carter Goble Associates, Inc. (January 1989)

Third Judicial Circuit Existing Facilities

Hilo Judiciary Complex

Figure 1-2



Organization of Third Judicial Circuit

Hilo Judiciary Complex

Figure 1-1

TABLE 1-1
EXISTING FACILITIES AND PERSONNEL OF THE CIRCUIT COURT PROPER

	No. of Employees	No. of Judges	No. of Courtrooms	Total Area (g.s.f.)
Hilo	54	2	2	20,946
Kona Hospital Bldg.	20	1	1	13,641
Waimea	1	0	0	2,876

Family Court Operations

The *responsibilities of the Family Court* are distributed among its five divisions: Judicial, Administrative and Support Services, Children and Youth Services, Adult Services, and Special Services. The first two divisions primarily provide services necessary to support the Court and coordinate the work of the Family Court. The remaining divisions specialize in services such as counseling and investigation of cases relating to youth and youth probation referred to the Court, and administration of the Professional Foster Care Program. There are approximately fifty employees in the Family Court of the Third Circuit, with facilities located in the Waiākea Office Plaza in Hilo and branch offices also located in Kona and Waimea. There are two permanent judges and two per diem judges assigned to Hilo, while Kona has one permanent and one per diem judge. The per diem judges are utilized on an as-needed basis when a permanent judge is unavailable.

The Waiākea Office Plaza building houses approximately 11,612 square feet of office and administrative space, including a small courtroom area and probation services. The Family Court facilities for Hilo, Kona, and Waimea are summarized in Table 1-2.

TABLE 1-2
EXISTING FACILITIES AND PERSONNEL OF THE FAMILY COURT AND PROBATION SERVICES

	No. of Employees	No. of Judges	No. of Courtrooms	Total Area (g.s.f.)
Hilo	32	2 (1 per diem)	2	11,612
Kona	13	1 (1 per diem)	1	1,996
Waimea	2	0	(Use District Court facility)	2,876

District Court Operations

The District Court is comprised of five functional divisions: Judicial, Administrative Services, Violations Bureau, Driver Improvement, and Probation Services. The responsibilities of the District Court include adjudication of criminal and civil matters, as well as processing all traffic citations, counseling for adult and juveniles traffic violators, and counseling and probationary services necessary to carry out Court mandates for persons on probation.

The District Court employs nearly sixty people with thirty employees in District #1, fourteen in District #2 and six in District #3. There are three permanent judges for the District Court, one assigned to each District and two per diem judges who are used on an as-needed basis if a permanent judge is unavailable.

The facilities for the District Court occupy a total of approximately 20,975 square feet in buildings throughout the Big Island. In Hilo, the District Court courtrooms, administrative and storage spaces occupy 3,313 square feet in the State Office Building, while Probation Services, the District Courts' fiscal office, and the Driver's Education Program are located in about 2,100 square feet of space in the Waiākea Office Plaza. Due to a lack of storage space, a private company is utilized to store files.

The remaining District Court facilities are located in Puna, Ka'ū, North and South Kohala, Kona and Hāmākua. The District Court information is summarized in Table 1-3.

TABLE 1-3

EXISTING FACILITIES AND PERSONNEL OF THE DISTRICT COURT

	No. of Employees	No. of Judges	No. of Courtrooms	Location	Total Area (g.s.f.)
District #1	34	1			
No./So. Hilo		(2 per diem)	1	Hilo/Waiākea	5,693
Puna			1	Kea'au	N/A
District #2	16	1			
No./So. Kona			1	Kealakekua	5,449
Ka'ū			1	Nā'alehu	2,880
District #3	6	1			
No. Kohala			1	Kapa'au	2,188
So. Kohala			1	Waimea	2,876
Hāmākua			1	Honoka'a	1,889

Third Circuit Judicial Facilities Capital Improvement Plan

In January 1989, Carter Goble Associates, Inc. issued the Hawai'i Judicial System Master Plan which made recommendations regarding future facilities for each judicial circuit based on projections through the year 2005. At the time of the Master Plan's publication, the Legislature had already appropriated funds for the development of a new Hilo Judicial Facility for the Third

Circuit. The Hilo Judiciary Complex project was later put on hold due to opposition to the site that was selected at that time which was adjacent to the existing State Office Building. The Center for Alternative Dispute Resolution was directed to conduct a community based process in 1993-1994 which identified seven candidate sites which were subsequently evaluated in the environmental impact statement and site selection study completed in 1997.

In addition to the new facility projected for Hilo, the Master Plan's remaining recommendations for the Third Circuit call for the North Kohala District Courthouse to close and its caseload to be assimilated into the South Kohala District Courthouse. The Puna District Courthouse would also be closed and its caseload assimilated into the new Hilo Judiciary Complex. The present Ka'ū and Kona court facilities would be abandoned and a new facility constructed to service the West Hawai'i population. Finally, the Hāmākua and South Kohala District Courthouses would be retained as satellite facilities. Facilities identified in the Master Plan's capital improvement recommendations are shown in Figure 1-3.

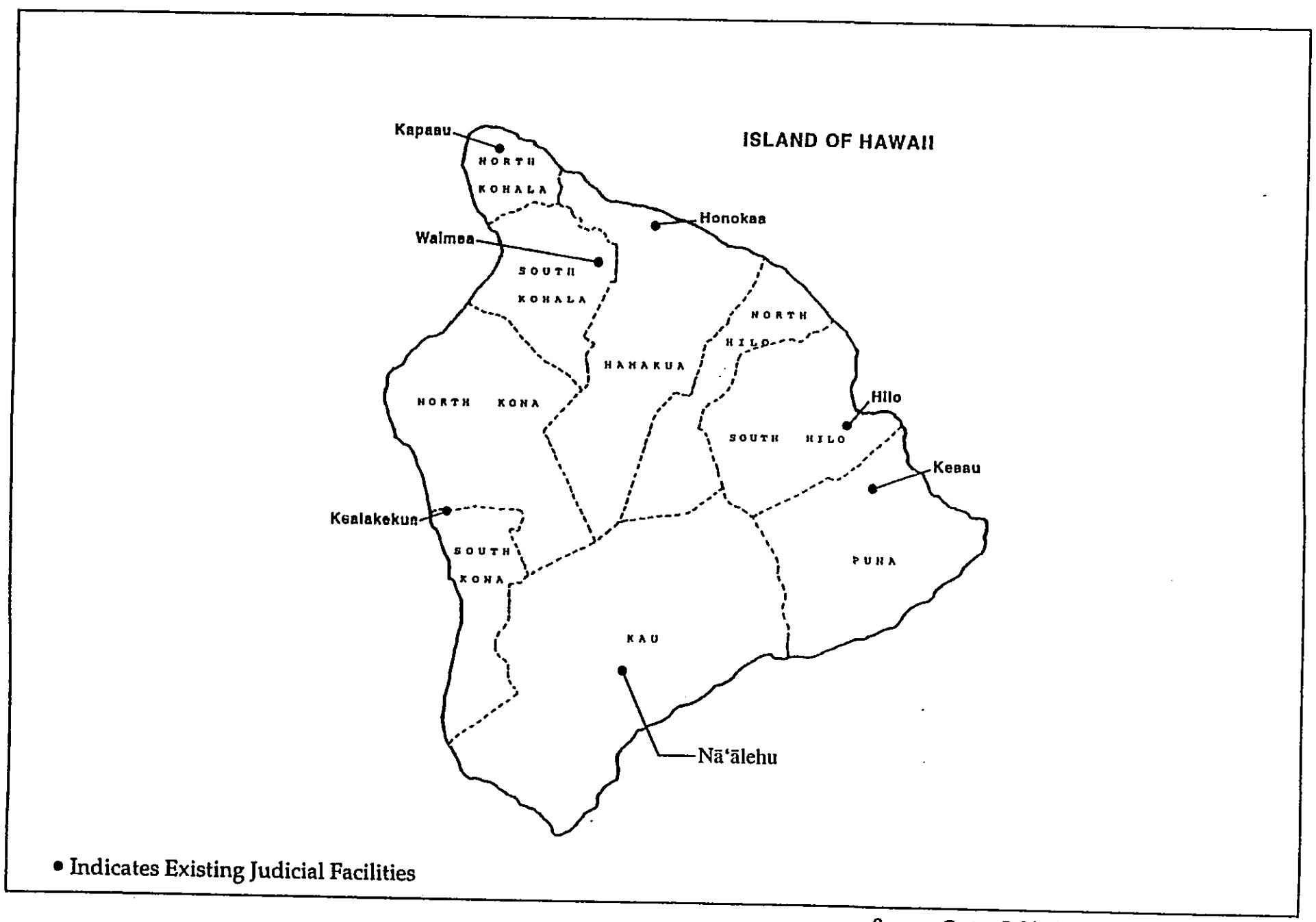
1.3 PROJECT NEED

The existing Hilo Circuit, District and Family Court facilities have been rated as spatially and operationally inadequate for more than a decade. A series of studies which have analyzed historical data and forecasts for population and caseload work have reached the conclusion that the existing Hilo facilities are inadequate for the present needs and cannot accommodate future growth. Equally important, the existing facilities are in various locations throughout urban East Hawai'i, therefore hampering the efficiency of operations. Also, some spaces are utilized for functions for which they were not designed and in general, there is a lack of sufficient storage space for proper maintenance of the growing number of records and files.

The following reports have documented the population and caseload growth the Third Judicial Circuit has experienced over the past decade and the need for a new judicial facility in Hilo: Project Development Report for the Third Circuit and District Courts by H. Mogi Planning and Research Inc. (May 1986), and two studies by Carter Goble Associates, Inc. entitled An Assessment of Judicial Facility Needs in Hilo (February 1988) and A Planning Report on the Hilo, Hawai'i Judicial Facility - Final Report (February 1991). The latest caseload projections are shown in Table 1-4. These studies identify the projected personnel needs and space requirements for a new Hilo Judiciary Complex; in particular the February 1988 report describes in great detail the inefficient operational conditions of the existing Hilo facilities.

Rather than reiterate the previous works, this section focuses on the consistent conclusion of these studies which states that the existing facilities are operationally inefficient and are not sufficient in size to accommodate future expansion. An appropriately designed and well-planned new Hilo Judiciary Complex is the best solution to the existing situation in order to effectively and efficiently accommodate the needs of the East Hawai'i Third Judicial Circuit Service Area through the year 2010 and perhaps beyond.

The 1991 Planning Report drew from Carter Goble's 1988 detailed analysis of historical data and forecast projections developed through statistical and system modeling methodologies.



Source: Carter Goble Associates, Inc. (January 1989)

Third Judicial Circuit Existing Facilities

Hilo Judiciary Complex

Figure 1-2

Projections were made to the year 2010 to provide the basis for the Hilo Judiciary Complex space program. During the actual facility programming and design phase, the space program may need to be revised due to subsequent changes in program requirements and a more defined time frame for delivery of the facility.

Table 1-4
Caseload Filing Projections
Third Judicial Circuit

Filings	1995	2000	2005
Circuit Court Filings	3,348	3,844	4,278
Family Court Filings	8,610	10,605	12,471
District Court Filings	75,136	88,281	100,646
TOTAL FILINGS	87,094	102,730	117,395

Adapted from: A Planning Report on the Hilo, Hawai'i Judicial Facility - Final Report. Carter Goble Associates, Inc., February 4, 1991.

Based on the caseload projections, the 1991 Planning Report identifies a staffing level of 220 personnel for the Third Circuit in Hilo by the year 2010. The space program for the new facility will accommodate the necessary spaces for Circuit, District and Family Court, and the increase in personnel (Carter Goble Associates, Inc. 1991). The projected personnel and facility space requirements from the Planning Report are reflected in Table 1-5.

Table 1-5
Personnel and Facility Space Requirements for the Hilo Judiciary Complex through the Year 2010

Court	Personnel	Total Space (gsf)	Courtrooms
Circuit Court	59	26,996	2
Family Court	92	28,410	1
District Court	69	47,037	4
Support/Mech. Spaces		27,864	
TOTALS	220	130,307	7

Adapted from: A Planning Report on the Hilo, Hawai'i Judicial Facility - Final Report. Carter Goble Associates, Inc., February 4, 1991.

The existing facility shortages and operational inefficiencies of Hilo's operations have been extensively documented. The separation of functions between the State Office Building and the Waiākea Office Plaza have impaired functional efficiency. The reports referenced above have concluded consistently over the past decade that the current facilities in Hilo are inadequate to accommodate future expansion to meet the growing needs of the Third Circuit operations in Hilo. The recommendation to construction a new Hilo Judiciary Complex is the appropriate course of action to address the existing operational inefficiencies and the future facility requirements for the Hilo service area.

The 1991 Planning Report contains a complete space program analysis for the new facility, as well as suggestions that are intended to assist architects in designing the new Hilo Judiciary Complex. As a result of constructing the Hilo Judiciary Complex, present facilities in the State Office Building could be converted for use by other State agencies. The office space being leased at Waiākea Office Plaza by the Judiciary also may be vacated as operations are consolidated into the new building.

1.4 OVERVIEW OF PREVIOUS HILO JUDICIARY COMPLEX STUDIES

The following is an overview of studies completed during the past decade for the proposed Hilo Judiciary Complex. It documents the series of events and reports regarding previous environmental impact reviews and site selection processes.

The first report was presented in May 1986 entitled Project Development Report for the Third Circuit and District Courts and prepared by H. Mogi Planning and Research, Inc. The report concluded that a new judicial facility of 133,779 gross square feet should be constructed in Hilo. Subsequently, DAGS commissioned the firm of Wilson Okamoto and Associates, Inc. to prepare a Site Selection Report and Environmental Impact Statement (EIS) based on the needs identified in the 1986 Report. The Final EIS and Site Selection Report was issued in October 1988. Over the course of this study, fifteen "potential" sites in the Hilo area were considered viable locations for a new judiciary complex. From this field of fifteen, five sites were identified and evaluated further as "candidate sites" using the site selection process' detailed criteria.

As a result of the 1988 site selection process, "The Adjacent State Office Building" candidate site received the highest score despite its location in a tsunami zone. As explained in the 1988 report, "This site is within the tsunami inundation zone and would normally have been deleted from further consideration. However, due to legislators' interest in the site because of its proximity to the existing State Office Building and because it is State-owned land, the site is being retained for further evaluation." During the 1991 Legislative session, funds were allocated for the new Hilo Judiciary Complex but were linked specifically to the "Adjacent State Office Building" site. Subsequently, the public raised significant safety-related concerns about building new court facilities within a tsunami zone. In addition to general public concerns, the site was opposed by the head of the Hawai'i County Civil Defense Agency.

In 1993, the Legislature instructed the Judiciary to "defer the plans and design on its current site (the Adjacent State Office Building site) and consider alternate sites...." (Act 277, Part V, Section 17). Following the Legislature's actions, Chief Justice Ronald T. Y. Moon asked the Center for Alternative Dispute Resolution (CADR) to "design and implement a process intended to develop the highest degree of consensus possible among the public regarding a site for the Hilo Judiciary Complex." (July 26, 1994 Final Report - Hilo Judiciary Complex Siting Process prepared by the CADR.)

Over the course of a year (1993-94), the CADR designed and implemented a process which involved "identifiable stakeholders" in the proposed judicial facility and the general public. Through a series of stakeholder and public meetings, the fifteen "original" sites and any additional potential sites were identified and evaluated. As a result of this public consensus building process, the CADR forwarded the seven candidate sites to Chief Justice Moon. The CADR also informed the participants of the process in which the Judiciary would hire a consultant to further study the seven sites that emerged from the consensus building process.

Group 70 International, Inc. of Honolulu was selected by DAGS in late 1995 to complete the planning and technical studies, as well as the detailed evaluations of the seven candidate sites. These sites were the focus of the Final EIS and Site Selection Study. In 1997, the final EIS / Site Selection study was accepted, with the preferred location identified as the J.C. Penney building site.

In 1999, the County of Hawai'i acquired the J.C. Penney building site, which was previously considered for the new Hilo Judiciary Complex. The J.C. Penney site had favorable locational attributes including size, location, cost, land use, zoning, lot configuration, infrastructure, access, and a finding of no significant environmental impact.

The adjacent site, occupied by the Kaiko'o Mall Shopping Center, is now being considered as a potential location for the new Judicary Complex. The Kaiko'o Mall Shopping Center site has similar favorable locational qualities as the adjacent J.C. Penney property.

1.5 AGENCY AND PUBLIC CONTACTED IN DRAFT EA

Listed below are the agencies, organizations and interested parties that were consulted in the preparation of the Draft Environmental Assessment (EA). Participants in previous Environmental Reviews were included. The State of Hawai'i Department of Accounting and General Services is the lead agency for this project. The accepting authority is the Governor of the State of Hawai'i.

United States Government
U.S. Army Corps of Engineers - Pacific Ocean Division
U.S. Department of Agriculture - Soil Conservation Service
U.S. Department of Commerce - National Marine Fisheries Services
U.S. Department of the Interior- Fish and Wildlife Services
U.S. Department of the Interior- National Park Service
U.S. Department of the Interior- U.S. Geological Survey, Water Resources Div

U.S. Department of the Navy - Commander, Naval Base Pearl Harbor
U.S. Department of Transportation - Federal Aviation Administration

State of Hawai'i
Department of Accounting and General Services
Department of Agriculture
Department of Business, Economic Development and Tourism (DBEDT)
DBEDT - State Energy Office
Department of Defense
Department of Education
Department of Hawaiian Home Lands
Department of Health
Department of Health - Environmental Management Division
Department of Land and Natural Resources
DLNR - State Historic Preservation Division
Department of Transportation
Office of Environmental Quality Control
Office of Hawaiian Affairs
Office of State Planning
The Judiciary
- Office of the Administrative Director of the Courts
- Courts of the Third Circuit
Department of Public Safety (DPS)
DPS Sheriff's Office
Island of Hawai'i State Legislative Delegation

University of Hawai'i
Environmental Center
Water Resources Research Center

County of Hawai'i
Civil Defense Agency
Department of Parks and Recreation
Department of Public Works
Department of Research and Development
Department of Water Supply
Planning Department
Office of the Corporation Counsel
Office of the Prosecuting Attorney
Office of the Prosecuting Attorney - Victim/Witness Assistance Program
Hawai'i County Bar Association
Hawai'i County Council
Hawai'i County Mayor
Hawai'i County Planning Commission

Other Parties
American Lung Association
Church of the Holy Apostles, Hilo, Hawai'i
Hilo Main Street Program/Downtown Improvement Association

Mr. William F. Hachmeister
Mr. Shunichi Hatada, President, Hatada Bakery Inc.
Hawai'i Equities, Inc.
HSC, Inc.
Mr. Stafford Oyama
Mr. Marlin Spike Werner, Ph. D.
Mr. Donald K. Yamada, President, Hilo Draying Co.
Mr. Ralph Smith
Mr. Dick Armstrong
Ms. Winifred Lum
Mr. Delbert Nishimoto
Mr. Ernest Medares
Ms. Linda Mende
Mr. William Halliday
Ms. Elaine Hamasaki
Mr. Dave Smith
Ms. Fay Naln
Mr. Zachary Higa, Adult Probation
Mr. Orlando Smith
Mr. Jason Armstrong, Newspaper
Hilo Law Center
Hawai'i Island Chamber of Commerce
Hawai'i Island Contractor's Association
Hawai'i Island Economic Development Board
Japanese Chamber of Commerce and Industry
Hilo Lagoon Centre Association of Apartment Owners
Kaiko'o Mall Association
Harry and Jeanette Weinberg Foundation

1.6 CONTENTS OF THE FINAL EA

This Environmental Assessment (EA) has been prepared and is being filed with the State of Hawai'i's Office of Environmental Quality Control (OEQC). This EA evaluates the potential impacts of the Hilo Judiciary Complex on the natural and human environment.

This document is presented in nine sections.
Section 1.0 contains an introduction to project need.
Section 2.0 describes the proposed project.
Section 3.0 describes the environmental setting of the project.
Section 4.0 contains the probable impacts.
Section 5.0 discusses alternatives to the proposed plan.
Section 6.0 identifies required permits and approvals, policies and plans.
Section 7.0 contains findings and reasons for anticipated determination.
Section 8.0 contains references.
Section 9.0 contains comment letters received during the review period of the Draft Environmental Assessment and response letters.

Section 2.0

Description of Proposed Project

2.0 DESCRIPTION OF PROPOSED PROJECT

The State of Hawai'i Department of Accounting and General Services (DAGS), on behalf of The State Judiciary, is proposing to build a new Judiciary Complex in Hilo for the East Hawai'i Service Area of the Third Judicial Circuit which comprises the entire Island of Hawai'i.

2.1 FACILITY PROGRAM

The Hilo Judiciary Complex will consists of a 130,307 gross square foot facility which will provide spaces for judicial proceedings including: seven courtrooms to be allocated amongst Circuit, Family and District Courts; judge's chambers; conference rooms and public waiting rooms; Family Court Services and social worker offices; probation services; driver education; central holding cells; a law library; and administrative and support spaces.

The increase in floor area for the new judiciary complex compared to existing facilities is due to two primary factors. First, to provide adequate spaces for Judiciary functions and personnel in Hilo. The second factor is to accommodate the projected caseload growth and the need for adequate spaces and personnel to handle the increased workload. A summary of the facility's gross square foot space program by court function is presented in Table 2-1. The Facility Program will consider applying energy efficient sustainable building techniques at the appropriate time.

2.2 LOCATION OF PROPOSED PROJECT SITE

The proposed project site being reviewed in this Environmental Assessment is located at 777 Kilauea Avenue, South Hilo, on the island of Hawai'i, commonly known as Kaiko'o Mall Shopping Center. See Figure 2-1.

The site is situated in the downtown area of Hilo, across the street from existing State and County Office Buildings, and is bounded by Aupuni Street to the north and east, Kilauea Street to the south and the adjoining portion of the former J.C. Penney Building to the west. Figure 2-2.

The site is identified as Tax Map Key (3) 2-2-15:76 and contains a total area of 348,480 square feet, equivalent to approximately eight acres. See Figure 2-3.

2.3 PROPERTY INFORMATION

The property is currently owned by The Harry and Jeanette Weinberg Foundation, Inc. Assessment values for the year 2000 are recorded as follows:

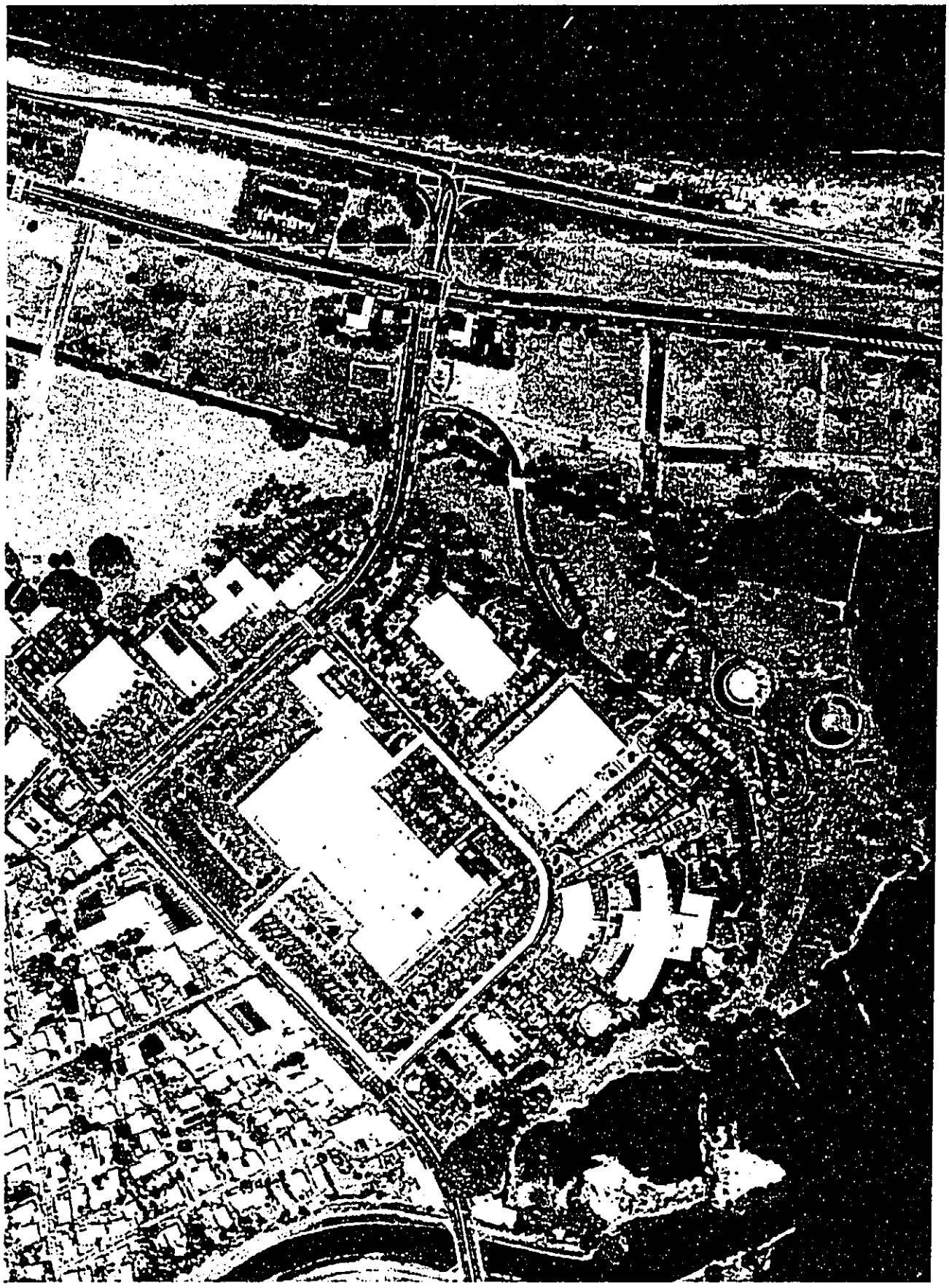
Land Value $2,787,800,
Building Value $6,368,500.

Table 2-1.
HILO JUDICIARY COMPLEX
FACILITY PROGRAM

ITEM NO.	DEPARTMENT	YEAR 2010 Dept. Gross Sq. Feet
1.	**CIRCUIT COURT**	
	JUDICIAL	10,696
	LEGAL DOCUMENTS/FISCAL/ADMINISTRATION	13,818
	COURT REPORTERS	1,344
	ESTATE & GUARDIANSHIP	1,138
		26,996
2.	**FAMILY COURT**	
	JUDICIAL	4,480
	FAMILY COURT SERVICES	23,930
		28,410
3.	**DISTRICT COURT**	
	JUDICIAL	17,612
	CLERKS/FISCAL/BAILIFFS/ADMINISTRATION	7,935
	PROBATION	3,125
	DRIVER'S EDUCATION	1,667
		30,339
4.	**COURT SUPPORT**	
	CENTRAL HOLDING	4,446
	CENTRAL SECURITY	672
	GRAND JURY	2,174
	LAW LIBRARY	4,274
		11,566
5.	**BUILDING SUPPORT**	5,132
	SUBTOTALS	**102,443**
	MECHANICAL/ELECTRICAL @ 6% DGSF	6,147
	TOTAL DEPARTMENTAL GROSS SQ FT	**108,590**
	TOTAL BUILDING GROSS SQ FT (X1.20)	**130,307**

NOTE: This space program does not include secure parking.

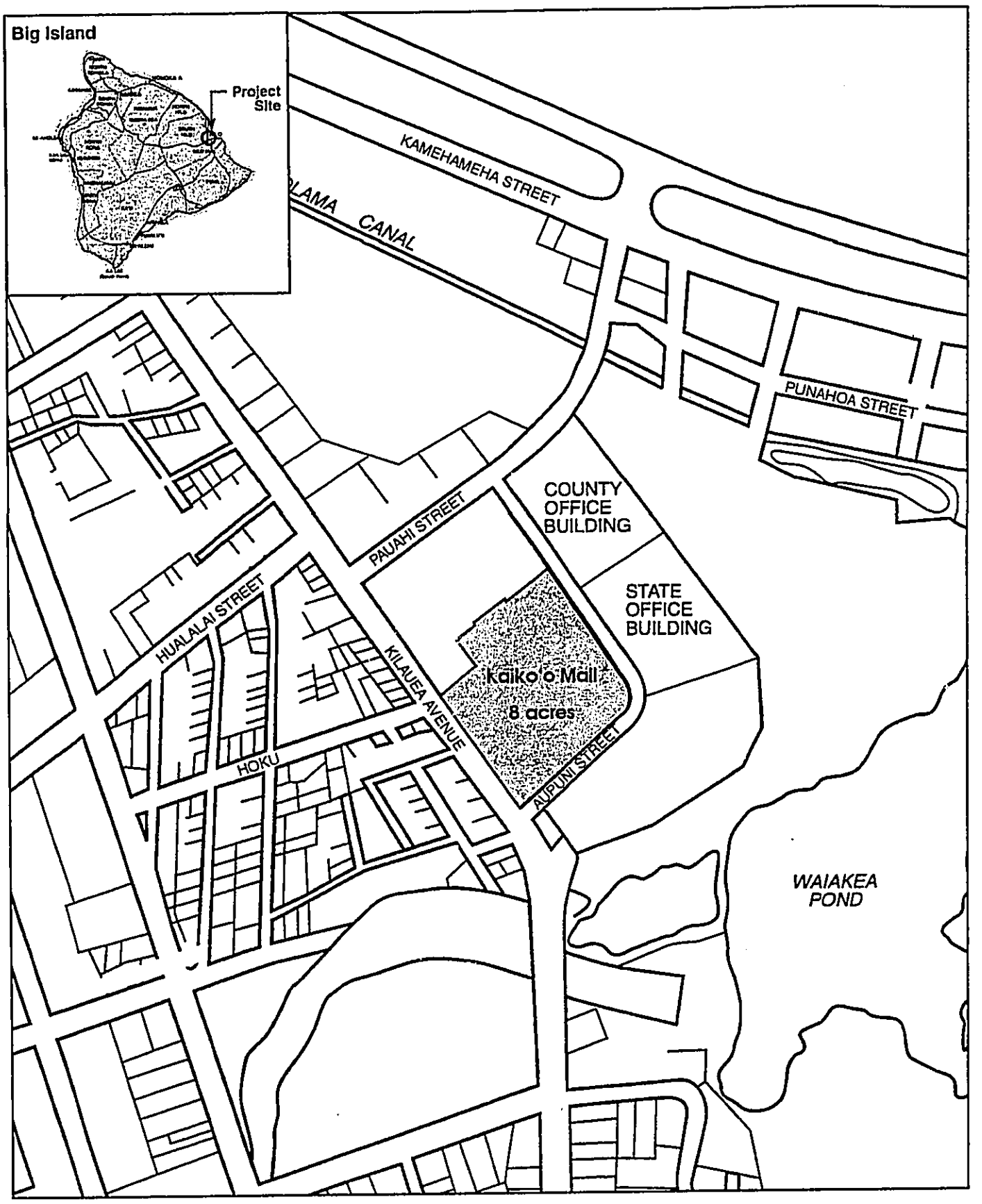
Source: A Planning Report on the Hilo, Hawai'i Judicial Facility - Final Report. Carter Goble Associates, Inc., February 4, 1991.



Aerial Photo

Hilo Judiciary Complex - Kaiko'o Mall Site

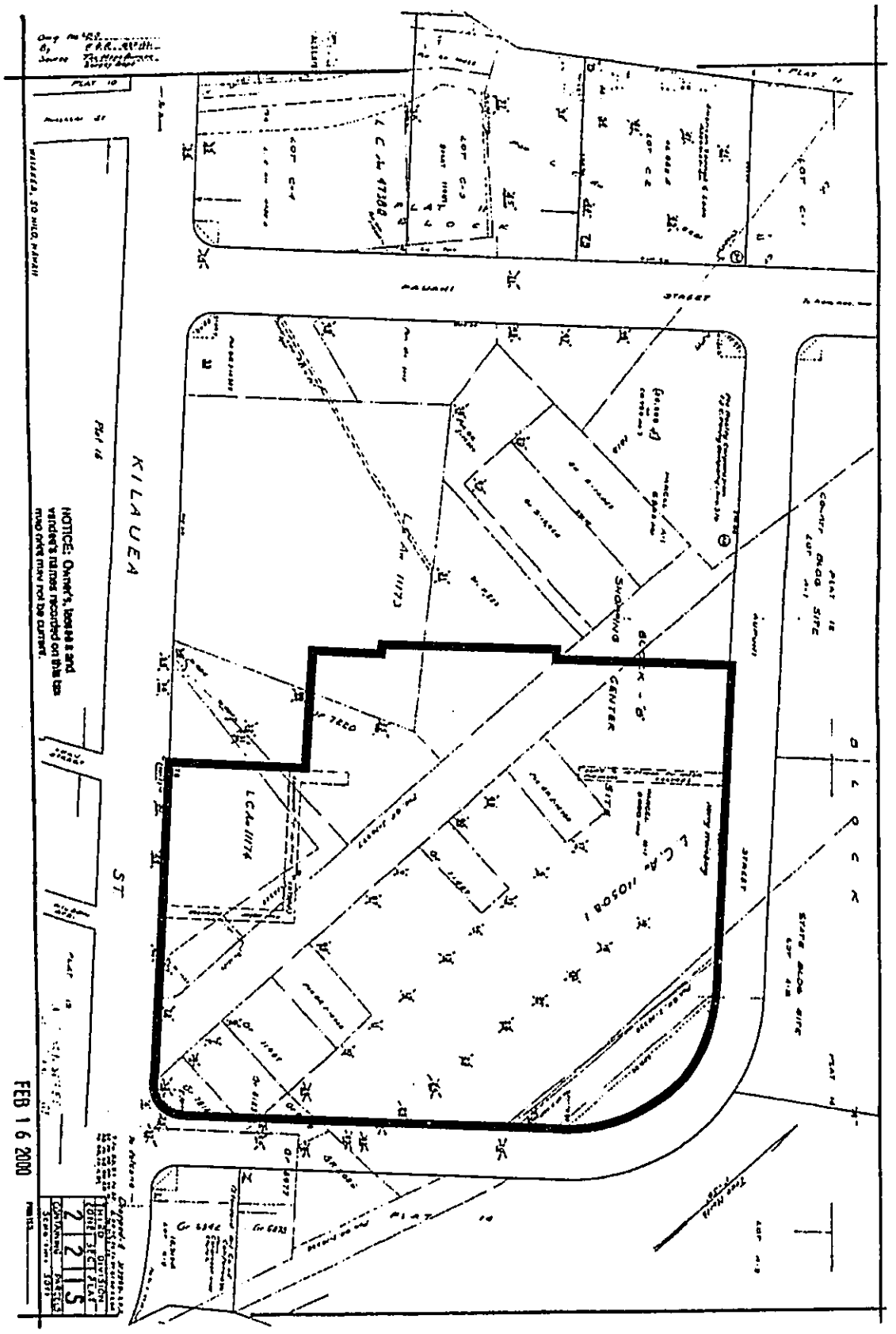
Figure 2-1



Location Map

Hilo Judiciary Complex - Kaiko'o Mall Site

Figure 2-2



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Hilo Judiciary Complex - Kaiko'o Mall Site

Figure 2-3

2.4 PARKING

Parking requirements for the proposed project have been calculated in accordance with the Hawai'i County Zoning Code and the Kaiko'o Redevelopment Plan. A minimum of 507 parking spaces is required to accommodate public, employee and official State vehicles based on the space program projected to the year 2010. Table 2-2 contains the parking calculation.

Table 2-2.
PARKING REQUIREMENTS

COUNTY PARKING STANDARD

Total building floor area is projected at 130,307 gross sq. ft. Per the Hawai'i County Zoning Ordinance, the number of required off-street parking spaces shall be determined based on the gross floor area of the building including covered lanais and patios as follows:

- One parking space for each 300 sq. ft. of floor area of government offices for project site in accordance with the Kaiko'o Redevelopment Plan standards.
- One parking space for every four seats in places of assembly with fixed seats.
- One parking space for each 200 sq. ft. of floor area in places of assembly without fixed seats for buildings with no principal assembly area or main hall.

PARKING FOR PLACES OF ASSEMBLY (With Fixed Seats)

1 Grand Jury Room	1,610 sq. ft. = 75 seats
4 Jury Rooms	1,600 sq. ft. = 45 seats
14 Conference Rooms	1,840 sq. ft. = 99 seats
Total	5,050 sq. ft. = 219 seats

At one parking space for every 4 seats, 219 seats require 55 parking spaces.

PARKING FOR PLACES OF ASSEMBLY (Without Fixed Seats)

7 Court Rooms	11,900 sq. ft.
Total	11,900 sq. ft.

At one parking space for each 200 sq. ft., 7 courtrooms require 60 parking spaces.

PARKING FOR OFFICE USE

130,307 gross sq. ft. less 5,050 sq. ft. and 11,900 sq. ft. = 113,357 sq. ft.

At one parking space for each 300 sq. ft., 113,357 sq. ft. of offices require 378 parking spaces.

PARKING FOR OFF-STREET LOADING

At one parking space for the first 5,000 sq. ft. of building floor area, plus one additional space for each additional 10,000 sq. ft.,

5,000 sq. ft. = 1 parking space plus $\frac{125,307}{10,000}$ = 13 parking spaces.

130,307 sq. ft. building floor area total requires 14 parking spaces for loading.

TOTAL PARKING REQUIREMENT

Places of Assembly (fixed seats)	55	parking spaces
Places of Assembly (without fixed seats)	60	
Office Use (1 per 300 sq. ft.)	378	
Off-Street Loading	14	
Total Parking Requirement for Project Site:	*507*	*parking spaces*

2.5 INFRASTRUCTURE

The following infrastructure and site improvements will be required: utilities to provide water, electricity, sewer and communications services; drainage improvements, driveway(s) and/or access roads; paved parking area; and landscaping.

2.6 CONSTRUCTION

The proposed project will require the following construction activities:

- Grading, site clearing and earthwork,
- Excavation and fill for utility lines and building foundations,
- Construction of the new judiciary complex building of reinforced concrete and/or concrete masonry units,
- Carpentry, drywall, flooring, glasswork, roofing, painting and other general construction;
- Landscaping, and
- Paving for driveways, parking and walkways.

The impact of short-term construction activities are addressed in Section 4.0 of this document.

2.7 DEVELOPMENT SCHEDULE

The project proposes to construct a new Hilo Judiciary Complex and consolidate current operations into one building. It is envisioned that the design and construction of the Hilo Judiciary Complex will be accomplished through public capital improvement project (CIP) appropriations. The existing facilities will continue to operate until the new building is constructed. Construction for the Judiciary Complex will probably not commence until sometime in calendar year 2003. The project schedule must allow for acquisition proceedings and cost negotiations.

Other factors impacting the project schedule include compliance with the State's Environmental Impact Statement requirements (Chapter 343, Hawai'i Revised Statutes), obtaining project funding for both design and construction, as well as obtaining all of the necessary permits and approvals. Additionally, the need to relocate any existing tenants or other occupants may impact the facility's construction schedule.

2.8 RELATIVE SITE EVALUATION CRITERIA AND FINDINGS

In 1997, a final EIS / Site Selection study for the Hilo Judiciary Complex was accepted, with the J.C. Penney building site receiving the most favorable overall ratings of the seven (7) candidate sites evaluated. In 1999, the County of Hawai'i acquired the J.C. Penney building site for County government agency office use. The former J.C. Penney site had favorable locational attributes including size, location, cost, land use, zoning, lot configuration, infrastructure, access, and a finding of no significant environmental impact.

The adjacent site, which shares the block with the former J.C. Penney property, is occupied by the Kaiko'o Mall Shopping Center. The Kaiko'o Mall Shopping Center site, due to this adjacenty

with the former J.C. Penney site, appears to have similar favorable qualities and is now being considered as a possible alternative location for the new Judicary Complex.

2.8.1 SITE EVALUATION CRITERIA

The following criteria being used in this Environmental Assessment parallel those used in the 1997 final EIS / Site Selection study.

Building Site Criteria. This set of criteria evaluates the physical site characteristics, availability of infrastructure such as roadways and utilities, access and environmental characteristics. These parameters address site development constraints and opportunities.

Community Criteria. This set of criteria is used to evaluate the development of the site in terms of State and local land use designations, existing use and land ownership, compatibility with surrounding land, as well as proximity to population activity and judicial support services.

Cost Considerations. This section addresses the relative costs associated with site acquisition, any demolition that may be required, and on-site and off-site improvements necessary for development.

Individual criteria, a description of the standards used to define rating categories, and a summary evaluation of each criteria are presented in Appendix A.

2.8.2 Summary of Building Site Criteria Evaluation

Site Characteristics

The Kaiko'o Mall site meets the ideal 7.0 acres needed to accommodate the judiciary facility's interior space and parking requirements, and allow for future expansion. The average slope of the site is "good" because the site is generally level which means only slight additional grading and site work are likely required. The shape of the site is "good" because of its ability to accommodate the preferred rectangular building shape, allowing the site to optimize the building and circulation layouts.

Soil stability characteristics for foundation work is "poor" because the site's soil characteristics are those which indicate poor engineering conditions such as low bearing capacity, high compressibility, or fractured soils. The site is also "poor" for soil depth as the site generally has shallow soils of 0 - 5 feet to bedrock. Deeper soils would help facilitate the installation of underground utilities.

The site's aesthetic value is "good" because there should be no loss of scenic views or of an aesthetic asset to the community. In terms of natural beauty or the potential for beautification through landscaping, the Kaiko'o Mall site is "fair" because it is almost completely developed and paved, but does contain some existing landscaping and has the potential for further beautification.

Roadways and Utilities

The Kaiko'o Mall site rates "good" due to its highly urbanized location and its existing on-and off-site improvements. With regards to water, the site is "good" due to its proximity to existing

water lines. The Kaiko'o Mall site is "good" as well in terms of wastewater because it is adjacent to existing sewer lines and does not require off-site improvements. The site is also "good" in terms of the availability of existing drainage facilities, and "good" for power and communication due to its proximity to existing adequate lines.

Accessibility
With regard to site accessibility to pedestrians, the Kaiko'o Mall site is "good" for having pedestrian access along two or more sides of the property. Automobile access addresses the need for easy ingress and egress to the site, as well as efficient traffic circulation. The site is "good" for automobile access because it has abutting roadways along at least one long side and one short side. Furthermore, the Hele-On Public Bus System of the Hawai'i County Mass Transit Agency provides bus service which passes by and could be flagged down to stop. The project site is also in close proximity to actual bus stops.

Environment
The Kaiko'o Mall project site is generally "good" for both botanical/wildlife and historical/archaeological resources which indicates that the sites can be developed without disturbing significant natural or historic resources. The project site is, in general, free from industrial and agricultural nuisances, experiences good air quality and has no known toxic wastes.

2.8.3 Summary of Community Criteria Evaluation

Government
The State Land Use district classification is "good" for the Kaiko'o Mall site because the land is classified as Urban. Regarding the County General Plan designations, the site is "good" based on its High Density designation which encourages general office, commercial or institutional uses. County zoning for the Kaiko'o Mall site is General Commercial, which is "good" because public buildings are a permitted use in General Commercial land use zones. Additionally, the Hawai'i County zoning code allows public buildings in any zoning district "provided they conform to the General Plan."

The Kaiko'o Mall site lies entirely outside of the Special Management Area (SMA) which is "good." Relative to known mapped flood hazard areas, the site lies within Other Areas Zone X which are areas determined to be outside of the 500-year flood plain.

Community Effects
Regarding the displacement of existing uses, the site rates "poor." The Kaiko'o Mall Shopping Center contains multiple existing government and commercial tenants.

The Kaiko'o Mall site is currently owned by a single private landowner. The site is rated as "fair" because of the time and expense involved to acquire lands in private or non-State ownership.

The Kaiko'o Mall Site is "good" regarding its intensity on surrounding land uses because it is located within an existing governmental and commercial office area. The site is of sufficient distance away from institutional uses such as schools, hospitals and rest homes.

The last three criteria are important indicators of a site's proximity to the facility's users and clients. Such proximity affects travel time, convenience of the judiciary's operations, and ease of interaction with related entities and support services. The County/State Office Center near Kaiko'o Mall and Hilo's downtown area are the "major population activity and commercial centers" used in the ratings for this particular group of criteria due to the concentration of businesses and attorney and government offices at these locations. The Kaiko'o Mall site is within one-quarter mile of major commercial and office centers such as the County/State Office Center.

With regard to proximity to related entities and support activities such as the police station, correctional facilities and other government agencies, the Kaiko'o Mall site is "good" because it is located within walking distance (one-quarter mile) of a majority of the support activities. In addition, a critical user-group of the new judiciary complex will be the private attorneys within the Hilo area. The Kaiko'o Mall site is "good" because it is located within one mile of more than fifty percent (50%) of all private law offices and attorneys in Hilo.

2.8.4 Summary of Cost Considerations

Site Acquisition Costs
Site acquisition costs for the project site is estimated at $6.5 million based on assessed valuation. This figure does not include costs associated with displacement or relocation of existing tenants / occupants, if any should be required.

On-Site and Off-Site Improvements:
The Kaiko'o Mall property is significantly developed, and should not require significant on-site and off-site improvements.

Further explanation and results of "good," "fair," and "poor" ratings are provided Appendix A.

Section 3.0
Description of Environmental Setting

3.0 ENVIRONMENTAL SETTING OF PROJECT

3.1 PROPOSED PROJECT SITE – KAIKO'O MALL

3.1.1 Physical Environment

The proposed project site being reviewed in this Environmental Assessment is situated on a portion of a 40-acre elevated plateau which was created with landfill to an elevation of 18 to 20 feet above mean sea level after the 1960 tsunami. The property consists of approximately eight acres of land and a building which was constructed in 1969. Kaiko'o Mall Shopping Center currently occupies a portion of the existing building.

The subject property has been improved with asphalt concrete pavement for parking and 2-foot wide planting strips along the street perimeter frontages. The parking circulation expands to the adjoining parking area for the former J.C. Penney building. The subject property has five (5) existing accesses for egress/ingress along Kilauea Avenue and Aupuni Street.

3.1.2 Existing Use of Proposed Project Site

The proposed project site is currently being used for commercial and retail operations of the Kaiko'o Mall Shopping Center. Tenants of the Kaiko'o Mall Shopping Center include:

Big Island Optical Inc.
Big Island Vision Center Inc.
Cheng's Chop Suey House
Child Support Enforcement Agency
City Bank
Dr. Z Body – Physical Therapy
The Firehouse Restaurant
Hawai'i Family Dental Centers
Hawai'i State Unemployment Insurance Division
Japanese Museum
Kaiko'o Seeds N' Things
Shiigi Drug Co
Soup and Roll
Suey's
WIC Program
Wireless Security Store
Workforce Development Division
Worldwide Realty Inc.
Kaiko'o Mall Association

3.1.3 Surrounding Area

Immediately adjoining the Kaiko'o Mall Shopping Center parcel is the former J.C. Penney building and parking lot. This property has been acquired by the County of Hawai'i for use as County government agency office space.

Surrounding the block on which the site sits are the State Office Building and Hilo Lagoon Center to the east, Longs Drugs, Bank of Hawai'i, American Savings & Loan and other offices to the west, and to the south are the Ace Hardware Store, restaurant and offices. The State Office Building currently houses the Third Circuit Court, the District Court of the Third Circuit, and various other state agencies and departments.

The 10-story Hilo Lagoon Center building was completed in 1971 as the former 377-room Hilo Lagoon Hotel. However, in 1983, the hotel was converted into a mixed-use fee simple condominium project consisting of 138 residential and 117 commercial apartment units. The County Office of the Corporation Counsel, Department of Civil Service, Department of Liquor Control are currently leasing office space in Hilo Lagoon Center.

3.1.4 Existing Land Use Designations

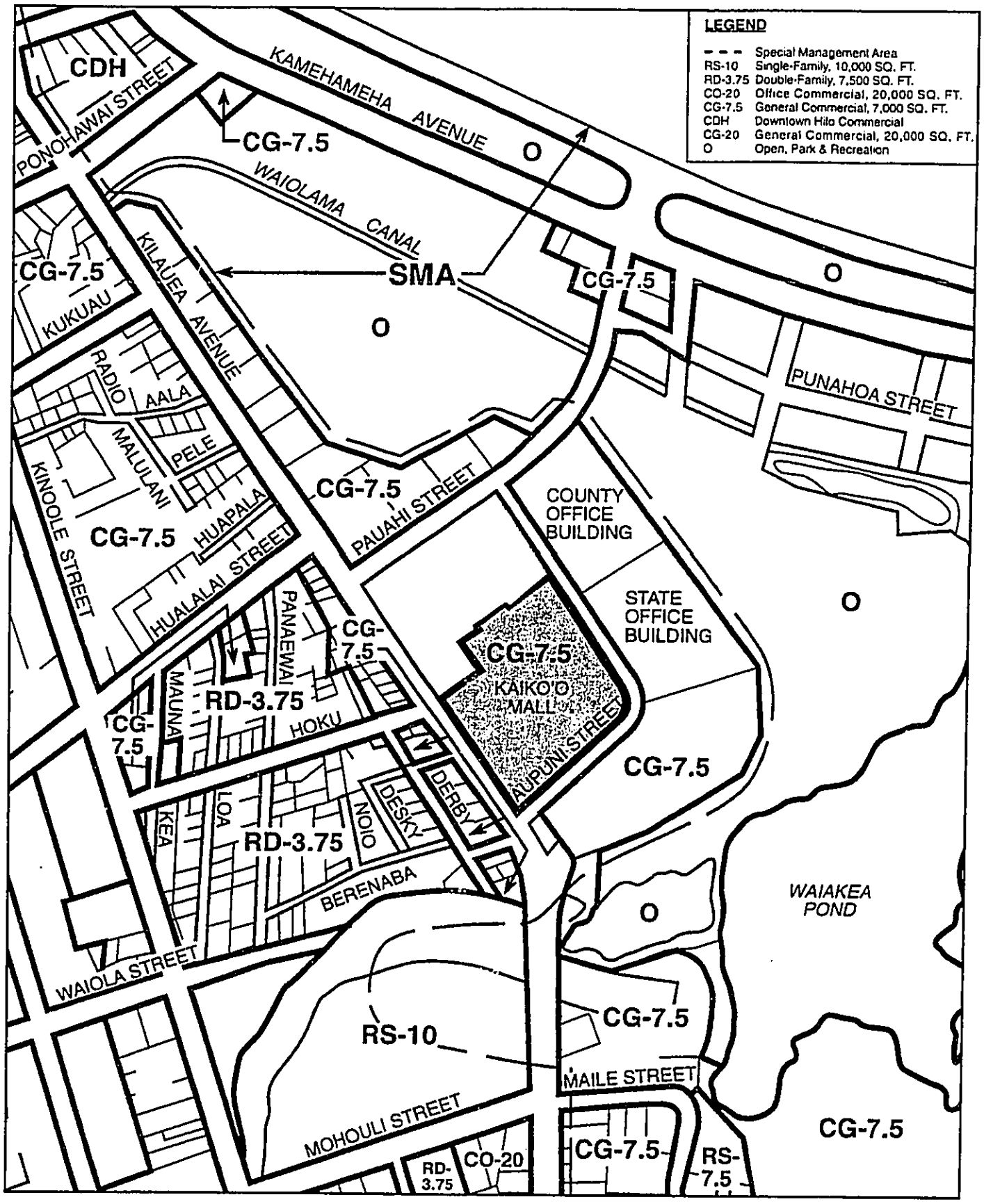
The site is situated within the State Land Use Urban District. According to the Land Study Bureau Detailed Land Classifications, the area has been classified for "Urban" type uses. Under the State Department of Agriculture's Agricultural Lands of Importance to the State of Hawai'i (ALISH), the lands have been developed for urban type use.

The Hawai'i County General Plan Land Use Pattern Allocation Guide (LUPAG) Map designates the project area as High Density Urban Development. This designation allows commercial, multiple residential and related services (including general and office commercial). The Hilo Community Development Plan Zoning Guide Map designates the area around the Kaiko'o Mall parcel as General Commercial with minimum lot size of 7,500 square feet (CG-7.5).

The proposed office use is permitted under this zoning district. Adjacent and surrounding areas have similar Urban and General Commercial land use designations. The site is outside of the Special Management Area. Figure 3-1. The Amended Urban Renewal Plan-Kaiko'o Project designates the project site as "Elevated Area." Further relationship to land use policies and plans is described in section 6.

3.1.5 Climate

The site is located in the downtown area of Hilo. Situated on the windward coast or east side of the island, Hilo is exposed to the nearly constant northeast tradewinds ranging between 13 to 24 miles per hour. Hilo's average temperatures range from 71.0 degrees Fahrenheit in January-February to 75.9 degrees Fahrenheit in August-September. The average annual rainfall documented at the Hilo Airport is 128 inches.



County Zoning & SMA

Hilo Judiciary Complex - Kaiko'o Mall Site

Figure 3-1

3.1.6 Flora and Fauna

There are no known endangered species of flora within the site area as land alteration has occurred by prior urban development activities. There are no known endangered species of fauna within the project site. Wildlife fauna occurring within the Hilo urban center is generally limited to dogs, cats, rats, mice, and mongoose. Birds found in the vicinity include the Cardinal, Barred Dove, Mockingbird, Mynah, Golden Plover, Pueo, Ricebird, House Sparrow, White Eye and Spotted Dove. (U.S. Army Corps of Engineers, 1981).

3.1.7 Soils and Topography

The U.S. Department of Agriculture Soil Conservation Service report, Soil Survey of the island of Hawai'i classifies the soils in the area as Hilo silty clay loam (HoC) and Keaukaha Series (rKFD) extremely rocky muck, 6 to 20 percent slopes. The soils consist of well-drained, thin organic soils overlying *pahoehoe* lava bedrock. In a representative profile, the surface layer is very dark brown muck about 8 inches thick. The soils above the lava are rapidly permeable. The *pahoehoe* lave is very slowly permeable, but water moves rapidly through the cracks. Runoff is medium and the erosion hazard is slight. The soil depth for site work at the Kaiko'o Mall site is approximately 6 to 8 feet to bedrock.

Hilo lies on the lower southeastern slopes of Mauna Loa at elevations ranging from sea level to 700 feet above sea level along the upper reaches of the town. Slopes are generally gentle, ranging from 0 to 5 percent in the urban areas to 6 to 10 percent in the upper reaches. Variations in the topography occur due to lava flow patterns and drainage channels. The average slope on the Kaiko'o Mall site is between 0 and 3 percent.

The Hawaiian Islands are subject to the impact of extremely high winds resulting from orographic amplification and torrential rains resulting in flooding from tropical cyclone/hurricane force winds. Hilo is situated in an area subject to the possibility of volcanic eruptions and seismic activity. Designs for the Judiciary Complex facility will take into consideration these potential hazards. The Judiciary facility could then be evaluated for use as a possible public shelter in the event of a natural disaster.

3.1.8 Flood and Tsunami Hazard

The Federal Emergency Management Agency's Flood Insurance Rate Map (FIRM), Community Panel #155166 0880 C dated September 16, 1988, specifies flood hazard areas inundated by the 100-year flood with base flood elevations determined. The area inland along Hilo Bay is within the "Coastal Flood with Velocity Hazard (wave action)" Area as designated on the FIRM. The Kaiko'o Mall site is within the Zone X designation which is described as areas outside of the 500 year flood plain (Figure 3-2.)

Figure 3-3 illustrates the project site in relation to several tsunami inundation and evaculation related zones. The project site is located totally outside of the 1946 Tsunami Inundation Zone. However, parts of the project site are within the 1960 Tsunami Inundation zone. In 1991, Dr.

George Curtis conducted a study at the University of Hawai'i which resulted in a new calculated tsunami inundation zone for the area around Hilo Bay. The study effectively locates portions of the Kaiko'o Mall site and building within this calculated tsunami inundation zone. Figure 3-3 also depicts the Hawai'i County Civil Defense evacuation lines which are established on the basis of being beyond the possible inundation line and for ease of enforcement. The Kaiko'o Mall site is within the Civil defense evaculation zone. There is a civil defense siren present at the Kaiko'o Mall site, and evacuation plans for potential tsunami events will be considered in the design of the building.

3.1.9 Scenic Characteristics

The Kaiko'o Mall site is not regarded as an aesthetic asset to the community and should not interfere with scenic vistas when developed. The existing building is aging and in a deteriorating condition which is not appealing. Further, the existing site lacks substantial landscaping. Any redevelopment on the site should be designed with an aesthetic character that is complementary to the Hilo area.

3.1.10 Archaeological and Historic Sites

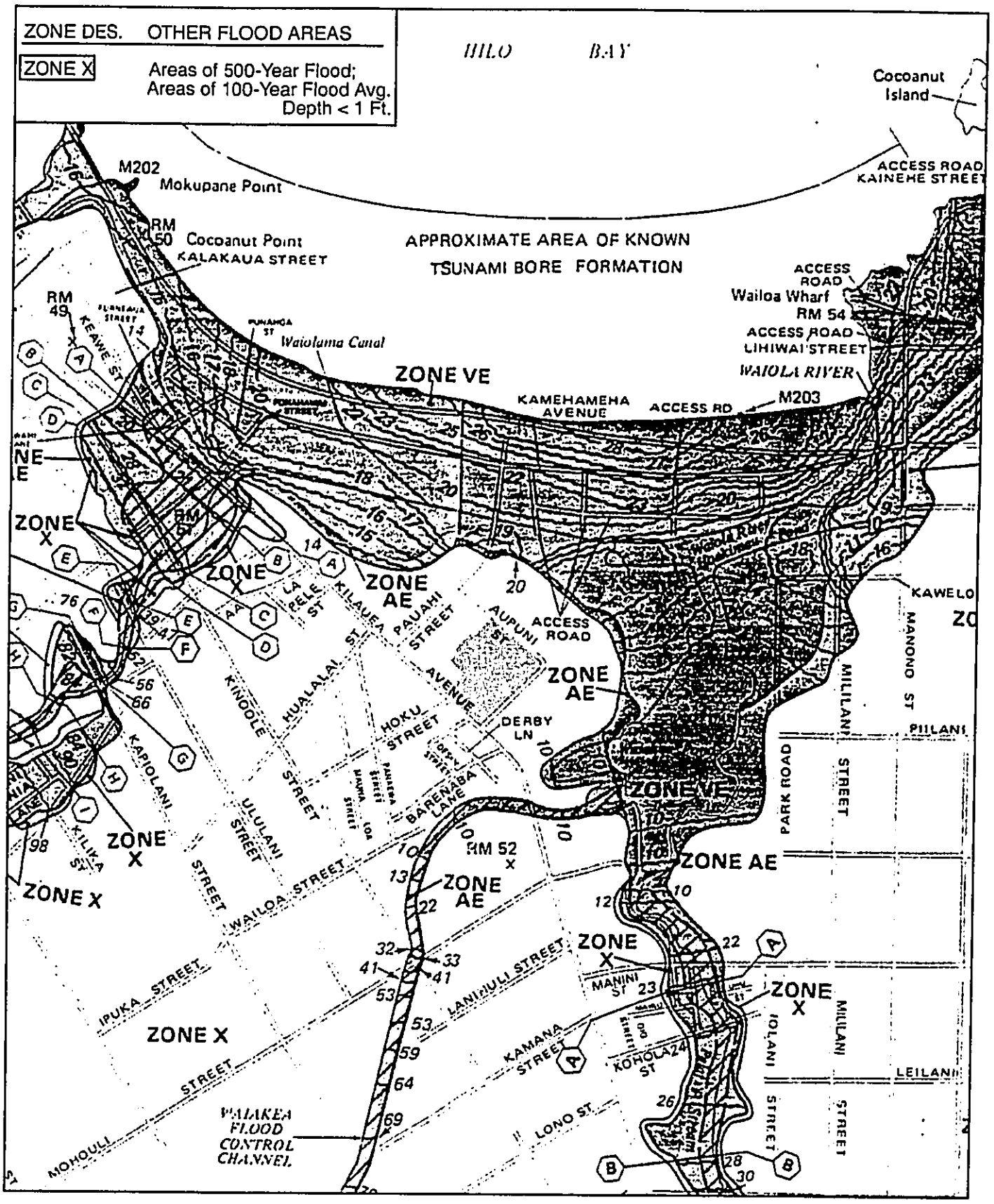
The site is located in a highly urbanized environment which, in the recent past, has been altered or modified. There are no archaeological sites listed on the National Register of Historic Places for this site.

3.1.11 Geology/Hydrology

The site selection area is located on the eastern slopes of Mauna Loa. Regional geology/hydrology information is taken from U.S. Army Corps of Engineers (1981) and Gordon and Abbott (1983). The surface rocks in this area originate from the Ka'ū volcanic series which is characterized by an extremely permeable basalt. The Ka'ū series, which erupted from Mauna Loa following the main deposition of Pahala ash, is approximately 25 feet thick in the Hilo region. Beneath the Pahala ash lies the initial basalt formation, the Kahuku series, which is also extremely permeable. As a result of the permeable subsurface and surface formations, surface runoff is low while infiltration and subsurface flow are high.

The Wailuku River is the major perennial stream in the Hilo area. It originates near the summit of Mauna Kea (elevation 13,796 feet) and flows into Hilo Bay. The Waiākea Stream is the other perennial stream in the study area which drains into Waiākea Pond and into the Wailoa River (a tributary of Hilo Bay). Several intermittent streams lying in the immediate area of the two perennial streams flow during periodic storms.

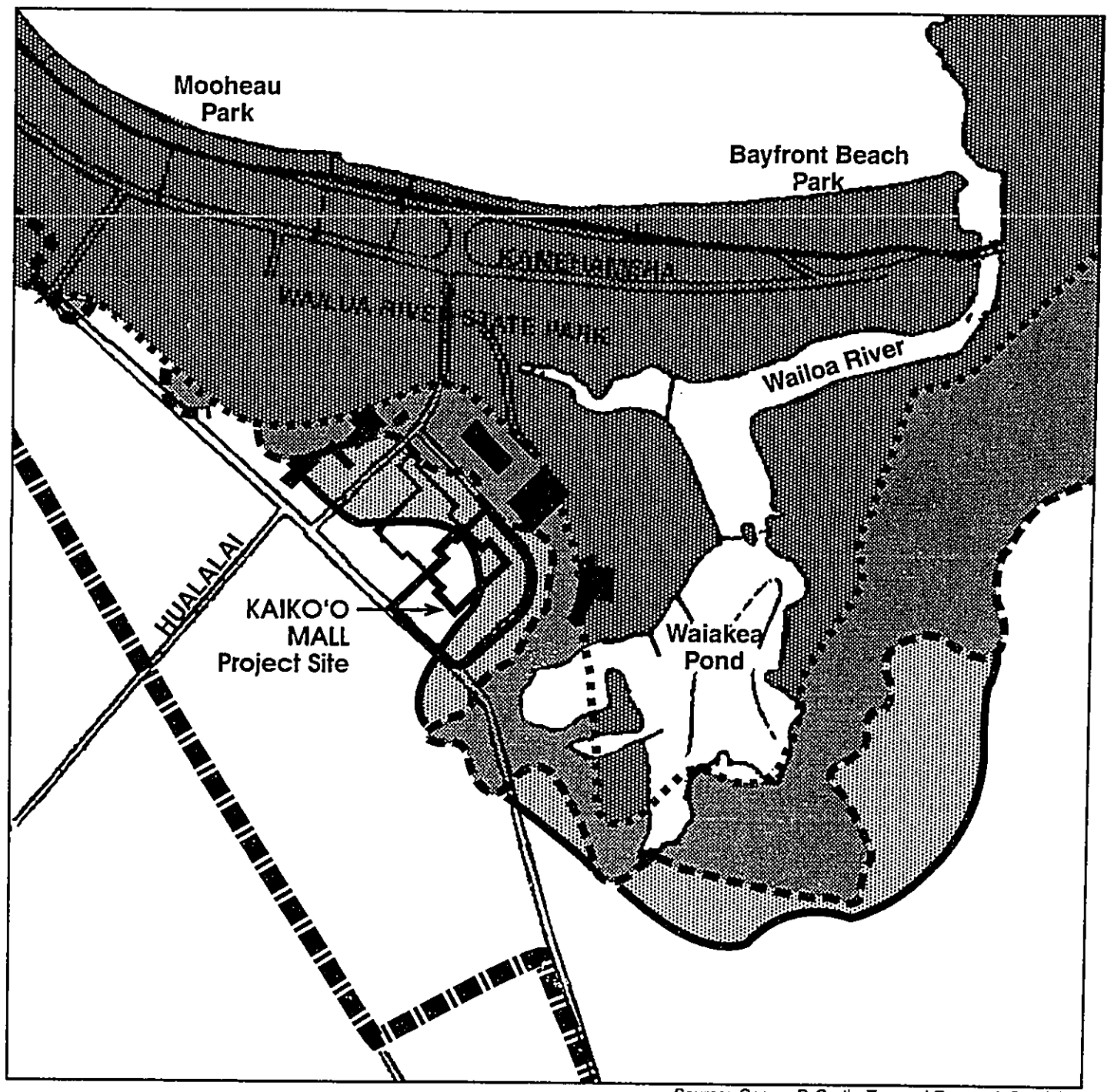
Basal groundwater tables underlie the entire Hilo area. The tables slope upward at an average rate of four or five feet per mile inland. Basal water of good quality is abundant due to rapid circulation and intense groundwater recharge.



Flood Hazard Zones FIRM Map - Community Panel #155166 0880 C

Hilo Judiciary Complex - Kaiko'o Mall Site

Figure 3-2



Source: George D. Curtis, Tsunami Research Specialist

Tsunami Inundation Zones - Hawaii County Civil Defense

Hilo Judiciary Complex - Kaiko'o Mall Site

Figure 3-3

3.1.12 Coastal Water Quality

Coastal water at Hilo Bay is rated Class A waters while Hilo Harbor water is rated Class II, under Chapter 54 of Title 11, Water Quality Standards of the Administrative Rules (Department of Health, State of Hawai'i, 1984). Class A waters are protected for recreational purposes and aesthetic enjoyment with the protection and propagation of fish, shellfish, and wildlife, and with recreation.

3.2 INFRASTRUCTURE

3.2.1 Water System

The Hilo area is served by the Hawai'i County Department of Water Supply. The anticipated water demand requirements for the project were estimated on a square footage basis at 18,500 gallons per day for maximum daily demand and 62,000 gallons per day for peak hour demand.

The Hilo Water System has adequate source, transmission and distribution facilities that are available to service a proposed new judiciary facility within Hilo's urban area. The system is fed by several sources as follows:

Source	Rate Capacity
Panaewa Well No. 1	1,500 gpm
Panaewa Well No. 2	2,200 gpm
Panaewa Well No. 3	2,100 gpm
Piihonua Well A	2,100 gpm
Piihonua Well B	2,100 gpm
Piihonua Well C	2,100 gpm
Olaa Flume Spring	700 gpm

Water from the Panaewa and the Piihonua wells located at the lower areas of the system can be pumped to the upper areas to supplement the higher levels' spring and surface sources. Based on 1994-1996 data, the maximum daily consumption is about 6.0 MGD.

Water service is available to the project site. Existing 8-inch water main and fire hydrants are located within the road rights-of way. Figure 3-4.

3.2.2 Sewer System

The majority of residences in the Hilo area rely on individual cesspools and septic tanks. Most business and commercial areas and some of the residential areas are served by Hawai'i County sewer lines. Wastewater collected through this system is transmitted to the Hilo Wastewater Treatment Plant. The plant has a capacity of about 7.0 million gallons per day with effluent discharged through an ocean outfall extending about 4,600 feet offshore.

A new wastewater treatment facility was recently constructed for the Hilo service area, providing an added total capacity of 5.0 MGD. The County Public Works Department has indicated that the treatment plant has ample capacity to accommodate the new judiciary facility. Sewer service is available to the project from an 8-inch sewer line along Aupuni Street. Figure 3-4.

3.2.3 Gas System

The Hilo Gas Company, a division of Gasco, Inc., distributes propane gas on the Island of Hawai'i. Gasco has metered gas available in limited areas of Hilo and bulk gas is available to individual customers.

3.2.4 Electrical and Telephone Systems

Electric power for Hilo is provided by Hilo Electric Light Company, Limited, a subsidiary of Hawaiian Electric Company, Inc. through various transmission and distribution substations within the Hilo area. Telephone service in the Hilo area, like the rest of the State, is provided by the GTE Hawaiian Telephone Company.

3.2.5 Drainage System

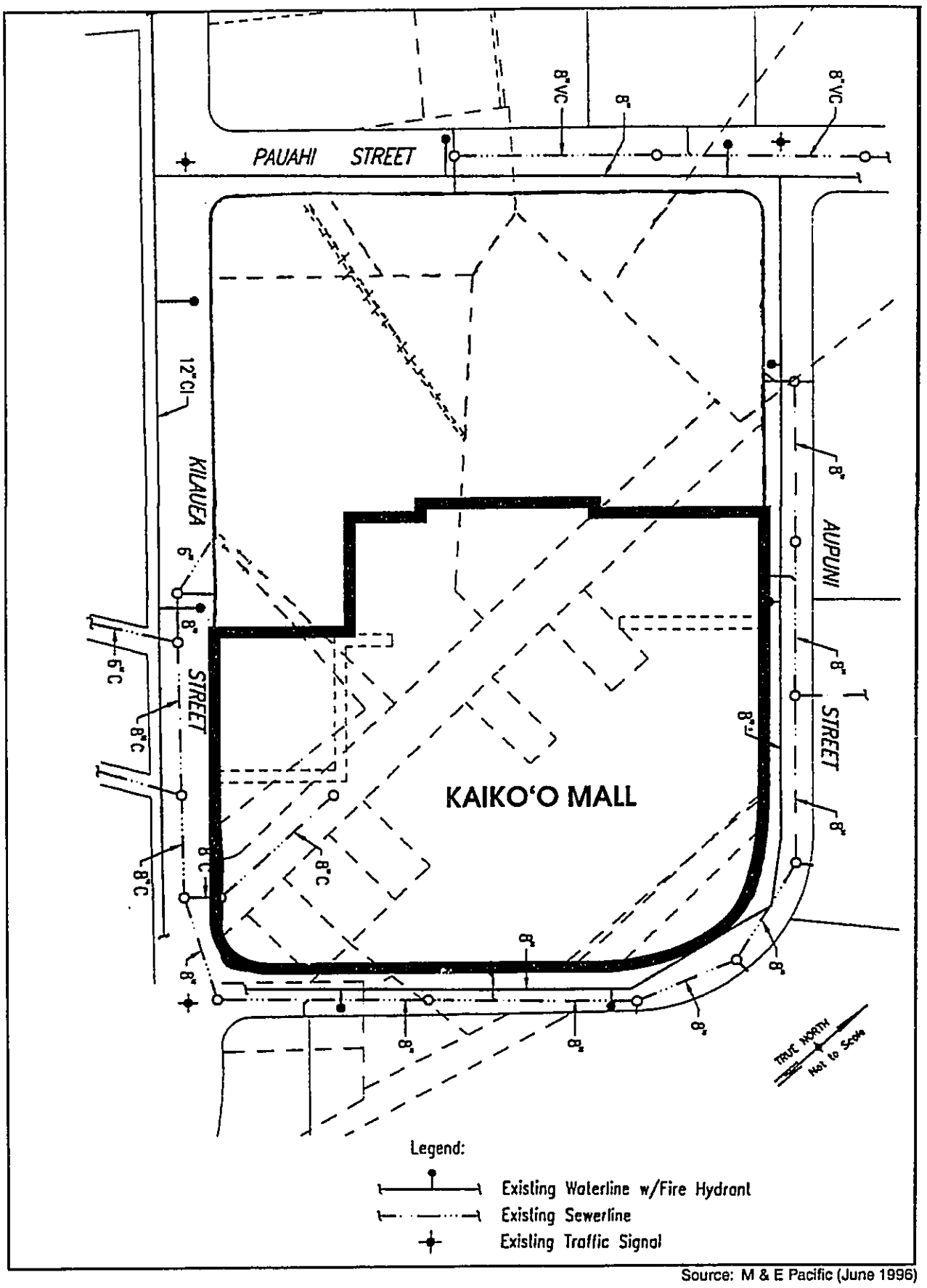
The County storm drainage system serving the Hilo area consists of a network of storm drainage pipes and culverts. Storm runoff collected by these pipes and culverts is either discharged and disposed of in sumps, drywells, injection wells or the ocean. In general, the porous overlying soil in the Hilo area facilitates percolation of rainwater into the ground.

3.2.6 Highway/Street Network

Mamalahoa Highway (Highway 19) runs along the north boundary of Hilo intersecting with Volcano Highway (Highway 11) on the south edge of town. The Saddle Road (Highway 200), which runs mauka of Hilo towards the summit of Mauna Kea, originates at an intersection with Highway 19 on the north side of Hilo near Hilo Bay. The Mamalahoa Highway and Volcano Highway are generally four-lanes along the periphery of Hilo.

The major roadways traversing Hilo include Kilauea Avenue, Kino'ole, and Komohana Road all running in a north-south direction, and Waianuenue Avenue, Puainako Street, Kawaikani Street, and Haihai Street generally running in an east-west direction, perpendicular to Volcano Highway.

Five existing egress/ingress accesses to the Kaiko'o Mall site are already in place. One is via Kilauea Avenue, another entrance is at Aupuni Street via Pauahi Street. Aupuni Street is a two-lane roadway that provides a connection between Pauahi Street and Kilauea Avenue. Kilauea Avenue is a four-lane roadway that provides traffic movements in the Downtown Hilo-Puna directions. These roadways are improved with curbs, gutters and sidewalks. Parking is permitted on both sides of Aupuni Street and Kilauea Avenue.



Source: M & E Pacific (June 1996)

Water, Sewer and Roadways

Hilo Judiciary Complex - Kaiko'o Mall Site

Figure 3-4

3.3 SOCIOECONOMIC CHARACTERISTICS

3.3.1 Population

The resident population of Hawai'i County has increased significantly by 47 percent from 92,053 in 1980 to 135,500 (estimated) in 1994, or 3.4 percent per year representing 43,447 new residents for an average annual increase of over 3,000 persons per year. The Department of Business Economic Development and Tourism forecasts continued growth for Hawai'i County, projecting that by the year 2005, the County will have almost 165,000 residents, an additional growth of approximately 22 percent.

The town of Hilo is the population center for East Hawai'i with a resident population in 1990 estimated at 37,808. The South Hilo District, within which Hilo is situated, had a total population of 44,600 in 1990, the largest district population on the Island. East Hawai'i's population has experienced continued growth and is projected to continue to do so well into the beginning of the next century.

3.3.2 Land Ownership

Approximately 1,448,537 acres or 58.0 percent of the Island of Hawai'i was in private ownership as of 1988. The State of Hawai'i owned approximately 33.0 percent (817,391 acres), the Federal government owned 9.2 percent (229,848 acres), and the County of Hawai'i owned 0.05 percent (1,278 acres).

3.3.3 Employment and Income

Hilo is the business and employment center of East Hawai'i. A mix of activities employs South Hilo District residents ranging from service industries, wholesale and retail trade, government, ranching, diversified agriculture, manufacturing and construction. The civilian labor force for Hawai'i County in 1997 was estimated at 68,750. The average unemployment rate in 1997 was 10.2 percent.

Hawai'i County's average annual wage in 1997 was $22,147, while the 1997 per capita personal income was $19,147. The median family income for Hawai'i County in 1989 was $33,186 (most recent available year).

3.3.4 Public Services

Major public facilities located within proximity of the proposed site are discussed below:

Recreation. Hilo offers a host of recreational facilities. Coastal, active and passive recreational facilities, as well as school park facilities provide residents and visitors with many opportunities for varied recreational pursuits. County of Hawai'i - maintained parks include: Liliuokalani Garden, Coconut Island, Lincoln Park, Ho'olulu Park, Kalakaua Park and Mo'oheau Park. The

County Library, Lyman Museum and indoor events held at the Hilo Civic Auditorium offer alternatives to outdoor recreation activities.

Schools. Educational facilities within Hilo include the University of Hawai'i at Hilo, Hawai'i Community College, two public high schools, two public intermediate schools, and six public elementary schools.

Police Protection. The proposed judiciary facility will be served by the Hilo Station of the Hawai'i County Police Department. Seven uniformed officers in each of three shifts daily are assigned to patrol the Hilo area. The Hilo Police Headquarters is located on Kapi'olani Street.

Fire Protection. Fire protection for the proposed judiciary facility will be provided by the Hilo Central Fire Station of the Hawai'i County Fire Department. The station has two fire engines, ambulance, and a staff of nine persons on duty 24 hours a day. The Hilo Central Fire Station is located at the corner of Ponahawai and Kino'ole Streets.

Health Care Facilities. Health care services include the State's Hilo Hospital and the Life Care Center, a private intermediate care facility. Located a short distance from Downtown Hilo, Hilo Hospital provides acute and long-term care services.

Ground Transportation. Facilities for ground transportation in the expanding urban areas of Hilo include a State highway system, and smaller collector and local roadways. Hawai'i Belt Highway, a State Highway, circles the island and is part of over 1,375 miles of improved highways. The Island of Hawai'i is serviced by a county owned bus transportation system known as the "Hele-On," which provides service island-wide and for Hilo.

Ocean Transportation. Hilo Harbor is one of two State commercial harbors on the Island of Hawai'i. Freight traffic into Hilo is about seven percent of freight total for major State harbors.

Air Transportation. The General Lyman Field Airport is one of three airports in the County accommodating scheduled commercial airline flights on the Island of Hawai'i (the second being Ke-ahole Airport, the third is in Waimea/Kamuela). Also accommodated are military, general aviation, and cargo aviation. General Lyman Field is located near the outskirts of Hilo.

Section 4.0

Probable Impacts and Mitigative Measures

4.0 PROBABLE IMPACTS AND MITIGATIVE MEASURES

This section presents an evaluation of the potential short-term and long-term impacts that are anticipated to result from development of the Hilo Judiciary Complex. Recommended mitigative measures are proposed to minimize or eliminate the potential for impacts to the natural and human environment.

4.1 SHORT-TERM IMPACTS

Development of the Judiciary Complex at the Kaiko'o Mall site, as is being proposed under this Environmental Assessment, is anticipated to generate short-term impacts. Short-term impacts are generally those associated with construction activities including demolition, grading and excavation, infrastructure/utilities installation, construction of structures and landscaping.

The evaluation of potential short-term impacts is discussed for construction noise, air quality, construction wastes, water quality, public health and safety, flora/fauna, economic, traffic and archaeological/historical resources.

4.1.1 Construction Noise

On-site sources of noise will be equipment required for construction activities, including heavy vehicles required to demolish existing buildings and pavings (as required), excavate and remove material, import construction materials and other power equipment operations. Worker vehicles and heavy equipment in transit to and from the job site will be another source of construction-related noise.

Construction-period noise will be mitigated in accordance with Title 11, Administrative Rules, Chapter 46, Community Noise Control of the State Department of Health. All construction equipment and on-site vehicles will be equipped with mufflers as required.

The Kaiko'o Mall site is neighbored by several potential noise receptors nearby, such as residences, businesses and institutions, which may be affected by construction noise.

4.1.2 Air Quality

Construction activities at the site will generate dust, particularly during grading activities. The State Department of Health and County of Hawai'i ordinances have regulations to minimize airborne pollutants, including Chapter 60 Air Pollution Control. The Contractor will be required to implement dust control measures, such as water sprinkling of work areas and construction roads, proper material storage and use of dust screens. These measures are effective in minimizing the amount of particulate matter becoming airborne and traveling off-site. The high frequency of rainfall in Hilo helps to minimize dust emissions from construction sites. An approved erosion control plan will specify the measures to be implemented to control dust.

Emissions from construction equipment are also expected to result from the construction activities, including heavy equipment and worker vehicles. The Contractor will be required to maintain construction equipment and vehicles in proper working condition, which will minimize exhaust emissions.

4.1.3 Construction Wastes

Wastes generated during construction will be appropriately managed temporarily in on-site storage areas, and be disposed off-site at a proper disposal site. Demolition activities will generate construction debris that will be disposed at an acceptable solid waste disposal facility. Asbestos material will be handled according to Federal requirements (40 CFR Part 61, National Emission Standard for Hazardous Air Pollutants, Asbestos NESHAP Revision; Final Rule, November 20, 1990) for demolition activities, and will be disposed at an appropriate permitted solid waste disposal, processing or recycling facility. An Asbestos Demolition / Renovation notification will be filed with the Department of Health's Noise, Radiation and Indoor Air Quality Branch, as required, ten working days prior to demolition of each building or the disturbance of regulated asbestos-containing material. Material generated from clearing and grubbing activities will be disposed separately from the other construction wastes. The Contractor will be required to submit a solid waste management plan to the County Department of Public Works for approval prior to construction.

4.1.4 Water Quality

Construction of the Judiciary Complex will involve soil disturbance for grading and excavation. Erosion hazard of soils at the proposed Kaiko'o Mall project site is slight. The design engineer will develop detailed drainage and erosion control plans that the contractor will be required to adhere to. These plans will include detailed hydrologic and hydraulic calculations, schemes for controlling erosion and disposal of runoff, and analysis of soil loss potential. The plan must verify that the grading and runoff generated by the project will not have adverse impacts on adjacent or downstream properties. To minimize potential adverse water quality impacts, appropriate erosion control treatment practices such as the use of interceptor ditches, diversion swales, sediment ponds and vegetation ground cover will be implemented, in accordance with State and County erosion control standards.

4.1.5 Public Health and Safety

The Contractor will be responsible for taking appropriate measures to ensure public health and safety throughout the duration of the construction project. Hazardous materials will be managed according to established procedures throughout the demolition and construction process. Construction areas will be secured with safety signs and devices as required by State and County regulations during non-work hours of night, weekends and holidays.

4.1.6 Flora/Fauna

The Kaiko'o Mall Site is an existing urban developed parcel. There are no known rare or endangered species of flora or fauna existing at or nearby the site. With the small extent of

landscaped areas on the site, only limited habitat for typical wildlife species are found near and around the site. Development of the Judiciary Complex would not be expected to adversely affect vegetation or wildlife species at the site.

4.1.7 Archaeology/Historical

The site has been previously altered by urban development. The likelihood of possible archaeological or historical significance of the site is minimal. In 1996, an archaeological assessment was conducted for the adjacent J.C. Penney property which found no identified surface remains. (Rosendahl, 1996).

There is the possibility that subsurface remains are present at the site. Subsurface testing is recommended to determine the presence or absence of subsurface cultural deposits. During construction, the potential exists that subsurface remains may be uncovered during site preparation or excavation activities. In such a situation, work in the area of such remains would be suspended immediately and the Historic Sites Office of the State Department of Land and Natural Resources would be immediately notified to determine the appropriate course of action.

4.1.8 Economic

The project will create short-term economic benefits as a result of the construction employment. The project will create jobs for local construction personnel. Local material suppliers and retail businesses could also be expected to benefit through a multiplier effect from the increased construction activities. State General Excise Tax revenues will be generated by the project construction and related expenditures.

4.1.9 Traffic

Development of the Judiciary Complex will be accompanied by short-term construction-related traffic. Trucks, heavy equipment and other construction-related vehicles will use existing roads to import construction materials and remove waste from the job site. Local traffic utilizing the construction access routes will likely be affected by minor delays at certain periods of the construction process. Delays to local traffic will generally be of short duration, and limited to worker vehicle ingress and egress periods. Large scale mobilization and de-mobilization of heavy equipment pose the greatest potential delay periods of the construction process; however, these will occur for a short time duration and can be timed to avoid peak traffic periods. The Contractor will be responsible for providing necessary traffic controls and precautions to maintain traffic safety on roadways bordering the construction site.

4.2 LONG-TERM IMPACTS

The operation and maintenance of a new Hilo Judiciary Complex will generate some potential long-term impacts to the natural and human environment. Potential long-term impacts to flora/fauna, social and economic considerations, public health and safety, displacement, infrastructure, traffic and visual/aesthetic resources are addressed below.

4.2.1 Social

The State will benefit substantially from an improvement in the working efficiency of the courts in the Third Judicial Circuit. As it stands today, the disconnected judiciary facilities are spread throughout the town of Hilo, making for an unsecured, inefficient and cumbersome working system. Hilo and the Third Circuit have struggled with their courts' inadequate working environment for more than 15 years, and a new comprehensive court facility is seen by the community as a necessary and long overdue improvement.

The Judiciary does not necessarily serve a role as an economic productivity element. The administration of justice is a societal function. This function is recognized in the Hawai'i State Plan and is one of the basic tenets of our democratic society. The new Judiciary Complex will enable the local courts and their affiliated services to function in an efficient manner to meet the existing and future requirements of the region. The new facility will provide the Hilo community with a sense of pride and confidence. The modern and efficient Judiciary Complex can help to build confidence in Hilo, leading to a healthier climate for the existing residents and businesses, and providing new stability to enhance future growth and investment in the area.

The new Judiciary Complex will be designed to accommodate the present and near term future needs of the East Hawai'i communities. The facility program accounts for the necessary requirements of a modernized functional judicial facility. In comparison to the existing judicial facilities in Hilo, the new facility will provide a more secure, and efficient and positive environment for the judicial system workers and the public.

The activities of the Judiciary Complex could provide new commerce potential, which will enhance the local service businesses. Long-terms impacts on the surrounding area due to the new complex may include some increase in employment of personnel at the facility.

4.2.2 Flora/Fauna

The Kaiko'o Mall site is located in an urbanized area and is unlikely to have significant impacts on the natural environment. No rare or endangered species of flora are known to exist at the project site. Vegetation lost in clearing and grubbing of the project site will be replaced by newly established landscaping in open space areas. No rare or endangered species of fauna are known to inhabit any of the candidate sites. Existing mammals such as mice, rats and mongoose will be displaced in the development process. Landscaping established in the open space surrounding the new Judiciary Complex will provide replacement habitat for the common birds that utilize these sites. To the extent possible, local compost and native vegetation will be given priority in landscaping.

4.2.3 Public Health and Safety

The long-term benefits of a new judicial complex includes the provision of a better courthouse facility to be used by the public. A new building will be designed to provide greater security for the employees and the general public. There will be an increase in efficiency of operations by

locating all of the court functions within one facility which is designed for the Judiciary's growing needs.

Criteria for public health involves evaluation of demands on existing police, fire protection, emergency medical and health services. The proposed project involves the re-establishment and expansion of the existing Judiciary facilities in Hilo at the new location. No additional demands for public services are expected to be generated.

The Kaiko'o Mall site is located within Zone X which is outside the 500-year flood plain.

4.2.4 Displacement

Development of the Judiciary Complex at the Kaiko'o Mall site could potentially cause displacement impacts on existing occupants / tenants of the existing shopping center building. The State Judiciary is currently in communication with the Kaiko'o Mall Association about potential displacement of tenants and will continue to work cooperatively with the Kaiko'o Mall Tenants' Association on a smooth transition should the project proceed at the Kaiko'o Mall site. Construction for the Judiciary Complex will probably not commence until sometime in calendar year 2003.

4.2.5 Infrastructure

A preliminary evaluation of off-site infrastructure systems was completed by M & E Pacific (July 1996) for the adjacent property (former J.C. Penney parcel). The evaluation included assessments of drainage, water supply, wastewater management, and electrical and communications facilities. Figure 3-4 depicts the general location and sizes of existing infrastructure serving the project site.

Water Supply. The anticipated maximum daily and peak hour water demand requirements for the Judiciary Complex are estimated at 18,500 gallons per day and 62,000 gallons per day, respectively. Water service will be subject to prevailing policies and Rules and Regulations of the Department of Water Supply. The proposed Kaiko'o Mall project site can be adequately served by the existing water system serving the site area.

Wastewater. The anticipated average daily wastewater flow for the Judiciary Complex is estimated at 14,500 gallons per day. Specific wastewater flow calculations and the proposed wastewater disposal system will be prepared by the design engineer. Direct connections can be made to the County wastewater system at the roadway fronting the project site. The State Department of Health has notified the State Department of Accounting and General Services that individual wastewater systems (septic tank and leaching field) would not be allowed for development of the Judiciary Complex.

Drainage. The project site is not within the flood hazard zones. The project site has an adequate existing storm drainage system. Off-site drainage improvements are not anticipated to be required. Runoff is anticipated to be controlled by direct discharge into existing drainage facilities or through on-site drywell dissipation.

Electrical and Communications. There is adequate service for electrical power and communications lines. The development of the Judiciary Complex will be coordinated with the County and utility companies to avoid potential impacts to existing and proposed infrastructure. Alteration to the existing water, wastewater, drainage, electrical and communications systems will be minimal, primarily involving on-site improvements and extension to off-site infrastructure.

4.2.6 Traffic

Conditions along the roadways serving the proposed Kaiko'o Mall project site was qualitatively assessed for traffic congestion, traffic hazards and access routes. Appendix B contains the traffic impact analysis report completed by M & E Pacific Inc. for the proposed Judiciary Building site at Kaiko'o Mall dated May 1, 2000.

The proposed Judiciary Building at Kaiko'o Mall, together with the County Building expansion, is not expected to have an adverse traffic impact on the adjacent street system. Traffic performance is currently very good and is expected to remain so with ambient traffic growth and the traffic generated by the proposed projects.

The access driveways from Kaiko'o Mall onto Kilauea Avenue have nearly reached their left turn capabilities. Peak period left turn restrictions should be imposed for safety reasons. The circulation pattern for the parking lot should provide access to Aupuni Street and Pauahi Street as alternative routes for the left turn ban. The Aupuni Street and Pauahi Street approaches to Kilauea Avenue have sufficient capacity to accommodate the additional diverted traffic.

A well designed parking and internal circulation pattern will be critical to minimizing traffic impacts on the adjacent roadways.

4.2.7 Visual and Aesthetics

The visual resources and aesthetics of the Hilo region are primarily focused around distant views of Hilo Bay and Mauna Kea. From various locations in the area, there are magnificent views of the mountain and coastline. From the bay, the land rises gently toward the slopes of Mauna Kea and Mauna Loa.

The Kaiko'o Mall site is an urban area location, directly adjacent to office, government and commercial land uses. Views of the site consist of the former large retail department store structure and parking area with limited landscaping improvements. Development of the Judiciary Complex at this location would expand the number of government buildings in this area of Hilo, and potentially creating a stronger sense of a civic center for Hilo.

The construction of the proposed facility will maintain the overall character of the Hilo area through design and siting measures. The building and landscaping should provide visual interest and be aesthetically appealing. The new facility will conform to Hawai'i County's conditions for zoning, bulk, scale and land use criteria to properly integrate with the surrounding uses and

environment. At this time, there has been no preliminary architectural design prepared for the new Judiciary Complex. There is a preference stated by the Judiciary that the facility be at least two stories high to allow for proper functional and security measures in the design.

Section 5.0

Alternatives to the Proposed Project

5.0 ALTERNATIVES TO THE PROPOSED PROJECT

5.1 NO-ACTION ALTERNATIVE

The "no-action" alternative would result in the continued inefficiency of separate buildings and locations in Hilo for judiciary operations. The existing facilities are inadequate in design for the necessary functions and do not provide sufficient space for the required courtrooms, security measures, administrative functions, storage rooms, and support areas. Given the historic trends of population and caseload growth for the Third Judicial Circuit, Hilo's existing inadequate judiciary facilities cannot meet the future needs of its population.

The existing Judiciary facilities continue to operate beyond capacity. The staff and the public must both cope with the inefficiencies of operating at separate building locations, as noted above, each of which is substandard in terms of size and types of space(s) available. The no-action alternative does not meet the needs or address the problems of the current situation and would force the Judiciary to pursue perhaps more costly short-term solutions. While the no-action alternative would have no adverse environmental impacts, it cannot be considered a reasonable solution to the existing and future facility deficiencies facing the Judiciary.

5.2 RETAIN AND EXPAND EXISTING JUDICIARY FACILITIES

This option would require the expansion of existing spaces occupied by the Judiciary and construction of additional space to accommodate the growing needs through 2010. The use of both the Waiākea Office Plaza and the State Office Building would be retained and existing spaces renovated. Construction of up to five new courtrooms as an annex to the State Office Building is required under this option. The annex would be a multi-level structure required to maximize space utilization at the site and maintain State parking, with connections established to the main building. The State's lease at the Waiākea Office Plaza would also be retained and the space would be renovated. It is possible that additional space would be leased and renovated to accommodate Judiciary functions at that location.

This option was evaluated in the DAGS (1988) study, and certain advantages and disadvantages were addressed at that time. There are some apparent direct short-term benefits in terms of potential low costs. Upon closer evaluation, significant areas of the existing State Office Building were found to contain asbestos material. DAGS is currently assessing the costs associated with the removal or treatment of the asbestos material. Renovation of this building for the Judiciary's needs would incur significant additional costs. Other disadvantages of this option include the continuation of the separation of functions of the Courts in different buildings. This separation causes inefficiencies in staff time because of travel between buildings. Lack of control for security and the difficulty of implementing proper measures has been another problem with the State Office Building.

Another disadvantage in this option is the renovation of the Waiākea Office Plaza space and continued lease rent payment. This space is generally considered inadequate for the Family Court and other Judiciary functions, and there is an even more serious problem with control over

security at this facility. Renovations to this facility would be limited in flexibility and the site on which the building lies is within the tsunami flood inundation zone.

The potential environmental impacts of this alternative would be somewhat similar to the 1991 proposed development of the Judiciary Complex at the site adjacent to the State Office Building. In addition to some added traffic attracted by the expanded Judiciary facilities, the construction of an annex to the State Office Building would create some potential visual impacts for the residents of the Hilo Lagoon Center.

5.3 CONSOLIDATE SERVICES AT STATE OFFICE BUILDING

This alternative would require a major renovation of the State Office Building to accommodate the projected space needs for the entire Judiciary operations of the Third Circuit in the Hilo area. This alternative was explored in the DAGS (1988) Site Selection Study and EIS which considered the possible consolidation of services at the State Office Building.

Due to the space limitations and peculiarities of the existing State Office Building, a new annex would have to be constructed in addition to the renovation of the existing building. All operations of the Judiciary would be consolidated into this one site. As compared to the option to retain and expand existing facilities, a larger annex would need to be constructed over the existing parking area to accommodate the consolidated functions. Also, relocations in phases of existing State office Building occupants, both temporary and permanent, must be carefully considered.

This option would provide the benefit of all services being located at one site. However, renovation issues such as the removal or treatment of asbestos material and very substantial reconfiguration of the building would still be present. Inadequate control over security within the building would also continue to exist. This option would be more costly than the foregoing option to retain and expand facilities.

The potential environmental impacts of this alternative would be somewhat similar to the 1991 proposed development of the Judiciary Complex at the former site adjacent to the State Office Building. The consolidated services of the expanded Judiciary facilities would add some traffic to the area. The construction of an even larger annex to the State Office Building than proposed under the previous alternative (retain and expand existing facilities) would create some potential visual impacts for the residents of the Hilo Lagoon Center.

5.4 LEASE ADDITIONAL SPACE TO ALLOW JUDICIARY EXPANSION

For this alternative, we make the assumption that the existing State office facilities are unavailable elsewhere because they are either unsuitable for the operational needs of the Judiciary or would displace another State agency. A short-term lease of private space would be a necessary solution to meet the projected space needs. Expansion would occur as funds and space become available, resulting in a continued scattering of offices which could be inefficient for the operational function of the Judiciary.

Leasing of significant amounts of available private building space in Hilo by the Judiciary (or any other State agency) would have some impact on the space available for private businesses

and other potential tenants. The State would make continuous lease rent payments without return on long term investment. In addition, there would be lack of control over security and lack of flexibility in making adjustments if space needs evolve in the future. The alternative of leasing space would not satisfy the long-term needs of the Judiciary, and the State would not maximize the utilization of land and capital. Given the inefficiencies of scattered offices and the disadvantage of lease payments, this is not a viable long-term solution.

Depending on the specific location of the private space leased for the Judiciary functions, the potential environmental impacts of this alternative would likely be less than developing a new facility at one of the candidate sites. In this scenario, an existing office building would be used with past tenant occupancy and associated traffic patterns already being familiar to surrounding area residents and businesses.

5.5 POSTPONING ACTION PENDING FURTHER STUDY

The option of waiting to provide new facilities for the courts in the Third Circuit is not reasonable for the workers in this system and the general public. Since the mid-1980's, there has been a documented shortage of proper facilities to service the Judiciary and the public in East Hawai'i. Many studies have been completed for this project, including Project Development Report (Mogi, 1986); Assessment of Judicial Facility Needs (Carter Goble, 1988); Site Selection Report and FEIS (DAGS, 1988); Hawai'i Judicial System Master Plan (Carter Goble, 1989); and A Planning Report on the Hilo Judiciary Facility (Carter Goble, 1991).

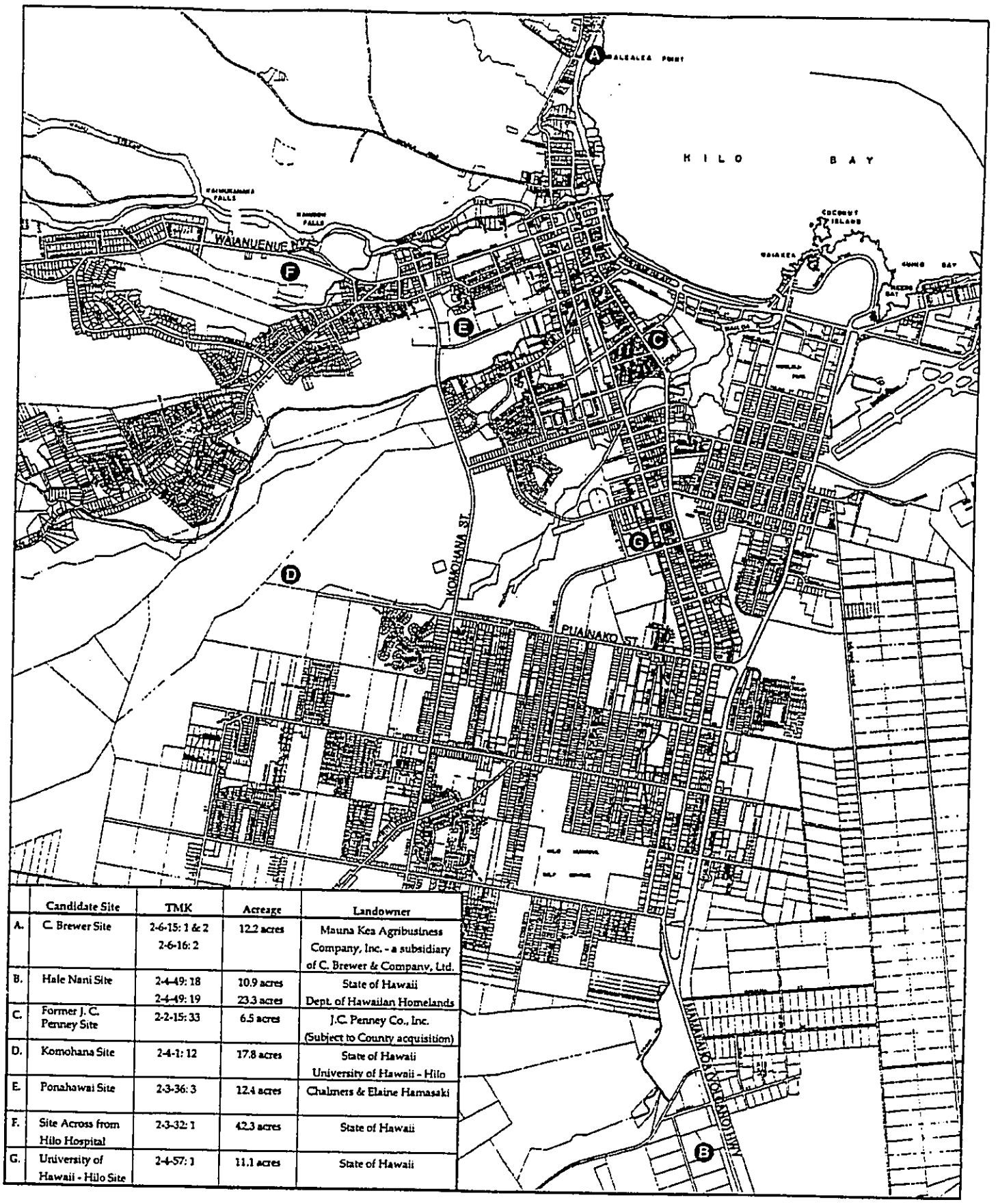
The detailed Site Selection Study and EIS process completed in 1988 led to a decision to build a new complex on a site next to the State Office Building. However, there was opposition to this site and the project did not advance. In 1994, there was a consensus-building process undertaken by the Center for Alternative Dispute Resolution, which elicited seven prospective sites for the new Judiciary Complex (Final Report - Hilo Judiciary Complex Siting Process, CADR, 1994). The Site Selection/EIS study completed in 1997 consisted of a thorough siting and environmental analysis of seven sites. Following the findings of that report, it was intended that action to select a site and proceed with development of a new Judiciary Complex would be initiated by the State of Hawai'i Judiciary.

There would be no environmental impacts resulting from this option, since the result would entail only further studies and no physical improvements to solve the 10-year old facilities problem.

5.6 ALTERNATIVE SITES

The 1997 Site Selection/EIS examined seven alternative locations and identified the J.C. Penney site as the most favorable rated site. Figure 5-1 identifies the locations of the seven candidate sites evaluated in the 1997 study. The J.C. Penney site was purchased by the County of Hawai'i, and is no longer being considered as a potential site for the new Judiciary complex at this time.

The site conditions presented by the Kaiko'o Mall site are nearly equivalent to the J.C. Penney site, which ranked highest among the seven candidate sites evaluated. The next two most favorably rated sites in the 1997 report were the UH-Hilo site and the Ponohawai Street site. The UH–Hilo site involved issues with traffic impacts and neighboring landowner concerns. The



	Candidate Site	TMK	Acreage	Landowner
A.	C. Brewer Site	2-6-15: 1 & 2 2-6-16: 2	12.2 acres	Mauna Kea Agribusiness Company, Inc. - a subsidiary of C. Brewer & Company, Ltd.
B.	Hale Nani Site	2-4-49: 18 2-4-49: 19	10.9 acres 23.3 acres	State of Hawaii Dept. of Hawaiian Homelands
C.	Former J. C. Penney Site	2-2-15: 33	6.5 acres	J.C. Penney Co., Inc. (Subject to County acquisition)
D.	Komohana Site	2-4-1: 12	17.8 acres	State of Hawaii University of Hawaii - Hilo
E.	Ponahawai Site	2-3-36: 3	12.4 acres	Chalmers & Elaine Hamasaki
F.	Site Across from Hilo Hospital	2-3-32: 1	42.3 acres	State of Hawaii
G.	University of Hawaii - Hilo Site	2-4-57: 1	11.1 acres	State of Hawaii

Candidate Sites Location Map 1997 SITE SELECTION/EIS

0' 2000' 4000' 8000' NORTH

Hilo Judiciary Complex

Figure 5-1

Ponohawai site had issues regarding infrastructure (e.g., roadways and utilities) and possible community effects (e.g., surrounding land use, proximity to Judicial support). Neither alternative site would rank above the Kaiko'o Mall site following the site selection criteria applied in the 1997 site.

5.7 EVALUATION OF ALTERNATIVES

Each of the alternatives proposed for the Hilo Judiciary Complex has some merits and have been considered. Aside from the options to construct a new multi-story Judiciary facility with the Kaiko'o Mall property as a proposed site, this study evaluates four options and a no-action alternative.

Consolidation of all Judicial services in one complex provides a direct benefit to clients and the public in general. The consolidation of services allows the greatest flexibility in space planning, although a new building entails the greatest expenditure of funds to provide the full range of facilities required. Many necessary features of the Judiciary Complex, such as security controls and prisoner holding, would not be satisfactorily provided in a renovated structure because of the limitations created by an existing building.

Creation of a new building has the potential of making space which is currently used by the Judiciary at the State Office Building available for use by other State agencies. The existing building was constructed primarily as an office building under the control of the administrative branch of government.

Consideration was also given in the past to converting the entire existing State Office Building to a Judiciary Complex as an alternative to developing a new facility. Renovating the existing office space for the Judiciary would entail substantially greater cost than renovating it into office space to accommodate relocated State administrative agencies. This higher cost is due primarily to the special security and operational requirements for the Judiciary. One important aspect desired by the County is the retaining of State administrative offices next to the County Building consistent with its urban planning initiatives for a "governmental / civic center" for Hilo. Also, the relocation of State administrative functions to another location could potentially entail a lengthy site selection process.

Overall, the alternative for construction of a new facility, possibly at the site of the present Kaiko'o Mall Shopping Center, provides significantly greater long-term benefits than the other options. The potential environmental impacts of the two alternatives involving the renovation and expansion of the State Office Building are similar to the previous proposal which was vigorously opposed by some area residents. In comparison to these two alternatives, development of a new Judiciary Complex at the Kaiko'o Mall site would create certain particular environmental impacts. The potential environmental impacts of this development, however, can be mitigated through proper planning and design measures. The expected public benefits of establishing the new Judiciary Complex at a new site are anticipated to offset such potential environmental impacts, and outweigh the other options presented as possible alternatives to the proposed action.

Section 6.0

Required Permits and Approvals, Policies and Plans

6.0 REQUIRED PERMITS AND APPROVALS

This section includes a list of necessary approvals, required for the action, from governmental agencies, boards or commissions or other similar groups having jurisdiction, and the status of each identified approval. Also included in this section is a discussion of how the proposed action may conform or conflict with objectives and specific terms of approved or proposed land use plans, policies and controls for the affected area.

6.1 HAWAI'I STATE PLAN

The Hawai'i State Plan establishes a statewide planning system that provides goals, objectives, and policies which detail priority directions and concerns of the State of Hawai'i. The proposed project supports and is consistent with the following State Goals, Objectives, Policies and Priority Guidelines:

A. Socio-Cultural Advancement - Individual Rights and Personal Well-Being

Objective: Planning for the State's socio-cultural advancement with regard to individual rights and personal well-being shall be directed towards achievement of the objective of increased opportunities and protection of individual rights to enable individuals to fulfill their socio-economic needs and aspirations.

Policies:

1. *Provide effective services and activities that protect individuals from criminal acts and unfair practices and that alleviate the consequences of criminal acts in order to foster a safe and secure environment.*
2. *Assure access to, and availability of, legal assistance, consumer protection, and other public services which strive to attain social justice.*

B. Socio-Cultural Advancement - Public Safety

Objective: Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of assurance of public safety and adequate protection of life and property for all people.

Policies:

1. *Support criminal justice programs aimed at preventing and curtailing criminal activities.*
2. *Ensure that public safety programs are effective and responsive to community needs.*
3. *Develop a coordinated, systematic approach to criminal justice administration among all criminal justice agencies.*

C. Socio-Cultural Advancement - Government

Objective: Planning for the State's socio-cultural advancement with regard to government shall be directed toward the achievement of the objective of efficient, effective; and responsive government services at all levels in the State.

Policies:

1. *Promote the consolidation of State and County governmental functions to increase the effective and efficient delivery of governmental programs and services and to eliminate duplicative services whenever feasible.*

D. Priority Guidelines in the Area of Crime and Criminal Justice

Guidelines: Support law enforcement activities and other criminal justice efforts that are directed to provide a safer environment.

Discussion: The new Judiciary Complex will be consistent with these objectives and policies. There is a clearly demonstrated public need to provide new consolidated Judiciary facilities in Hilo, in terms of required improvements to service, efficiency and security. The new facilities will be consistent with the objectives, policies and guidelines of the Hawai'i State Plan in the area of individual rights, public safety, government, and crime and criminal justice.

6.2 HAWAI'I STATE FUNCTIONAL PLANS

The State Functional Plans implement the Goals, Objectives, Policies and Priority Guidelines of the Hawai'i State Plan. The Functional Plans provide the connection between State programs and State policy. Twelve functional plans have been adopted by the State Legislature which include the areas of Agriculture, Conservation Lands, Education, Energy, Health, Higher Education, Historic Preservation, Housing, Recreation, Tourism, Transportation and Water Resources.

The construction of a public facility, such as a new Judiciary Complex, is required to be in conformance with these functional plans. There are no functional plans which directly involve the State's Judiciary facilities. However, there are specific functional plan policies and implementing actions that have been used to provide guidelines in the development of the project's locational criteria, infrastructure development and energy efficient building design.

6.3 STATE LAND USE DISTRICT BOUNDARIES

The State of Hawai'i Land Use Law regulates the classification and uses of lands in the State to accommodate growth and development, and to retain the natural resources of the area. All State lands are classified by the State Land Use Commission, with consideration given to the General Plan of the County, as either Urban, Rural, Agricultural, or Conservation. The project site is located within the State Urban District.

6.4 HAWAI'I COASTAL ZONE MANAGEMENT PROGRAM

The objectives of the Hawai'i Coastal Zone Management (CZM) Program, Section 205A-2, HRS, are to protect valuable and vulnerable coastal resources such as coastal ecosystems, special scenic and cultural values and recreational opportunities. The objectives of the program are also to reduce coastal hazards and to improve the review process for activities proposed within the coastal zone. Described below are the ten objectives of the Hawai'i Coastal Zone Management Program and an assessment of the project impacts relative to the objectives.

(1) ***Recreational 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."

(3) ***Scenic and Open Space Resources Objective***
"Protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources."

(4) ***Coastal Ecosystems Objective***
"Protect valuable coastal ecosystems from disruption and minimize adverse impacts on all coastal ecosystems."

(5) ***Economic Uses Objective***
"Provide public or private facilities and improvements important to the State's economy in suitable location."

(6) ***Coastal Hazards Objective***
"Reduce hazard to life and property from tsunami, storm wave, stream flooding, erosion and subsidence."

(7) ***Managing Development Objective***
"Improve the development review process, communication, and public participation in the management of coastal resources and hazards."

(8) ***Public Participation***
"Stimulate public awareness, education and participation in coastal management."

(9) ***Beach Protection***
"Protect beaches for public use and recreation."

(10) ***Marine Resources***
"Implement the State's ocean resources management plan."

Discussion: The new Hilo Judiciary Complex project will be consistent with the objectives and policies of the Hawai'i Coastal Zone Management Program. In particular, the project will have no adverse effect on coastal ecosystems or beaches as the site is located outside of any coastal hazard areas. The Hilo Judiciary Complex will benefit the public and will provide a public facility which is important to the State's economy in a suitable location. The proposed action will also generate short-term economic benefits from construction activity.

6.5 HAWAI'I COUNTY GENERAL PLAN

Construction of the new Judiciary Complex advocates the following goal and policies:

Goal:
Encourage the provision of public facilities that effectively service community needs and continue to seek ways of improving public service through better and more functional facilities which are in keeping with the environmental and aesthetic concerns of the community.

Policies:
1. *The County shall continue to seek ways of improving public service through the coordination of service and by maximizing the use of personnel and facilities.*
2. *Public office center sites shall satisfy modern and reasonable requirements of accessibility and compatibility with the surrounding neighborhood.*

Applicable courses of action for the South Hilo District as follows:

1. *Expansion plans for the Hilo public office center shall be evaluated and implemented if feasible.*
2. *Consolidate government offices in the public office center.*

Discussion: The new Hilo Judiciary Complex will be consistent with the objectives and policies of the Hawai'i County General Plan. The 1989 General Plan advocates the concept of housing governmental agencies which centralizes services and maximizes the utilization of land and capital expenditures.

The General Plan Land Use Pattern Allocation Guide (LUPAG) Map designates the project area as High Density Urban Development. This designation allows commercial; multiple residential and related services (general and office commercial; multiple residential – up to 87 units per acre).

6.6 HILO COMMUNITY DEVELOPMENT PLAN

The Hilo Community Development Plan provides detailed plans for administrative purposes and assists the Planning Department and Planning Commission to implement the County's General Plan. Adopted in 1975, it serves as a guideline for specific improvements and provides orderly direction for Hilo's future growth within the framework of the General Plan.

While the Hilo Community Development Plan recommends goals and policies with respect to police protection, detention and correctional facilities, it does not specifically address the needs of the judiciary system within the County except under Government Operations.

The Zoning Guide Map designates the project area as "General Commercial."

6.7 HAWAI'I COUNTY ZONING DISTRICTS

County of Hawai'i Zoning within the Hilo service area includes Residential, Commercial, Industrial, Open and Agricultural Districts. Officially, government office facilities would be permitted uses within zoning districts designated as General Commercial (CG); Office Commercial (CO); and Neighborhood Commercial (CN). According to the Hawai'i County Planning Department, the State can actually develop a public facility such as the Judiciary Complex within any zoning designation provided the site/project complies with General Plan. The Kaiko'o Mall site is zoned CG 7.5, General Commercial 7,000 square feet, which permits government office facilities. Adjacent surrounding areas have similar Urban and General Commercial land use designations.

6.8 DOWNTOWN HILO REDEVELOPMENT PLAN

The Hilo Downtown Development Plan was first adopted by the Planning Commission of the County of Hawai'i in May 1975 to redefine the role of Downtown Hilo. The intent was to reverse the trend of retail and business activities which were locating outside of the Downtown area by promoting development and improvements. Many of the plan proposals focused on special design districts and incorporated basic urban design principles to promote pedestrian oriented businesses and rehabilitation of buildings based on cultural and historic themes.

The Downtown Hilo Redevelopment Plan replaced the Downtown Development Plan in 1985, as the County's primary development plan and policy for downtown Hilo, Pu'ueo and Kukuau. This new plan, again focuses on the economic revitalization of Downtown Hilo. The Downtown Hilo Redevelopment Area is divided into three sub-areas: Downtown Hilo, a portion of Pu'ueo, and a portion of Kukuau. The plan encourages State and County government agencies to relocate downtown and reinforce historic rehabilitation and private construction efforts with public investment.

The proposed Kaiko'o Mall project site is located within the Downtown Hilo Redevelopment Plan area. The project, if so located, directly supports the intent of the Redevelopment Plan by locating government services in the downtown area.

6.9 SPECIAL MANAGEMENT AREA

Development along the Hilo shorefront and coastal areas falling within the County's Special Management Area (SMA) is regulated through the SMA Use Permit process. County review is guided by the objectives and policies of Chapter 205A, HRS and Rule 9 of the Hawai'i County

Planning Commission's Rules and Regulations. The intent of the permit review is to determine if the proposal will have "significant environmental effects" on the Special Management Area (SMA) with respect to concerns such as recreational, historic/archaeological and scenic/open space resources, coastal ecosystems, coastal hazards, economic uses, and managing development. The Kaiko'o Mall site is located outside of the Special Management Area boundaries. It is located more than 1,000 feet from the shoreline at Hilo Bay. Refer to Figure 3-1 in Section 3.0.

6.10 URBAN RENEWAL PLAN, KAIKO'O PROJECT

The Kaiko'o Mall project site is located within the Urban Renewal Plan area. The Amended Urban Renewal Plan for the Kaiko'o Project, date June 25, 1965, designates the project site as "Elevated Area." Prior to the devastating tsunami of May 23, 1960, the subject lands were a developed urban area with commercial, industrial and residential uses. Subsequent to the tsunami, the Kaiko'o Urban Renewal Plan was enacted by the now defunct Hawai'i Redevelopment Agency (HRA) to redevelop certain areas of Hilo damaged by the 1960 tsunami. The Kaiko'o Project was federally assisted program which created the Hawai'i Redevelopment Agency in 1960 to coordinate and administer the program.

The general purpose and objectives of the Renewal Plan were to redevelop the devastated area in such a way as to minimize the danger or loss of life or damage to property in the areas subject to inundation and flooding from seismic waves. To achieve this purpose, the Urban Renewal Plan designated the affected areas into the land use classification as "Elevated Areas." The "Elevated Areas" have been raised 18 to 20 feet above mean sea level for protection from future seismic waves of the size and magnitude of the 1960 tsunami. According to the Urban Renewal Plan, "Only commercial uses shall be permitted in elevated areas, which shall include all types of retail merchandising and businesses, wholesale display and sales, all types of service businesses, general office space, medical, dental and other professional offices, theaters, restaurants, hotels, and other similar uses which are not inconsistent nor incompatible with the commercial uses contemplated by the Renewal Plan. A civic center complex, bus terminals and other transportation facilities and public utility facilities and substations may also be located in commercial area."

The Hawai'i Redevelopment Agency maintains jurisdiction over development in the Kaiko'o Project area and has the right to review and approve the proposed plans and specifications with respect to the use of the land, site plan, building standards and requirements, density, lot layout, off-street parking and loading, landscaping and general architectural appearance and design. Where proposed plans are at variance with the requirements set forth by the Renewal Plan, the Agency may require that appropriate design adjustments be made, provided that said adjustments are not in conflict with the intent and purpose of the Renewal Plan or related public regulations. The proposed plans are also subject to review and approval of State and County agencies that have jurisdiction and authority regarding conformance with regulations relating to construction.

6.11 LIST OF NECESSARY APPROVALS

Permit Approval	Kaiko'o Mall Site
State Land Use District Boundary Amendment	
General Plan Amendment	
Zoning Change	
Special Management Area (SMA) Use Permit	
Downtown Hilo Redevelopment Plan	X
Kaiko'o Urban Renewal Plan	X
Subdivision	
Plan Approval	X
Building Plan Approval (Fire)	X
National Flood Insurance	
Building Permit	X
Electrical Permit	X
Plumbing Permit	X
Outdoor Lighting	X
Sewer Connection	X
Work with County Roads	X
Grubbing & Grading	X
Sidewalk Construction	X
Construct Driveway	X
Air Conditioning/Ventilation	X

Section 7.0

Findings Supporting Anticipated Determination

7.0 FINDINGS AND REASONS SUPPORTING ANTICIPATED DETERMINATION

7.1 ANTICIPATED DETERMINATION

After reviewing the significance criteria outlined in Chapter 343, Hawai'i Revised Statutes (HRS), and Section 11-200-12, State Administrative Rules, Contents of Environmental Assessment, it is anticipated that the proposed action will not result in significant adverse effects on the natural or human environment. A Finding of No Significant Impact (FONSI) is anticipated for this project.

7.2 REASONS SUPPORTING THE ANTICIPATED DETERMINATION

The potential impacts of the development and future use after construction of the Hilo Judiciary Complex have been fully examined and discussed in this Environmental Assessment. As stated earlier, there are no significant environmental impacts expected to result from the proposed action. This determination is based on the following assessments:

1. The proposed project does not involve an irrevocable loss or destruction of any natural or cultural resources. The subject lands were a developed urban area with commercial, industrial and residential uses prior to the 1960 tsunami occurrence. The area has since been elevated and has been extensively improved, including the present Kaiko'o Mall Shopping Center and paved at grade parking. Therefore, no significant natural resources are present.

2. The proposed project does not curtail the range of beneficial uses of the environment. The project area is situated in an extensively developed area within the city of Hilo, with existing office and commercial structures and infrastructures. The proposed project, if located at the existing Kaiko'o Mall Shopping Center site could help centralize State and County public service agencies.

3. The proposed project does not conflict with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders. As previously stated, the area has been in urban development before and after the 1960 tsunami occurrence. Therefore, the area does not contain any significant natural resources. Any construction-related impacts of noise, dust, and emissions will be mitigated by compliance with the State Department of Health Administrative Rules.

4. The proposed project does not substantially affect the economic or social welfare of the community or State. Potential centralization of State and County public service agencies in

the Kaiko'o area would benefit the East Hawai'i community, as well as functions of the State and County government.

5. The proposed project does not substantially affect public health. Any construction-related impacts of noise, dust and emissions would be mitigated by compliance with the State Department of Health Administrative Rules.

6. The proposed project does not involve ~~substantial or adverse~~ secondary impacts, such as population changes or effects on public facilities. The proposed project also does not involve a substantial degradation of environmental quality. The project is to acquire and renovate the existing Kaiko'o Mall Shopping Center building and site in order to centralize County public service agencies. As stated earlier, the site and its surrounding area has been extensively improved with the existing office and commercial structures and related parking areas.

7. The proposed project will not have a cumulatively deleterious effect upon the environment or involve a commitment to larger actions.

8. The proposed project does not substantially affect any ~~rare, threatened or endangered species~~, or its habitat. The area has been extensively improved with existing office and commercial structures and related parking areas. Therefore, no rare, threatened or endangered species or habitats of flora or fauna is present at the site.

9. The proposed project does not detrimentally affect air or water quality or ambient noise levels. The project area is situated more than 1,000 feet from the shoreline at Hilo Bay. Any construction-related impacts of noise, dust and emissions would be mitigated by compliance with the State Department of Health Administrative Rules.

10. The proposed project will not affect scenic vistas and viewplanes identified in County or State plans or studies.

11. The proposed project will not require substantial energy consumption.

12. Although the proposed project is located in a zone exposed to some earthquake and volcanic hazard, there are no reasonable alternatives as the zone encompasses the entire Big Island of Hawai'i. The proposed action would not expose any persons to unreasonable risks. The subject lands were a developed urban area with commercial, industrial and residential uses prior to the 1960 tsunami occurrence. The area, including the Kaiko'o Mall property, has since been elevated and has been extensively improved with the existing building(s) and parking area.

13. The project will be consistent with existing zoning and State and County plans and policies for the area.

14. The project will generate construction jobs both in the short term.

15. The project will be consistent with the Downtown Hilo Redevelopment Plan which encourages State and County government agencies to relocate downtown and reinforce historic rehabilitation and private construction efforts with public investment.

Based on the above findings, further consideration of the project's impacts through the preparation of an Environmental Impact Statement is not warranted. A Finding of No Significant Impact (FONSI) is anticipated for this project.

CORRECTION

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

15. The project will be consistent with the Downtown Hilo Redevelopment Plan which encourages State and County government agencies to relocate downtown and reinforce historic rehabilitation and private construction efforts with public investment.

Based on the above findings, further consideration of the project's impacts through the preparation of an Environmental Impact Statement is not warranted. A Finding of No Significant Impact (FONSI) is anticipated for this project.

Section 8.0
References

8.0 REFERENCES

Carter Goble Associates, Incorporated. February 23, 1988. An Assessment of Judicial Facility Needs in Hilo.

Carter Goble Associates, Incorporated. January 1989. Hawai'i Judicial System Master Plan. Four volume set.

Carter Goble Associates, Incorporated. February 4, 1991. A Planning Report on the Hilo, Hawai'i Judicial Facility - Final Report.

Center for Alternative Dispute Resolution. July 26, 1994. Final Report - Hilo Judiciary Complex Siting Process.

Curtis, George D. April 19, 1991. Hawai'i Tsunami Inundation / Evacuation Map Project. Final Report. Submitted to Hawai'i State Civil Defense Agency. JIMAR Contr. No. 91-237.

County of Hawai'i Planning Department. Road Alignment, Rights-of-Way and Zoning Map. Last revised August 23, 1995.

County of Hawai'i Planning Department. City of Hilo Map.

County of Hawai'i. 1983 and as amended. Comprehensive Zoning Ordinance.

County of Hawai'i. November 1989. The General Plan - Hawai'i County.

Federal Emergency Management Agency. September 1988. Flood Insurance Rate Maps: Hawai'i County.

H. Mogi Planning and Research, Incorporated. May 19, 1986. Project Development Report for the Third Circuit and District Courts. Prepared for the State of Hawai'i, Department of Accounting and General Services.

Wilson Okamoto & Associates, Incorporated. October 1988. Site Selection Report and Final Environmental Impact Statement - The New Hilo Judicary Complex, Hilo, Hawai'i. Prepared for the State of Hawai'i, Department of Accounting and General Services.

United States Department of Agriculture, Soil Conservation Service. December 1973. Soil Survey of the Island of Hawai'i.

University of Hawai'i, Department of Geography. 1983. Atlas of Hawai'i.

Section 9.0

Draft EA Comments and Responses

9.0 DRAFT EA COMMENTS AND RESPONSES

The following agencies and organizations were contacted during the preparation of the Draft Environmental Assessment and/or received a copy for review and comment for the proposed Hilo Judiciary Complex at Kaiko'o Mall.. Copies of their letters and responses are included in this EA report.

Agency/Organization	Comments Received Draft EA
United States	
U.S. Army Corps of Engineers	--
U.S. Department of Agriculture	X
U.S. Department of Commerce, National Marine Fisheries Services, Pacific Islands Area	--
U.S. Department of Interior, Fish & Wildlife Services	--
U.S. Department of Interior, National Park Services	--
U.S. Department of Interior, Geological Survey, Hawaii District Office	--
U.S. Department of Transportation (DOT)	--
U.S. Naval Base Pearl Harbor	--
State of Hawaii	
Department of Accounting and General Services	--
Department of Agriculture	--
Department of Business, Economic Development and Tourism (DBEDT)	X
DBEDT Energy, Resources & Technology Division	--
Department of Defense	X
Department of Education	X
Department of Hawaiian Home Lands	X
Department of Health, Environmental Management Division	X
Department of Land and Natural Resources (DLNR)	--
DLNR Historic Preservation Division	X
Department of Public Safety	X
Department of Public Safety, Sheriff Division	--
Department of Transportation	X
Office of Environmental Quality Control	X
State Judiciary, Office of the Administrative Director of the Courts	--
State Judiciary, Center for Alternative Dispute Resolution	--
Office of Hawaiian Affairs	--
Office of Planning	--
University of Hawaii Environmental Center	X
University of Hawaii Water Resources Research Center	--

Agency/Organization	Comments Received Draft EA
State District 1 Representative Dwight Takamine	--
State District 2 Representative Jerry Change	--
State District 3 Representative Eric Hamakawa	--
State District 4 Representative Robert Herkes	--
State District 5 Representative Paul Whalen	--
State District 6 Representative Jim Rath	--
State District 1 Senator Lorraine Inouye	--
State District 2 Senator David Matsuura	--
State District 1 Senator Andrew Levin	--
Office of the Governor	--
County of Hawaii	
Civil Defense Agency	--
Department of Parks and Recreation	--
Department of Public Works	X
Department of Planning	X
Department of Research and Development	--
Department of Water Supply	X
Office of Corporation Counsel	--
Office of Prosecuting Attorney	X
Hawaii County Prosecuting Attorney, Victim/Witness Assistance Program	--
Hawaii County Mayor	--
Hawaii County Council Clerk	--
Hawaii County Planning Commissioners	--
Hilo Public Library	--
Other Parties	
Hilo Main Street Program Downtown Improvement Association	--
American Lung Association	--
Church of the Holy Apostles	--
William Hachmeister	--
Hatada Bakery, Inc.	--
Hawaii Equities, Inc.	--
HSC, Inc.	--
Hilo Draying Co.	--
Hilo Law Center	--
Hawaii Island Chamber of Commerce	--
Hawaii Island Contractors Association	--
Hawaii Island Economic Development Board	--
Japanese Chamber of Commerce & Industry of Hawaii	--

Agency/Organization	Comments Received Draft EA
Hilo Lagoon Centre Association of Apartment Owners	--
The Harry & Jeannette Weinberg Foundation, Inc.	--
Kaiko'o Mall Association	X
Mr. Stafford Oyama	--
Ms. Elaine Hamasaki	--
Mr. Marlin Spike Werner, Ph.D.	X
Mr. and Mrs. Ralph D. Smith	--
Mr. Dick Armstrong	--
Ms. Winifred R. Lum	--
Mr. Delbert M. Nishimoto	--
Mr. Ernest Medares	--
Ms. Linda Mende	--
Mr. William Halliday	--
Mr. Dave Smith	--
Ms. Fay Naln	--
Mr. Zachary Higa	--
Mr. Orlando Smith	--
Mr. Jason Armstrong	--
Nakamoto, Okamoto & Yamamoto Law Firm	X

United States
Department of
Agriculture

Natural
Resources
Conservation
Service

P.O. Box 50004
Honolulu, HI
96850

Our People...Our Islands...In Harmony

August 9, 2000

Mr. Tyler Fujiyama
Department of Accounting and General Services
P.O. Box 119
Honolulu, Hawaii 96810

Dear Mr. Fujiyama:

Subject: Letter No. (P) 1336.0 - Draft Environmental Assessment (DEA) – Hilo Judiciary Complex, Proposed Site at Kaiko'o Mall, South Hilo District, Island of Hawaii

We have reviewed the above mentioned document and have no comments to offer at this time.

Thank you for the opportunity to review this document.

Sincerely,

ACTING FOR
KENNETH M. KANESHIRO
State Conservationist

Cc:
Ms. Genevieve Salmonson, Director, Office of Environmental Quality Control, 235 South Beretania Street, Suite 702, Honolulu, HI 96813
Mr. Jeffrey Overton, Group 70 International, Inc., 925 Bethel Street, 5th Floor, Honolulu, HI 96813-4307

BENJAMIN J. CAYETANO
GOVERNOR

MAJOR GENERAL EDWARD L. CORREA, JR.
DIRECTOR OF CIVIL DEFENSE

EDWARD T. TEIXEIRA
VICE DIRECTOR OF CIVIL DEFENSE

STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE DIRECTOR OF CIVIL DEFENSE
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAII 96816-4495

PHONE (808) 733-4300
FAX (808) 733-4287

September 20, 2000

TO: Mr. Tyler Fujiyama
Department of Accounting and General Services
State of Hawaii

FROM: Edward T. Teixeira
Vice Director of Civil Defense

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (DEA), HILO JUDICIARY COMPLEX

Thank you for the opportunity to comment on the Hilo Judiciary Complex, Kaikoo Mall Site, South Hilo District, island of Hawaii, State of Hawaii TMK (3) 2-2-15:76.

Request an Emergency Alert System (EAS) receiver be installed in a 24-hour manned office such as the security office. Please contact the State Civil Defense (SCD) Telecommunications Office at 733-4300, ext. 530, for delivery of the receiver.

It is also recommended that a minimum 10' x 10' room or space be provided on the roof of the tallest building to provide possible communications for the complex and other State agencies.

Just as parks, schools, fire hydrants, underground/overhead utilities and sidewalks are planned as integral parts of planned developments, an emergency warning system and support infrastructure must be purchased and installed by the developer for the safety and well-being of the residents, faculty and students.

We appreciate your consideration and interest in this matter. Our SCD planners and technicians are available to discuss any concerns your staff may have. Please contact Mr. Norman Ogasawara, SCD, at 733-4300, ext. 531.

c: Hawaii Civil Defense Agency

Mr. Robert Hlivak
ICSD, DAGS

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, HI 96813

Mr. Jeffrey Overton
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813-4307

BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

LETTER NO (P)1610.0

OCT 10 2000

TO: Mr. Edward T. Teixeria, Vice Director
Office of the Director of Civil Defense
Department of Defense

SUBJECT: Hilo Judiciary Complex
Draft Environmental Assessment

Thank you for providing your comments on the Draft Environmental Assessment for the Hilo Judiciary Complex.

We acknowledge the civil defense provisions applicable to this proposed new public building, as discussed in your September 20, 2000, memorandum. During the design phase of this project, the recommended provisions for security communication rooms and emergency warning system receivers will be addressed. These items would be included if they are funded by the Department of Defense.

Your comment letter and this response letter will be included in the Final Environmental Assessment. We appreciate your input on this project.

GORDON MATSUOKA
Public Works Administrator

TF:jk
c: Mr. Jeffrey Overton, Group 70 International, Inc.

AS
TF

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

BENJAMIN J. CAYETANO
GOVERNOR
BEIJI F. NAYA
DIRECTOR
PHILIP J. BOSSERT
DEPUTY DIRECTOR

ENERGY, RESOURCES, AND TECHNOLOGY DIVISION
235 South Beretania St., 5th Flr., Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Tel.: (808) 587-3807
Fax: (808) 586-2536

August 4, 2000

Department of Accounting and General Services
P.O. Box 119
Honolulu, HI 96810
Attn: Mr. Tyler Fujiyama

Dear Mr. Fujiyama:

Subject: Hilo Judiciary complex
Proposed Site at Kaiko'o Mall
Draft Environmental Assessment
South Hilo District, Island of Hawaii
TMK (3) 2-2-15:76

Thank you for the opportunity to review and comment on the Draft Environmental Assessment for the proposed new Judiciary complex in Hilo. We have no additional comments at this time.

Sincerely,

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

AS —
TF Jr

BENJAMIN J. CAYETANO
GOVERNOR

PAUL G. LeMAHIEU, Ph.D.
SUPERINTENDENT

STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAII 96804

DIVISION OF ADMINISTRATIVE SERVICES

JUL 28

July 26, 2000

MEMO TO: Mr. Gordon Matsuoka, Public Works Administrator
Department of Accounting and General Services

A T T N: Mr. Tyler Fujiyama, Building Engineer

F R O M: Lester H. T. Chuck, Director
Facilities and Support Services Branch

SUBJECT: Hilo Judiciary Complex
Draft Environmental Assessment

The Department of Education has no comment on the subject draft environmental assessment.

Thank you for the opportunity to respond.

LHTC:SB:hy

cc: P. Yoshioka, DAS
G. Salmonson, OEQC
J. Overton, Group 70 International

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to:
File:

September 6, 2000

00-145/epo

Mr. Tyler Fujiyama
Department of Accounting
and General Services
P.O. Box 119
Honolulu, Hawaii 96810

Dear Mr. Fujiyama:

Subject: Draft Environmental Assessment (DEA)
Hilo Judiciary Complex
Proposed Site at Kaiko'o Mall
Hilo, Hawaii
TMK: 2-2-15:76

Thank you for allowing us to review and comment on the subject project. We have the following comments to offer:

Office of Solid Waste Management

Since the development of the project involves road and/or parking lot paving activities, the Department of Health (DOH) would like to remind the applicant that Hawaii Revised Statutes, Chapter 103D-407 mandates the use of glasphalt for all State and County paving projects when the glass is available to the quarry or contractor at a price no greater than that of equivalent aggregate.

The DOH also suggests the use of locally produced compost in the landscaping of the proposed project.

Finally, the applicant shall ensure that all solid waste generated during the project's construction shall be directed to a permitted solid waste disposal, processing or recycling facility.

Please contact Mr. Lane Otsu of the Office of Solid Waste Management at (808) 586-4240 with any questions regarding these comments.

Noise Concerns

With reference to Section 4.1.1, Construction Noise, on page 4-1 of the Draft Environmental Assessment, Chapter 11-43 was superseded by Chapter 11-46, Hawaii Administrative Rules, "Community Noise Control" on September 23, 1996. Also, Chapter 11-42, "Vehicular Noise Control for Oahu" was repealed on June 28, 2000.

Activities associated with the construction of the project shall comply with the Department of Health's Administrative Rules, Chapter 11-46, "Community Noise Control."

1. The contractor shall obtain a noise permit if the noise levels from the construction activities are expected to exceed the maximum permissible sound levels of the regulations as stated in Section 11-46-6(a).

2. Construction equipment and on-site vehicles requiring an exhaust of gas or air shall be equipped with mufflers as stated in Section 11-46-6(b)(1)(A).

3. The contractor shall comply with the requirements pertaining to construction activities as specified in the rules and the conditions issued with the permit as stated in Section 11-46-7(d)(4).

Asbestos

Prior to any demolition activities, federal rules (40 CFR Part 61, National Emission Standard for Hazardous Air Pollutants, Asbestos NESHAP Revision; Final Rule, November 20, 1990), require an inspection of all affected areas to determine whether asbestos is present.

Under the NESHAP regulation, the project would be required to file with the Noise, Radiation and Indoor Air Quality Branch of the Department of Health an Asbestos Demolition/Renovation notification ten working days prior to demolition of each building or the disturbance of regulated asbestos-containing materials. All regulated quantities and types of asbestos-containing materials would be subject to emission control, proper collection, containerizing, and disposal at a permitted landfill.

Questions concerning asbestos requirements should be directed to Mr. Robert H. Lopes at 586-5800. Should there be additional concerns, please contact Mr. Russell Takata, Environmental Health Program Manager of the Noise, Radiation and Indoor Air Quality Branch at 586-4701.

Sincerely,

GARY GILL
Deputy Director
Environmental Health Administration

c: OSWM
NR&IAQB
OEQC
Group 70 International, Inc.

BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

LETTER NO (P) 1608.0

OCT 10 2000

TO: Mr. Gary Gill, Deputy Director
Environmental Health Administration
Department of Health

SUBJECT: Hilo Judiciary Complex
Draft Environmental Assessment

Thank you for your September 6, 2000, comments on the Draft Environmental Assessment for the Hilo Judiciary Complex.

While most of your comments are related to design and construction phases of the project which would occur subsequent to this present Environmental Assessment process, we have prepared the following responses to your concerns:

1. Office of Solid Waste Management

   Road and parking lot paving activities will be developed in accordance with HRS, 103D-407.

   Solid waste generated during the construction of the project will be directed to a permitted solid waste disposal, processing or recycling facility.

   To the extent available, locally produced compost will be used in landscaping, as appropriate, for the new judiciary complex.

2. Noise Concerns

   Activities associated with the construction of the project will comply with the Department of Health's current Administrative Rules, Chapter 11-46, "Community Noise Control."

3. Asbestos

   Asbestos material will be handled according to Federal requirements (40 CFR Part 61, National Emission Standard for Hazardous Air Pollutants, Asbestos NESHAP Revision; Final Rule, November 20, 1990).

An Asbestos Demolition/Renovation notification will be filed with the Department of Health's Noise, Radiation and Indoor Air Quality Branch, as required, ten working days prior to demolition of each building or the disturbance of regulated asbestos-containing material.

Thank you for providing clarification on current rules and regulations. Your comment letter and this response letter will be included in the Final Environmental Assessment. We appreciate your input on this project.

GORDON MATSUOKA
Public Works Administrator

TF:jk
c: Mr. Jeffrey Overton, Group 70 International, Inc.

BENJAMIN J. CAYETANO
GOVERNOR
STATE OF HAWAII

RECEIVED - DAGS
DIV. OF PUBLIC WORKS
2000 AUG -1 P 2:28

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

RAYNARD C. SOON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOBIE M. K. M. YAMAGUCHI
DEPUTY TO THE CHAIRMAN

July 27, 2000

To: The Honorable Raymond H. Sato, State Comptroller
Department of Accounting and General Services

Attn: Tyler Fujiyama

From: Raynard C. Soon, Chairman
Hawaiian Homes Commission

Subject: Hilo Judiciary Complex, Proposed Site at Kaikoo Mall, Draft Environmental Assessment, TMK 2-2-15:76, South Hilo, Hawaii, Dated July, 2000

Thank you for the opportunity to review the subject application. The Department of Hawaiian Home Lands has no comment to offer.

If you have any questions, please call Daniel Ornellas of our Planning Office at 586-3836.

AUG 2

State P.W. Engr	Approval
P.W. Secy	Sign
Staff Serv. B	Info
Planning B	File
Proj. Mgmt. B	See me
Design B	Comments
Insp B	Invest &
Const. Engr	Rept

SENT BY:DAGS ; 8-15-00 ;10:14AM ; PLANNING BRANCH→GAMMAFAX ID_0350 ;# 7

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

AS —
TP —

TIMOTHY E. JOHNS, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
JANET E. KAWELO

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND RESOURCES
ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS
WATER RESOURCE MANAGEMENT

RECEIVED-DAGS
DIV. OF PUBLIC WORKS
2000 AUG -4 A 8:48

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

July 31, 2000

Mr. Tyler Fujiyama
Department of Accounting and General Services
P.O. Box 119
Honolulu, HI 96810

LOG NO: 25925 ✓
DOC NO: 0007PM27

Dear Mr. Fujiyama:

SUBJECT: **Hilo Draft Environmental Assessment**
Hilo, South Hilo, Hawaii Island
TMK: 2-2-15:76

Thank you for submitting the subject document for our review and comment. We previously commented on this project ((Hibbard to Overton May 18, 2000), but our letter was not included in the Draft EA.

As noted in our May 18 letter, we have no record of historic sites on the subject parcel, which is currently occupied by the Kaikoo Mall. The probability of intact cultural deposits beneath the Mall is difficult to ascertain, but if there is going to be any deep excavation for the proposed building we would recommend some initial archaeological assessment be submitted to our office for review (evaluating whether sites are likely to be present) and then periodic monitoring could be planned (under an approved monitoring plan based on the assessment) to identify and treat historic sites that might be present. If archaeological deposits are found, then additional mitigation planning may well be needed.

If you should have any questions please contact our Hawaii Island archaeologist, Patrick McCoy (692-8029).

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

PM:md

AUG 4 2000

c. Genevieve Salmonson, OEQC
Jeffrey Overton, Group 70 International, Inc.

BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

LETTER NO. (P) 1613.0

OCT 10 2000

TO: Mr. Don Hibbard, Administrator
State Historic Preservation Division
Department of Land and Natural Resources

SUBJECT: Hilo Judiciary Complex
Draft Environmental Assessment

Thank you for your July 31, 2000, comments on the Draft Environmental Assessment for the Hilo Judiciary Complex.

Should there be any questions or concerns regarding any findings of cultural deposits at the project site, we will contact Hawaii Island archaeologist, Dr. Patrick McCoy.

We apologize for not including your May 18, 2000, pre-consultation comment letter in the Draft EA report. Your comment letter and this response letter will be included in the Final Environmental Assessment. We appreciate your input on this project.

GORDON MATSUOKA
Public Works Administrator

TF:jk
c: Mr. Jeffrey Overton, Group 70 International, Inc.

BENJAMIN J. CAYETANO
GOVERNOR

TED SAKAI
DIRECTOR

PAULINE N. NAMUO
Deputy Director
Administration

MARIAN E. TSUJI
Deputy Director
Corrections

SIDNEY A. HAYAKAWA
Deputy Director
Law Enforcement

STATE OF HAWAII
DEPARTMENT OF PUBLIC SAFETY
919 Ala Moana Boulevard, 4th Floor
Honolulu, Hawaii 96814

AUG 25

No. 2000-2008

August 24, 2000

Department of Accounting and General Services
P.O. Box 119
Honolulu, Hawaii 96810
Attn: Mr. Tyler Fujiyama

RE: HILO JUDICIARY COMPLEX
PROPOSED SITE AT KAIKO'O MALL
DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Fujiyama:

The Department of Public Safety has had the opportunity to review the Draft Environmental Assessment for the Hilo Judiciary Complex at the proposed Kaiko'o Mall and offers the following comments:

1. A secure, enclosed vehicle sallyport with dedicated accessway and adjacent to the planned central prisoner holding area is needed.

2. We believe a desirable design feature would be to provide for separate interior circulation for use by prisoners between the central holding area and the individual courtrooms. This may include both dedicated hallways and elevators.

Thank you for providing us with the opportunity to respond.

Very truly yours,

TED SAKAI
Director

[2000/Correspondence/To DAGS/Hilo Judiciary DEA 7-17-00]

BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

LETTER NO. (P)1615.0

OCT 10 2000

TO: The Honorable Ted Sakai, Director
Department of Public Safety

SUBJECT: Hilo Judiciary Complex
Draft Environmental Assessment

We have received your August 24, 2000, comments on the Draft Environmental Assessment for the Hilo Judiciary Complex.

Thank you for providing us with facility design recommendations which would enhance public safety. The project is currently in the planning phase and design work will follow once the site selection process is completed. Your suggestions to include a secure, enclosed vehicle sallyport with dedicated accessway adjacent to the central prisoner holding area and dedicated hallways and elevators will be duly considered in the design of the new complex.

Your comment letter and this response letter will be included in the Final Environmental Assessment. We appreciate your input on this project.

RAYMOND H. SATO
State Comptroller

c: Mr. Jeffrey Overton, Group 70 International, Inc.

BENJAMIN J. CAYETANO
GOVERNOR

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

AUG 11 2000

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

AUG 14 2000

IN REPLY REFER TO:

HWY-PS
2.9581

Mr. Tyler Fujiyama
Department of Accounting and
General Services
P.O. Box 119
Honolulu, Hawaii 96810

Dear Mr. Fujiyama:

Subject: Draft environmental Assessment, Proposed Location Hilo Judiciary Complex
Kaiko'o Mall, South Hilo, TMK: 2-2-15: 76

Thank you for requesting our review of the draft environmental assessment for the proposed Judiciary Complex in Hilo.

The proposed facility will not impact our State transportation facilities.

Very truly yours,

KAZU HAYASHIDA
Director of Transportation

c: OEQC (Ms. Genevieve Salmonson)
Group 70 International, Inc. (Mr. Jeffrey Overton)

BENJAMIN J. CAYETANO
GOVERNOR

RECEIVED - DAGS
DIV. OF PUBLIC WORKS
2000 JUL 20 P 1:14

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

GENEVIEVE SALMONSON
DIRECTOR

July 19, 2000

Gordon Matsuoka
Department of Accounting and General Services
P.O. Box 119
Honolulu, Hawaii 96810

Attention: Tyler Fujiyama

Dear Mr. Matsuoka:

Subject: Draft Environmental Assessment (EA), **Hilo Judiciary Complex at Kalkoʻo Mall**

We have the following comments to offer:

1. Time frame: Section 2.7, *Development Schedule*, notes factors that can affect scheduling but does not list possible construction dates. What are the anticipated start and end dates of this project?

2. Cumulative Impacts:

The Environmental Impact Statement law requires that full disclosure of cumulative impacts be made on geographically-related projects. There is no analysis of the impacts of both this project and the recently proposed closure of Aupuni-Pauahi intersection (proposed by the county Department of Public Works) in order to create a pedestrian mall/civic center. See the enclosed diagram. The TIAR does not analyze traffic patterns with the intersection closure as one possible scenario. Other factors, such as drainage and runoff, need to be addressed as well.

After your consultation with DPW and any other agencies proposing nearby projects, provide a full analysis of cumulative impacts in the final EA.

If you have any questions, please call Nancy Heinrich at 586-4185.

Sincerely,

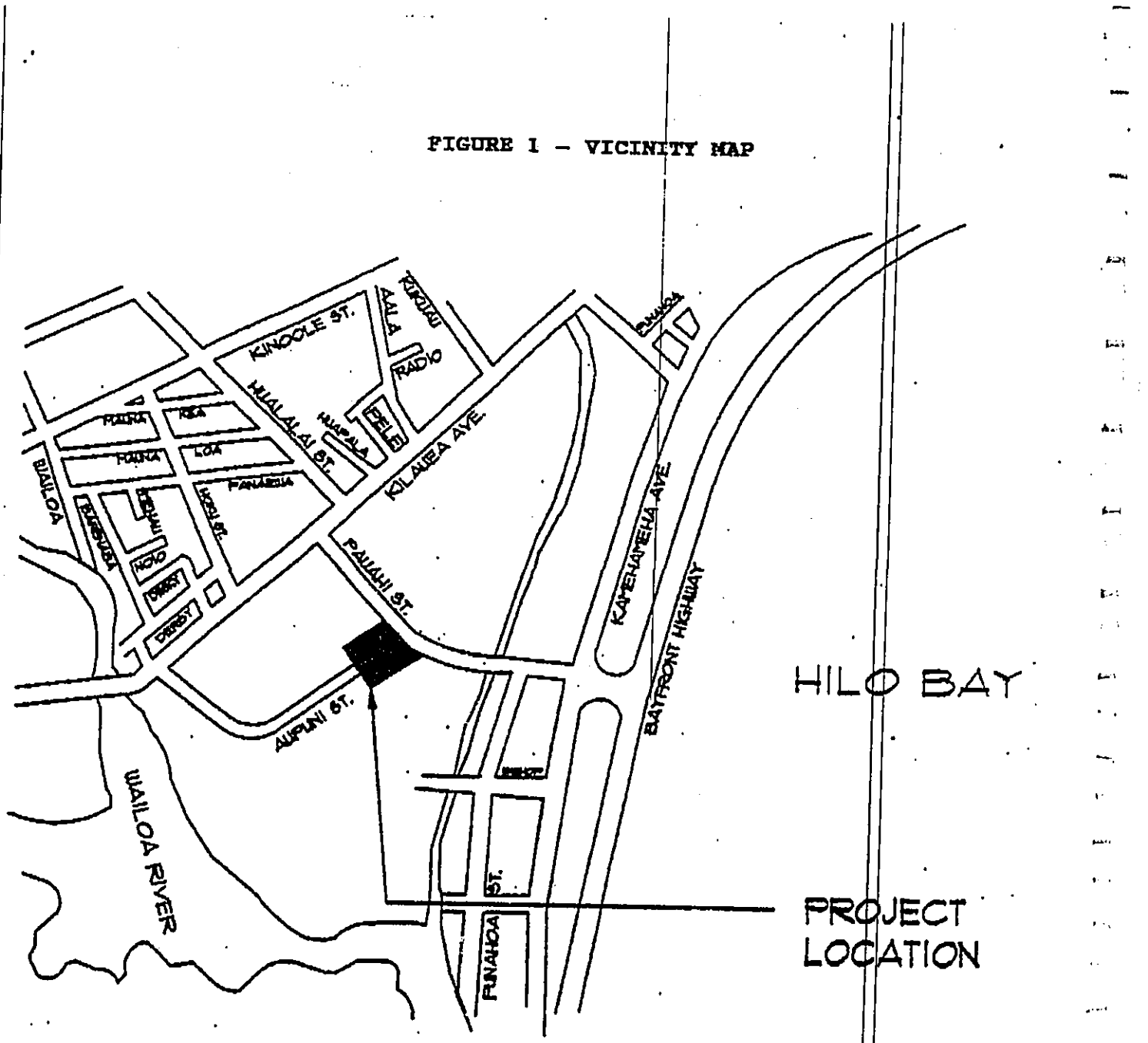
GENEVIEVE SALMONSON
Director

c: Jeff Overton

RECEIVED
JUL 20 2000

SENT BY:DAGS ; 8-15-00 ;10:12AM ; PLANNING BRANCH→GAMMAFAX IO_0350 ;# 3

FIGURE 1 – VICINITY MAP



BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

LETTER NO. (P)1617.0

OCT 10 2000

TO: Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control

SUBJECT: Hilo Judiciary Complex
Draft Environmental Assessment

Thank you for your July 19, 2000, comments on the Draft Environmental Assessment for the Hilo Judiciary Complex. We have prepared the following responses to your concerns:

1. Time Frame: The construction schedule for the new judiciary complex has not been firmly established, and it is pending future funding allocations. At this point, the construction would not commence until sometime in 2003. The estimated construction timing will be added to Section 2.7 Development Schedule.

2. Cumulative Impacts: In a letter dated August 21, 2000, the County of Hawaii announced its termination of all further work on the project to close Aupuni Street. A copy of the letter is enclosed. The traffic impact assessment has been based on the intersection of Aupuni and Pauahi Streets remaining open.

   Assessment of drainage and runoff impacts are addressed in Section 4.2.5 in the Draft Environmental Assessment report. The Kaikoo Mall site includes a large structure and large paved parking areas, making the land generally impervious. The existing drainage system is adequate. Since the site is impervious, the amount of runoff will be similar to existing conditions. Off-site drainage improvements are not anticipated to be required. Runoff is anticipated to be controlled by direct discharge into existing drainage facilities.

Your comment letter and this response letter will be included in the Final Environmental Assessment. We appreciate your input on this project.

GORDON MATSUOKA
Public Works Administrator

TF:JK
Attachment
c: Mr. Jeffrey Overton, Group 70 International, Inc. w/attach.

BUILDING DIVISION - DPW

COUNTY OF HAWAII - 25 AUPUNI STREET - HILO, HAWAII 96720
HILO OFFICE (808) 961-8331 KONA OFFICE (808) 327-3520

Post-it® Fax Note 7671	Date 8/21	# of pages ▶ 1
To Jeff Overton	From Ed Harada	
Co./Dept.	Co.	
Phone #	Phone #	
Fax # (F) 523-5874	Fax #	

August 21, 2000

Mr. Edward Harada, PE
M&E Pacific, Inc.
100 Pauahi St., Ste 212
Hilo, Hawaii 96720

Subject: County of Hawaii Proposal for Closure of Aupuni Street

In response to your inquiry regarding the proposed road closure the Department of Public Works has terminated all further work on this project due to a lack of available funding. In addition the Draft Environmental Assessment has been withdrawn and no further action will be taken.

Should you have any questions please give me a call at 961-8331.

Stanley Takemura
Building Division Chief

University of Hawai'i at Mānoa

Environmental Center
A Unit of Water Resources Research Center
2550 Campus Road • Crawford 917 • Honolulu, Hawai'i 96822
Telephone: (808) 956-7361 • Facsimile: (808) 956-3980

August 21, 2000
EA: 1206

Mr. Tyler Fujiyama
Department of Accounting and General Services
P.O. Box 118
Honolulu, Hawaii 96810

Dear Mr. Fujiyama:

Hilo Judiciary Complex - Proposed Site at Kaiko'o Mall
Draft Environmental Assessment
Hilo, Hawaii

The Department of Accounting and General Services, on behalf of the State Judiciary, proposes to construct a Judiciary Complex at the current Kaiko'o Mall location in downtown Hilo. The Complex will replace the existing facilities that are both inadequate, and housed at three separate locations. The purpose of the project is to consolidate the separate facilities in one central location, thereby increasing efficiency and accessibility. The proposed site was selected from numerous other sites in and around Hilo by a set of site evaluation criteria. This review was conducted with the assistance of Sherri Hiraoka, Environmental Center.

General Comments

The State has gone through a long process of selecting a proper site for its judiciary complex, and we appreciate its efforts to include the public via the Center for Alternative Dispute Resolution. We acknowledge the need for a central facility that adequately accommodates the needs of the Judiciary and recognize that the proposed Kaiko'o Mall site would be ideal. However, there are details that should be clarified and elaborated on in the final Environmental Assessment (EA) before the project commences. These include the cumulative impacts of the project with other proposed projects in the area (i.e., the County Civic Center and Aupuni Street Closure), and the relocation of the existing tenants in the Kaiko'o Mall. These points are further discussed below, along with a few other minor comments.

Construction

Basic building design should be included in the final EA. Such details as building height (two or three stories) and a conceptual drawing would help in evaluating whether the proposed structure will "fit in" with the existing surroundings.

Flora/Fauna

We would suggest that native vegetation be given a priority in selection of plants for landscaping.

Displacement

The EA should include more discussion concerning the fate of the current tenants of the Kaiko'o Mall. What efforts will be made to relocate them? Will they be compensated for the inconvenience? What are the prospects of finding new locations with ideal accessibility and rent? Additionally, what has been the general reaction of the tenants to this project?

Traffic

The findings presented in the traffic impact analysis are based on the assumption that Aupuni street will remain open. According to the EA, no consideration was given to the effects of the County's Civic Center proposed project that will close off Aupuni Street. Many concerns have been raised by the local public opposing the closure of Aupuni Street, including traffic congestion and evacuation difficulties. The cumulative impacts of the two projects should be evaluated in the final EA, including the proposed closure of one end of Aupuni Street, which would restrict traffic flow in that area.

Evacuation Planning

Evacuation planning should be discussed in the final EA. Responses to comments from the Department of Public Safety and from Elaine Hamasaki in section 9.0 indicate that this matter will be covered in the design phase. Evacuation accessibility should be included in the criteria in evaluating potential sites for construction.

Costs

Cost assessments only estimate the total for site acquisition at $6.5 million. What are the projected costs for construction and for relocation of existing tenants?

Conclusion

The Hilo Judiciary Complex will satisfy the need for a centrally-located facility that can accommodate the space requirements of the Judiciary. Most concerns associated with construction projects are avoided by the selection of this site, as it is previously developed and will therefore have minimal impacts on historical, archaeological, endangered/threatened species, visual, infrastructure, ecosystem, or water quality resources. However, social impacts including tenant displacement and cumulative traffic issues should be further addressed in the Final EA.

Thank you for the opportunity to comment on this Draft Environmental Assessment.

Sincerely,

Jacquelin N. Miller

Jacquelin N. Miller
Associate Environmental Coordinator

cc: Jeffrey Overton, Group 70 International, Inc.
OEQC
James Moncur, WRRC
Sherri Hiraoka, Environmental Center

BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

LETTER NO (P)1611.0

OCT 10 2000

TO: Ms. Jacquelin N. Miller
Associate Environmental Coordinator
Environmental Center
University of Hawaii at Manoa

SUBJECT: Hilo Judiciary Complex
Draft Environmental Assessment

Thank you for your August 21, 2000, letter regarding your review of the Draft Environmental Assessment for the Hilo Judiciary Complex. We have prepared the following responses to your comments:

1. Construction: At this time, there has been no preliminary architectural design prepared for the new judiciary complex. However, the construction of the proposed facility will maintain the overall character of the Hilo area through design and siting measures. The new facility will conform to Hawaii County conditions for bulk and scale criteria to properly integrate with the surrounding uses and environment.

2. Flora/Fauna: A priority will be given to the use of native vegetation in landscaping, as appropriate, for the new judiciary complex.

3. Potential Displacement: We are currently in communication with the Kaiko'o Mall Association about the potential displacement of tenants. In a letter dated August 20, 2000, the Kaiko'o Mall Association forwarded their comments regarding the new judiciary complex. On August 24, 2000, at the public meeting held in Hilo regarding the present environmental assessment effort, several Kaiko'o Mall tenants expressed their concern about potentially being displaced. The Judiciary stated a willingness to continue an open dialogue on this issue should the project proceed at the Kaiko'o Mall site.

4. Traffic: In a letter dated August 21, 2000, the County of Hawaii announced the termination of the Aupuni Street closure project. Enclosed is a copy of their letter.

5. Tsunami Evacuation: Should the project proceed at the Kaiko'o Mall site, evacuation planning for potential tsunami events will be considered in the design of the building as is mentioned in Section 3.1.8 of the Draft Environmental Assessment report.

6. Costs: Projected costs for construction and relocation of existing tenants of Kaiko'o Mall have not been estimated at this time.

Your comment letter and this response letter will be included in the Final Environmental Assessment. We appreciate your input on this project.

GORDON MATSUOKA
Public Works Administrator

TF:jk
Attachment
c: Mr. Jeffrey Overton, Group 70 International, Inc.

Stephen K. Yamashiro
Mayor

RECEIVED - DAGS
DIV. OF PUBLIC WORKS
2000 AUG -7 A 8:46

Virginia Goldstein
Director

Russell Kokubun
Deputy Director

County of Hawaii

PLANNING DEPARTMENT
25 Aupuni Street, Room 109 • Hilo, Hawaii 96720-4252
(808) 961-8288 • Fax (808) 961-8742

August 3, 2000

Mr. Tyler Fujiyama
Department of Accounting and General Services
PO Box 119
Honolulu, Hawaii 96810

Dear Mr. Fujiyama,

Subject: Draft Environmental Assessment for the Hilo Judiciary Complex

Thank you for the opportunity to comment on the "Draft Environmental Assessment for the Hilo Judiciary Complex." The County Planning Department does not have any comments at this time.

If there are any questions, please feel free to contact Norren Kato at 961-8288.

Sincerely,

VIRGINIA GOLDSTEIN
Planning Director

NK:lnm
P:\WPWIN60\NORREN\LETTERS\2000 Letters\DEA Hilo Judiciary Complex at Kaikoo mall #2.doc

xc: Ms. Genevieve Salmonson
Mr. Jeffrey Overton
Mr. Harry Takahashi, Managing Director, County of Hawaii

AUG 7

State P.W. Engr
P.W. Secy
Staff Serv. Br.
Planning Br.
Proj. Mgmt. Br.
Design Br.
Insp. Br.
Dist. Cont. Engr.
Approval
Sign
Info
File
See me
Comments
Invest. &
Rept.

8/8

SENT BY:DAGS ; 8-15-00 ;10:18AM ; PLANNING BRANCH→GAMMAFAX 10_0350 ;#10

Stephen K. Yamashiro
Mayor

Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii

DEPARTMENT OF PUBLIC WORKS

25 Aupuni Street, Room 202 · Hilo, Hawaii 96720-4252
(808) 961-8321 · Fax (808) 961-8630

August 24, 2000

Mr. Tyler Fujiyama
Department of Accounting & General Services
P.O. Box 119
Honolulu, Hawaii 96810

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
Hilo Judiciary Complex
Proposed Site at Kaiko'o Mall
TMK: 2-2-15: 076

We have reviewed the subject application and have the following comments.

1. All new building construction shall conform to current code requirements.
2. A solid waste management plan shall be submitted for review and approval by the Department of Public Works (DPW).
3. Wastewater disposal shall meet the rules and regulations of the DPW, Wastewater Division.
4. All new, or reconstructed, driveways shall be of "at grade" type construction.
5. Eliminate (demolish and reconstruct as concrete sidewalk) the driveway along Kilauea Avenue closest to Aupuni Street and close the opening in the painted median.
6. Eliminate the driveway along Aupuni Street closest to Kilauea Avenue.
7. For the center driveway along Kilauea Avenue (between Aupuni & Pauahi Streets): Provide physical restraint to limit access onto Kilauea Avenue from Kaiko'o Mall to right-turn out only. Provide a left-turn storage lane on Kilauea Avenue for access into Kaiko'o Mall.
8. All sidewalks and driveways shall meet the Americans with Disabilities Act Guidelines as required by HRS 103-50.
9. All work within the County right-of-way will require a permit from the Department of Public Works, in accordance with Chapter 22, Article 3, Section 22-44 of the Hawaii County Code.

Should you have any questions, please contact Kelly Gomes of our Engineering Division at 961-8327.

GALEN M. KUBA, Division Chief
Engineering Division

GKM/KG

c: Office of Environmental Quality Control
Group 70 International, Inc.

BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

LETTER NO. (P)1630.0

OCT 10 2000

Mr. Galen M. Kuba
Division Chief
Engineering Division
Department of Public Works
County of Hawaii
25 Aupuni Street, Room 202
Hilo, Hawaii 96720-4252

Dear Mr. Kuba:

Subject: Hilo Judiciary Complex
Draft Environmental Assessment

Thank you for your August 24, 2000, letter regarding your review of the Draft Environmental Assessment for the Hilo Judiciary Complex.

The implementation of the new facility will conform to current building code requirements, ADA guidelines, County reviews and permitting procedures. Specific design aspects of the new facility, such as the elimination of driveways, will be considered during the design phase of this project.

Your comment letter and this response letter will be included in the Final Environmental Assessment. We appreciate your input on this project.

Sincerely,

GORDON MATSUOKA
Public Works Administrator

TF:jk
c: Mr. Jeffrey Overton, Group 770 International, Inc.

DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII
25 AUPUNI STREET • HILO, HAWAII 96720
TELEPHONE (808) 961-8660 • FAX (808) 961-8657

August 10, 2000

State of Hawaii
Department of Accounting and General Services
ATTENTION: MR. TYLER FUJIYAMA
P.O. Box 119
Honolulu, HI 96810

DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED HILO JUDICIARY COMPLEX SITUATED AT WAIAKEA, SOUTH HILO, HAWAII TAX MAP KEY 2-2-015:076

We have reviewed the subject draft environmental assessment and have the following comments.

Section 3.2.1 *Water System* on page Nos. 3-8 needs to be revised by deleting Lyman Springs, which is no longer being used, and adding Piihonua Well C at 2,100 gpm.

We appreciate that the relocation of the existing water meters will be examined during the civil engineering design process. At that time, we will require the submittal of water use calculations so that the meter size and any necessary facilities charges for the project can be determined. (Please refer to our June 1, 2000 letter concerning this subject. A copy is attached.)

Should there be any questions, please call our Water Resources and Planning Branch at 961-8665.

Sincerely yours,

Milton D. Pavao, P.E.
Manager

BCM:gms

Att.

copy – Office of Environmental Quality Control
Group 70 International, Inc.✓

... Water brings progress...

DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII
25 AUPUNI STREET • HILO, HAWAII 96720
TELEPHONE (808) 961-8660 • FAX (808) 961-8657

June 1, 2000

State of Hawaii
Department of Accounting and General Services
P.O. Box 119
Honolulu, HI 96810-0119

REINSTATEMENT OF FACILITIES CHARGE PAYMENTS

The Water Commission of the County of Hawaii, at its regular meeting of May 23, 2000, rescinded an administrative directive that waived Facilities Charges for State projects. The rescission, however, will take effect six months after this notification to allow the State adequate time for planning and budgeting for any upcoming State projects in the County of Hawaii.

herefore, as of December 1, 2000, the State shall be subject to prevailing Facilities Charges for any State project in the County of Hawaii. A system of credits, however, will be available for system development by the State in accordance with prevailing guidelines as approved by the Water Commission.

Should you have any questions, please call us at (808) 961-8660.

Sincerely yours,

Milton D. Pavao, P.E.
Manager

MDP:dms

BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

LETTER NO (P)1618.0

OCT 10 2000

Mr. Milton D. Pavao, P.E.
Manager
Department of Water Supply
County of Hawaii
25 Aupuni Street, Room 103
Hilo, Hawaii 96720

Dear Mr. Pavao:

Subject: Hilo Judiciary Complex
Draft Environmental Assessment

Thank you for your August 10, 2000, comments on the Draft Environmental Assessment for the Hilo Judiciary Complex and a copy of your June 1, 2000, letter regarding water system facility charges for State projects.

We appreciate your clarification on existing water system wells and have made the appropriate changes to the report.

Your comment letter and this response letter will be included in the Final Environmental Assessment. We appreciate your input on this project.

Sincerely,

GORDON MATSUOKA
Public Works Administrator

TF:jk
c: Mr. Jeffrey Overton, Group 70 International, Inc.

JAY T. KIMURA
PROSECUTING ATTORNEY

CHARLENE Y. IBOSHI
FIRST DEPUTY
PROSECUTING ATTORNEY

34 RAINBOW DRIVE
HILO, HAWAII 96720
PH: 961-0466
FAX: 961-2703
961-2580

WEST HAWAII UNIT
P.O. BOX 748
KEALAKEKUA, HAWAII 96750
PH: 322-2552
FAX: 322-6584

OFFICE OF THE PROSECUTING ATTORNEY

August 2, 2000

Mr. Gordon Matsuoka
Public Works Administrator
Dept. of Accounting and General Services
P.O. Box 119
Honolulu HI 96810

Dear Mr. Matsuoka:

Re: Hilo Judiciary Complex
Proposed Site at Kaiko'o Mall

Thank you for the opportunity to comment on the proposed Judiciary Complex.

The Office of the Prosecuting Attorney by Charter and under the authority of the Attorney General prosecutes all crimes occurring on the Big Island. We prosecute traffic matters to murders in the Hilo courthouse, and at any one time can have up to twelve personnel handling traffic, grand jury, and circuit court matters.

We would need sufficient parking spaces for the staff and witnesses handling cases in the new courthouse. In addition, we request that some accommodation be provided for victims and their families pursuant to H. R. S. 801D-4(5).

Thank you again for the opportunity to comment on the draft environmental assessment.

Sincerely yours,

JAY T. KIMURA
Prosecuting Attorney

JTK:ph

BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

LETTER NO. (P)1614.0

OCT 10 2000

Mr. Jay T. Kimura
Prosecuting Attorney
Office of the Prosecuting Attorney
County of Hawaii
34 Rainbow Drive
Hilo, Hawaii 96720

Dear Mr. Kimura:

Subject: Hilo Judiciary Complex
Draft Environmental Assessment

Thank you for your August 2, 2000, comments on the Draft Environmental Assessment for the Hilo Judiciary Complex. We have prepared the following responses to your concerns:

1. The parking needs of staff and witnesses will be addressed as a part of the total projected parking requirements for the proposed project. A minimum of 507 parking spaces is presently planned to accommodate public, employee and official State vehicles at the facility.

2. The Hilo Judiciary Complex facility program is anticipated to provide spaces for judicial support functions, including secure waiting areas for victims and witnesses, related to the HRS 801D-4(5) provisions you have cited.

Your comment letter and this response letter will be included in the Final Environmental Assessment. We appreciate your input on this project.

Sincerely,

GORDON MATSUOKA
Public Works Administrator

TF:jk
c: Mr. Jeffrey Overton, Group 70 International, Inc.

KAIKO'O MALL ASSOCIATION

777 Kilauea Avenue
Hilo, Hawaii 96720

AUGUST 20, 2000

JEFF OVERTON, AICP
CHIEF ENVIRONMENTAL PLANNER
GROUP 70
925 BETHEL ST. FIFTH FLOOR
HONOLULU, HAWAII 96813-130

DEAR MR. OVERTON,

AS A RESULT OF OUR PREVIOUS MEETINGS WITH CLYDE NAMUO, MICHAEL BRODERICK AND THE COUNTY OF HAWAII, THE KAIKO'O MALL ASSOCIATION WISHES TO FORWARD OUR CONCLUSIONS TO YOU:

1 THE COUNTY OF HAWAII SHOULD MOVE INTO THE JC PENNEY BUILDING AS SOON AS POSSIBLE.

2. THE STATE JUDICIARY SHOULD BUILD ON THE OLD SURE SAVE SIDE OF THE MALL.

WE WILL HELP TO CREATE A SUPPORTIVE ENVIRONMENT IN OUR COMMUNITY FOR THIS CONCEPT OF AN EXPANDED CIVIC COMPLEX.

SINCERELY,

JAMES M. RHODES
DIRECTOR OF PROMOTIONS
KAIKO'O MALL ASSOCIATION

BETTY KOSORA
PRESIDENT
KAIKO'O MALL ASSOCIATION
CONTACT NUMBER - 934-7660

CC: MICHAEL BRODERICK
HARRY AND JEANETTE WEINBERG FOUNDATION, INC.
MAYOR STEPHEN K. YAMASHIRO

KAIKO'O MALL ASSOCIATION

777 Kilauea Avenue
Hilo, Hawaii 96720

SEPTEMBER 12, 2000
777 KILAUEA AVE.
HILO, HAWAII 96720

JEFF OVERTON, AICP
CHIEF ENVIRONMENTAL PLANNER
GROUP 70
925 BETHEL ST. FIFTH FLOOR
HONOLULU, HAWAII 96813-130

DEAR MR. OVERTON,

THIS LETTER IS TO EXPRESS OUR OPPOSITION TO YOUR PRESENTING THE KAIKO'O MALL PROPERTY AS A POSSIBLE SITE FOR THE NEW JUDICIARY BUILDING IN HILO.

THE FOLLOWING ARE SOME OF OUR AND OUR CLOSE NEIGHBORS CONCERNS:

1. WE DO NOT SEE SPENDING SOME 60 PLUS MILLION DOLLARS IN PUTTING UP A NEW BUILDING IN A PROVEN TSUNAMI INUNDATION ZONE. EXPERTS PREDICT THAT WE ARE OVER DUE FOR A TSUNAMI. EVEN THOUGH THIS BUILDING MAY BE BUILT WITH THE TSUNAMI CONCERNS FACTORED IN, NO ONE CAN PREDICT THE AWESOME POWER OF MOTHER NATURE. (SEE ENCLOSED H.A. SEPTEMBER 5, 2000)

2. WE ARE ALSO VERY CONCERNED ABOUT THE EVACUATION of THE KAIKO'O MALL AREA. THE OCTOBER 4, 1994 TSUNAMI WARNING CREATED HAVOC AROUND HERE. THE RESULTING TRAFFIC CONGESTION, ESPECIALLY FOR THE PATRONS AND TENANTS OF THE HILO LAGOON CENTER AS WELL THE LARGE POPULATION OF ELDERLY IN THIS AREA, WAS CONSIDERABLE. (SEE ENCLOSED H.A. OCTOBER 5, 1994)

3. THE STATE HAS OTHER SITES THAT ENVIORNMENTAL IMPACT STATEMENTS HAVE BEEN COMPLETED. THE MOST IMPORTANT FACTOR IS THAT THEY ARE FAR AWAY FROM THE TSUNAMI DANGER ZONE.

THANK YOU FOR YOUR TIME AND LOOK FORWARD TO WORKING WITH YOU ON THIS MATTER.

SINCERELY,

JAMES M. RHODES
DIRECTOR OF PROMOTIONS
KAIKO'O MALL ASSOCIATION

BETTY KOSORA
PRESIDENT
KAIKO'O MALL ASSOCIATION
CONTACT NUMBER - 934-7660

CC: MICHAEL BRODERICK
HARRY AND JEANETTE WEINBERG FOUNDATION, INC.
CHIEF JUSTICE RONALD T.Y. MOON

ENC.

overdue

Experts fear few aware of danger

By Jan TenBruggencate
Advertiser Science Writer

State civil defense officials are setting up teams of people to go out after the next major tsunami hits Hawai'i and measure the effects.

"Basically they'll measure how high the seaweed is in the coconut tree," said Brian Yanagi, the agency's earthquake and tsunami program manager.

The larger part of his job — seeing that nobody gets trapped — is growing more difficult as most residents may not understand what they're up against.

The last big tsunami, in 1960, killed 2,000 people — most in Chile, but 61 of them in Hawai'i and 122 in Japan.

"Our No. 1 public relations problem is that, since it's been close to 40 years since we've had a destructive tsunami, to people in their 40s and younger, it's academic to them," Yanagi said. "We used to have them every eight or 10 years."

Yanagi has been overseeing a number of programs aimed at keeping the public alert to the potential hazard. The entire tsunami monitoring community recognizes the challenge.

"It's been amazingly quiet. ... We're overdue," said Mike Blackford, director of the Honolulu-based International Tsunami Informa-

See TSUNAMI, B4

Tsunami: Best strategy to reach high ground

FROM PAGE B1

tion Center.

Tsunamis are very different from the wind-driven waves that create a good day of surf. Triggered by an earthquake, undersea landslide, volcanic eruption or fallen meteorite, they travel through the open ocean at more than 400 mph. When they reach shore, they can create vast tumbling walls of water that devastate the near-shore landscape.

Normally there are multiple waves, often many minutes apart. At Hilo in 1960, there were two major waves in the first hour, and five major waves in the second hour. The third wave was the most destructive.

In some cases, a locally generated tsunami won't give government officials time to issue radio alerts or siren signals. The shaking itself is the warning.

"If the ground shakes and you're along the coastline, go inland and head to higher ground," Yanagi said.

Blackford added a warning: Roads that run along the beach are not safe. Powerful tsunamis can run hundreds of yards inland in low-lying areas. For short-term evacuations, "go inland rather than parallel to the coast," he said.

For people who get trapped in the inundation zone as a tsunami approaches, the situation is grave, but not necessarily fatal.

While hundreds were killed in the 1960 tsunami, a few who were trapped survived. The National Tsunami Hazard Mitigation Program has a publication that explains some strategies for survival, "Surviving a Tsunami: Lessons from Chile, Hawaii and Japan." It is available on the Web at geopubs.wr.usgs.gov. Look for circular 1187.

The first, best strategy is to get out of the danger zone, move to high ground and stay there until the threat is over, which could take hours.

A second strategy, for those who are unable to evacuate in time, is to reach higher floors or the roof of a sturdy building, the report says. A third is to climb a sturdy tree.

But with many structures destroyed and trees uprooted, a fourth technique that worked for some Chilean and Hawai'i survivors swept up by the water was to climb on something that floats.

Yanagi said one group of Hawai'i residents that has his office worried is surfers who head into the water instead of away from it, in the mistaken belief that such waves are rideable.

"In the last tsunami, on Oct. 4, 1994 (which produced only small changes in water height in Hawai'i), several hundred surfers went out. Instead of getting out of harm's way, the surfing community got into harm's way, and that puts the rescue people in harm's way," Yanagi said.

State civil defense and federal authorities are employing a range of techniques to keep people alert to the tsunami threat. Civil Defense has just paid for a half-hour video, "Tsunami: Waves of Destruction," which it hopes to distribute through the Department of Education and through public-access television.

State officials are using the latest scientific modeling techniques to determine which areas are at risk.

One of the major threats to Hawai'i comes from earthquakes near the Aleutian Islands and Alaska. The federal government in recent years has established tsunami detection buoys offshore to measure any waves generated by quake activity there.

Considerable information is available on the Web. Data from tsunami detection buoys can be reviewed at tsunami.pmel.noaa.gov/dartqc/WaveWatcher.

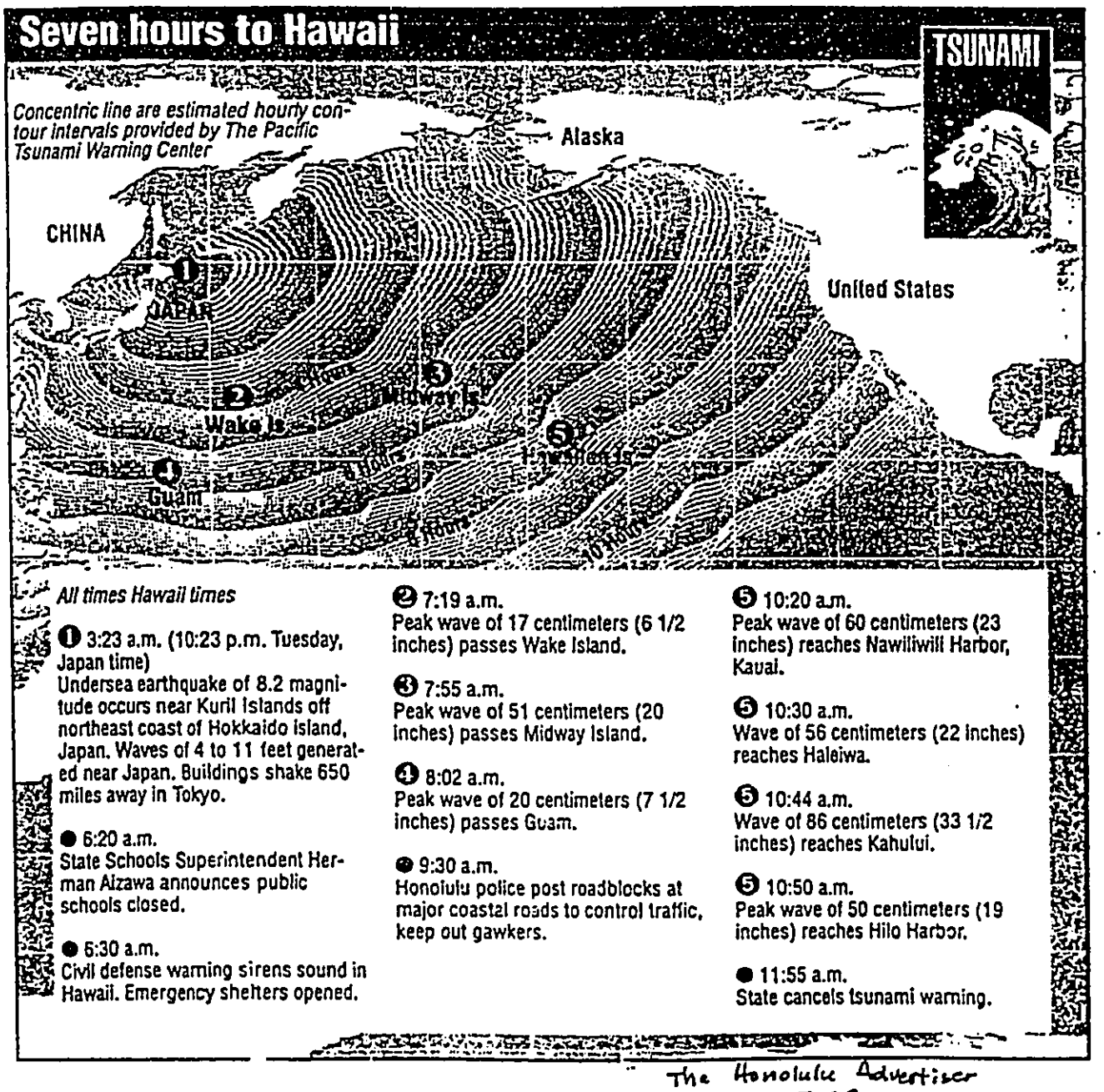
A range of tsunami-related information is available from the National Tsunami Hazard Mitigation Program at www.pmel.noaa.gov/tsunami-hazard.

For the average resident, one of the best resources is the local telephone book.

"One of the main things to do is every once in a while check the evacuation zone maps (in the front of the phone book) and work out evacuation routes for getting away from shore," Blackford said.

The Wave That Wasn't
October 4, 1994

A powerful earthquake off the eastern coast of Hokkaido sets the tsunami sirens at 6:30 a.m. in Hawaii.



All times Hawaii times

❶ 3:23 a.m. (10:23 p.m. Tuesday, Japan time)
Undersea earthquake of 8.2 magnitude occurs near Kuril Islands off northeast coast of Hokkaido Island, Japan. Waves of 4 to 11 feet generated near Japan. Buildings shake 650 miles away in Tokyo.

● 6:20 a.m.
State Schools Superintendent Herman Aizawa announces public schools closed.

● 6:30 a.m.
Civil defense warning sirens sound in Hawaii. Emergency shelters opened.

❷ 7:19 a.m.
Peak wave of 17 centimeters (6 1/2 inches) passes Wake Island.

❸ 7:55 a.m.
Peak wave of 51 centimeters (20 inches) passes Midway Island.

❹ 8:02 a.m.
Peak wave of 20 centimeters (7 1/2 inches) passes Guam.

● 9:30 a.m.
Honolulu police post roadblocks at major coastal roads to control traffic, keep out gawkers.

❺ 10:20 a.m.
Peak wave of 60 centimeters (23 inches) reaches Nawiliwili Harbor, Kauai.

❺ 10:30 a.m.
Wave of 56 centimeters (22 inches) reaches Haleiwa.

❺ 10:44 a.m.
Wave of 86 centimeters (33 1/2 inches) reaches Kahului.

❺ 10:50 a.m.
Peak wave of 50 centimeters (19 inches) reaches Hilo Harbor.

● 11:55 a.m.
State cancels tsunami warning.

The Honolulu Advertiser
October 5, 1994

BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

LETTER NO (P)1609.0

OCT 10 2000

Mr. James M. Rhodes, Director of Promotion
Ms. Betty Kosora, President
Kaiko'o Mall Association
777 Kilauea Avenue
Hilo, Hawaii 96720

Dear Mr. Rhodes and Ms. Kosara:

Subject: Hilo Judiciary Complex
Draft Environmental Assessment

Thank you for your letters on the subject Draft Environmental Assessment (EA), dated August 20 and September 12, 2000, and for your attendance at the public information meeting held on August 24, 2000. Thank you also for expressing your concerns specifically related to the EA's proposal for the Kaiko'o Mall property as a possible site for the new judiciary facility in Hilo.

We appreciate the information enclosed with your September 12, 2000, letter about past tsunamis and your concerns regarding potential future tsunamis. Our understanding is that the Kaiko'o Mall site is **not** within the **established** tsunami inundation zone defined by the 1960 tsunami which hit Hilo, but that a portion (mainly at the makai edge of the property) appears to be within a "**calculated**" or theoretically projected inundation zone postulated by University of Hawaii researcher, Dr. George Curtis in the early 1990s.

We have noted that, significantly, this calculated inundation zone runs through most of the other properties in the Kaiko'o area, including the present County of Hawaii building, the present State building (where a substantial part of the Judiciary's operations in Hilo is located presently), the Hilo Lagoon complex, and a portion of the former J. C. Penney property being redeveloped by the County. We believe that any future development of the Kaiko'o Mall site, whether for a court facility or any other use, institutional or commercial, can and should be undertaken with the identifiable ramifications of tsunami activity on the Kaiko'o area firmly in mind. Should this site be chosen for the new judiciary complex, we fully expect to coordinate the site development planning and facility design efforts with the County of Hawaii Civil Defense and other agencies which have been consulted throughout this EA process.

The other major concern expressed by your Association has been the prospect of displacement of the present Kaiko'o Mall tenants. Should the Kaiko'o Mall property be selected as the site for the judiciary complex, it is our hope to maintain an ongoing, open dialog with your Association regarding these concerns. As one of the present tenants of the mall has already indicated, there would be a considerable amount of time between a designation of the site for the new court facility and the start of any actual construction. This fact should allow adequate time to address and work toward resolving such concerns.

Your letters, together with this response letter, will be included in the final Environmental Assessment report. Again, we thank you for your interest, input, and participation in the EA process for this project.

Sincerely,

GORDON MATSUOKA
Public Works Administrator

TF:jk
c: Mr. Jeffrey Overton, Group 70 International, Inc.

Marlin Spike Werner, Ph.D.

Audiology, Speech / Language Pathology
400 Hualani Street, Suite 191-A, Hilo, Hawai`i 96720-4389
935-1299 (Voice) 961-3452 (FAX)

Tuesday, August 15, 2000

Department of Accounting and General Services
P.O. Box 119
Honolulu, HI 96810
Attn: Mr. Tyler Fujiyama

Re: Hilo Judiciary Complex
Proposed Site at Kaiko`o Mall
Draft Environmental Assessment (EA)
South Hilo District, Island of Hawai`i
TMK (3) 2-2-15:76

Dear DAGS:

Hui Aloha o`AARP 655 voted unanimously against the siting of the Judiciary Building on Aupuni Street between 75 Aupuni and 101 Aupuni. They were not denying a need for the building—only the site chosen.

Among the reasons given were

1. Increased congestion at the edge of the **tsunami zone** with the attendant evacuation hazards.
2. The obvious resultant Manhatanization of an area already at saturation for buildings.
3. The city planners and engineers advised against further development in the area for the above reasons plus the poor footing for foundations.

At the hearing, the only supporters of the siting of the building were attorneys who never addressed the siting problem. They made it pretty obvious that since they had their offices located in the vicinity, they didn't wish to walk any further than absolutely necessary to carry on their business.

The attorneys were vastly outnumbered by those opposed to the choice of building placement.

It appears that DAGS has ignored the testimonies of those opposed to the siting on Aupuni, and is just moving across the street.

The Kaiko`o location still poses many of the same **evacuation hazards** due to the increase of population to be evacuated.

I feel that DAGS has not operated in good faith with the public. Subsequent siting hearings were announced only three days before the times scheduled, and required many of us to change a page full of appointments to accommodate. Because those in charge know better, it appears to have been a deliberate manipulation so as to over-ride the expressed concerns of the public.

Sincerely yours,

M. S. Werner

Marlin Spike Werner, Ph.D.

Cc: Office of Environmental Quality Control
Group 70 International, Inc.
Hui Aloha o`AARP 655

BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

LETTER NO. (P) 1612.0

OCT 10 2000

Dr. Marlin Spike Werner
400 Hualani Street, Suite 191-A
Hilo, Hawaii 96720-4389

Dear Dr. Werner:

Subject: Hilo Judiciary Complex
Draft Environmental Assessment

Thank you for your letter dated August 15, 2000, regarding the concerns of Hui Aloha o'AARP 655 on the Kaiko'o Mall property as a potential site for the Hilo Judiciary Complex.

Should the Kaiko'o Mall site be selected for the new judiciary complex, DAGS and the Judiciary will carefully consider and be open to input by the nearby residents and existing tenants of Kaiko'o Mall.

We recognize your evacuation-related concerns associated with this location. A civil defense siren system which provides coverage over the Kaiko'o area is now in place, which we understand was not previously the case. We fully anticipate that evacuation considerations will be an important factor in the site planning and design of the building.

Your comment letter and this response letter will be included in the Final Environmental Assessment. We appreciate your input on this project.

Sincerely,

GORDON MATSUOKA
Public Works Administrator

TF:jk
c: Mr. Jeffrey Overton, Group 70 International, Inc.

NAKAMOTO, OKAMOTO & YAMAMOTO
ATTORNEYS AT LAW, A LAW CORPORATION

ROY K. NAKAMOTO
ALAN M. OKAMOTO
JEREL I. YAMAMOTO
HENRY T. NAKAMOTO

187 KAPIOLANI STREET
HILO, HAWAII 96720

TELEPHONE (808) 961-0641
FAX (808) 935-3872

NYO187@INTERPAC.NET

August 25, 2000

Mr. Jeffrey Overton
Group 70
925 Bethel Street
5th Floor
Honolulu, Hawaii 96813

re: Hilo Judiciary Building

Dear Mr. Overton:

Thank you for allowing me to submit my comments on behalf of the Hawaii County Bar Association at the Public Meeting held on August 24, 2000, regarding the Environmental Assessment for the Kaiko'o Mall Site. I would like to submit written comments to supplement your record.

The Hawaii County Bar Association is a voluntary organization of attorneys located in East Hawaii. We have about 125 to 150 members. There are about 250 attorneys on the Island of Hawaii. I am a member of an ad hoc committee of the Bar to monitor the progress of the new building. These comments are submitted for the members of the Bar.

As we stated in June 1996 when comments were being obtained on the various sites, there was an imperative need for a new courthouse in Hilo. That need has not changed. In fact, there is an even more pressing need for a new judiciary facility.

With the court facilities located at various sites, attorneys scramble to attend hearings in various courts. If the facilities were in one building or in a central complex, there would be efficiency and savings for clients and less delay in court proceedings.

The court staff simply does not have enough room for files or public court records. Due to the increasing case load, the Clerk's office has case files in hallway shelves and in storage rooms. The court has had to rent storage space because it does not have the facilities to store everything on one site. The court cannot maintain proper controls and supervision over these records.

The court facilities are inadequate to meet the needs of attorneys and clients. In many instances, settlement discussions are held outside the courtroom. Because there are no meeting rooms to discuss settlements with the client in private, these discussions are out in the public. Although the attorneys make every attempt to discuss sensitive and

confidential matters where no one can hear the same, this lack of privacy does not promote justice, does not promote confidence in the judicial process and does not give persons a fair opportunity to discuss this matter in private with their attorney.

The current court facilities provide inadequate security for its staff and the public. In Hilo, although there are numerous deputy sheriffs or security personnel around, prisoners wait in the hallways for hearing. Victims families wait in the same general area. Domestic abusers and victims must wait in the same area. This is a situation that is waiting to explode. A new and properly designed building should help to defuse this volatile situation.

The time to act is now. This process for a new courthouse has been going on for too long. The proper and fair administration of justice requires a new courthouse. At this point, the members of the bar do not particularly care what site is chosen, but they believe a selection must be made so the process can continue forward uninterrupted. Otherwise, we won't see a new courthouse for another 20 years.

The bar has members that can be a valuable resource to the Judiciary. We want to be partners with you in the new building and offer our services to the Judiciary. We want to be involved in the design of the courthouse to insure that it is user friendly for attorneys and for the public and that it provides for hi-tech support services.

Thank you for allowing the Bar to submit these comments. We hope that the process will move forward quickly and without interruption so that we can see a new building constructed no later than 2005. If you have any questions, please feel free to contact me.

Very truly yours,

Jerel J. Yamamoto

JIY:jha
cc: Henry Nakamoto
Peter Kubota
Katherine Garson
Gerald Takase
Kris Laguire

BENJAMIN J. CAYETANO
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810

LETTER NO (P)1616.0

OCT 10 2000

Mr. Jerel I. Yamamoto
Nakamoto, Okamoto & Yamamoto
Attorneys at Law, A Law Corporation
187 Kapiolani Street
Hilo, Hawaii 96720

Dear Mr. Yamamoto:

Subject: Hilo Judiciary Complex
Draft Environmental Assessment

Thank you for your August 25, 2000, comments on the Draft Environmental Assessment for the Hilo Judiciary Complex and for participating in the public information meeting held on August 24, 2000.

We recognize the ongoing difficulties with current Judiciary facilities in Hilo, as discussed in your letter dated August 25, 2000. We also appreciate the support of the Hawaii County Bar Association and look forward to your valuable input in the design of a new courthouse which improves judicial services in East Hawaii.

Your comment letter and this response letter will be included in the Final Environmental Assessment. We appreciate your input on this project.

Sincerely,

GORDON MATSUOKA
Public Works Administrator

TF:jk
c: Mr. Jeffrey Overton, Group 70 International, Inc.

Appendix A
Site Analysis

APPENDIX A : SITE SELECTION ANALYSIS

1.1 SITE EVALUATION CRITERIA

This section describes the site evaluation criteria which includes requirements utilized by the Department of Accounting and General Services and the State Judiciary to assess the relative merits of the project site. The criteria represent a wide range of considerations which are important in selecting an appropriate site for a new judiciary complex in Hilo.

The project site was evaluated according to the following criteria categories:

Building Site Criteria

This set of criteria evaluates the physical site characteristics, availability of infrastructure such as roadways and utilities, access and environmental characteristics. These parameters address site development constraints and opportunities.

Community Criteria

This set of criteria is used to evaluate the development of the site in terms of State and local land use designations, existing use and land ownership, compatibility with surrounding land, as well as proximity to population activity and judicial support services.

Cost Considerations

This section addresses the relative costs associated with site acquisition, any demolition that may be required, and on-site and off-site improvements necessary for development.

The following is a presentation of the individual criteria, and a description of the standards used to define rating categories for each criteria.

1.2 BUILDING SITE CRITERIA

1.2.1 Site Characteristics

The project site is evaluated for its size, slope, shape, stability for foundations, soil depth, aesthetic value, and natural beauty.

1) Size/Buildable Area:

The area requirement for the judiciary complex is based on a two-story 130,300 square foot structure with a footprint of approximately 1.5 acres. The parking requirement of approximately 410 stalls provided at-grade will require an additional 3.75 acres for a total of 5.25 acres to accommodate the building complex and at-grade parking. Another 1.75 acres would accommodate room for future expansion for a total of 7.0 acres.

Good: The site has a minimum buildable area of 7.0 acres, allowing for at-grade parking and potential future expansion.

Fair: The site has a minimum buildable area of 5.25 acres, allowing for at-grade parking, however, no land is available for potential future expansion.

Poor: The site has less than 5.25 acres of buildable area.

2) Slope:

Good: The average slope for the site is between 0 and 3 percent.
Fair: The average slope of the site is between 4 and 10 percent.
Poor: The average slope of the site is greater than 10 percent.

3) Shape:
The site should be generally rectangular in shape and the length to width ratio of the site should not exceed 2.5:1.0.

Good: The site is generally rectangular in shape. The length to width ratio is between 1.5:1 to 2.5 :1.
Fair: The site is fairly rectangular in shape and has a length to width ratio between 1:1 to 1.4:1, or is non-rectangular in shape and has an average length to width ratio between 1:1 to 2.5:1.
Poor: The site is highly irregular in shape creating less efficient utilization of the property and/or has a length to width ratio greater than 2.5:1.

4) General Soil Stability for Foundations:
This criteria relates to the suitability of the soil for use as fill material under roadways and bearing capacity for buildings. *The Soil Conservation Service Report "Soil Survey of Island of* Hawaii, State of Hawaii" includes a rating system indicating suitability based on an interpretation of the following engineering parameters: compressibility, workability, stability, shear strength, erodibility, plasticity, and location of water table. The Soil Conservation Service rating system of "good", "fair" and "poor" is utilized to rate the project site.

Good: Soil features of undisturbed soil which influence its capacity to support low buildings include high bearing capacity, high compressibility, high shear strength and is subject to minimal sliding; or soil has a depth of less than two feet to bedrock or lava (consolidated material).
Fair: Soil has moderate bearing capacity, moderate compressibility, moderate shear strength and is subject to moderate sliding; or soil has a depth of two to five feet to bedrock.
Poor: Soil has low bearing capacity, low compressibility, low shear strength and is subject to sliding; or soil has a depth to bedrock of greater than five feet.

5) Soil Depth for Site Work:

Good: The site is composed of non-rocky soils with a depth greater than 10 feet to bedrock or lava. Deeper soils would facilitate installation of underground utilities, lot grading and road building.
Fair: The site is composed of non-rocky soil with a 6 to 10 feet depth to bedrock or lava.
Poor: The site is composed of (1) non-rocky soil with a 0 to 5 feet depth to bedrock or (2) marshy soil or (3) lava.

6) Aesthetic Value:

Good: The site is not an aesthetic asset to the community and will not interfere with scenic vistas when developed.
Fair: The site has some aesthetic value to the community or may partially obstruct scenic vistas when developed.
Poor: The site is an aesthetic asset to the community or will obstruct scenic vistas when developed.

7) Natural Beauty:

CORRECTION

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

Good: The average slope for the site is between 0 and 3 percent.
Fair: The average slope of the site is between 4 and 10 percent.
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Good: The site is composed of non-rocky soils with a depth greater than 10 feet to bedrock or lava. Deeper soils would facilitate installation of underground utilities, lot grading and road building.
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6) Aesthetic Value:

Good: The site is not an aesthetic asset to the community and will not interfere with scenic vistas when developed.
Fair: The site has some aesthetic value to the community or may partially obstruct scenic vistas when developed.
Poor: The site is an aesthetic asset to the community or will obstruct scenic vistas when developed.

7) Natural Beauty:

Good: The site contains trees, plants, rock formations, open space, etc. which can be preserved and integrated into the proposed building and landscape design.

Fair: The site generally lacks natural beauty but still has reasonable potential for beautification through proper landscaping.

Poor: The site lacks natural beauty with potential for beautification only achievable with extensive site improvements.

1.2.2 Roadways and Utilities

Roadways and utility concerns covered in this section are adequacy of roadways, water service, sewer service, drainage facilities, and electrical power and communication services.

8) Adequacy of Roadways:

Good: The site is served by adequate roadways to accommodate traffic generated by the proposed facility within the short-term and long-term horizon.

Fair: The site is served by roadways requiring widening or other improvements to meet the interim and ultimate needs of the proposed facility. Main access route involves a residential collector roadway.

Poor: The site has no roadways or is only served by a minor residential roadway. *Construction of a roadway system* is required to specifically accommodate the new facility.

9) Adequacy of Water:

Good: The site has adequate water pressure and fire protection, adequate size of transmission lines, and storage capacity to meet ultimate building complex needs.

Fair: The existing water service requires modest improvements to provide adequate service which will meet interim and ultimate needs of the building complex.

Poor: The site has inadequate water service and will require the development of a new water system or major improvements to the existing water system to specifically meet building complex needs (i.e. development of a reservoir and/or lengthy extension of transmission line to the site).

10) Adequacy of Wastewater:

Good: The site has adequate sewer lines available to meet the needs of the proposed facility.

Fair: The site will have adequate sewer service through a modest extension of the existing collection system which will serve interim and ultimate needs of the proposed facility.

Poor: The site has no sewer service and will require a major extension of the existing collection system. Development of an on-site treatment and reclamation system is a possible alternative to a major sewer extension.

11) Adequacy of Drainage:

Good: The site is served by existing on-site drainage facilities that are adequate to meet ultimate building complex needs. Runoff from adjacent lands entering the site is not expected to require drainage improvements on- or off-site.

Fair: The site will have adequate on-site drainage facilities once developed to serve interim and ultimate needs of the building complex. Modest drainage system improvements are required to handle runoff from the complex.

Poor: The site has inadequate drainage facilities and will require the development of a major drainage system on- and/or off-site to serve the building complex.

12) Adequacy of Power and Communication:

Good: The site has or is proximate to adequate existing power and communications services and these services are available to meet the facility's needs.

Fair: The site will require some modest off-site improvements which will provide adequate power and communications to serve the interim and ultimate needs of the facility.

Poor: The site has insufficient power or communications available and will require extensive off-site improvement of these services to meet the facility's ultimate needs.

1.2.3 Accessibility

Accessibility considerations for the project site include: adequacy of pedestrian access, adequacy of automobile access and availability of bus service.

13) *Pedestrian Access*:

Good: The site has pedestrian access along two or more sides of the property.

Fair: The site has pedestrian access along only one side of the property.

Poor: The site has no existing pedestrian access to the property.

14) Automobile Access:

Good: The site abuts roadways along one short side and one long side to provide ease of access and more efficient traffic circulation.

Fair: The site has roadways along one long side or two short sides.

Poor: The site has a roadway along only one short side, or is served by a cul-de-sac or dead-end street, or the site is a flag lot.

15) Accessibility To Public Bus Service

Good: The site is served by a major bus line which passes the site along an adjacent roadway. This service provides users of the proposed facility transportation options.

Fair: A major bus line passes within reasonable (0.5 mile) distance of the site.

Poor: No bus service is available.

1.2.4 Environment

16) Botanical and Wildlife Resources:

Good: There are no known rare or endangered plant species, or significant wildlife habitat. The site contains mainly introduced species and common wildlife.

Fair: The site contains native plant species commonly found in the area.

Poor: The site contains rare or endangered plant and/or wildlife species, or significant wildlife habitat.

17) Historic/Archaeological Resources:

Good: There are no known significant historic or archaeological resources on the site.

Fair: The site contains historic or archaeological resources which require data recovery, further study and mitigation.

Poor: Significant historic or archaeological resources are on the site and require preservation which constrains the buildable area.

18) Air Quality/Industrial and Agricultural Nuisances:

Good: The site is free from surrounding significant noise, dust, odors, smoke, and other nuisances created by industrial or agricultural activities and adjacent highways. There are no sources of significant air pollution or odors within 500 feet of the property boundary.

Fair: The noise, dust, odors, smoke, and other nuisances from industrial or agricultural activities and highways are at worst periodic but well within the limits of human tolerance. A source of air pollution or odors is located within 500 feet of the property boundary.

Poor: The above mentioned nuisances cause considerable discomfort and hamper the function of the facility, or a significant source of air pollution or odors is located on adjacent land.

19) Toxic Waste:

Good: There are no visible signs or known presence of hazardous waste on the site, adjacent to the property boundary, or known sources within 1,000 feet.

Fair: There are significant hazardous waste sources within 500 feet of the property boundary.

Poor: There are significant hazardous waste sources on the property and/or the adjacent lands.

1.3 COMMUNITY CRITERIA

1.3.1 Government

This set of criteria is used to evaluate the compatibility of the project site with State and local land use designations, potential impacts on the surrounding community and uses, existing land use and ownership, and proximity to major population activity and judicial support services.

20) State Land Use:

Good: The site is within the Urban Land Use District which permits urban-related development without undergoing a boundary amendment process.

Fair: The site is within the Agricultural or Conservation District and is adjacent to the Urban District. A petition for a boundary amendment would be required, however, approval is considered reasonable and likely because it would involve contiguous development of urban land.

Poor: The site is within the Agricultural or Conservation District and is not adjacent to the Urban District. A boundary amendment may not be appropriate since it would involve scattered and non-contiguous urban development.

21) County General Plan:

Good: The site is designated for High Density Use such as general and office commercial, multiple residential, or institutional use consistent with County policies for land use in the project area.

Fair: The site is designated for Medium Density Use such as residential apartments and village/neighborhood commercial, or for alternate urban expansion and open space use which may be compatible depending upon the extent of development proposed around the project area.

Poor: The site is designated for Low Density Use such as single-family residential or uses such as hotel, industrial, or agricultural use which are incompatible with public building use.

22) County Zoning:

The Hawaii County zoning code states that the development of community, public, and public service buildings are permitted uses within any zoning district "provided they conform to the general plan". Consistency with the County Zoning designation is rated as follows.

Good: The site is zoned commercial which permits public buildings. Or, regardless of the site's zoning, the proposed public building use conforms with the General Plan, therefore no rezoning is required.

Fair: The site's zoning designation is something other than commercial which may be indicative that the proposed public building use could be less compatible with the surrounding uses. However, the public building use conforms with the site's General Plan, therefore no rezoning is required.

Poor: The site is zoned for uses such as single-family residential, agriculture, industrial or resort-hotel uses and the proposed public building use does not conform with the site's General Plan designation. A General Plan change and rezoning will be required.

23) Special Management Area (SMA)

The development of sites within the Special Management Area require an SMA Use Permit and are subject to Chapter 205-A of the Hawaii Revised Statutes as amended, and Section 25-52, Permits Granted Pursuant to Chapter 205, Hawaii Revised Statues and the Hawaii County Zoning Code.

Good: The entire site is outside of the Special Management Area.

Fair: A portion of the site is within the Special Management Area.

Poor: The entire site is within the Special Management Area.

24) National Flood Insurance Program

The development of sites within a designated flood hazard district must be in compliance with the National Flood Insurance Program. The flood hazard districts are delineated on the Federal Emergency Management Agency's Flood Insurance Rate Maps (FIRM).

Good: The entire site is outside of any flood hazard district. This rating also applies to sites in areas where flood hazards have not yet been determined. This assumes that the absence of an evaluation implies it is an area of low criticality.

Fair: A major portion of the site, including any occupied structures, is outside of a flood hazard district.

Poor: A major portion of the site is within a flood hazard district.

1.3.2 Community Effects

The project site is rated on the potential impacts the proposed facility may have on the community and surrounding uses. Factors considered include displacement of existing structures, existing use, interference with nearby institutions, surrounding land use, and proximity to population activity and judiciary support services.

25) Displacement:

Good: The site is vacant or requires displacement of only abandoned, dilapidated or *underutilized existing structures.*

Fair: The site may be acquired without relocating any combination of less than five dwelling units and business establishments.

Poor: The site cannot be acquired without the relocation of any combination of more than five dwelling units and business establishments.

26) Interference With Institutions:

Good: The site is greater than 0.5 miles from hospitals, rest homes, schools, and any other institution which may be disturbed by the proposed use.

Fair: The site is far enough away (0.25 to 0.5 mile) from any hospital, rest home, school, etc. so that any disturbance to the institution by the activities of the proposed building complex will be minimal.

Poor: The site is adjacent to a hospital, rest home, school or similar institution.

27) Surrounding Land Use:

Good: The site is vacant or underutilized and/or is surrounded by government-related offices or commercial establishments, and the Judiciary Complex can be developed without significantly disrupting their existing operations.

Fair: The site is occupied and/or surrounded by government-related offices or commercial establishments, and development of the Judiciary Complex will result in disruption of existing government services or business activities.

Poor: The site is surrounded by or bordered on two sides by incompatible uses such as agricultural, industrial , or single-family residential uses.

28) Land Ownership:

Good: The site is entirely owned by the Federal, State or County government which minimizes acquisition costs.

Fair: The site is entirely owned by less than three private individuals or business entities.

Poor: The site is owned by three or more individuals or business entities.

29) Proximity To Major Population Activity And Commercial Centers:

Good: The site is within a quarter-mile (0.25 mile) of commercial and office centers (Downtown Hilo or the County/State Office Center) which facilitates public access and supports judiciary operations.

Fair: The site is reasonably close (0.25 to 1.0 mile) to major commercial and office centers.

Poor: The site is more than one-mile (1.0 mile) away from major commercial and office centers.

30) Relation To Judicial Support Activities:

Good: The site is within walking distance (0.25 mile) to the State and County Buildings which contain government legal and law enforcement offices and criminal justice-related facilities such as the police station and correctional center.

Fair: The site is located between a quarter-mile to one-mile (0.25 to 1.0 mile) from government legal and law enforcement offices and facilities.

Poor: The site is located more than one-mile (1.0 mile) from government legal and law enforcement and facilities.

31) Relation To Private Law Offices And Attorneys:

Good: The site is located within a one mile (1.0 mile) of approximately 50 percent or more of all private law offices and attorneys in Hilo.

Fair: The site is within 1.0 mile of between 25 percent to 50 percent of all private attorneys in Hilo.

Poor: The site is within 1.0 mile of less than 25 percent of all private attorneys in Hilo.

1.4 COST CONSIDERATIONS

An important consideration in the selection of a site for the new judiciary complex is the relative costs associated with site acquisition and development. Cost estimates have been prepared for land acquisition, and on-site and off-site improvements. The estimates permit approximate costs associated with the project site, but are not intended to reflect actual expected expenditures the State may incur.

Site Acquisition Costs

Site acquisition costs are based on the 1996 County of Hawaii Real Property Assessment values for land and any buildings on the sites. The assessed values represent an estimation of the acquisition costs for privately-owned land. The assessed values are not intended to reflect market value or the costs the State may actually incur. Additional costs for displacement of existing on-site uses or relocation of tenants are not included.

On-Site Improvement Costs

On-site improvements costs have been estimated for the development of required infrastructure and utilities within the site's boundaries. These include: clearing and grading, water, wastewater, drainage, and power and communications.

Off-Site Improvement Costs

Off-site improvement costs have been estimated for the development of required infrastructure and utilities outside of the site's boundaries. These include: roadways, water; wastewater, and power and communications.

KAIKOO MALL SITE
TMK: 2-2-15: 76

BUILDING SITE CRITERIA

A. Site Characteristics

1) Size/Buildable Area ..... 8 acres

2) Slope ..... Good
The average slope is between 0 and 3%.

3) Shape ..... Good
The site is generally rectangular in shape.

4) General Soil Stability for Foundations ..... Poor
Soil Phase: Hilo silty clay loam (HoC) and
Keahukaha (rKFD).

5) Soil Depth for Site Work ..... Fair
Description: approximately 6 to 8 feet to bedrock.

6) Aesthetic Value ..... Good
The site is not an aesthetic asset.

7) Natural Beauty ..... Fair
Existing trees, plants, scenic views: Limited
Potential for beautification: Yes
Crossed by overhead lines: Yes

B. Roadways and Utilities

8) Adequacy of Roadways ..... Good
The site is bounded by Kilauea Avenue which is a four-lane street
and Aupuni Street which has two wide lanes.

9) Adequacy of Water ..... Good
8-inch lines available within Aupuni Street.
12-inch line available within Kilauea Avenue.

10) Adequacy of Wastewater ..... Good
8-inch sewer line available within Aupuni Street.

11) Adequacy of Drainage ..... Good
Existing drainage facilities are in place.

12) Adequacy of Power and Communication ..... Good

C. Accessibility

13) Pedestrian Access .....Good
Number of sides with available access: Three.

14) Automobile Access .....Good
Frontage along Aupuni Street and Kilauea Avenue.

15) Public Bus Service .....Good
The Hele-On Bus stops at Kaiko'o Mall.

D. Environment

16) Botanical/Wildlife Resources .....Good
The site is entirely developed with some landscape plantings.

17) Historic/Archaeological Resources.....Good
The site is entirely developed.

18) Air Quality-Industrial/Agricultural Nuisances .....Good
The site is not adjacent to agricultural or industrial uses.

19) Toxic Waste.....Good
No visible signs of hazardous waste on or adjacent to the site.

COMMUNITY CRITERIA

E. Government

20) State Land Use .....Good
District Designation: Urban

21) County General Plan .....Good
General Plan Designation: High Density Urban

22) County Zoning .....Good
Zoning Designation: CG-7.5 General Commercial

23) Special Management Area .....Good
The entire site is outside of the SMA.

24) National Flood Insurance Program .....Good
The site lies within the Other Flood Area Zone X which is outside of the 500-year floodplain.

F. Community Effects

25) Displacement.....Poor

The site contains multiple tenants of the Kaikoo Mall Shopping Center.

26) Interference with Institutions ..... Good
The site is within approximately 0.5 miles of St. Joseph's High School and Kapiolani School, however, the judiciary complex is not anticipated to interfere.

27) Surrounding Land Use ..... Good
The site is surrounded by government offices and commercial establishments.

28) Land Ownership ..... Fair
The land is privately owned by a single entity: The Harry and Jeanette Weinberg Foundation, Inc.

29) Proximity to Major Population Activity and Commercial Centers ..... Good
The site is located within a quarter mile of the County/State Office Center.

30) Relation to Judicial Support Activities ..... Good
Proximity to criminal justice-related facilities:
Approximately 1/2 mile from Hilo Police Station and across Aupuni Street from government offices.

31) Relation to Private Law Offices and Attorneys ..... Good
Located within 1.0 mile from of more than 50% of Hilo's private attorneys.

Appendix B

Traffic Impact Analysis Report

TRAFFIC IMPACT ANALYSIS REPORT

PROPOSED JUDICIARY BUILDING
AT KAIKO'O MALL SITE

By:

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May 1, 2000

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TRAFFIC IMPACT ANALYSIS REPORT
PROPOSED JUDICIARY BUILDING AT KAIKO'O MALL SITE

The Hawaii State Judiciary proposes to develop a judicial complex on the site of the Kaiko'o Mall in Hilo, Hawaii. A study was conducted to determine the traffic impacts of the proposed project and to identify any mitigating measures. This report documents the methodology, existing conditions, forecast of future conditions, evaluation of traffic impacts, and conclusions of the study.

PROJECT DESCRIPTION

The State of Hawaii Judiciary has been attempting for years to put up a new building to consolidate and modernize its judicial functions in Hilo. They identified a site next to the State Office Building in 1990 but were not successful in implementing it. They then conducted an extensive review of alternate sites in the Hilo area and have identified the Kaiko'o Mall property as the most desirable. The southern eight acre portion of the site is available with most of the retail tenants having vacated the mall building. The new Judicial Building is expected have 212 employees, many who are currently in the State Office Building. The building is expected to reach this occupancy level by 2006.

Figure 1 shows the proposed project site in relation to the surrounding street network. The site is bounded by Kilauea Avenue to the west, Pauahi Street to the north, and Aupuni Street to the east and south.

The northern portion of the site, formerly occupied by JC Penney, has been purchased by the County of Hawaii for expansion of the current County building. Based on the "Traffic Impact Analysis Report, Closure of Aupuni Street for the County Building Expansion" (February 1998) prepared by M&E Pacific, Inc., the County proposed to place 275 full-time equivalent employees in the building. However, only about 50 new

employees would be brought into this area. Most of the employees would be relocated from the current County Building which has been characterized as overcrowded. The County also considered closing Aupuni Street at Pauahi Street as part of this improvement, but did not pursue it.

STUDY METHODOLOGY

The study reviewed existing roadway and traffic conditions. It forecast traffic volumes to account for the increase in ambient traffic and traffic generated by the County Building Expansion and the proposed project. The study then conducted a level of service analysis to determine the traffic impacts of the proposed project and recommended appropriate traffic mitigation measures.

For the purposes of this study, it was assumed that the County would have control of the northern portion of the Kaiko'o Mall property, including parking and access. The same employee assumptions used in the aforementioned study were maintained, but the Aupuni Street closure would not be in effect. The State Judiciary would control the southern portion of the project site, including parking and access. The new Judiciary Building would have 212 employees. Those Judiciary employees relocated from the State Office Building would be replaced by other State employees, so there would not be a net loss of employees in the area.

Based on the results of the previous studies and current concerns, the following six intersections identified on Figure 1 were analyzed in the study:

Kilauea Avenue at Aupuni Street
Kilauea Avenue at Pauahi Street
Kilauea Avenue at Hualalai Street
Kilauea Avenue at one Kaiko'o Mall driveway access
Pauahi Street at Aupuni Street
Kamehameha Avenue at Pauahi Street.

In addition to the aforementioned County Building expansion report, this study also utilized material from "Traffic Impact Analysis Report for the Hawaii County Judicial Building" (1991) prepared by M&E Pacific, Inc., for the initial project site. Information from these two studies were utilized as appropriate.

EXISTING CONDITIONS

Surveys were taken to determine existing roadway and traffic conditions.

Roadway Conditions

Kilauea Avenue is a four lane roadway running in a generally north-south direction on the west boundary of the project site. It has separate left turn lanes at major intersections including southbound at Aupuni Street and at Pauahi Street, and northbound at Hualalai Street. The traffic signals at these left turn lanes have leading left turn phases and follow with permitted left turns on green. There are no southbound left turn lanes into the two access driveways of Kaiko'o Mall on Kilauea Avenue. Parking is permitted on certain portions on the mauka side of Kilauea Avenue.

Pauahi Street is another four lane roadway providing east-west (makai-mauka) access between the Bayfront Highway and Kilauea Avenue. Parking is permitted on the south side of the roadway between Kilauea Avenue and Aupuni Street, and on both sides between the County Building and Piopio Street.

Aupuni Street is a two lane local street that provides a connection between Kilauea Avenue and Pauahi Street. It borders the south and east boundaries of the Kaiko'o Mall property. Parking is permitted on both sides of Aupuni Street. The approach to Pauahi Street is stop sign controlled and permits outbound right turns only. Aupuni Street intersects Kilauea Avenue at a signal controlled T-intersection. The Aupuni Street approach has an exclusive left turn lane and a shared left and right turn lane.

Pauahi Street and Hualalai Street intersect Kilauea Avenue as T-intersections but from different directions. These two side street approaches are about 200 feet apart with the middle lane between them marked as exclusive left turn lanes. Due to the proximity of these two intersections, they act as one intersection for signal timing purposes. A complex traffic signal timing plan facilitates traffic movements through the adjoining intersections. Both the Pauahi Street and Hualalai Street approaches have two lanes, one each for exclusive left and right turns.

Kamehameha Avenue and the Bayfront Highway are major makai roadways in Hilo. The former facility is a local arterial providing access between downtown Hilo and Waiakea. The latter facility becomes the Mamalahoa Highway that provides access to the Hamakua coast. Kamehameha Avenue is a four lane roadway with a separate left turn lane on each approach to Pauahi Street. The makai bound approach of Pauahi Street has three lanes, one each for left, through, and right turn movements. The mauka bound approach has one through and one left turn lane, and an exclusive right turn lane to Kamehameha Avenue. The Pauahi Street and Kamehameha Avenue intersection is signalized.

Traffic Conditions

Traffic turning movement counts were taken at the six study intersections during the morning and afternoon peak periods on Thursday, April 13, 2000. The worksheets for the counts are included in the Appendix. The resultant traffic volumes are shown on Figures 2A and 2B for the morning and afternoon peak hours, respectively. The current quality of traffic conditions is discussed in the latter section on "Traffic Impact Analysis".

These current traffic volumes were compared with traffic volumes taken in the previous studies. The 1997 study for the County Building expansion took counts in the morning, mid-morning and afternoon peak periods, but did not include the Hualalai Street and Kamehameha Avenue intersections. The 1990 study for the initial Judiciary building

took counts in the mid-morning and afternoon peak periods. Counts were taken in mid-morning for these earlier studies since the retail component of the mall caused mid-morning traffic volumes to be higher than the morning commuter traffic volumes. However, since there would be no major retail activity with the proposed project, only the two commuter peak periods were analyzed for this study. Based on the available data, comparisons were made with 1997 AM, 1997 PM and 1990 PM data.

The results of the analysis are shown on Table 1. The results for each column show mixed trends of higher and lower traffic. Comparison with the 1997 AM data indicates that traffic volumes on Kilauea Avenue increased slightly from 1% to 7%, although the volumes on the northbound approach at Pauahi Street did decrease 7%. Outbound traffic from Aupuni Street decreased 14% at Kilauea Avenue but remained constant at Pauahi Street. Westbound traffic on Pauahi Street increased 5% at Aupuni Street but decreased 4% at Kilauea Avenue.

Comparison with the 1997 PM data showed traffic decreases on Kilauea Avenue ranging from 10% to 19%. Outbound traffic from Aupuni Street decreased 8% at Kilauea Avenue but remained constant at Pauahi Street. Westbound traffic on Pauahi Street decreased 6% at Aupuni Street but increased 2% at Kilauea Avenue.

The reason for the increase in morning traffic and decrease in afternoon traffic on Kilauea Avenue can probably be attributed to a small increase in commuter traffic but loss of retail traffic in the afternoon. Likewise, the decrease in outbound traffic on Aupuni Street at Kilauea Avenue can be attributed to loss of retail activity. The constant traffic levels on Aupuni Street at Pauahi Street can be attributed to the constancy of government activity at this end of the street.

Comparison with the 1990 PM data showed large decreases on Kilauea Avenue, although the volumes on the southbound approach at Pauahi Street did increase 26%. Conversely, traffic increased on Kamehameha Avenue 85% northbound and 5%

southbound. This decrease on Kilauea Avenue and increase on Kamehameha Avenue can probably be attributed to the closure of the Bayfront Highway south of Pauahi Street and the repair of the Wailoa Bridge during the 1990 count, which forced traffic onto Kilauea Avenue during this period. Outbound traffic from Aupuni Street decreased 22% at Kilauea Avenue, probably due to loss of retail activity at the mall. However, it remained constant at Pauahi Street. Traffic volumes for both approaches of Pauahi Street decreased 4%.

TRAFFIC FORECAST METHODOLOGY

The three components of traffic change included:

1. The increase in ambient traffic due to regional growth.
2. The additional traffic generated by the relocated employees in the County Building expansion.
3. The additional traffic generated by the Judiciary Building.

The results for these three components were combined to obtain a total traffic forecast.

Ambient Traffic Increase

The analysis of existing and previous traffic volumes implied a small growth in commuter traffic. Therefore, it was assumed that traffic would increase during the six year project implementation period at the 1.7% annual rate used in the first judiciary building study. This rate is the mid-range forecast from the Hawaii County General Plan. The current traffic volumes shown on Figures 2A and 2B were increased 10% with the exception of traffic turning into or out from Aupuni Street and the Kaiko'o Mall driveway. The ambient traffic forecasts for the AM and PM peak hours in the year 2006 are shown on Figures 3A and 3B, respectively.

County Building Extension

The expansion of the County into the former JC Penney building is expected to add 50 relocated employees to the area. It was assumed that traffic of the existing employees in the area would be included in the current traffic volumes. The trip generation, distribution and assignment analysis from the aforementioned traffic study was utilized for this study. However, the proposed closure of Aupuni Street was not assumed for this study. The trip generation analysis is summarized on Table 2. The trip assignment results for the morning and afternoon peak hours are shown on Figures 4A and 4B, respectively. Some of the turning movements from the original study were modified to account for the non-closure of Aupuni Street.

The traffic turning movements into the Kaiko'o Mall lot should be considered preliminary since definite parking lot and internal circulation plans have not been developed. A well designed parking and circulation plan will do much to minimize traffic impacts on the adjacent street system.

Proposed Judiciary Building

The number of employees being proposed for the Judiciary Building is similar to the number assumed in the original study. Therefore, the results of the trip generation, distribution and assignment analysis for the afternoon peak hour from the 1991 report were used for this study. The results of the trip generation analysis shown on Table 2 indicate 55 inbound and 180 outbound trips. The trip assignment results as modified for the new building site are shown on Figure 5B.

The original M&E study conducted a mid-morning analysis rather than a morning commuter peak for the reasons given earlier. Therefore, this study conducted a separate trip generation, distribution and assignment analysis for the morning peak hour. The original building area of 109,000 square feet used in the previous study was assumed for this study. The original study found that a trip generation analysis based on employees could not be used since employee densities in Judiciary Building would

be about half that of normal office buildings. Hence, the building area was used, as was for this study. The results using the Institute of Transportation Engineers Trip Generation Handbook (Fourth Edition, 1987) are shown on Table 2. The proposed Judiciary Building would generate 165 inbound and 25 outbound trips in the morning peak, about 45 less trips than the afternoon peak hour. The trip assignment results are shown on Figure 5A.

As with the County Building extension, the trip assignments into the Kaiko'o Mall should be considered preliminary until definite parking lot and internal circulation plans are made. Although there are two separate access driveways on Kilauea Avenue, this study assumed that Judiciary Building traffic would be sharing the same access driveway as the County. This assumption would emphasize the impacts of a poor access design.

Total Traffic Forecast

The ambient traffic forecast was combined with the traffic which would be generated by the County Building Expansion and the proposed Judiciary Building to obtain the total traffic forecast. The traffic volumes from Figures 3A, 4A and 5A were added together to obtain the total traffic forecast for the morning peak hour shown on Figure 6A. Likewise, Figures 3B, 4B and 5B were combined to obtain the total traffic forecast for the afternoon peak hour shown on Figure 6B.

TRAFFIC IMPACT ANALYSIS

Traffic volumes in themselves do not give an indication of the quality of traffic flow. The Transportation Research Board has developed methodologies to calculate levels of service on various types of roadways as a means of indicating traffic quality. Their Highway Capacity Manual (1994) has separate methodologies to calculate levels of service for signalized and unsignalized intersections, as described in the Appendix.

The methodology for calculating levels of service of a signalized intersection results in a single intersection value, as well as separate approach values, based on average stop time delays. The methodology for calculating levels of service of an unsignalized intersection does it for several critical movements: the outbound left and right turn movements from the stop-controlled approach, and the left turn movement from the main through street; based on the expected delay.

Traffic impacts can be measured by changes in levels of service as traffic generated from proposed projects are added to the roadway system. A decrease in level of service from an acceptable level to an unacceptable forecast level would indicate an adverse traffic impact. For signalized intersections, acceptable levels of service range from A to D, while levels E and F are considered unacceptable. Levels of service A to E are considered acceptable for unsignalized intersections, and level F unacceptable. Mitigating measures would be considered for intersections with unacceptable levels of service.

The results of the signalized and unsignalized intersection analyses are summarized on Table 3. They show very good results at all but one of the intersections. All of the signalized intersections are currently operating at level of service B and are forecast to remain so into the future with the additional traffic. This indicates that the ambient traffic growth and additional traffic from the two projects will not have an adverse impact on the signalized intersections.

Both critical movements at the Aupuni Street/Pauahi Street intersection, an unsignalized interserction, are currently at level of service A and are forecast to remain so in the future. This indicates that there would be no adverse traffic impact at this location.

The unsignalized Kaiko'o Mall access driveway on Kilauea Avenue has a different result. Despite the very small number of vehicles currently leaving the driveway, the

outbound left turn movement is currently at level of service D in the morning peak and level E in the afternoon peak due to the high volume of through traffic on Kilauea Avenue. Even with no additional left turning traffic, the ambient forecast decreases to level E in the morning and level F in the afternoon due to the higher traffic volumes forecast on Kilauea Avenue. With the additional vehicles generated by the two projects, the left turn movement would remain at level of service E in the morning only because a few vehicles would be added. However, the afternoon delays would increase significantly with the higher volume of left turns.

Although only one of the two access driveways was analyzed, this analysis is apropos to both. It indicates that both driveways are near their capacities in the peak periods and cannot accommodate much more outbound left turn movements. Drivers are already aware of this given the small number of left turns and larger number of exiting right turns in the afternoon peak. Left turn restrictions would need to be imposed during the morning and afternoon peak periods. Also, the parking and internal circulation plans for both the County and State portions of the parking lot would be critical to minimizing traffic impacts on the adjoining street system. The design would have to permit access to Aupuni Street and Pauahi Street as an alternative to entering Kilauea Avenue.

Based on the signalized intersection analysis, the Aupuni Street and Pauahi Street approaches to Kilauea Avenue would be able to handle additional traffic generated by the Judiciary Building that could not access Kilauea Avenue. In adddition, the through traffic volumes on Pauahi Street are much lower than on Kilauea Avenue, and drivers should find it easier to make left turns onto Pauahi Street during the peak periods.

CONCLUSIONS

1. The proposed Judiciary Building at Kaiko'o Mall, together with the County Building expansion, is not expected to have an adverse traffic impact on the adjacent street system. Traffic performance is currently very good and is

expected to remain so with ambient traffic growth and the traffic generated by the proposed projects.

2. The access driveways from Kaiko'o Mall onto Kilauea Avenue have nearly reached their left turn capacities. Peak period left turn restrictions should be imposed for safety reasons. The circulation pattern for the parking lot should provide access to Aupuni Street and Pauahi Street as alternative routes for the left turn ban. The Aupuni Street and Pauahi Street approaches to Kilauea Avenue have sufficient capacity to accommodate the additional diverted traffic.

3. A well designed parking and internal circulation plan will be critical to minimizing traffic impacts on the adjacent roadways.

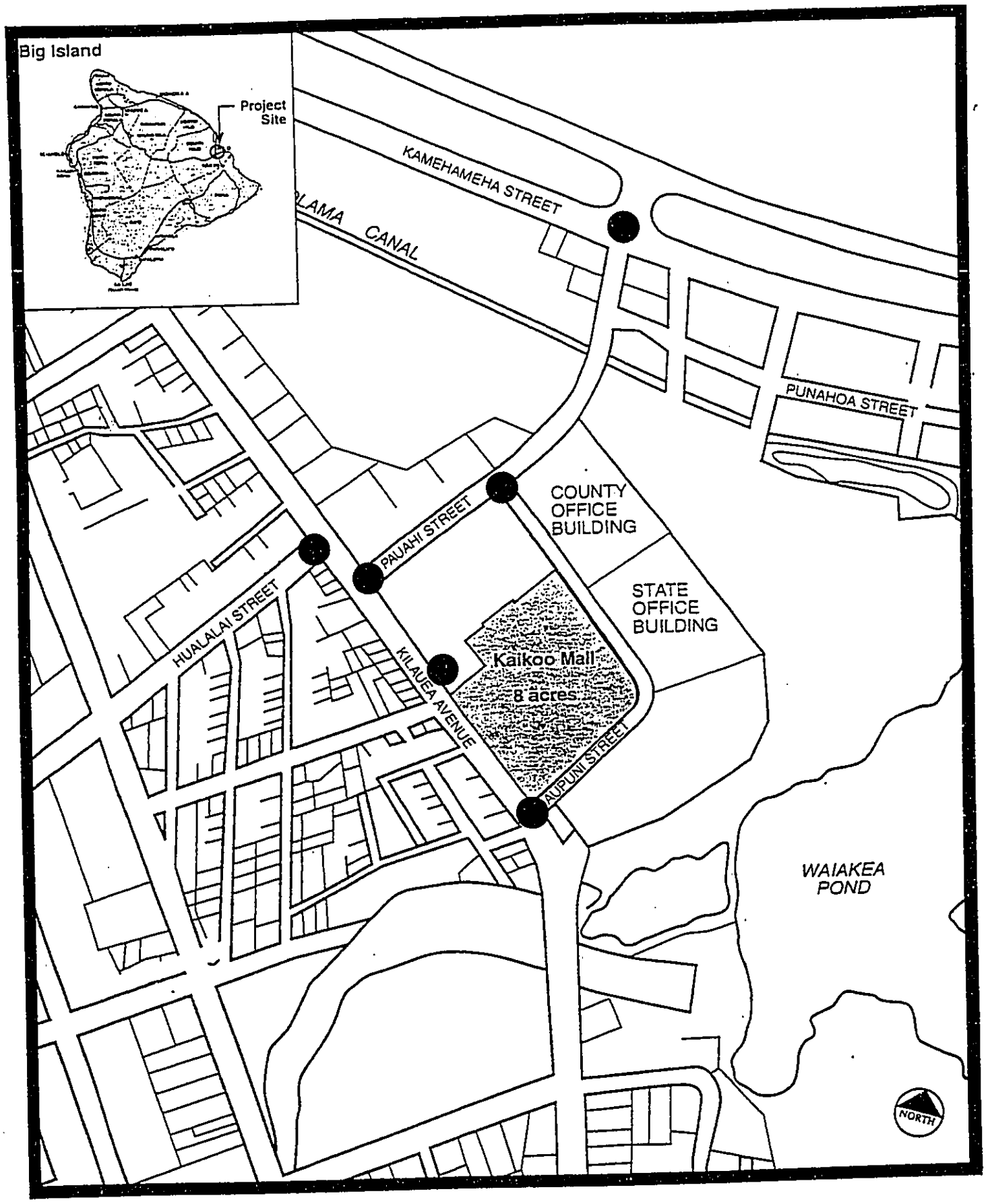


FIGURE 1
LOCATION MAP

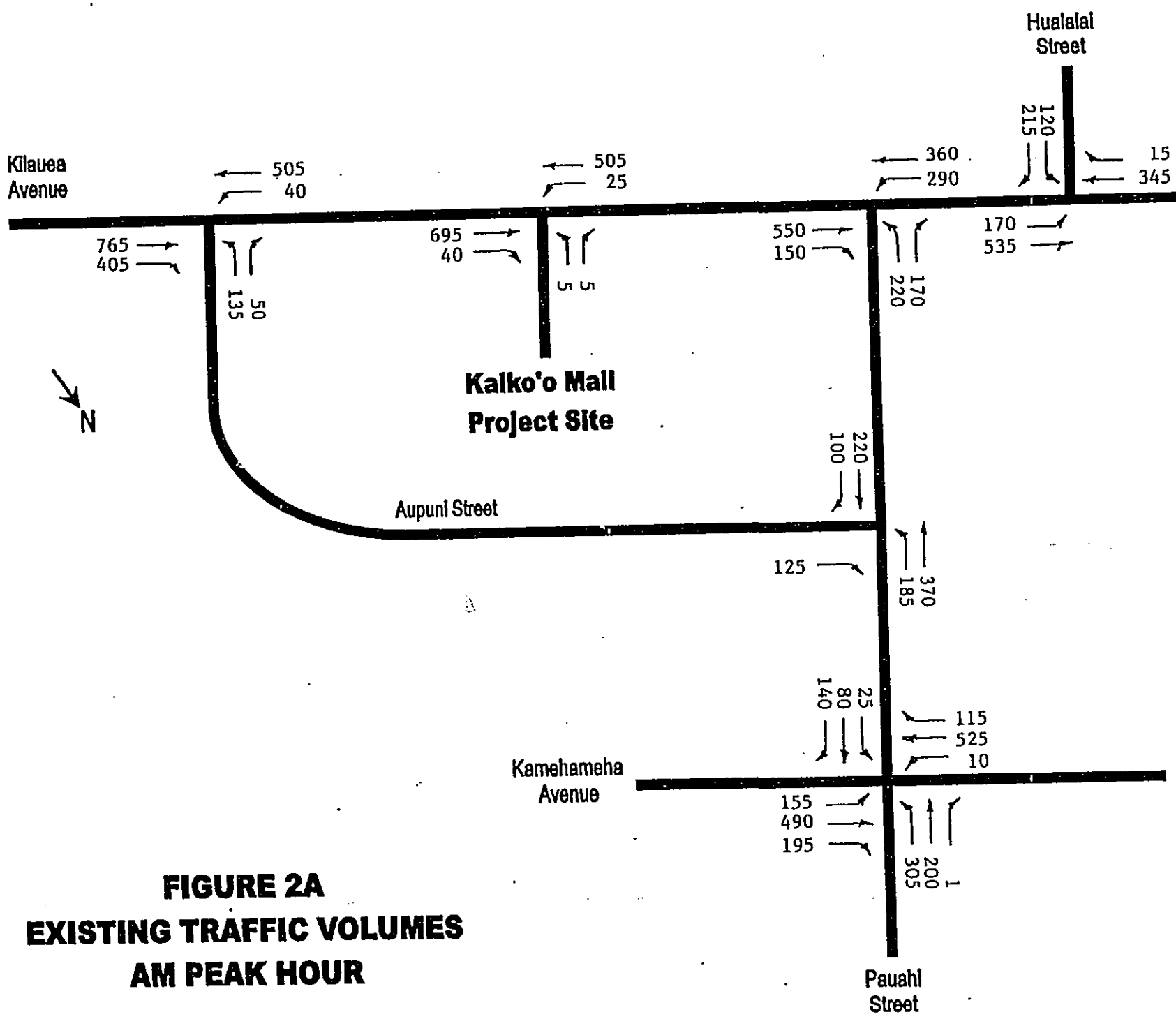


FIGURE 2A
EXISTING TRAFFIC VOLUMES
AM PEAK HOUR

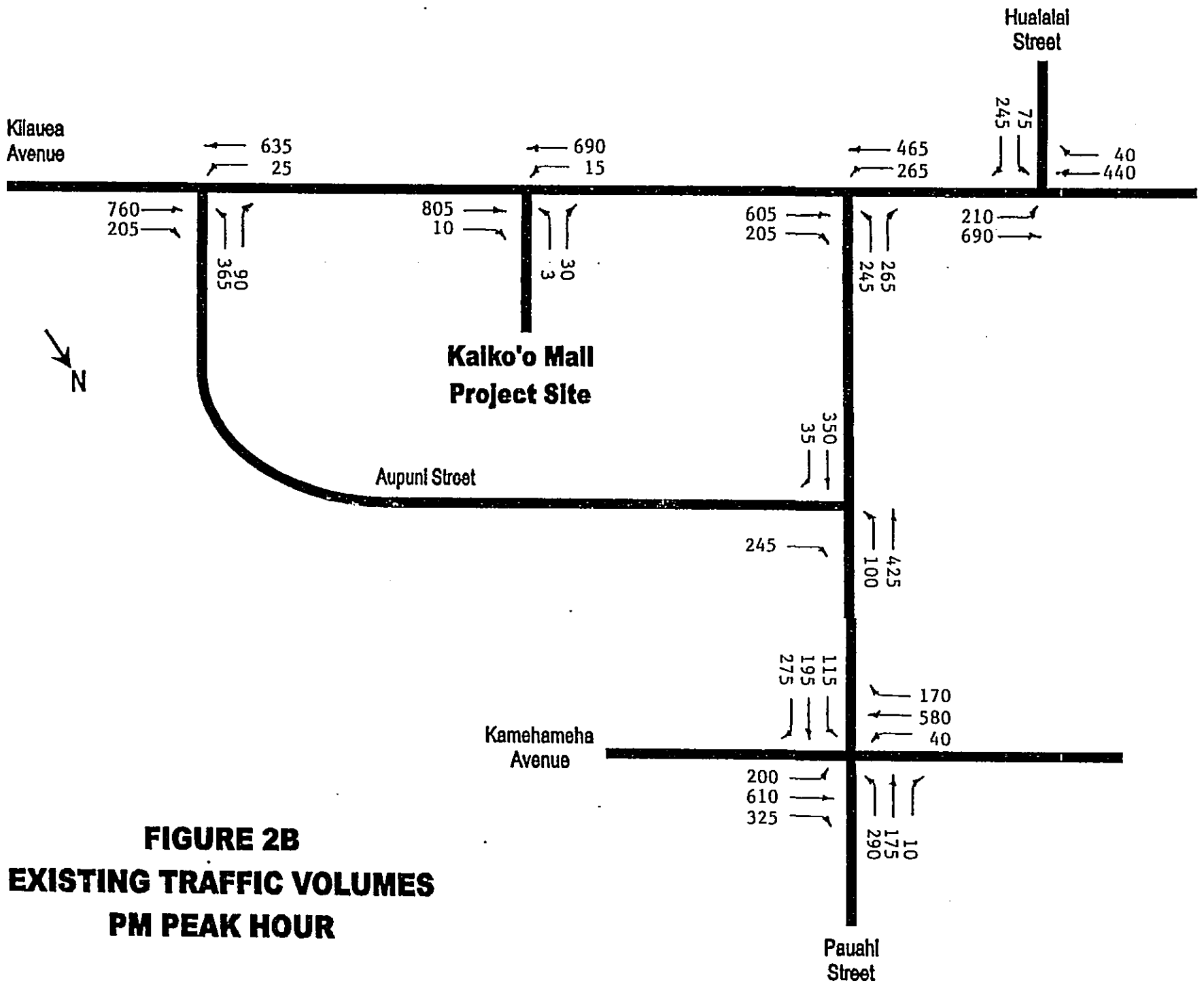


FIGURE 2B
EXISTING TRAFFIC VOLUMES
PM PEAK HOUR

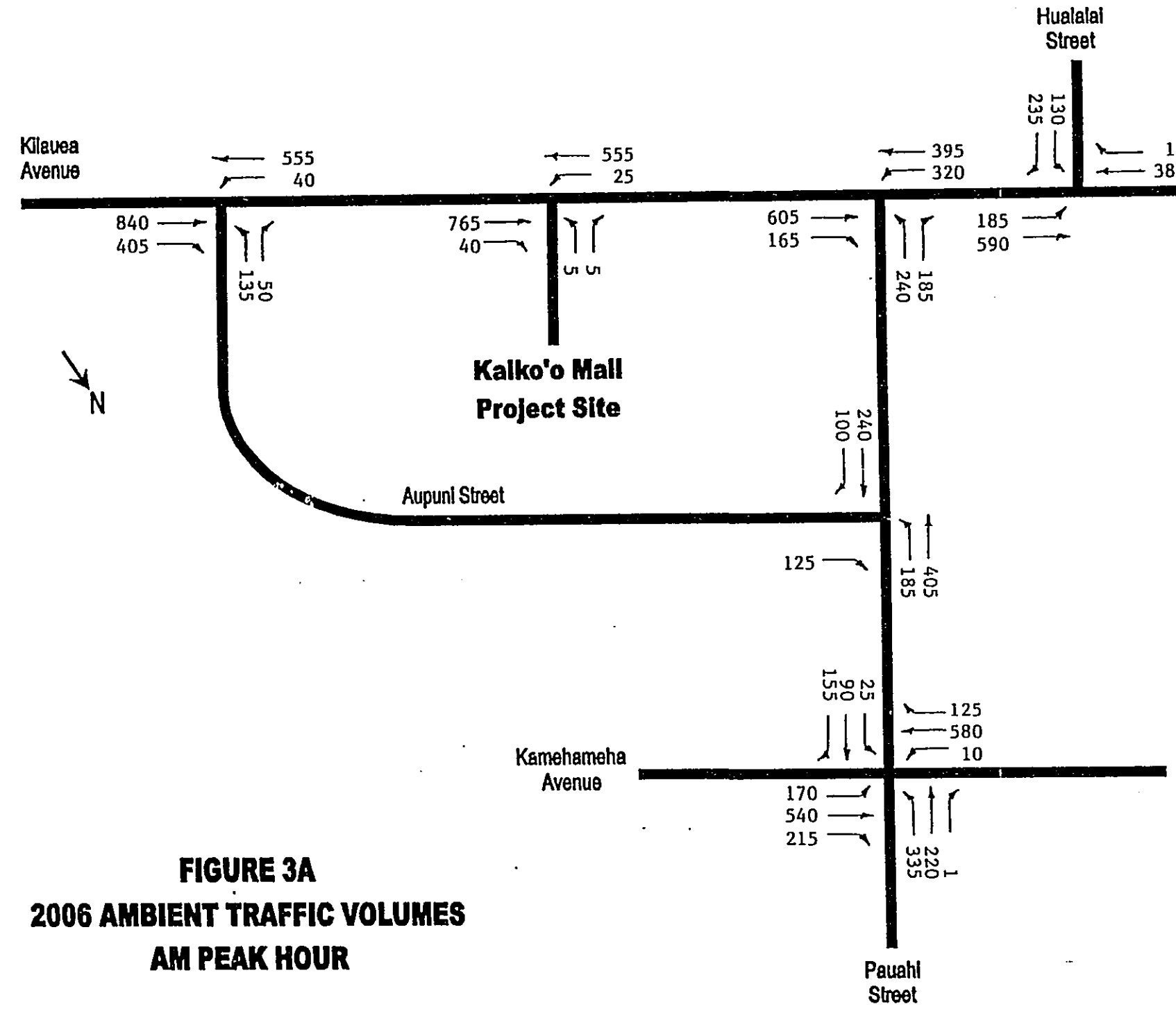


FIGURE 3A
2006 AMBIENT TRAFFIC VOLUMES
AM PEAK HOUR

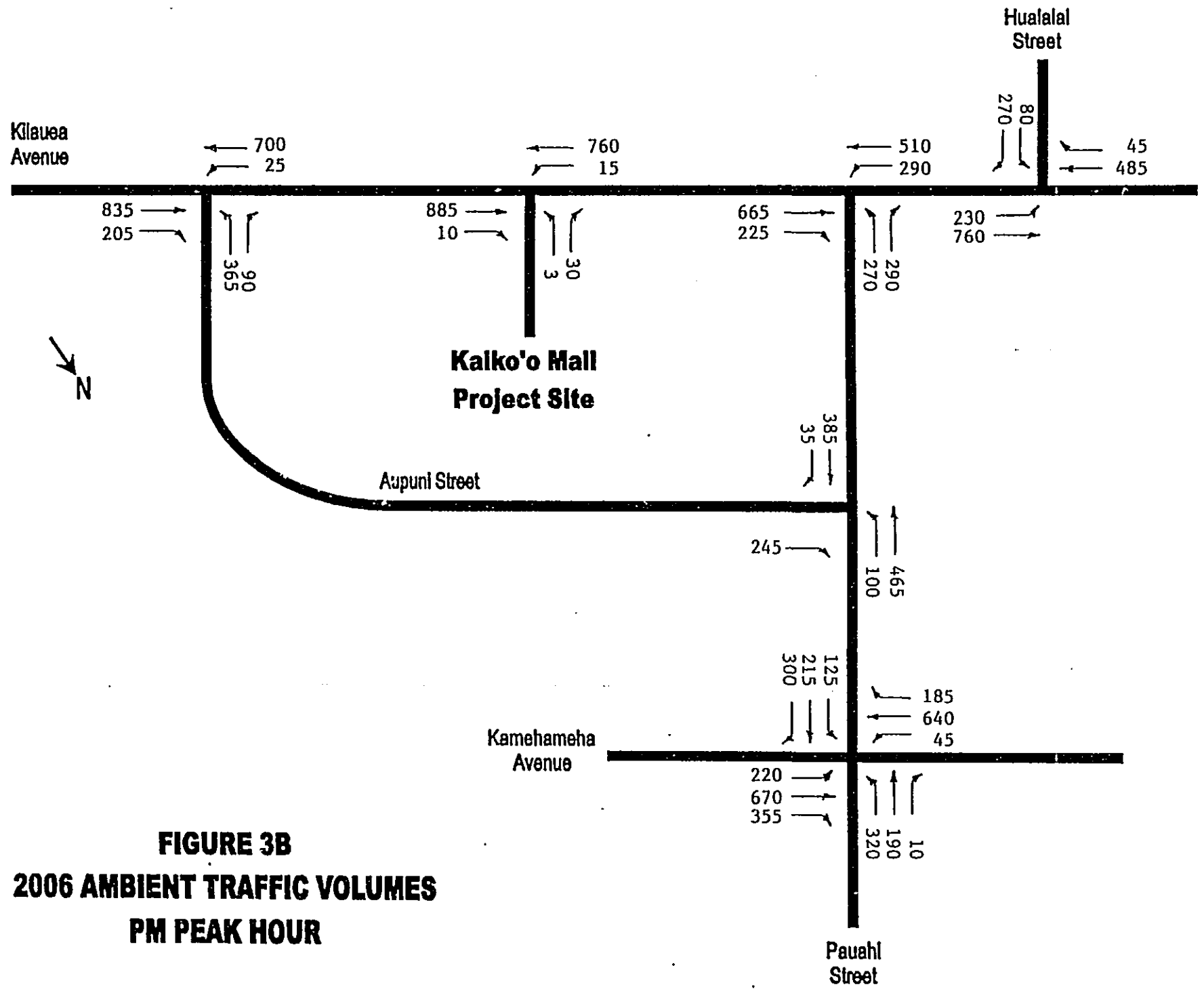
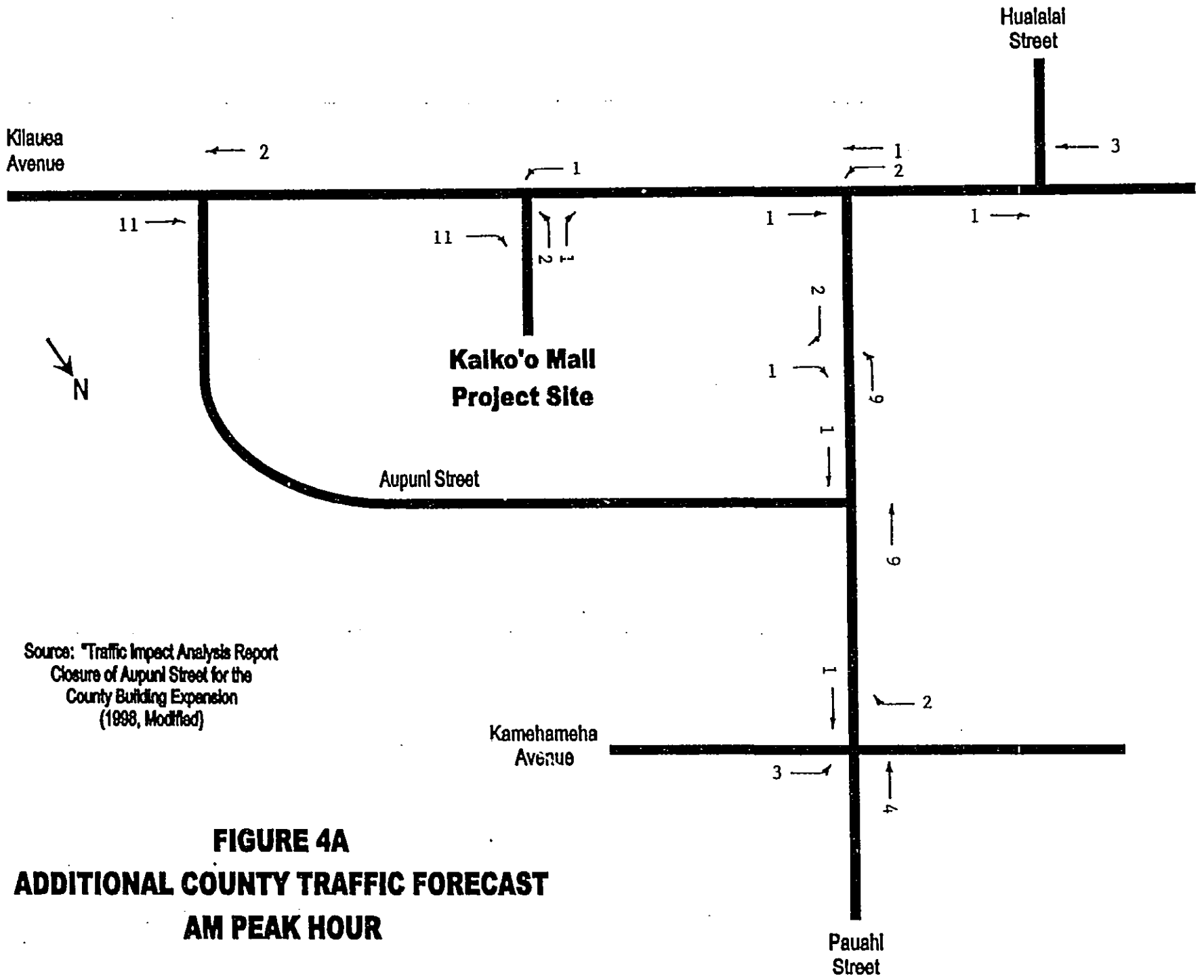
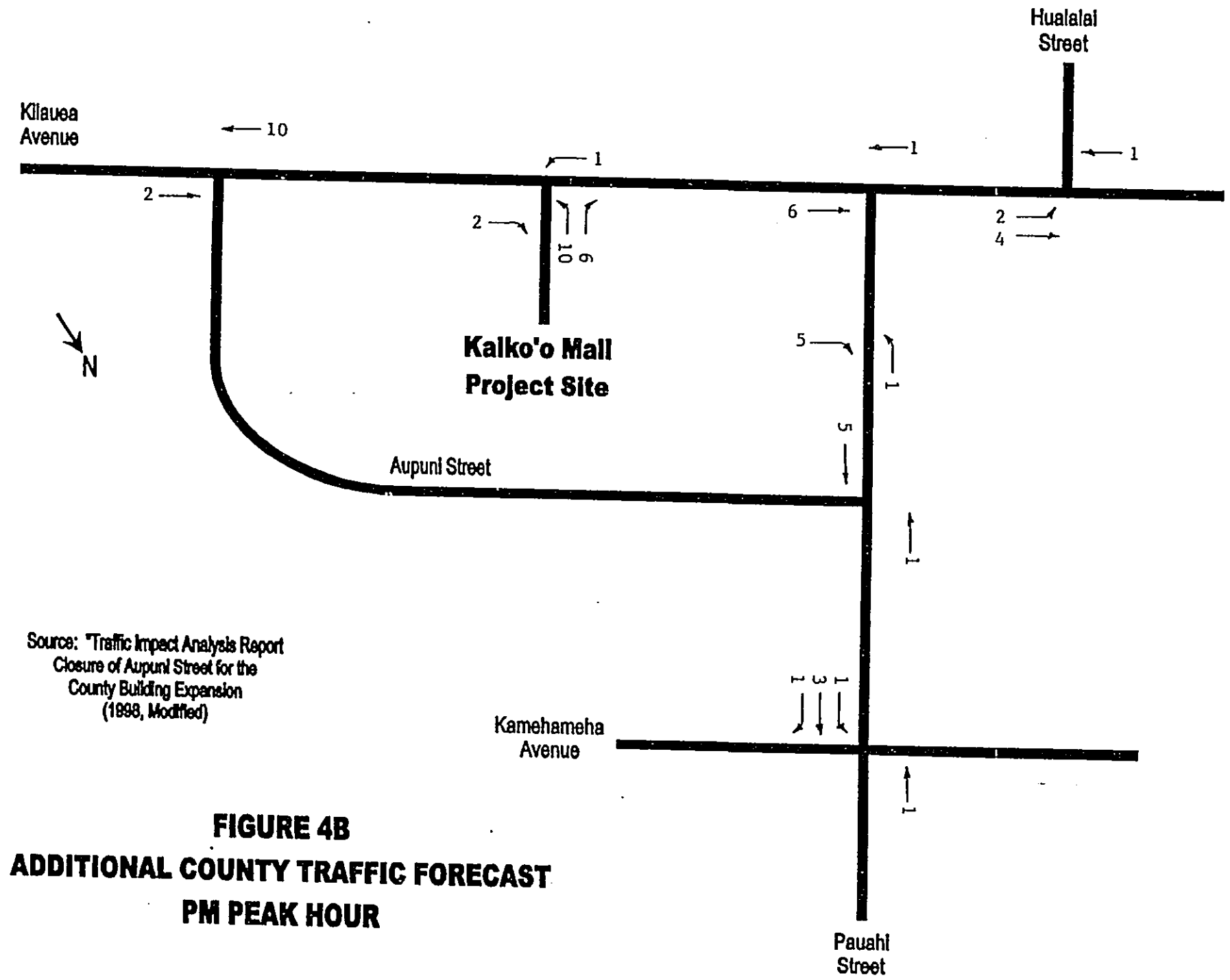


FIGURE 3B
2006 AMBIENT TRAFFIC VOLUMES
PM PEAK HOUR



Source: "Traffic Impact Analysis Report
Closure of Aupuni Street for the
County Building Expansion
(1998, Modified)

FIGURE 4A
ADDITIONAL COUNTY TRAFFIC FORECAST
AM PEAK HOUR



Source: "Traffic Impact Analysis Report
Closure of Aupuni Street for the
County Building Expansion
(1998, Modified)

FIGURE 4B
ADDITIONAL COUNTY TRAFFIC FORECAST
PM PEAK HOUR

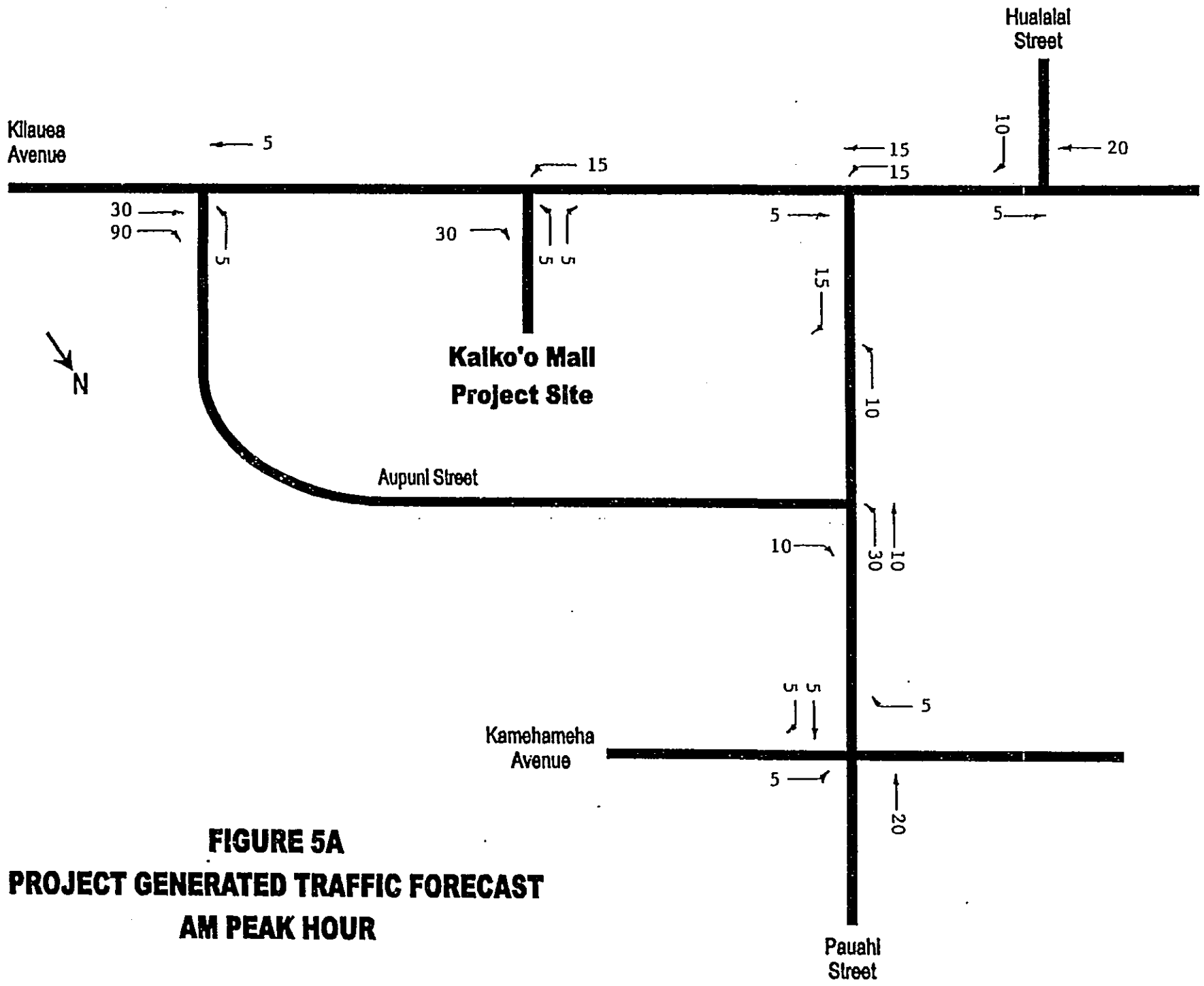
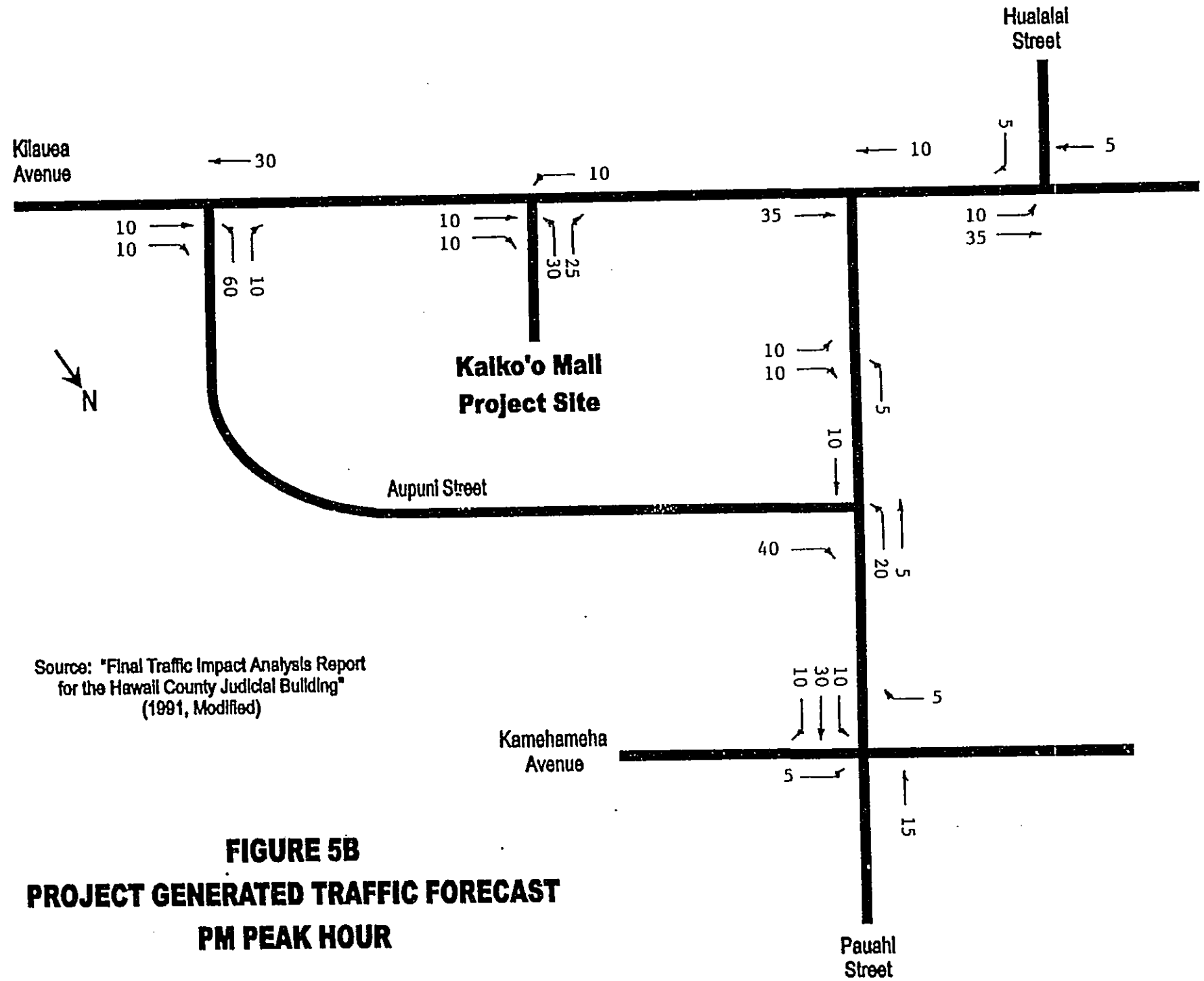


FIGURE 5A
PROJECT GENERATED TRAFFIC FORECAST
AM PEAK HOUR



Source: "Final Traffic Impact Analysis Report for the Hawaii County Judicial Building" (1991, Modified)

FIGURE 5B
PROJECT GENERATED TRAFFIC FORECAST
PM PEAK HOUR

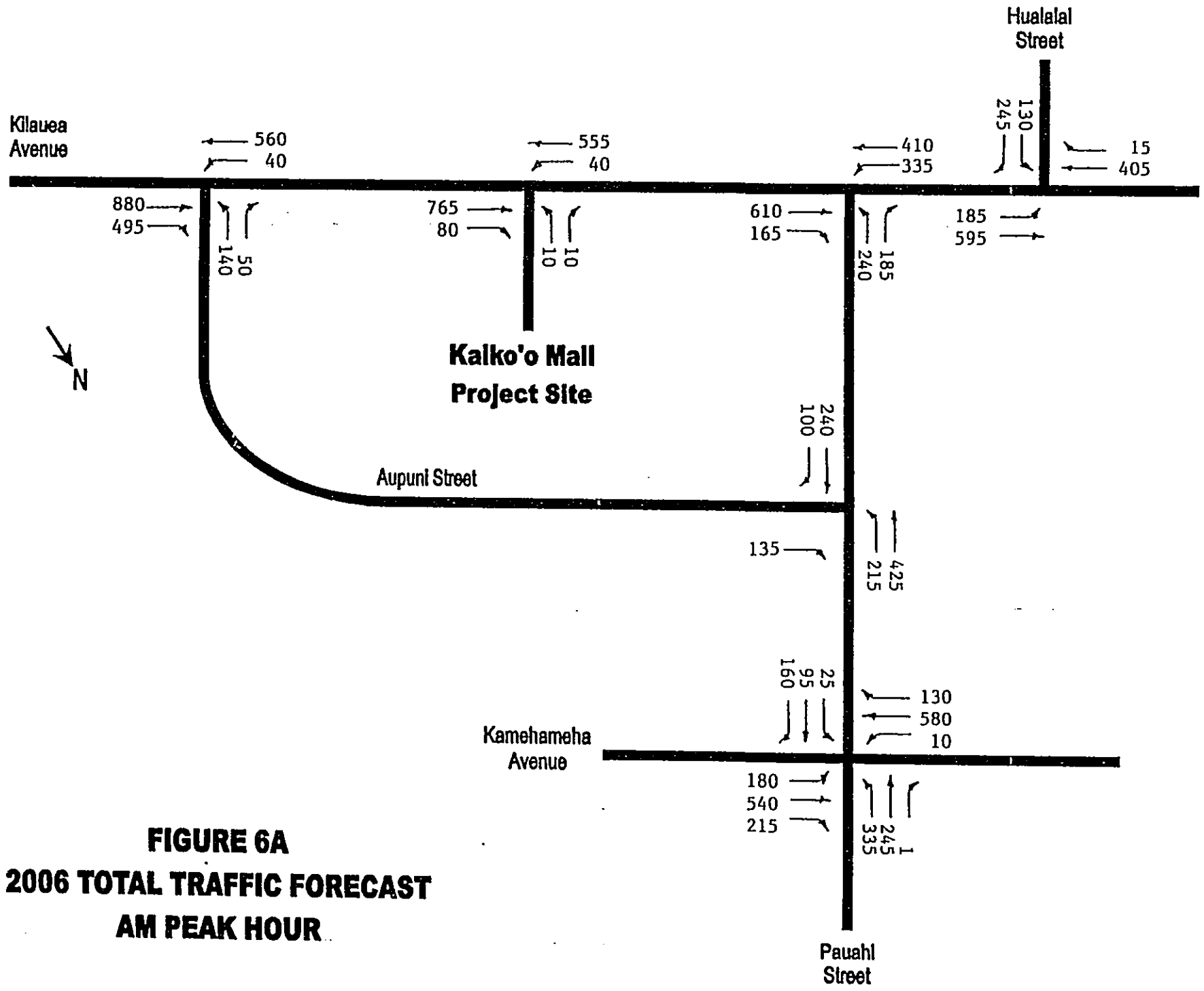


FIGURE 6A
2006 TOTAL TRAFFIC FORECAST
AM PEAK HOUR

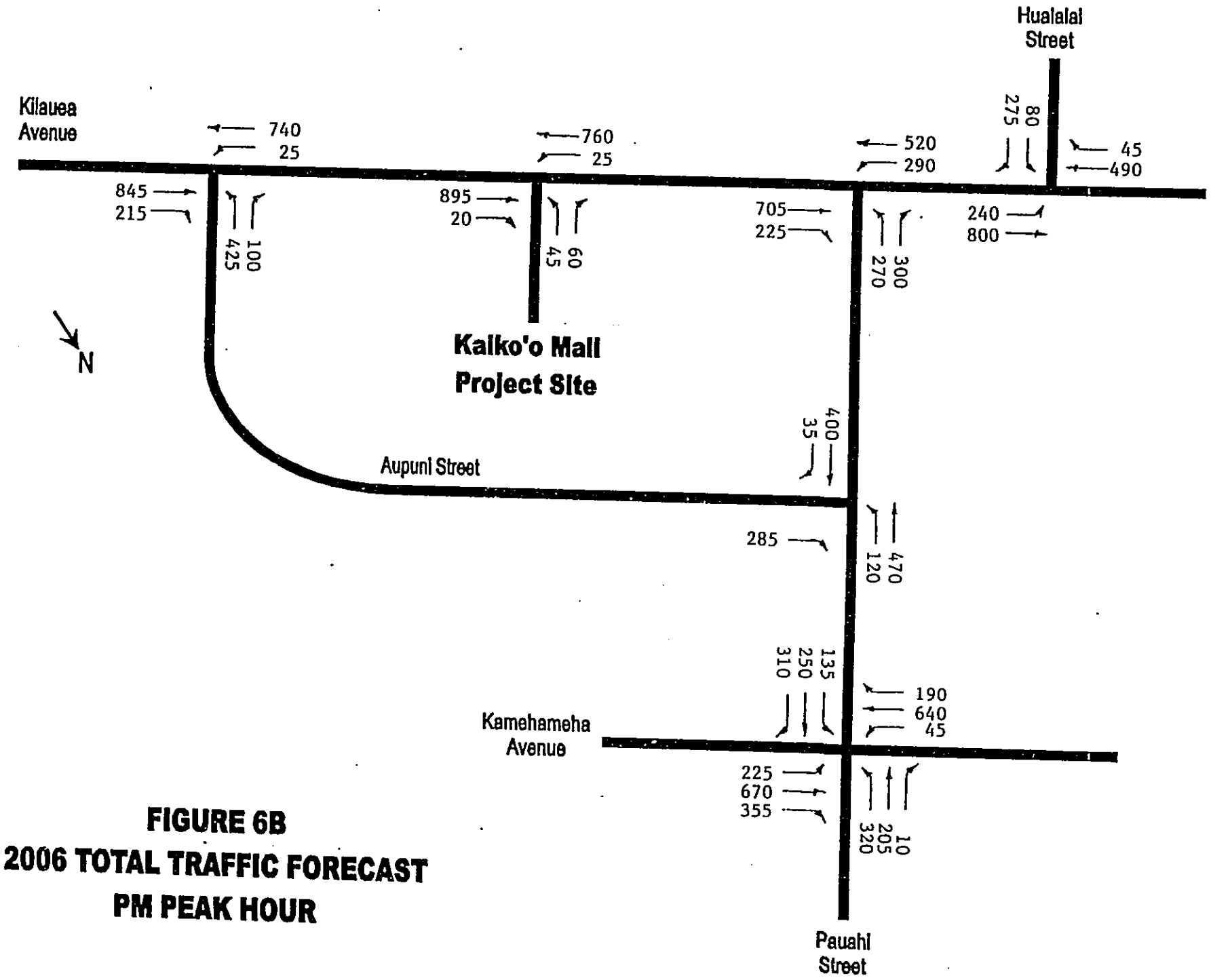


FIGURE 6B
2006 TOTAL TRAFFIC FORECAST
PM PEAK HOUR

TABLE 1

HISTORICAL COMPARISON OF TRAFFIC VOLUMES

APPROACH	AM PEAK HOUR	PM PEAK HOUR	
	2000 / 1997 = ratio	2000 / 1997 = ratio	2000 / 1990 = ratio
Kilauea Avenue @ Aupuni Street Southbound	1170 / 1160 = 1.01	965 / 1090 = 0.88	965 / 1695 = 0.58
Kilauea Avenue @ Aupuni Street Northbound	545 / 520 = 1.04	660 / 815 = 0.81	660 / 875 = 0.75
Aupuni Street @ Kilauea Avenue Westbound	185 / 210 = 0.86	455 / 490 = 0.92	455 / 580 = 0.78
Kilauea Avenue @ Pauahi Street Northbound	700 / 750 = 0.93	810 / 900 = 0.90	810 / 980 = 0.83
Kilauea Avenue @ Pauahi Street Southbound	650 / 610 = 1.07	730 / 810 = 0.90	730 / 580 = 1.26
Pauahi Street @ Kilauea Avenue Westbound	390 / 405 = 0.96	510 / 500 = 1.02	510 / 530 = 0.96
Aupuni Street @ Pauahi Street Northbound	125 / 125 = 1.00	245 / 245 = 1.00	245 / 245 = 1.00
Pauahi Street @ Aupuni Street Westbound	555 / 530 = 1.05	525 / 560 = 0.94	525 / 545 = 0.96
Kamehameha Avenue @ Pauahi Street Northbound	—	—	1135 / 615 = 1.85
Kamehameha Avenue @ Pauahi Street Southbound	—	—	790 / 750 = 1.05
Pauahi Street @ Kamehameha Avenue Westbound			475 / 450 = 1.06

TABLE 2

TRIP GENERATION ANALYSIS

DESCRIPTION	AM PEAK HOUR			PM PEAK HOUR		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Additional County Employees*						
50 Employees	23	4	27	4	21	25
Judiciary Employees						
109,000 sq. ft. Building	165	25	190			
221 Employees **				55	180	235

*Source: M&E Pacific, Inc., "Traffic Impact Analysis Report Closure of Aupuni Street for County Building Expansion" (1998)

**Source: M&E Pacific, Inc. "Final Traffic Impact Analysis Report for the Hawaii County Judicial Building" (1991)

TABLE 3

SUMMARY OF LEVEL OF SERVICE ANALYSIS

INTERSECTION	AM PEAK HOUR			PM PEAK HOUR		
	EXISTING	AMBIENT	TOTAL	EXISTING	AMBIENT	TOTAL
Signalized Intersections						
Kilauea Avenue @ Aupuni Street	B	B	B	B	B	B
Kilauea Avenue @ Pauahi Street	B	B	B	B	B	B
Kilauea Avenue @ Hualalai Street	B	B	B	B	B	B
Kamehameha Avenue @ Pauahi Street	B	B	B	B	B	B
Unsignalized Intersections [Level of Service and Approach Delay (Seconds/Vehicles)]						
Aupuni Street @ Pauahi Street						
Aupuni Street Northbound Right	A	A	A	A	A	A
Pauahi Street Westbound Left	A	A	A	A	A	A
Kaiko'o Driveway @ Kilauea Avenue						
Driveway Westbound Left	D	E	E	E	F	F
Driveway Westbound Right	A	A	A	A	A	A
Kilauea Avenue Southbound Left	A	B	B	B	B	B

APPENDIX A

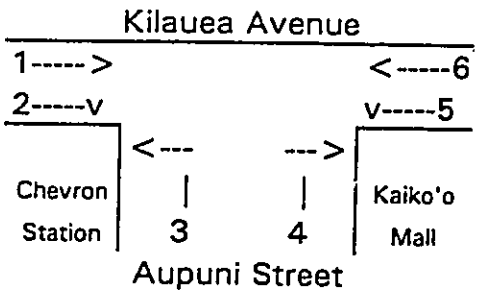
TRAFFIC TURNING MOVEMENT COUNTS

AM COUNT: 6:30 am. – 8:30 a.m.

PM COUNT: 3:30 p.m. – 5:30 p.m.

TRAFFIC TURNING MOVEMENT COUNT
Judiciary

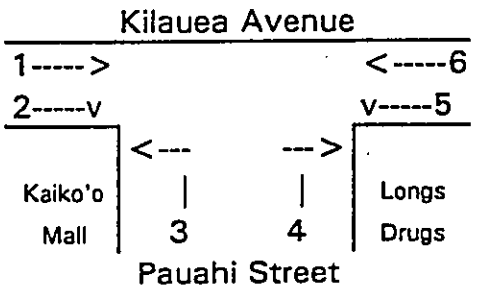
LOCATION: Kilauea Avenue/Aupuni Street Intersection
DATE: Thursday, April 13, 2000
TIME: 6:30a-8:30a/3:30p-5:30p
WEATHER: Morning: Overcast/No Rain/Visibility /Good
Afternoon: Clear and Sunny
RECORDER: Mae M. Higashi



TIME PERIOD	MOVEMENT NUMBER 1	2	3	4	5	6	TOTAL
6:30-6:45	61	17	8	2	4	31	123
6:45-7:00	86	32	13	2	2	40	175
7:00-7:15	121	48	16	5	6	66	262
7:15-7:30	157	69	18	2	7	107	360
7:30-7:45	202	127	28	7	12	139	515
7:45-8:00	224	109	41	10	10	140	534
8:00-8:15	185	90	31	11	8	134	459
8:15-8:30	152	80	37	20	10	93	392
6:30- 8:30	1188	572	192	59	59	750	2820
7:30- 8:30	763	406	137	48	40	506	1900
3:30- 3:45	193	49	60	22	12	170	506
3:45- 4:00	191	48	61	22	12	147	481
4:00- 4:15	205	58	53	15	4	155	490
4:15- 4:30	189	51	74	26	8	135	483
4:30- 4:45	186	49	145	25	5	165	575
4:45- 5:00	182	46	91	22	10	182	533
5:00- 5:15	172	39	82	11	7	178	489
5:15- 5:30	156	30	51	11	7	138	393
3:30- 5:30	1474	370	617	154	65	1270	3950
4:00- 5:00	762	204	363	88	27	637	2081

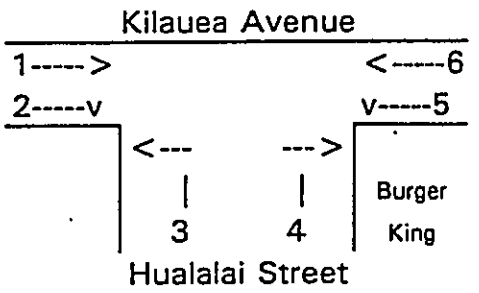
TRAFFIC TURNING MOVEMENT COUNT
Judiciary

LOCATION: Kilauea Avenue/Pauahi Street Intersection
DATE: Thursday, April 13, 2000
TIME: 6:30a-8:30a/3:30p-5:30p
WEATHER: Cloudy
RECORDER: Terry Espenshien



TIME PERIOD	MOVEMENT NUMBER 1	2	3	4	5	6	TOTAL
6:30-6:45	51	13	12	11	21	23	131
6:45-7:00	56	29	19	13	38	29	184
7:00-7:15	104	28	27	26	41	34	260
7:15-7:30	116	39	54	34	69	74	386
7:30-7:45	159	46	69	47	112	108	541
7:45-8:00	155	37	56	43	47	95	433
8:00-8:15	121	35	43	44	62	85	390
8:15-8:30	132	39	37	33	53	62	356
6:30- 8:30	894	266	317	251	443	510	2681
7:15- 8:15	551	157	222	168	290	362	1750
3:30- 3:45	172	48	50	55	57	138	520
3:45- 4:00	186	42	68	64	81	102	543
4:00- 4:15	151	43	57	47	66	98	472
4:15- 4:30	173	51	47	59	68	110	508
4:30- 4:45	139	65	57	87	61	124	533
4:45- 5:00	143	44	75	72	69	132	535
5:00- 5:15	132	46	71	58	59	97	463
5:15- 5:30	113	33	38	55	62	86	387
3:30- 5:30	1209	372	473	497	523	887	3961
4:00- 5:00	606	203	246	265	264	464	2048

TRAFFIC TURNING MOVEMENT COUNT
Judiciary

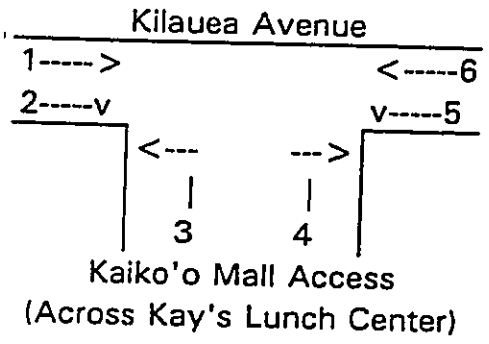


LOCATION: Kilauea Avenue/Hualalai Intersection
DATE: Thursday, April 13, 2000
TIME: 6:30a-8:30a/3:30p-5:30p
WEATHER:
RECORDER:

TIME PERIOD	MOVEMENT NUMBER 1	2	3	4	5	6	TOTAL
6:30-6:45	25	1	5	14	14	39	98
6:45-7:00	34	0	14	28	14	67	157
7:00-7:15	34	1	13	28	19	125	220
7:15-7:30	64	5	14	63	28	94	268
7:30-7:45	97	3	35	87	41	138	401
7:45-8:00	87	5	39	48	40	142	361
8:00-8:15	92	5	31	44	50	128	350
8:15-8:30	71	4	14	37	37	129	292
6:30- 8:30	504	24	165	349	243	862	2147
7:30- 8:30	347	17	119	216	168	537	1404
3:30- 3:45	117	20	14	72	57	190	470
3:45- 4:00	82	5	17	52	59	138	353
4:00- 4:15	106	11	25	51	43	187	423
4:15- 4:30	89	9	15	55	52	148	368
4:30- 4:45	116	11	17	60	56	179	439
4:45- 5:00	128	10	20	79	59	176	472
5:00- 5:15	78	5	12	55	53	120	323
5:15- 5:30	85	9	16	54	47	132	343
3:30- 5:30	801	80	136	478	426	1270	3191
4:00- 5:00	439	41	77	245	210	690	1702

TRAFFIC TURNING MOVEMENT COUNT
Judiciary

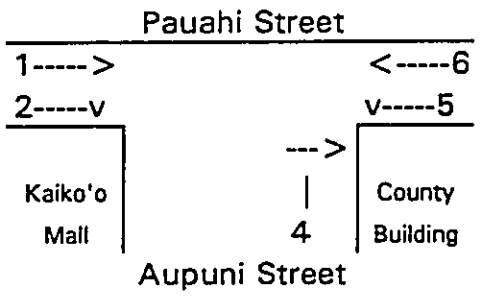
LOCATION: Kilauea Avenue/Kaiko'o Mall Access
Across Kay's Lunch Center) Intersection
DATE: Thursday, April 13, 2000
TIME: 6:30a-8:30a/3:30p-5:30p
WEATHER: Morning-Clear/Afternoon-Overcast
RECORDER: Earl Fujishige



TIME PERIOD	MOVEMENT NUMBER 1	2	3	4	5	6	TOTAL
6:30-6:45	64	1	1	1	0	34	101
6:45-7:00	91	7	0	1	2	40	141
7:00-7:15	129	1	1	1	3	66	201
7:15-7:30	151	4	2	2	6	104	269
7:30-7:45	179	11	0	2	8	143	343
7:45-8:00	198	18	0	2	5	147	370
8:00-8:15	168	8	3	0	4	113	296
8:15-8:30	161	4	3	4	3	93	268
6:30- 8:30	1141	54	10	13	31	740	1989
7:15- 8:15	696	41	5	6	23	507	1278
3:30- 3:45	227	2	4	2	8	185	428
3:45- 4:00	193	3	3	6	6	153	364
4:00- 4:15	206	0	0	6	3	162	377
4:15- 4:30	204	2	2	8	2	143	361
4:30- 4:45	211	5	0	11	3	177	407
4:45- 5:00	185	1	1	5	7	210	409
5:00- 5:15	175	2	3	9	1	164	354
5:15- 5:30	155	2	2	2	4	138	303
3:30- 5:30	1556	17	15	49	34	1332	3003
4:00- 5:00	806	8	3	30	15	692	1554

TRAFFIC TURNING MOVEMENT COUNT
Judiciary

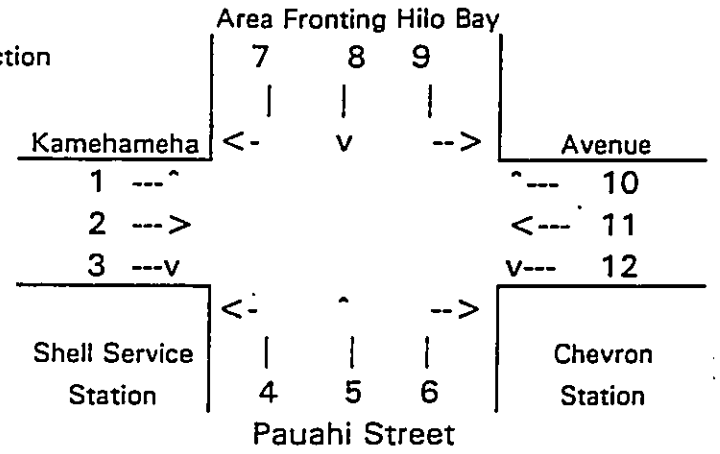
LOCATION: Pauahi Street/Aupuni Street Intersection
DATE: Thursday, April 13, 2000
TIME: 6:30a-8:30a/3:30p-5:30p
WEATHER: Cloudy
RECORDER: Tim Duffy



TIME PERIOD	MOVEMENT NUMBER 1	2	3	4	5	6	TOTAL
6:30-6:45	20	7		6	8	26	67
6:45-7:00	40	8		11	11	31	101
7:00-7:15	35	14		15	24	54	142
7:15-7:30	46	17		8	28	74	173
7:30-7:45	71	36		34	56	117	314
7:45-8:00	56	32		29	52	104	273
8:00-8:15	47	15		23	35	89	209
8:15-8:30	46	19		41	44	62	212
6:30- 8:30	361	148	0	167	258	557	1491
7:30- 8:30	220	102	0	127	187	372	1008
3:30- 3:45	56	13		44	23	96	232
3:45- 4:00	60	21		34	38	87	240
4:00- 4:15	79	12		42	20	104	257
4:15- 4:30	83	13		40	32	109	277
4:30- 4:45	94	10		100	27	113	344
4:45- 5:00	84	6		47	22	110	269
5:00- 5:15	87	8		58	21	94	268
5:15- 5:30	68	3		37	15	92	215
3:30- 5:30	611	86	0	402	198	805	2102
4:15- 5:15	348	37	0	245	102	426	1158

TRAFFIC TURNING MOVEMENT COUNT
Judiciary

LOCATION: Pauahi Street/Kamehamhea Avenue Intersection
DATE: March 23, 2000, Thursday
TIME: 6:30a-8:30a/3:30p-5:30p
WEATHER:
RECORDER:



TIME PERIOD	MOVEMENT NUMBER 1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
6:30-6:45	1	61	5	2	11	10	0	11	77	36	32	12	258
6:45-7:00	1	69	7	0	16	26	1	28	75	38	65	17	343
7:00-7:15	0	93	15	3	13	31	0	33	70	40	53	15	366
7:15-7:30	3	134	11	5	18	29	0	53	93	49	109	32	536
7:30-7:45	1	115	28	6	19	51	0	64	65	51	139	39	578
7:45-8:00	5	138	49	5	22	33	1	50	90	39	140	40	612
8:00-8:15	2	140	26	7	23	28	0	33	56	58	101	43	517
8:15-8:30	0	118	28	11	32	43	0	39	62	51	77	24	485
6:30-8:30	13	868	169	39	154	251	2	311	588	362	716	222	3695
6:30-7:30	5	357	38	10	58	96	1	125	315	163	259	76	1503
7:15-8:15	11	527	114	23	82	141	1	200	304	197	489	154	2243
3:30- 3:45	4	139	18	4	43	52	2	26	58	81	135	43	605
3:45- 4:00	0	148	31	19	22	45	4	49	86	69	135	58	666
4:00- 4:15	3	154	24	23	32	56	3	26	73	75	158	43	670
4:15- 4:30	4	137	64	19	26	54	6	25	80	65	165	40	685
4:30- 4:45	11	178	42	60	63	78	1	50	80	60	135	50	808
4:45- 5:00	12	142	31	19	35	88	0	55	70	90	175	60	777
5:00- 5:15	14	124	31	17	72	56	3	45	60	109	135	48	714
5:15- 5:30	3	144	28	12	41	52	6	32	69	78	150	54	669
3:30- 5:30	51	1166	269	173	334	481	25	308	576	627	1188	396	5594
3:30- 4:30	11	578	137	65	123	207	15	126	297	290	593	184	2626
4:30- 5:30	40	588	132	108	211	274	10	182	279	337	595	212	2968

APPENDIX B

ABSTRACT OF METHODOLOGY

for the

CAPACITY ANALYSIS FOR
SIGNALIZED AND UNSIGNALIZED INTERSECTIONS

ABSTRACT OF METHODOLOGY

for the

CAPACITY ANALYSIS FOR SIGNALIZED INTERSECTIONS

ABSTRACT OF METHODOLOGY
for the
LEVEL OF SERVICE ANALYSIS OF SIGNALIZED INTERSECTIONS

A very complex methodology is used to determine the capacity and level of service of signalized signals. The procedure is divided into the five modules shown on Figure 9-3. The input data required for the analysis is shown on Figure 9-4. The level of service criteria is shown below:

LEVEL OF SERVICE (LOS)
CRITERIA FOR SIGNALIZED INTERSECTIONS

Level of Service	Stopped Delay Per Vehicle (Seconds)
A	≤ 5.0
B	5.1 to 15.0
C	15.1 to 25.0
D	25.1 to 40.0
E	40.1 to 60.0
F	≥ 60.0

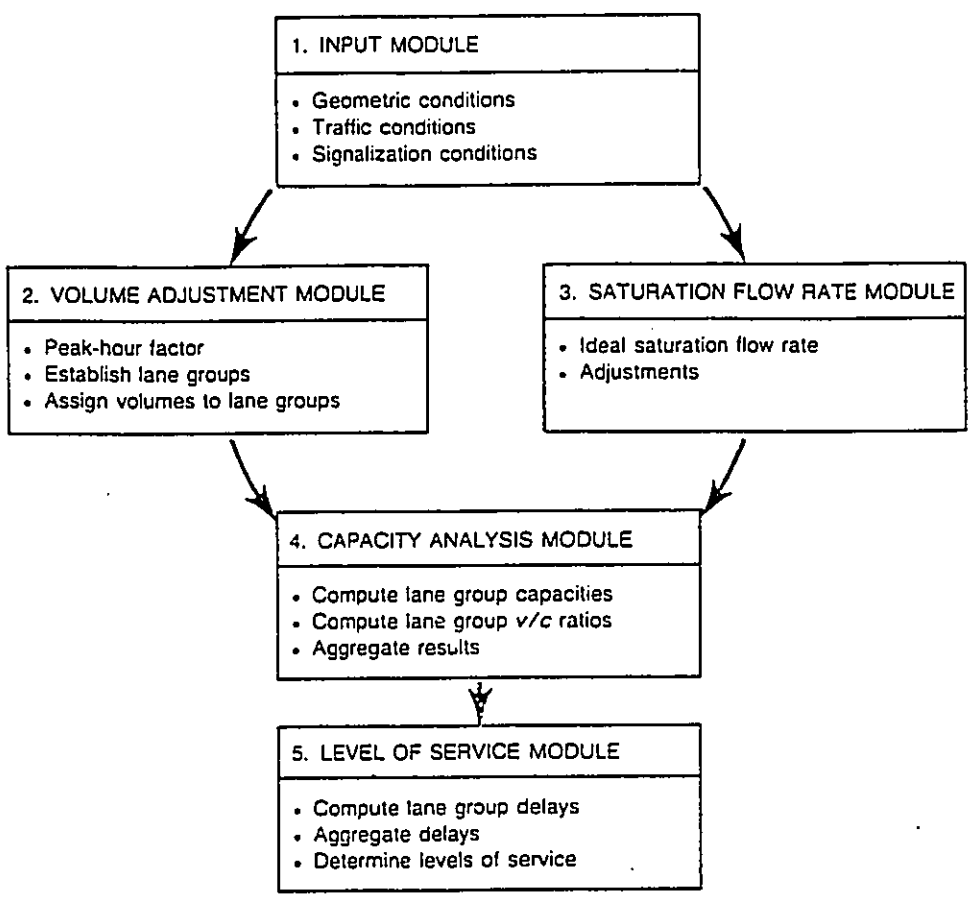


Figure 9-3. Operational analysis procedure.

TYPE OF CONDITION	PARAMETER	SYMBOL
Geometric conditions	Area Type	CBD, Other
	Number of Lanes	N
	Average Lane Widths, ft.	W
	Grades, %	%G
	Existence of Exclusive LT or RT Lanes	None
	Length of Storage Bay, LT or RT Lane	L_s
	Parking Conditions	Yes, No
Traffic conditions	Volumes by Movement, vph	V
	Ideal Saturation Flow Rate by Mov't, pcphgpl	s_o
	Peak Hour Factor	PHF
	Percent Heavy Vehicles	%HV
	Conflicting Pedestrian Flow Rate, peds/hr	PEDS
	Local Buses Stopping in Intersection	N_b
	Parking Activity, pkg maneuvers/hr	N_m
	Arrival Type (1-6)	AT
	Proportion of Vehicles Arriving on Green	P
Signalization conditions	Cycle Length, sec	C
	Green Time, sec	G
	Yellow change interval	Y
	All-red clearance interval	AR
	Actuated or Pretimed Operation	A or P
	Pedestrian Push-Button?	Yes, No
	Minimum Pedestrian Green	G_p
	Phase Plan	None

Figure 9-4. Input data needs for each analysis lane group.

ABSTRACT OF METHODOLOGY

for the

CAPACITY ANALYSIS FOR UNSIGNALIZED INTERSECTIONS

ABSTRACT OF METHODOLOGY
for the
LEVEL OF SERVICE ANALYSIS OF UNSIGNALIZED INTERSECTIONS

This abstract summarizes the procedures for analyzing the capacities of unsignalized intersections. These procedures are described in the Highway Capacity Manual, Special Report 209 (Third Edition, 1994) by the Transportation Research Board (TRB). This manual "is a collection of techniques for estimating highway capacity that have been judged, through consensus, as the best available at the time of publication." This manual does not set legal standards for highway design but the procedures have become widely accepted and used in the traffic engineering profession.

The capacity analysis procedure is based on a German method originally published in 1972 and translated in 1974, and modified for U. S. conditions by the TRB in 1985, and new data reflected in 1994. It is intended for two-way STOP- and YIELD-controlled intersection and calculates the capacities of movements which cross or turn through the major traffic stream. The capacity of each movement is based on two factors: the gap distribution in conflicting traffic streams and the gap acceptance behavior of drivers at such intersections.

The basic steps in methodology are as follows:

1) Define intersection geometry and traffic volumes.

2) Determine the "conflicting conflicts" through which every minor street movement and major street left turn must cross.

3) Determine the size of the gap in the conflicting stream needed by vehicles in each movement crossing a conflicting traffic stream.

4) Determine the capacity of the gaps in the major traffic stream to accommodate each of the subject movements that will utilize these gaps.

5) Adjust the capacities to account for impedance and the use of shared lanes.

6) Estimate average delay and determine level of service for each movement.

Tables and charts, as well as computer programs, have been developed to facilitate using this methodology.

INTERSECTION DATA

Key geometric factors include: number and use of lanes, channelization, percent grade, curb radii and approach angle, and sight distances. One hour volumes are specified by movement and converted to passenger cars per hour using the passenger car equivalents in TABLE 10-1.

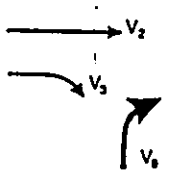
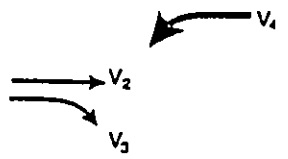
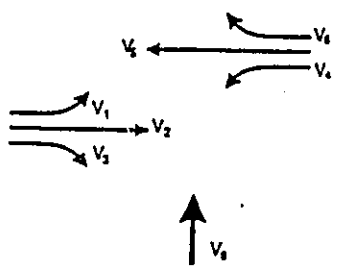
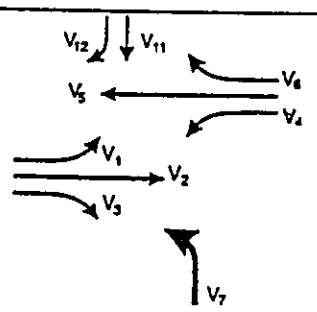
TABLE 10-1. PASSENGER-CAR EQUIVALENTS FOR TWSC INTERSECTIONS

	GRADE (%)				
TYPE OF VEHICLE	−4	−2	0	+2	+4
Motorcycles	0.3	0.4	0.5	0.6	0.7
Passenger Cars	0.8	0.9	1.0	1.2	1.4
SU/RVs[a]	1.0	1.2	1.5	2.0	3.0
Combination Vehicles[b]	1.2	1.5	2.0	3.0	6.0
All Vehicles[c]	0.9	1.0	1.1	1.4	1.7

[a] Single-unit trucks and recreational vehicles.
[b] Includes tractor-trailer combinations and buses.
[c] If vehicle composition is unknown, these values may be used as an approximation.

CONFLICTING TRAFFIC

The conflicting movements and turning movement faces is summarized on Figures 10-3(a) and 10-3(b). The right turn movement from the minor street faces the least number of conflicting movements, the left turn movement from the minor street the most.

Subject Movement	Conflicting Traffic, $V_{c,x}$	Illustration
1. RIGHT TURN from minor street ($V_{c,9}$)	$1/2(V_3)$ ① $+ V_2$ ②	
2. LEFT TURN from major street ($V_{c,4}$)	$V_2 + V_3$ ①	
3. THROUGH MOVEMENT from minor street ($V_{c,8}$)	$1/2(V_3)$ ① $+ V_2 + V_1 + V_6$ ⑤ $+ V_5 + V_4$	
4. LEFT TURN from minor street ($V_{c,7}$)	$1/2(V_3)$ ① $+ V_2 + V_1 + 1/2(V_6)$ ⑤ $+ V_5 + V_4 + 1/2(V_{11} + V_{12}$ ④$)$	

① Where a right-turn lane is provided on major street, and/or where V_3 is STOP-/YIELD-controlled, eliminate V_3

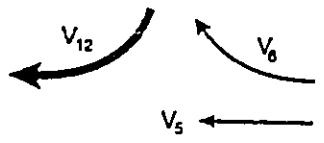
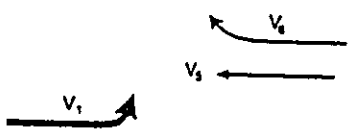
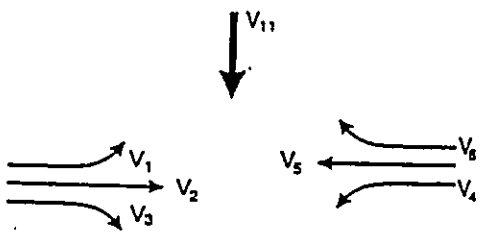
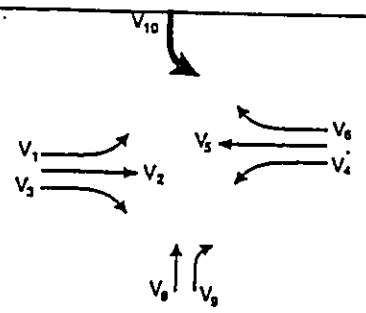
② V_2 includes only the volume in the right hand lane.

③ Where the right-turn is STOP- or YIELD-controlled, eliminate V_3 , V_6

④ V_{12} should be eliminated on multi-lane major streets.

⑤ Where a right-turn lane is provided on major street, and/or where V_6 is STOP-/YIELD-controlled, and/or on multi-lane major streets, eliminate V_6

Figure 10-3(a). Definition and computation of conflicting traffic volumes for two minor approaches.

Subject Movement	Conflicting Traffic, $V_{c,x}$	Illustration
5. RIGHT TURN from minor street ($V_{c,12}$)	$1/2(V_6)^{⑧}+V_5^{⑦}$	
6. LEFT TURN from major street ($V_{c,1}$)	$V_5 + V_6^{⑧}$	
7. THROUGH MOVEMENT from minor street ($V_{c,11}$)	$1/2(V_6)^{⑧} + V_5 + V_4 + V_3^{⑩} + V_2 + V_1$	
8. LEFT TURN from minor street ($V_{c,10}$)	$1/2(V_6)^{⑧} + V_5 + V_4 + 1/2(V_3)^{⑩} + V_2 + V_1 + 1/2(V_8 + V_9^{⑨})$	

⑥ Where a right-turn lane is provided on major street, and/or where V_6 is STOP-/YIELD-controlled, eliminate V_6

⑦ V_5 includes only the volume in the right hand lane.

⑧ Where the right-turn is STOP- or YIELD-controlled, eliminate V_6 , V_3

⑨ V_9 should be eliminated on multi-lane major streets.

⑩ Where a right-turn lane is provided on major street, and/or where V_3 is STOP-/YIELD-controlled, and/or multi-lane streets, eliminate V_3

Figure 10-3(b). Definition and computation of conflicting traffic volumes for two minor approaches.

CRITICAL GAP SIZE

"The 'critical gap' is defined as the median time headway between two successive vehicles in the major traffic stream that is accepted by drivers in a subject movement that must cross and/or emerge with the major street traffic." It is dependent upon a number of factors, including:

1) The type of maneuver being executed.
2) STOP or YIELD sign control.
3) The average running speed on the major street.
4) The number of lanes on the major street.
5) The geometrics and environmental conditions at the intersection.

The value of the critical gap is selected from TABLE 10-2. The basic critical gap is selected and adjustments and modifications made.

TABLE 10-2. CRITICAL GAPS t_g AND FOLLOW-UP TIMES t_f FOR TWSC INTERSECTIONS

	CRITICAL GAP t_g		
VEHICLE MANEUVER	TWO-LANE MAJOR ROAD	FOUR-LANE MAJOR ROAD	FOLLOW-UP TIME t_f (SEC)
Left turn, major street	5.0	5.5	2.1
Right turn, minor street	5.5	5.5	2.6
Through traffic, minor street	6.0	6.5	3.3
Left turn, minor street	6.5	7.0	3.4

NOTE: The critical gap and follow-up time values presented in this table reflect data obtained on roadways where the average approach speed of the major street through vehicles approximated 30 mph. In cases where no better data are available, these same values may be used to approximate t_g and t_f for roadways with approach speeds other than 30 mph.

POTENTIAL CAPACITY FOR MOVEMENT

"The potential capacity is defined as the 'ideal' capacity for a specific movement," and is selected from Figures 10-4 and 10-5. It is based on the conflicting traffic volume and movement type. The result is read in passenger cars per hour.

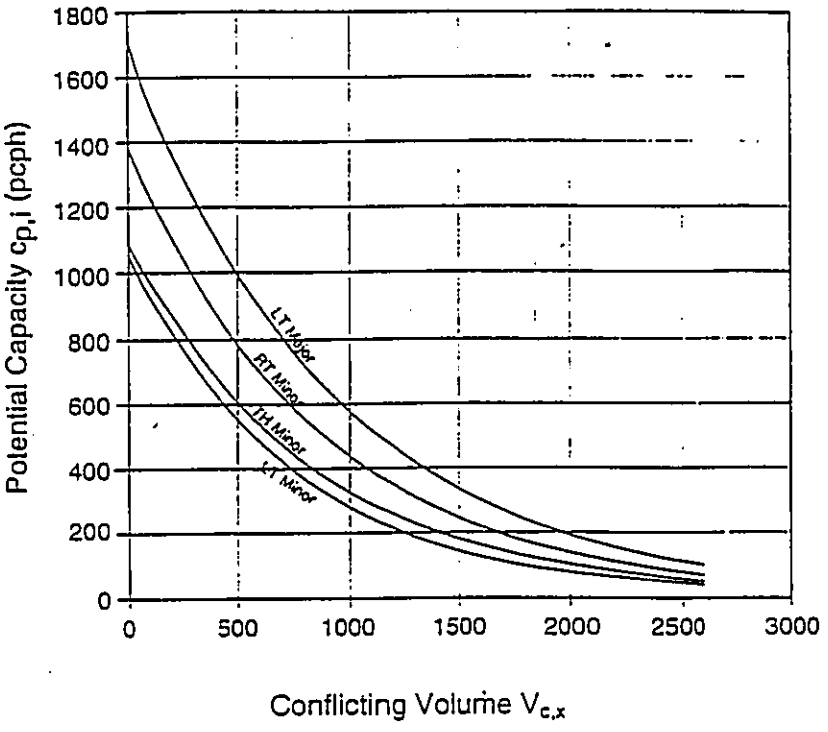


Figure 10-4. Potential capacity based on conflicting volume and movement type (two-lane roadways).

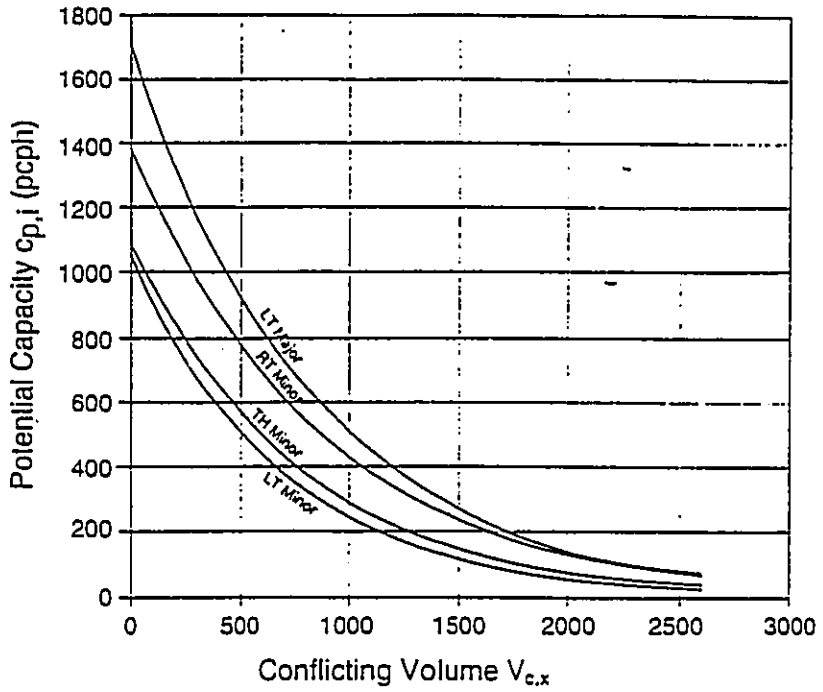


Figure 10-5. Potential capacity based on conflicting volume and movement type (four-lane roadways).

IMPEDANCE EFFECTS

The methodology assumes that vehicles use gaps at an unsignalized intersection in a prioritized manner. Thus, when traffic becomes congested in a high-priority movement, it can reduce the potential capacity of lower priority traffic movements. Given the priority of gap usage:

1) Left turn from the major street impede both through movements and left turns from the minor street.

2) Through movements from the minor streets impede left turns from the minor street.

The impact of impedance is addressed by multiplying the potential capacity of a movement by a series of impedance factors for each higher priority impeding movement. Impedance factors are derived using Figure 10-6.

SHARED LANE CAPACITY

The methodology has assumed to this point that each minor street movements has an exclusive lane. In reality, most minor street approaches have two or three movements sharing one lane. An equations used to compute the capacity of the shared lane.

LEVEL OF SERVICE CRITERIA

The above computations yield a capacity solution for each lane in the minor street approaches and for left turn movements from the major streets. The movement capacity and conflicting volumes for each movement are used to calculate the average total delay (seconds/vehicle) per Figure 10-7.

The level of service based on the average total delay is summarized on Table 10-3.

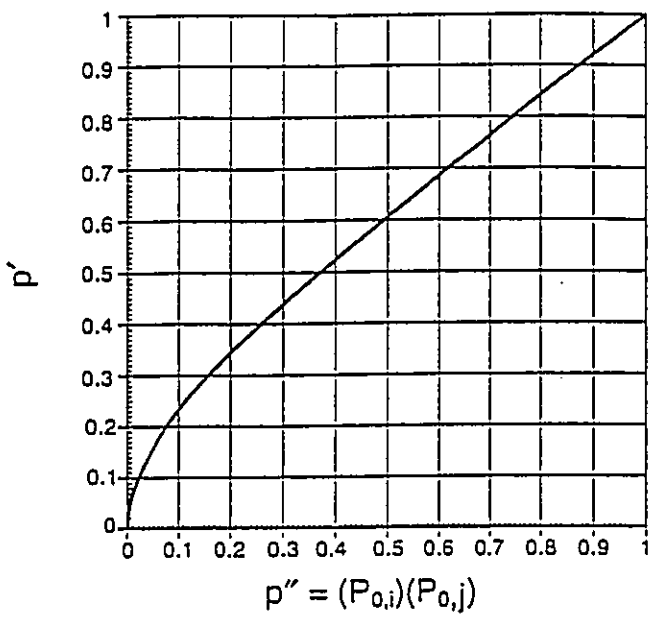


Figure 10-6. Adjustment to the major left, minor through impedance factor (2).

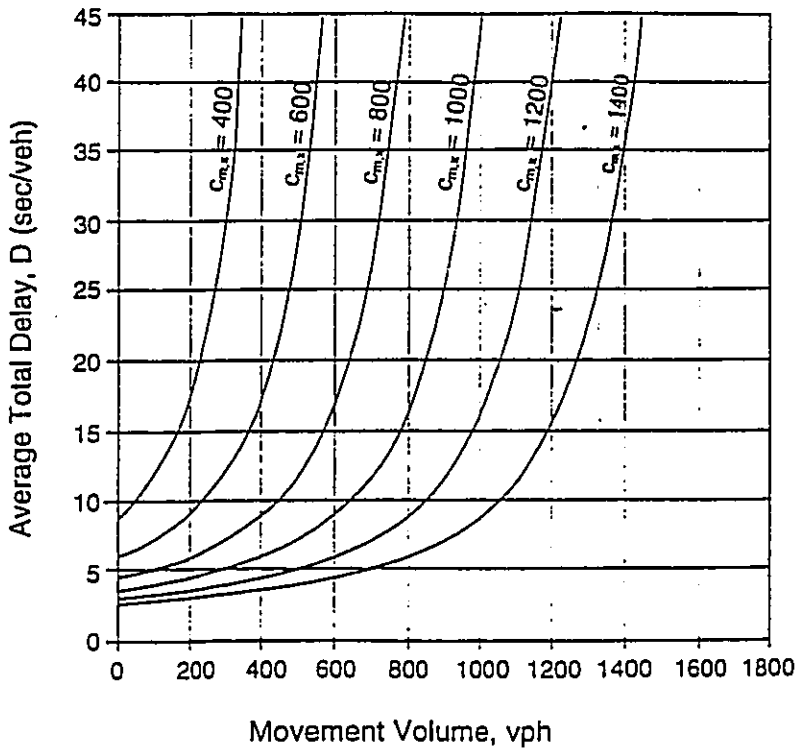


Figure 10-7. Average total delay based on conflicting volume and movement capacity (15-min analysis period).

TABLE 3 - LEVEL OF SERVICE CRITERIA

Level of Service	Average Total Delay (Seconds/Vehicle)
A	≤ 5
B	5.1 to 10.0
C	10.1 to 20.0
D	20.1 to 30.0
E	30.1 to 45.0
F	> 45

APPENDIX C

TRAFFIC CALCULATIONS

SIGNALIZED AND UNSIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS) CALCULATIONS

SIGNALIZED INTERSECTION
LEVEL OF SERVICE (LOS) CALCULATIONS

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-24-2000
Center For Microcomputers In Transportation

Streets: (E-W) aupuni st (N-S) kilauea ave
Analyst: Wy File Name: KAUPAMEX.HC9
Area Type: Other 4-24-0 am peak
Comment: existing 2000 am peak

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	1	> 0	< 1	0	2	< 0	1	2	0
Volumes				135		50		765	405	40	505	
Lane W (ft)				12.0	12.0	12.0		12.0		12.0	12.0	
RTOR Vols						0			50			0
Lost Time				3.00		3.00		3.00	3.00	3.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru					Thru	•		
Right					Right	•		
Peds	•				Peds	•		
WB Left	•				SB Left	•	•	
Thru					Thru	•	•	
Right	•				Right			
Peds	•				Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	20.0A				Green	3.0A	27.0P	
Yellow/AR	4.0				Yellow/AR	3.0	3.0	

Cycle Length: 60 secs Phase combination order: #1 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
WB	L	619	1770	0.144	0.350	8.6	B	8.7	B
	LR	600	1715	0.177	0.350	8.7	B		
	R	554	1583	0.000	0.350	0.0	A		
NB	TR	1597	3549	0.775	0.450	10.7	B	10.7	B
SB	L	212	1770	0.198	0.550	5.8	B	4.7	A
	T	2049	3725	0.273	0.550	4.6	A		

Intersection Delay = 8.8 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.511

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-24-2000
Center For Microcomputers In Transportation

Streets: (E-W) aupuni st (N-S) kilauea ave
Analyst: Wy File Name: KAUPAMAM.HC9
Area Type: Other 4-24-0 am peak
Comment: ambient 2006 am peak

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	1	> 0	< 1	0	2	< 0	1	2	0
Volumes				135		50		840	405	40	555	
Lane W (ft)				12.0	12.0	12.0		12.0		12.0	12.0	
RTOR Vols						0			50			0
Lost Time				3.00		3.00		3.00	3.00	3.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru					Thru	•		
Right					Right	•		
Peds	•				Peds	•		
WB Left	•				SB Left	•	•	
Thru					Thru	•	•	
Right	•				Right			
Peds	•				Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	20.0A				Green	3.0A	27.0P	
Yellow/AR	4.0				Yellow/AR	3.0	3.0	

Cycle Length: 60 secs Phase combination order: #1 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
WB	L	619	1770	0.144	0.350	8.6	B	8.7	B
	LR	600	1715	0.177	0.350	8.7	B		
	R	554	1583	0.000	0.350	0.0	A		
NB	TR	1602	3560	0.824	0.450	11.9	B	11.9	B
SB	L	212	1770	0.198	0.550	6.2	B	4.8	A
	T	2049	3725	0.299	0.550	4.7	A		

Intersection Delay = 9.5 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.537

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-24-2000
Center For Microcomputers In Transportation

Streets: (E-W) aupuni st (N-S) kilauea ave
Analyst: Wy File Name: KAUPTOAM.HC9
Area Type: Other 4-24-0 am peak
Comment: total 2006 am peak

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	1 > 0	< 1		0	2 < 0		1	2	0
Volumes				140		50		880	495	40	560	
Lane W (ft)				12.0	12.0	12.0		12.0		12.0	12.0	
RTOR Vols						0			50			0
Lost Time				3.00		3.00		3.00	3.00	3.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru					Thru	•		
Right					Right	•		
Peds	•				Peds	•		
WB Left	•				SB Left	•	•	
Thru					Thru	•	•	
Right	•				Right			
Peds	•				Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	20.0A				Green	3.0A	27.0P	
Yellow/AR	4.0				Yellow/AR	3.0	3.0	

Cycle Length: 60 secs Phase combination order: #1 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
WB	L	619	1770	0.150	0.350	8.7	B	8.7	B
	LR	600	1715	0.178	0.350	8.7	B		
	R	554	1583	0.000	0.350	0.0	A		
NB	TR	1592	3538	0.920	0.450	16.6	C	16.6	C
SB	L	212	1770	0.198	0.550	7.0	B	4.9	A
	T	2049	3725	0.302	0.550	4.7	A		

Intersection Delay = 12.6 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.588

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-24-2000
Center For Microcomputers In Transportation

Streets: (E-W) aupuni st (N-S) kilauea ave
Analyst: Wy File Name: KAUPPMEX.HC9
Area Type: Other 4-24-0 pm peak
Comment: existing 2000 pm peak

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	1 > 0	< 1		0	2 < 0		1	2	0
Volumes				365		90		760	205	25	635	
Lane W (ft)				12.0	12.0	12.0		12.0		12.0	12.0	
RTOR Vols						0			50			0
Lost Time				3.00		3.00		3.00	3.00	3.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru					Thru	•		
Right					Right	•		
Peds	•				Peds	•		
WB Left	•				SB Left	•	•	
Thru					Thru	•	•	
Right	•				Right			
Peds	•				Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	25.0A				Green	3.0A	22.0P	
Yellow/AR	4.0				Yellow/AR	3.0	3.0	

Cycle Length: 60 secs Phase combination order: #1 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
WB	L	767	1770	0.316	0.433	7.3	B	7.3	B
	LR	751	1734	0.315	0.433	7.3	B		
	R	686	1583	0.000	0.433	0.0	A		
NB	TR	1331	3631	0.759	0.367	12.6	B	12.6	B
SB	L	213	1770	0.122	0.467	6.8	B	6.9	B
	T	1739	3725	0.403	0.467	6.9	B		

Intersection Delay = 9.6 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.506

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-24-2000
Center For Microcomputers In Transportation

Streets: (E-W) aupuni st (N-S) kilauea ave
Analyst: Wy File Name: KAUPPMAM.HC9
Area Type: Other 4-24-0 pm peak
Comment: ambient 2006 pm peak

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	1 > 0 < 1			0	2 < 0		1	2	0
Volumes				365		90		835	205	25	700	
Lane W (ft)				12.0	12.0	12.0		12.0		12.0	12.0	
RTOR Vols						0			50			0
Lost Time				3.00		3.00		3.00	3.00	3.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru					Thru	•		
Right					Right	•		
Peds	•				Peds	•		
WB Left	•				SB Left	•	•	
Thru					Thru	•	•	
Right	•				Right			
Peds	•				Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	25.0A				Green	3.0A	22.0P	
Yellow/AR	4.0				Yellow/AR	3.0	3.0	

Cycle Length: 60 secs Phase combination order: #1 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	Approach: LOS
WB	L	767	1770	0.316	0.433	7.3	B	7.3	B
	LR	751	1734	0.315	0.433	7.3	B		
	R	686	1583	0.000	0.433	0.0	A		
NB	TR	1334	3638	0.820	0.367	14.1	B	14.1	B
SB	L	213	1770	0.122	0.467	7.1	B	7.1	B
	T	1739	3725	0.445	0.467	7.1	B		

Intersection Delay = 10.4 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.532

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-24-2000
Center For Microcomputers In Transportation

Streets: (E-W) aupuni st (N-S) kilauea ave
Analyst: Wy File Name: KAUPTOPM.HC9
Area Type: Other 4-24-0 pm peak
Comment: total 2006 pm peak

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	1 > 0 < 1			0	2 < 0		1	2	0
Volumes				425		100		845	215	25	740	
Lane W (ft)				12.0	12.0	12.0		12.0		12.0	12.0	
RTOR Vols						0			50			0
Lost Time				3.00		3.00		3.00	3.00	3.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru					Thru	•		
Right					Right	•		
Peds	•				Peds	•		
WB Left	•				SB Left	•	•	
Thru					Thru	•	•	
Right	•				Right			
Peds	•				Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	25.0A				Green	3.0A	22.0P	
Yellow/AR	4.0				Yellow/AR	3.0	3.0	

Cycle Length: 60 secs Phase combination order: #1 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	Approach: LOS
WB	L	767	1770	0.368	0.433	7.5	B	7.5	B
	LR	752	1736	0.359	0.433	7.5	B		
	R	686	1583	0.000	0.433	0.0	A		
NB	TR	1333	3634	0.837	0.367	14.6	B	14.6	B
SB	L	213	1770	0.122	0.467	7.2	B	7.2	B
	T	1739	3725	0.471	0.467	7.2	B		

Intersection Delay = 10.6 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.566

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-25-2000
Center For Microcomputers In Transportation

Streets: (E-W) pauahi st (N-S) kilauea st
Analyst: Wy File Name: KILPAMEX.HC9
Area Type: Other 4-24-0 am peak
Comment: existing 2000 am peak

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	1	0	1	0	2	< 0	1	2	0
Volumes				220		170		550	150	290	360	
Lane W (ft)				12.0		12.0		12.0		12.0	12.0	
RTOR Vols						0			0			0
Lost Time				3.00		3.00		3.00	3.00	3.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left	•		
Thru					Thru	•		
Right					Right	•		
Peds					Peds			
WB Left	•				SB Left	•	•	
Thru					Thru	•	•	
Right	•				Right		•	
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right	•		
Green	17.0A				Green	9.0P	20.0A	
Yellow/AR	4.0				Yellow/AR	5.0	5.0	
Cycle Length:	60 secs				Phase combination order: #1 #5 #6			

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
WB	L	531	1770	0.437	0.300	11.3	B	8.5	B
	R	844	1583	0.212	0.533	4.8	A		
NB	TR	1322	3606	0.585	0.367	10.4	B	10.4	B
SB	L	449	1770	0.679	0.600	8.2	B	5.5	B
	T	2235	3725	0.178	0.600	3.5	A		

Intersection Delay = 8.2 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.609

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-25-2000
Center For Microcomputers In Transportation

Streets: (E-W) pauahi st (N-S) kilauea st
Analyst: Wy File Name: KILPAMAM.HC9
Area Type: Other 4-24-0 am peak
Comment: ambient 2000 forecast

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	1	0	1	0	2	< 0	1	2	0
Volumes				240		185		605	165	320	395	
Lane W (ft)				12.0		12.0		12.0		12.0	12.0	
RTOR Vols						0			0			0
Lost Time				3.00		3.00		3.00	3.00	3.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left	•		
Thru					Thru	•		
Right					Right	•		
Peds					Peds			
WB Left	•				SB Left	•	•	
Thru					Thru	•	•	
Right	•				Right		•	
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right	•		
Green	17.0A				Green	9.0P	20.0A	
Yellow/AR	4.0				Yellow/AR	5.0	5.0	
Cycle Length:	60 secs				Phase combination order: #1 #5 #6			

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
WB	L	531	1770	0.476	0.300	11.6	B	8.7	B
	R	844	1583	0.231	0.533	4.8	A		
NB	TR	1322	3606	0.644	0.367	11.0	B	11.0	B
SB	L	449	1770	0.751	0.600	11.3	B	6.9	B
	T	2235	3725	0.196	0.600	3.5	A		

Intersection Delay = 9.0 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.661

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-25-2000
Center For Microcomputers In Transportation

Streets: (E-W) pauahi st (N-S) kilauea st
Analyst: Wy File Name: KILPTOAM.HC9
Area Type: Other 4-24-0 am peak
Comment: total 2000 forecast

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	1	0	1	0	2	0	1	2	0
Volumes				240		185		610	165	335	410	
Lane W (ft)				12.0		12.0		12.0		12.0	12.0	
RTOR Vols						0			0			0
Lost Time				3.00		3.00		3.00	3.00	3.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left	•		
Thru					Thru	•		
Right					Right	•		
Peds					Peds			
WB Left	•				SB Left	•	•	
Thru					Thru	•	•	
Right	•				Right		•	
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right	•		
Green	17.0A				Green	9.0P	20.0A	
Yellow/AR	4.0				Yellow/AR	5.0	5.0	

Cycle Length: 60 secs Phase combination order: #1 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
WB	L	531	1770	0.476	0.300	11.6	B	8.7	B
	R	844	1583	0.231	0.533	4.8	A		
NB	TR	1322	3606	0.648	0.367	11.0	B	11.0	B
SB	L	449	1770	0.786	0.600	13.2	B	7.8	B
	T	2235	3725	0.203	0.600	3.5	A		

Intersection Delay = 9.3 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.663

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-25-2000
Center For Microcomputers In Transportation

Streets: (E-W) pauahi st (N-S) kilauea st
Analyst: Wy File Name: KILPPMEX.HC9
Area Type: Other 4-24-0 pm peak
Comment: existing 2000 pm peak

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	1	0	1	0	2	0	1	2	0
Volumes				245		265		605	205	265	465	
Lane W (ft)				12.0		12.0		12.0		12.0	12.0	
RTOR Vols						0			0			0
Lost Time				3.00		3.00		3.00	3.00	3.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left	•		
Thru					Thru	•		
Right					Right	•		
Peds					Peds			
WB Left	•				SB Left	•	•	
Thru					Thru	•	•	
Right	•				Right		•	
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right	•		
Green	17.0A				Green	9.0P	20.0A	
Yellow/AR	4.0				Yellow/AR	5.0	5.0	

Cycle Length: 60 secs Phase combination order: #1 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
WB	L	531	1770	0.486	0.300	11.7	B	8.3	B
	R	844	1583	0.330	0.533	5.2	B		
NB	TR	1314	3584	0.682	0.367	11.4	B	11.4	B
SB	L	449	1770	0.621	0.600	7.2	B	4.9	A
	T	2235	3725	0.229	0.600	3.6	A		

Intersection Delay = 8.3 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.651

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-25-2000
Center For Microcomputers In Transportation

Streets: (E-W) pauahi st (N-S) kilauea st
Analyst: Wy File Name: KILPPMAM.HC9
Area Type: Other 4-24-0 pm peak
Comment: ambient 2006 forecast

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	1	0	1	0	2	< 0	1	2	0
Volumes				270		290		665	225	290	510	
Lane W (ft)				12.0		12.0		12.0		12.0	12.0	
RTOR Vols						0			0			
Lost Time				3.00		3.00		3.00	3.00	3.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left	•		
Thru					Thru	•		
Right					Right	•		
Peds					Peds			
WB Left	•				SB Left	•	•	
Thru					Thru	•	•	
Right	•				Right		•	
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right	•		
Green	17.0A				Green	9.0P	20.0A	
Yellow/AR	4.0				Yellow/AR	5.0	5.0	

Cycle Length: 60 secs Phase combination order: #1 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
WB	L	531	1770	0.535	0.300	12.2	B	8.6	B
	R	844	1583	0.361	0.533	5.3	B		
NB	TR	1314	3584	0.749	0.367	12.4	B	12.4	B
SB	L	449	1770	0.679	0.600	8.7	B	5.4	B
	T	2235	3725	0.252	0.600	3.7	A		

Intersection Delay = 9.0 sec/veh Intersection LOS = B

Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.715

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-25-2000
Center For Microcomputers In Transportation

Streets: (E-W) pauahi st (N-S) kilauea st
Analyst: Wy File Name: KILPTOPM.HC9
Area Type: Other 4-24-0 pm peak
Comment: total 2006 forecast

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	1	0	1	0	2	< 0	1	2	0
Volumes				270		300		705	225	290	520	
Lane W (ft)				12.0		12.0		12.0		12.0	12.0	
RTOR Vols						0			0			
Lost Time				3.00		3.00		3.00	3.00	3.00	3.00	

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left	•		
Thru					Thru	•		
Right					Right	•		
Peds					Peds			
WB Left	•				SB Left	•	•	
Thru					Thru	•	•	
Right	•				Right		•	
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right	•		
Green	17.0A				Green	9.0P	20.0A	
Yellow/AR	4.0				Yellow/AR	5.0	5.0	

Cycle Length: 60 secs Phase combination order: #1 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
WB	L	531	1770	0.535	0.300	12.2	B	8.6	B
	R	844	1583	0.374	0.533	5.4	B		
NB	TR	1316	3590	0.781	0.367	13.1	B	13.1	B
SB	L	449	1770	0.679	0.600	8.9	B	5.5	B
	T	2235	3725	0.257	0.600	3.7	A		

Intersection Delay = 9.3 sec/veh Intersection LOS = B

Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.728

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-25-2000
Center For Microcomputers In Transportation

Streets: (E-W) kilauea ave (N-S) hualalai st
Analyst: wy File Name: KHUAAMEX.HC9
Area Type: Other 4-24-0 am peak
Comment: 2000 existing

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	0	1	0	0	0	1	2	0	0	2	0
Volumes	120		215				170	535			345	15
Lane W (ft)	12.0		12.0				12.0	12.0			12.0	
RTOR Vols			0						0			0
Lost Time	3.00		3.00				3.00	3.00			3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	•				NB Left	•	•	
Thru					Thru	•	•	
Right	•				Right			
Peds					Peds			
WB Left					SB Left			
Thru					Thru		•	
Right					Right		•	
Peds					Peds			
NB Right					EB Right	•		
SB Right					WB Right			
Green	13.0A				Green	16.0A	17.0A	
Yellow/AR	4.0				Yellow/AR	5.0	5.0	

Cycle Length: 60 secs Phase combination order: #1 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
EB	L	359	1539	0.393	0.233	12.9	B	7.2	B
	R	923	1583	0.274	0.583	4.0	A		
NB	L	719	1770	0.278	0.667	2.7	A	2.7	A
	T	2483	3725	0.266	0.667	2.6	A		
SB	TR	1172	3702	0.380	0.317	10.4	B	10.4	B

Intersection Delay = 5.7 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.382

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-25-2000
Center For Microcomputers In Transportation

Streets: (E-W) kilauea ave (N-S) hualalai st
Analyst: wy File Name: KHUAAMAM.HC9
Area Type: Other 4-24-0 am peak
Comment: ambient 2006 forecast

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	0	1	0	0	0	1	2	0	0	2	0
Volumes	130		235				185	590			380	15
Lane W (ft)	12.0		12.0				12.0	12.0			12.0	
RTOR Vols			0						0			0
Lost Time	3.00		3.00				3.00	3.00			3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	•				NB Left	•	•	
Thru					Thru	•	•	
Right	•				Right			
Peds					Peds			
WB Left					SB Left			
Thru					Thru		•	
Right					Right		•	
Peds					Peds			
NB Right					EB Right	•		
SB Right					WB Right			
Green	13.0A				Green	16.0A	17.0A	
Yellow/AR	4.0				Yellow/AR	5.0	5.0	

Cycle Length: 60 secs Phase combination order: #1 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
EB	L	359	1539	0.426	0.233	13.2	B	7.4	B
	R	924	1583	0.299	0.583	4.1	A		
NB	L	696	1770	0.313	0.667	2.9	A	2.7	A
	T	2484	3725	0.294	0.667	2.7	A		
SB	TR	1173	3704	0.416	0.317	10.6	B	10.6	B

Intersection Delay = 5.9 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.417

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-25-2000
Center For Microcomputers In Transportation

Streets: (E-W) kilauea ave (N-S) hualalai st
Analyst: wy File Name: KHUATOAM.HC9
Area Type: Other 4-24-0 am peak
Comment: total 2006 forecast

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	0	1	0	0	0	1	2	0	0	2	< 0
Volumes	130		245				185	595			405	15
Lane W (ft)	12.0		12.0				12.0	12.0			12.0	
RTOR Vols			0						0			0
Lost Time	3.00		3.00				3.00	3.00			3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	•				NB Left	•	•			
Thru					Thru	•	•			
Right	•				Right					
Peds					Peds					
WB Left					SB Left					
Thru					Thru		•			
Right					Right		•			
Peds					Peds					
NB Right					EB Right	•				
SB Right					WB Right					
Green	13.0A				Green	16.0A	17.0A			
Yellow/AR	4.0				Yellow/AR	5.0	5.0			

Cycle Length: 60 secs Phase combination order: #1 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
EB	L	359	1539	0.426	0.233	13.2	B	7.3	B
	R	924	1583	0.312	0.583	4.2	A		
NB	L	681	1770	0.320	0.667	3.0	A	2.8	A
	T	2484	3725	0.296	0.667	2.7	A		
SB	TR	1173	3705	0.442	0.317	10.7	B	10.7	B

Intersection Delay = 6.0 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.427

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-25-2000
Center For Microcomputers In Transportation

Streets: (E-W) kilauea ave (N-S) hualalai st
Analyst: wy File Name: KHUAPMEX.HC9
Area Type: Other 4-24-0 pm peak
Comment: 2000 existing

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	0	1	0	0	0	1	2	0	0	2	< 0
Volumes	75		245				210	690			440	40
Lane W (ft)	12.0		12.0				12.0	12.0			12.0	
RTOR Vols			0						0			0
Lost Time	3.00		3.00				3.00	3.00			3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	•				NB Left	•	•			
Thru					Thru	•	•			
Right	•				Right					
Peds					Peds					
WB Left					SB Left					
Thru					Thru		•			
Right					Right		•			
Peds					Peds					
NB Right					EB Right	•				
SB Right					WB Right					
Green	13.0A				Green	16.0A	17.0A			
Yellow/AR	4.0				Yellow/AR	5.0	5.0			

Cycle Length: 60 secs Phase combination order: #1 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
EB	L	359	1539	0.245	0.233	12.2	B	6.0	B
	R	924	1583	0.312	0.583	4.2	A		
NB	L	655	1770	0.377	0.667	3.3	A	2.9	A
	T	2484	3725	0.343	0.667	2.8	A		
SB	TR	1165	3679	0.509	0.317	11.1	B	11.1	B

Intersection Delay = 5.8 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.421

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-25-2000
Center For Microcomputers In Transportation

Streets: (E-W) kilauea ave (N-S) hualalai st
Analyst: wy File Name: KHUAPMAM.HC9
Area Type: Other 4-24-0 pm peak
Comment: ambient 2006 forecast

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	0	1	0	0	0	1	2	0	0	2	< 0
Volumes	80		270				230	760			485	45
Lane W (ft)	12.0		12.0				12.0	12.0			12.0	
RTOR Vols			0						0			0
Lost Time	3.00		3.00				3.00	3.00			3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	•				NB Left	•	•	
Thru					Thru	•	•	
Right	•				Right			
Peds					Peds			
WB Left					SB Left			
Thru					Thru		•	
Right					Right		•	
Peds					Peds			
NB Right					EB Right	•		
SB Right					WB Right			
Green	13.0A				Green	16.0A	17.0A	
Yellow/AR	4.0				Yellow/AR	5.0	5.0	

Cycle Length: 60 secs Phase combination order: #1 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
EB	L	359	1539	0.262	0.233	12.2	B	6.1	B
	R	924	1583	0.344	0.583	4.3	A		
NB	L	655	1770	0.414	0.667	3.6	A	3.1	A
	T	2484	3725	0.378	0.667	2.9	A		
SB	TR	1165	3678	0.562	0.317	11.5	B	11.5	B

Intersection Delay = 6.1 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.461

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-25-2000
Center For Microcomputers In Transportation

Streets: (E-W) kilauea ave (N-S) hualalai st
Analyst: wy File Name: KHUATOPM.HC9
Area Type: Other 4-24-0 pm peak
Comment: total 2006 forecast

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	0	1	0	0	0	1	2	0	0	2	< 0
Volumes	80		275				240	800			490	45
Lane W (ft)	12.0		12.0				12.0	12.0			12.0	
RTOR Vols			0						0			0
Lost Time	3.00		3.00				3.00	3.00			3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	•				NB Left	•	•	
Thru					Thru	•	•	
Right	•				Right			
Peds					Peds			
WB Left					SB Left			
Thru					Thru		•	
Right					Right		•	
Peds					Peds			
NB Right					EB Right	•		
SB Right					WB Right			
Green	13.0A				Green	16.0A	17.0A	
Yellow/AR	4.0				Yellow/AR	5.0	5.0	

Cycle Length: 60 secs Phase combination order: #1 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
EB	L	359	1539	0.262	0.233	12.2	B	6.1	B
	R	924	1583	0.351	0.583	4.3	A		
NB	L	655	1770	0.431	0.667	3.7	A	3.2	A
	T	2484	3725	0.398	0.667	3.0	A		
SB	TR	1165	3678	0.567	0.317	11.5	B	11.5	B

Intersection Delay = 6.0 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.470

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-24-2000
Center For Microcomputers In Transportation

Streets: (E-W) kamehameha ave (N-S) pauahi ave
Analyst: wy
Area Type: Other
Comment: existing 2000
File Name: KAMAMEX.HC9
4-24-0 am peak

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Volumes	25	80	140	305	200	1	155	490	195	10	525	115
Lane W (ft)	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vols			50			0			15			50
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left			•		NB Left	•	•	•
Thru			•		Thru		•	•
Right			•		Right		•	•
Peds					Peds			
WB Left		•	•	•	SB Left	•		•
Thru			•	•	Thru			•
Right			•	•	Right			•
Peds					Peds			
NB Right		•	•		EB Right	•	•	
SB Right		•			WB Right	•	•	
Green		2.0A	3.0A	8.0A	Green	2.0A	4.0A	24.0A
Yellow/AR		4.0	4.0	5.0	Yellow/AR	4.0	5.0	5.0

Cycle Length: 70 secs Phase combination order: #1 #2 #3 #5 #6 #7

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
EB	L	235	1770	0.119	0.229	15.2	C	13.8	B
	T	266	1863	0.334	0.143	17.7	C		
	R	565	1583	0.177	0.357	10.0	B		
WB	L	443	1770	0.860	0.329	24.4	C	21.1	C
	T	452	1863	0.553	0.243	16.1	C		
	R	724	1583	0.001	0.457	6.7	B		
NB	L	410	1770	0.505	0.586	6.4	B	6.1	B
	T	1863	3725	0.368	0.500	7.0	B		
	R	1018	1583	0.236	0.643	3.4	A		
SB	L	244	1770	0.053	0.457	7.8	B	10.9	B
	T	1384	3725	0.531	0.371	11.4	B		
	R	724	1583	0.119	0.457	7.0	B		

Intersection Delay = 11.5 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.668

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-24-2000
Center For Microcomputers In Transportation

Streets: (E-W) kamehameha ave (N-S) pauahi ave
Analyst: wy
Area Type: Other
Comment: ambient 2006 forecast
File Name: KAMAMAM.HC9
4-24-0 am peak

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Volumes	25	90	155	335	220	1	170	540	215	10	580	125
Lane W (ft)	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vols			50			0			15			50
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left			•		NB Left	•	•	•
Thru			•		Thru		•	•
Right			•		Right		•	•
Peds					Peds			
WB Left		•	•	•	SB Left	•		•
Thru			•	•	Thru			•
Right			•	•	Right			•
Peds					Peds			
NB Right		•	•		EB Right	•	•	
SB Right		•			WB Right	•	•	
Green		2.0A	5.0A	8.0A	Green	2.0A	4.0A	22.0A
Yellow/AR		4.0	4.0	5.0	Yellow/AR	4.0	5.0	5.0

Cycle Length: 70 secs Phase combination order: #1 #2 #3 #5 #6 #7

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
EB	L	222	1770	0.126	0.229	15.2	C	13.9	B
	T	266	1863	0.376	0.143	18.0	C		
	R	565	1583	0.205	0.357	10.1	B		
WB	L	480	1770	0.873	0.357	23.9	C	20.4	C
	T	506	1863	0.544	0.271	15.0	B		
	R	769	1583	0.001	0.486	6.0	B		
NB	L	410	1770	0.554	0.557	7.8	B	7.0	B
	T	1756	3725	0.430	0.471	8.0	B		
	R	1018	1583	0.262	0.643	3.5	A		
SB	L	209	1770	0.062	0.429	8.6	B	12.6	B
	T	1277	3725	0.636	0.343	13.2	B		
	R	679	1583	0.147	0.429	7.9	B		

Intersection Delay = 12.2 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.734

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-24-2000
Center For Microcomputers In Transportation

Streets: (E-W) kamehameha ave (N-S) pauahi ave
Analyst: wy File Name: KAMTOAM.HC9
Area Type: Other 4-24-0 am peak
Comment: total 2005 forecast

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Volumes	25	95	160	335	245	1	180	540	215	10	580	130
Lane W (ft)	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vols			50			0			15			50
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	•		•		NB Left	•	•	•	
Thru			•		Thru		•	•	
Right			•		Right		•	•	
Peds					Peds				
WB Left	•	•	•		SB Left	•		•	
Thru		•	•		Thru			•	
Right		•	•		Right			•	
Peds					Peds				
NB Right		•	•		EB Right	•	•		
SB Right		•			WB Right	•	•		
Green	2.0A	5.0A	8.0A		Green	2.0A	4.0A	22.0A	
Yellow/AR	4.0	4.0	5.0		Yellow/AR	4.0	5.0	5.0	

Cycle Length: 70 secs Phase combination order: #1 #2 #3 #5 #6 #7

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
EB	L	214	1770	0.131	0.229	15.2	C	14.0	B
	T	266	1863	0.398	0.143	18.2	C		
	R	565	1583	0.216	0.357	10.2	B		
WB	L	473	1770	0.886	0.357	25.3	D	21.3	C
	T	506	1863	0.605	0.271	15.9	C		
	R	769	1583	0.001	0.486	6.0	B		
NB	L	410	1770	0.585	0.557	8.2	B	7.1	B
	T	1756	3725	0.430	0.471	8.0	B		
	R	1018	1583	0.262	0.643	3.5	A		
SB	L	209	1770	0.062	0.429	8.6	B	12.6	B
	T	1277	3725	0.636	0.343	13.2	B		
	R	679	1583	0.156	0.429	7.9	B		

Intersection Delay = 12.5 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.748

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-24-2000
Center For Microcomputers In Transportation

Streets: (E-W) kamehameha ave (N-S) pauahi ave
Analyst: wy File Name: KAMPMEX.HC9
Area Type: Other 4-24-0 pm peak
Comment: existing 2000

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Volumes	115	195	275	290	175	10	200	610	325	40	580	170
Lane W (ft)	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vols			0			0			100			50
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	•		•		NB Left	•	•	•	
Thru			•		Thru		•	•	
Right			•		Right		•	•	
Peds					Peds			•	
WB Left	•	•	•		SB Left	•		•	
Thru		•	•		Thru			•	
Right		•	•		Right			•	
Peds					Peds			•	
NB Right		•	•	•	EB Right	•	•		
SB Right		•		•	WB Right	•			
Green	2.0A	3.0A	13.0A		Green	2.0A	4.0A	15.0A	
Yellow/AR	4.0	4.0	5.0		Yellow/AR	4.0	5.0	5.0	

Cycle Length: 66 secs Phase combination order: #1 #2 #3 #5 #6 #7

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
EB	L	342	1770	0.374	0.318	12.5	B	11.4	B
	T	423	1863	0.513	0.227	15.3	C		
	R	720	1583	0.425	0.455	8.1	B		
WB	L	429	1770	0.844	0.424	19.1	C	15.9	C
	T	621	1863	0.353	0.333	10.9	B		
	R	672	1583	0.018	0.424	7.1	B		
NB	L	435	1770	0.614	0.485	9.8	B	8.4	B
	T	1468	3725	0.582	0.394	10.6	B		
	R	1288	1574	0.233	0.818	0.9	A		
SB	L	213	1770	0.249	0.348	10.8	B	17.3	C
	T	960	3725	0.846	0.258	20.0	C		
	R	835	1574	0.192	0.530	5.2	B		

Intersection Delay = 12.6 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.787

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-24-2000
Center For Microcomputers In Transportation

Streets: (E-W) kamehameha ave (N-S) pauahi ave
Analyst: wy File Name: KAMPMAM.HC9
Area Type: Other 4-24-0 pm peak
Comment: ambient 2006 forecast

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Volumes	125	215	300	320	190	10	220	670	355	45	640	185
Lane W (ft)	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vols			100			0			100			90
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	•		•		NB Left	•	•	•
Thru			•		Thru		•	•
Right			•		Right		•	•
Peds					Peds			•
WB Left		•	•		SB Left	•		•
Thru			•		Thru			•
Right			•		Right			•
Peds					Peds			•
NB Right		•	•		EB Right	•	•	
SB Right		•	•		WB Right	•		
Green		2.0A	5.0A	12.0A	Green	2.0A	3.0A	17.0A
Yellow/AR		4.0	4.0	5.0	Yellow/AR	4.0	5.0	5.0

Cycle Length: 68 secs Phase combination order: #1 #2 #3 #5 #6 #7

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
EB	L	302	1770	0.460	0.294	14.3	B	13.9	B
	T	384	1863	0.623	0.206	18.1	C		
	R	652	1583	0.341	0.412	9.0	B		
WB	L	427	1770	0.937	0.426	30.3	D	22.9	C
	T	630	1863	0.376	0.338	11.2	B		
	R	675	1583	0.018	0.426	7.3	B		
NB	L	396	1770	0.740	0.485	13.5	B	9.5	B
	T	1479	3725	0.634	0.397	11.3	B		
	R	1297	1574	0.262	0.824	0.9	A		
SB	L	205	1770	0.293	0.368	10.7	B	18.0	C
	T	1041	3725	0.861	0.279	20.3	C		
	R	834	1574	0.152	0.529	5.3	B		

Intersection Delay = 14.8 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 9.0 sec Critical v/c(x) = 0.889

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4f 04-24-2000
Center For Microcomputers In Transportation

Streets: (E-W) kamehameha ave (N-S) pauahi ave
Analyst: wy File Name: KAMTOPM.HC9
Area Type: Other 4-24-0 pm peak
Comment: total 2006 forecast

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	1	1	2	1	1	2	1
Volumes	135	250	310	320	205	10	225	670	355	45	640	190
Lane W (ft)	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vols			100			0			100			90
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	•		•		NB Left	•	•	•
Thru			•		Thru		•	•
Right			•		Right		•	•
Peds					Peds			•
WB Left		•	•		SB Left	•		•
Thru			•		Thru			•
Right			•		Right			•
Peds					Peds			•
NB Right		•	•		EB Right	•	•	
SB Right		•	•		WB Right	•		
Green		2.0A	6.0A	11.0A	Green	2.0A	3.0A	17.0A
Yellow/AR		4.0	4.0	5.0	Yellow/AR	4.0	5.0	5.0

Cycle Length: 68 secs Phase combination order: #1 #2 #3 #5 #6 #7

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
EB	L	275	1770	0.545	0.279	16.0	C	17.2	C
	T	356	1863	0.781	0.191	24.2	C		
	R	629	1583	0.371	0.397	9.5	B		
WB	L	448	1770	0.893	0.426	24.0	C	18.9	C
	T	630	1863	0.406	0.338	11.4	B		
	R	675	1583	0.018	0.426	7.3	B		
NB	L	396	1770	0.758	0.485	14.3	B	9.6	B
	T	1479	3725	0.634	0.397	11.3	B		
	R	1297	1574	0.262	0.824	0.9	A		
SB	L	205	1770	0.293	0.368	10.7	B	18.0	C
	T	1041	3725	0.861	0.279	20.3	C		
	R	810	1574	0.164	0.515	5.7	B		

Intersection Delay = 14.7 sec/veh Intersection LOS = B
Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.901

UNSIGNALIZED INTERSECTION
LEVEL OF SERVICE (LOS) CALCULATIONS

Center For Microcomputers In Transportation
University of Florida
512 Weil Hall
Gainesville, FL 32611-2083
Ph: (904) 392-0378

Streets: (N-S) aupuni st (E-W) pauahi st
Major Street Direction.... EW
Length of Time Analyzed... 60 (min)
Analyst..... wy
Date of Analysis..... 4/24/0
Other Information.....existing 2000 am peak hour
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	0	1	0	0	0
Stop/Yield			N			N						
Volumes		220	100	185	370				125			
PHF		.95	.95	.95	.95				.95			
Grade		0			0			0				
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's				1.10					1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	168	
Potential Capacity: (pcph)	1138	
Movement Capacity: (pcph)	1138	
Prob. of Queue-Free State:	0.87	

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)	337	
Potential Capacity: (pcph)	1130	
Movement Capacity: (pcph)	1130	
Prob. of Queue-Free State:	0.81	
TH Saturation Flow Rate: (pcphpl)	3400	
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:	0.79	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB R	145	1138		3.6	0.4	A	3.6
WB L	215	1130		3.9	0.8	A	1.3

Intersection Delay = 1.2 sec/veh

Center For Microcomputers In Transportation
University of Florida
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Gainesville, FL 32611-2083
Ph: (904) 392-0378

Streets: (N-S) aupuni st (E-W) pauahi st
Major Street Direction.... EW
Length of Time Analyzed... 60 (min)
Analyst..... wy
Date of Analysis..... 4/24/0
Other Information.....ambient 2006 am peak hour
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	0	1	0	0	0
Stop/Yield			N			N						
Volumes		240	100	185	405				125			
PHF		.95	.95	.95	.95				.95			
Grade		0			0			0				
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's				1.10					1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	179	
Potential Capacity: (pcph)	1124	
Movement Capacity: (pcph)	1124	
Prob. of Queue-Free State:	0.87	

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)	358	
Potential Capacity: (pcph)	1101	
Movement Capacity: (pcph)	1101	
Prob. of Queue-Free State:	0.80	
TH Saturation Flow Rate: (pcphpl)	3400	
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:	0.78	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB R	145	1124		3.7	0.5	A	3.7
WB L	215	1101		4.1	0.8	A	1.3

Intersection Delay = 1.1 sec/veh

Center For Microcomputers In Transportation
University of Florida
512 Weil Hall
Gainesville, FL 32611-2083
Ph: (904) 392-0378

Streets: (N-S) aupuni st (E-W) pauahi st
Major Street Direction.... EW
Length of Time Analyzed... 60 (min)
Analyst..... wy
Date of Analysis..... 4/24/0
Other Information.....total 2006 am peak hour
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	0	1	0	0	0
Stop/Yield			N			N						
Volumes		240	100	215	425				135			
PHF		.95	.95	.95	.95				.95			
Grade		0			0			0				
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's				1.10					1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	179	
Potential Capacity: (pcph)	1124	
Movement Capacity: (pcph)	1124	
Prob. of Queue-Free State:	0.86	

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)	358	
Potential Capacity: (pcph)	1101	
Movement Capacity: (pcph)	1101	
Prob. of Queue-Free State:	0.77	
TH Saturation Flow Rate: (pcphpl)	3400	
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:	0.74	

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB	R	156	1124		3.7	0.5	A	3.7
WB	L	249	1101		4.2	1.0	A	1.4

Intersection Delay = 1.3 sec/veh

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Ph: (904) 392-0378

Streets: (N-S) aupuni st (E-W) pauahi st
Major Street Direction.... EW
Length of Time Analyzed... 60 (min)
Analyst..... wy
Date of Analysis..... 12/14/97
Other Information.....existing 2000 pm peak hour
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	0	1	0	0	0
Stop/Yield			N			N						
Volumes		350	35	100	425				245			
PHF		.95	.95	.95	.95				.95			
Grade		0			0			0				
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's				1.10					1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	202	
Potential Capacity: (pcph)	1094	
Movement Capacity: (pcph)	1094	
Prob. of Queue-Free State:	0.74	

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)	405	
Potential Capacity: (pcph)	1039	
Movement Capacity: (pcph)	1039	
Prob. of Queue-Free State:	0.89	
TH Saturation Flow Rate: (pcphpl)	3400	
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:	0.87	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB R	284	1094		4.4	1.2	A	4.4
WB L	116	1039		3.9	0.4	A	0.7

Intersection Delay = 1.3 sec/veh

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Major Street Direction.... EW
Length of Time Analyzed... 60 (min)
Analyst..... wy
Date of Analysis..... 12/14/97
Other Information.....ambient 2006 pm peak hour
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	< 0	0	> 2	0	0	0	1	0	0	0
Stop/Yield			N			N						
Volumes		385	35	100	465				245			
PHF		.95	.95	.95	.95				.95			
Grade		0			0			0				
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's				1.10					1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	221	
Potential Capacity: (pcph)	1070	
Movement Capacity: (pcph)	1070	
Prob. of Queue-Free State:	0.73	

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)	442	
Potential Capacity: (pcph)	993	
Movement Capacity: (pcph)	993	
Prob. of Queue-Free State:	0.88	
TH Saturation Flow Rate: (pcphpl)	3400	
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:	0.86	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB R	284	1070		4.6	1.2	A	4.6
WB L	116	993		4.1	0.4	A	0.7

Intersection Delay = 1.2 sec/veh

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Streets: (N-S) aupuni st (E-W) pauahi st
Major Street Direction.... EW
Length of Time Analyzed... 60 (min)
Analyst..... wy
Date of Analysis..... 12/14/97
Other Information.....total 2006 pm peak hour
Two-way Stop-controlled Intersection

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	0	1	0	0	0
Stop/Yield			N			N						
Volumes		400	35	120	470				285			
PHF		.95	.95	.95	.95				.95			
Grade		0			0			0				
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's				1.10					1.10			

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	NB	SB
Conflicting Flows: (vph)	229	
Potential Capacity: (pcph)	1060	
Movement Capacity: (pcph)	1060	
Prob. of Queue-Free State:	0.69	

Step 2: LT from Major Street	WB	EB
Conflicting Flows: (vph)	458	
Potential Capacity: (pcph)	973	
Movement Capacity: (pcph)	973	
Prob. of Queue-Free State:	0.86	
TH Saturation Flow Rate: (pcphpl)	3400	
RT Saturation Flow Rate: (pcphpl)		
Major LT Shared Lane Prob. of Queue-Free State:	0.83	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
NB R	330	1060		4.9	1.5	A	4.9
WB L	139	973		4.3	0.5	A	0.9

Intersection Delay = 1.5 sec/veh

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Streets: (N-S) kilauea ave (E-W) kaikoo mall d.w.
Major Street Direction.... NS
Length of Time Analyzed... 60 (min)
Analyst..... wy
Date of Analysis..... 4/25/0
Other Information.....existing 2000 am peak hour
Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	1	2	0	0	0	0	1	0	1
Stop/Yield			N			N						
Volumes		695	40	25	505					5		5
PHF		.95	.95	.95	.95					.95		.95
Grade		0			0						0	
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's				1.10						1.10		1.10

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	387	
Potential Capacity: (pcph)	882	
Movement Capacity: (pcph)	882	
Prob. of Queue-Free State:	0.99	
Step 2: LT from Major Street	**SB**	**NB**
Conflicting Flows: (vph)	774	
Potential Capacity: (pcph)	659	
Movement Capacity: (pcph)	659	
Prob. of Queue-Free State:	0.96	
Step 4: LT from Minor Street	**WB**	**EB**
Conflicting Flows: (vph)	1311	
Potential Capacity: (pcph)	154	
Major LT, Minor TH Impedance Factor:	0.96	
Adjusted Impedance Factor:	0.96	
Capacity Adjustment Factor due to Impeding Movements	0.96	
Movement Capacity: (pcph)	147	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
WB L	6	147		25.5	0.0	D	14.8
WB R	6	882		4.1	0.0	A	
SB L	29	659		5.7	0.0	B	0.3

Intersection Delay = 0.2 sec/veh

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Major Street Direction.... NS
Length of Time Analyzed... 60 (min)
Analyst..... wy
Date of Analysis..... 4/25/0
Other Information.....ambient 2006 am peak hour
Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	< 0	1	2	0	0	0	0	1	0	1
Stop/Yield			N			N						
Volumes		765	40	25	555					5		5
PHF		.95	.95	.95	.95					.95		.95
Grade		0			0						0	
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's				1.10						1.10		1.10

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	424	
Potential Capacity: (pcph)	844	
Movement Capacity: (pcph)	844	
Prob. of Queue-Free State:	0.99	

Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)	847	
Potential Capacity: (pcph)	602	
Movement Capacity: (pcph)	602	
Prob. of Queue-Free State:	0.95	

Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)	1436	
Potential Capacity: (pcph)	128	
Major LT, Minor TH Impedance Factor:	0.95	
Adjusted Impedance Factor:	0.95	
Capacity Adjustment Factor due to Impeding Movements	0.95	
Movement Capacity: (pcph)	122	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
WB L	6	122		31.0	0.0	E	17.7
WB R	6	844		4.3	0.0	A	
SB L	29	602		6.3	0.0	B	0.3

Intersection Delay = 0.2 sec/veh

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Major Street Direction.... NS
Length of Time Analyzed... 60 (min)
Analyst..... wy
Date of Analysis..... 4/25/0
Other Information.....total 2006 am peak hour
Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	1	2	0	0	0	0	1	0	1
Stop/Yield			N			N						
Volumes		765	80	40	555					10		10
PHF		.95	.95	.95	.95					.95		.95
Grade		0			0						0	
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's				1.10						1.10		1.10

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	444	
Potential Capacity: (pcph)	825	
Movement Capacity: (pcph)	825	
Prob. of Queue-Free State:	0.99	

Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)	889	
Potential Capacity: (pcph)	571	
Movement Capacity: (pcph)	571	
Prob. of Queue-Free State:	0.92	

Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)	1473	
Potential Capacity: (pcph)	121	
Major LT, Minor TH Impedance Factor:	0.92	
Adjusted Impedance Factor:	0.92	
Capacity Adjustment Factor due to Impeding Movements	0.92	
Movement Capacity: (pcph)	111	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
WB L	12	111		36.4	0.3	E	20.4
WB R	12	825		4.4	0.0	A	
SB L	46	571		6.9	0.2	B	0.5

Intersection Delay = 0.5 sec/veh

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Major Street Direction.... NS
Length of Time Analyzed... 60 (min)
Analyst..... wy
Date of Analysis..... 4/25/0
Other Information.....existing 2000 pm peak hour
Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	< 0	1	2	0	0	0	0	1	0	1
Stop/Yield			N			N						
Volumes		805	10	15	690					3		30
PHF		.95	.95	.95	.95					.95		.95
Grade		0			0						0	
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's				1.10						1.10		1.10

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	429	
Potential Capacity: (pcph)	839	
Movement Capacity: (pcph)	839	
Prob. of Queue-Free State:	0.96	
Step 2: LT from Major Street	**SB**	**NB**
Conflicting Flows: (vph)	858	
Potential Capacity: (pcph)	594	
Movement Capacity: (pcph)	594	
Prob. of Queue-Free State:	0.97	
Step 4: LT from Minor Street	**WB**	**EB**
Conflicting Flows: (vph)	1594	
Potential Capacity: (pcph)	101	
Major LT, Minor TH Impedance Factor:	0.97	
Adjusted Impedance Factor:	0.97	
Capacity Adjustment Factor due to Impeding Movements	0.97	
Movement Capacity: (pcph)	98	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
WB L	3	98		37.9	0.0	E	7.5
WB R	35	839		4.5	0.0	A	
SB L	18	594		6.2	0.0	B	0.1

Intersection Delay = 0.2 sec/veh

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Major Street Direction.... NS
Length of Time Analyzed... 60 (min)
Analyst..... wy
Date of Analysis..... 4/25/0
Other Information.....ambient 2006 pm peak hour
Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	1	2	0	0	0	0	1	0	1
Stop/Yield			N			N						
Volumes		885	10	15	760					3		30
PHF		.95	.95	.95	.95					.95		.95
Grade		0			0						0	
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's				1.10						1.10		1.10

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	472	
Potential Capacity: (pcph)	798	
Movement Capacity: (pcph)	798	
Prob. of Queue-Free State:	0.96	

Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)	943	
Potential Capacity: (pcph)	534	
Movement Capacity: (pcph)	534	
Prob. of Queue-Free State:	0.97	

Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)	1754	
Potential Capacity: (pcph)	80	
Major LT, Minor TH Impedance Factor:	0.97	
Adjusted Impedance Factor:	0.97	
Capacity Adjustment Factor due to Impeding Movements	0.97	
Movement Capacity: (pcph)	77	

Intersection Performance Summary

Movement		Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
WB	L	3	77		48.6	0.0	F	8.7
WB	R	35	798		4.7	0.0	A	
SB	L	18	534		7.0	0.0	B	0.1

Intersection Delay = 0.2 sec/veh

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Streets: (N-S) kilauea ave (E-W) kaikoo mall d.w.
Major Street Direction.... NS
Length of Time Analyzed... 60 (min)
Analyst..... wy
Date of Analysis..... 4/25/0
Other Information.....total 2006 pm peak hour
Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	< 0	1	2	0	0	0	0	1	0	1
Stop/Yield			N			N						
Volumes		895	20	25	760					45		60
PHF		.95	.95	.95	.95					.95		.95
Grade		0			0						0	
MC's (%)												
SU/RV's (%)												
CV's (%)												
PCE's				1.10						1.10		1.10

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

Worksheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	482	
Potential Capacity: (pcph)	789	
Movement Capacity: (pcph)	789	
Prob. of Queue-Free State:	0.91	

Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)	963	
Potential Capacity: (pcph)	521	
Movement Capacity: (pcph)	521	
Prob. of Queue-Free State:	0.94	

Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)	1778	
Potential Capacity: (pcph)	77	
Major LT, Minor TH Impedance Factor:	0.94	
Adjusted Impedance Factor:	0.94	
Capacity Adjustment Factor due to Impeding Movements	0.94	
Movement Capacity: (pcph)	73	

Intersection Performance Summary

Movement	Flow Rate (pcph)	Move Cap (pcph)	Shared Cap (pcph)	Avg. Total Delay (sec/veh)	95% Queue Length (veh)	LOS	Approach Delay (sec/veh)
WB L	52	73		151.3	4.6	F	67.7
WB R	69	789		5.0	0.2	A	
SB L	29	521		7.3	0.0	B	0.2

Intersection Delay = 4.0 sec/veh