ALAPA'I TRANSIT CENTER AND JOINT TRAFFIC MANAGEMENT CENTER

Honolulu, Hawai'i
TMK (1) 2-1-042: 004, 013 and 011

Final ~~Draft~~ Environmental Assessment

Applicant:

City and County of Honolulu
Department of Transportation Services (DTS)
650 South King Street, 3rd Floor
Honolulu, Hawai'i 96813

Prepared by:

Group 70 International, Inc.
Architecture • Planning & Environmental Services • Interior Design • Assets Management
Honolulu, Hawai'i

January 2008 ~~July 2007~~

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January 22, 2008

Mr. Laurence K. Lau, Acting Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Mr. Lau:

Subject: Notice of Determination Final Environmental Assessment (FEA) for, TMK (1) 2-1-042:004, 013, and 011, Honolulu, Oahu

The applicant, City and County of Honolulu, Department of Transportation Services (DTS), has proposed construction of a Bus Transit Center and Joint Traffic Management Center at the existing Alapai bus transit center site on the northeastern corner of the intersection of Alapai Street and King Street in downtown Honolulu.

DTS (approving agency) has reviewed the comments received during the 30-day public comment period from August 8, 2007 to September 7, 2007 and determined that the project will not result in significant environmental effects. DTS has issued the following determination: Finding of No Significant Impact (FONSI).

We have enclosed a complete set of OEQC publication materials and the requested copies of the FEA. If you have further questions regarding this project, please contact Mr. Ty Fukumitsu, Acting Division Chief, Traffic Signals and Technology Division, at 808-768-8388.

Very truly yours,

WAYNE Y. YOSHIOKA
Acting Director

Enclosure

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Honolulu, Hawai'i
TMK (1) 2-1-042: 004, 013 and 011

Final ~~Draft~~ Environmental Assessment

This environmental document is prepared pursuant to Chapter 200 of Title 11, Administrative Rules, Department of Health, "Environmental Impact Statement Rules."

Applicant:

City and County of Honolulu
Department of Transportation Services (DTS)
650 South King Street, 3rd Floor
Honolulu, Hawai'i 96813

Accepting Authority:

City and County of Honolulu,
Department of Transportation Services

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January 2008 ~~**July 2007**~~

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LIST OF ACRONYMS

ADA	Americans with Disabilities Act
AIS	Archaeological Inventory Survey
ASTM	American Society for Testing and Materials
ATC	Alapa'i Transit Center
BWS	Board of Water Supply
CCTV	Closed Circuit Television Cameras
CE	Categorical Exclusion
CFR	Code of Federal Regulations
CIE	Cultural Impact Evaluation
City	City and County of Honolulu
CMP	Capital Management Plan
CMS	Changeable Message Signs
COOPS	Concept of Operations
CSH	Cultural Surveys Hawai'i
cy	Cubic Yards
DDC	City Department of Design and Construction
DEM	City Department of Emergency Management
DMS	Dynamic Message Signs
DNL	Day-Night Average Sound Level
DOH	State of Hawai'i Department of Health
DPP	City Department of Planning and Permitting
DTS	City Department of Transportation Services
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMS	Emergency Management Services
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
ETC	EnviroServices and Training Center, LLC
FEMA	Federal Emergency Management Agency

FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMB	Fasi Municipal Building
FONSI	Finding of No Significant Impact
ft	Feet
FTA	Federal Transit Administration
FY	Fiscal Year
GB	Government Building
HAR	Hawaiʻi Administrative Rules
HBMP	Honolulu Bicycle Master Plan
HDOT	State of Hawaiʻi Department of Transportation
HECO	Hawaiian Electric Company
HEER	State Hazardous Evaluation and Emergency Response
HFD	Honolulu Fire Department
HOA	Hida, Okamoto and Associates, Inc.
HOV	High Occupancy Vehicle
HPD	Honolulu Police Department
HRS	Hawaiʻi Revised Statutes
ITS	Intelligent Transportation Systems
JDA	Joint Development Agreement
JTMC	Joint Traffic Management Center
LCD	Lane Control Displays
LEED	Leadership in Energy and Environmental Design
LUO	Land Use Ordinance
LUST	Leaking Underground Storage Tank
MOU	Memorandum of Understanding
MSL	Mean Sea Level
NEPA	National Environmental Policy Act
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System Permit
OHA	Office of Hawaiian Affairs
OIBC	Oʻahu Island Burial Council
OMPO	Oʻahu Metropolitan Planning Organization
ORTP	Oʻahu Regional Transportation Plan
OTS	Oʻahu Transit Services
PIM	Public Infrastructure Map
PTD	Public Transit Division
PUC	Primary Urban Center
PUCDP	Primary Urban Center Development Plan
SCS	Soil Conservation Service
SD	Special District
SDP-Major	Special District Permit – Major
sf	Square Foot
SFP	State Functional Plans
SHPD	Department of Land and Natural Resources State Historic Preservation Division
SHWB	State Hazardous Waste Branch
SHWS	State Hazardous Waste Sites
SIHP	State Inventory of Historic Places
SMA	Special Management Area

TDM	Transportation Demand Management
TED	Traffic Engineering Division
TFP	Transportation Functional Plan
TIP	Transportation Improvement Program
TMC	Traffic Management Center
TMK	Tax Map Key
TOC	Traffic Operations Center
TPD	Transportation Planning Division
TS&TD	Traffic Signals and Technology Division
TSM	Transportation Systems Management
USDA	United States Department of Agriculture
UST	Underground Storage Tanks
VOC	Volatile Organic Compound
WOC	Wilson Okamoto Corporation

1.0 INTRODUCTION

1.0 INTRODUCTION

1.1 PROJECT INFORMATION SUMMARY

Type of Application:	Environmental Assessment (EA) to meet the requirements of HRS Chapter 343
Applicant:	City and County of Honolulu Department of Transportation Services (DTS) 650 South King Street, 3rd Floor Honolulu, HI 96813 Contact: Ty Fukumitsu, Acting ~~Director~~ Chief, Traffic Signal and Technology Division Phone: (808) 768-8388
Agent:	Group 70 International, Inc. 925 Bethel Street, 5th Floor Honolulu, HI 96813 Contact: Rachel Shaak, AICP Telephone: 808-523-5866 x 160
Accepting Authority:	City and County of Honolulu, Department of Transportation Services
Name of Action:	Alapa'i Transit Center (ATC) and Joint Traffic Management Center (JTMC)
Class of Action:	Use of County lands and funds Use of Federal grant monies for construction
Project Location:	The site is located at 710 and 752 South King Streets, mauka of King Street, east of Alapa'i Street, makai of Hotel Street and west of Kealamakai ~~Makai~~ Street, and at 810 S. Beretania Street, between Alapa'i and Hale Makai Streets, in downtown Honolulu, Island of O'ahu, Hawai'i *(Figure 1.1).*
Tax Map Key (TMK):	2-1-042: 013, 011 and 004, and adjoining portion of Hotel Street (no TMK). *(Figure 1.2)*
Land Ownership:	City and County of Honolulu

Land Area:

	Square Feet	Acres
TMK 2-1-042: 011	204,732	4.7
TMK 2-1-042: 013	63,210	1.45
TMK 2-1-042: 004	98,289	2.26
Hotel Street	18,295	0.42
TOTAL	**384,526**	**8.83**

State Land Use District: Urban District (U) *(Figure 1.3)*

City / County Zoning: BMX-3, Community Business Mixed Use District within the Hawai'i Capital Special District – Alapa'i Precinct *(Figure 1.4)*

City / County Development Plan: Primary Urban Center *(Figure 1.5)*

Special District: Hawai'i Capital Special District – Alapa'i Precinct

Special Management Area (SMA): Not located in SMA

Flood Zone: FIRM Zone X *(Figure 1.6)*

Tsunami Zone: Not located in the Tsunami Inundation Zone.

Anticipated Determination: Finding of No Significant Impact (FONSI)

1.2 OVERVIEW OF PROPOSED PROJECT

The City and County of Honolulu (City), Department of Transportation Services (DTS) will construct a replacement bus transit center and a new Joint Traffic Management Center (JTMC) at the existing Alapa'i Transit Center (ATC) site at King Street and Alapa'i Street in downtown Honolulu, O'ahu, State of Hawai'i. The applicant will seek a Joint Development Agreement (JDA) with the adjacent HPD property due to a slight encroachment into their property on the makai side of the existing Police Department parking garage (TMK (1) 2-1-042: 011). The JDA would effectively join the two properties together, creating a single "project site." The 8.83-acre site is identified as Tax Map Keys (1) 2-1-042: 013, 011 and 004, plus a portion of Hotel Street. The project site is located within the County's Hawai'i Capital Special District, requiring a Special District Permit (Major) *(Figure 1.1)*.

An Environmental Impact Statement (EIS) was prepared for the HPD property (TMK (1) 2-1-042: 011) in August 1988 by Sam Chang Architects and Associates. Environmental impacts associated with the development of the HPD property were evaluated and mitigated as described in the 1988 EIS and are not repeated in this current Environmental Assessment (EA). The proposed Alapa'i project development will occur primarily on the Alapa'i site and

therefore this current EA addresses the setting and potential project impacts of the proposed ATC and JTMC on the Alapa'i project site.

The Alapa'i site has been in municipal use as a bus transit center and parking area since circa 1938. The City and County of Honolulu purchased the project site and associated mass transit line in 1970 from Honolulu Rapid Transit & Land Company. Use of Federal Transit Administration (FTA) funds for the purchase required that the site remain in transit-related land use. The existing and proposed future use as a transit center meets this requirement. In its existing condition, the site is underused and large enough to accommodate improved bus operations and a new multi-story government office building. The JTMC will jointly locate related agencies in a new building, providing an opportunity to increase efficiency, coordination, and effectiveness among State and City agencies involved in future transit planning and daily transportation and emergency operations.

The ATC and JTMC will be referred to collectively as the Alapa'i Project throughout the document.

Figure 1.1. Project Location Map

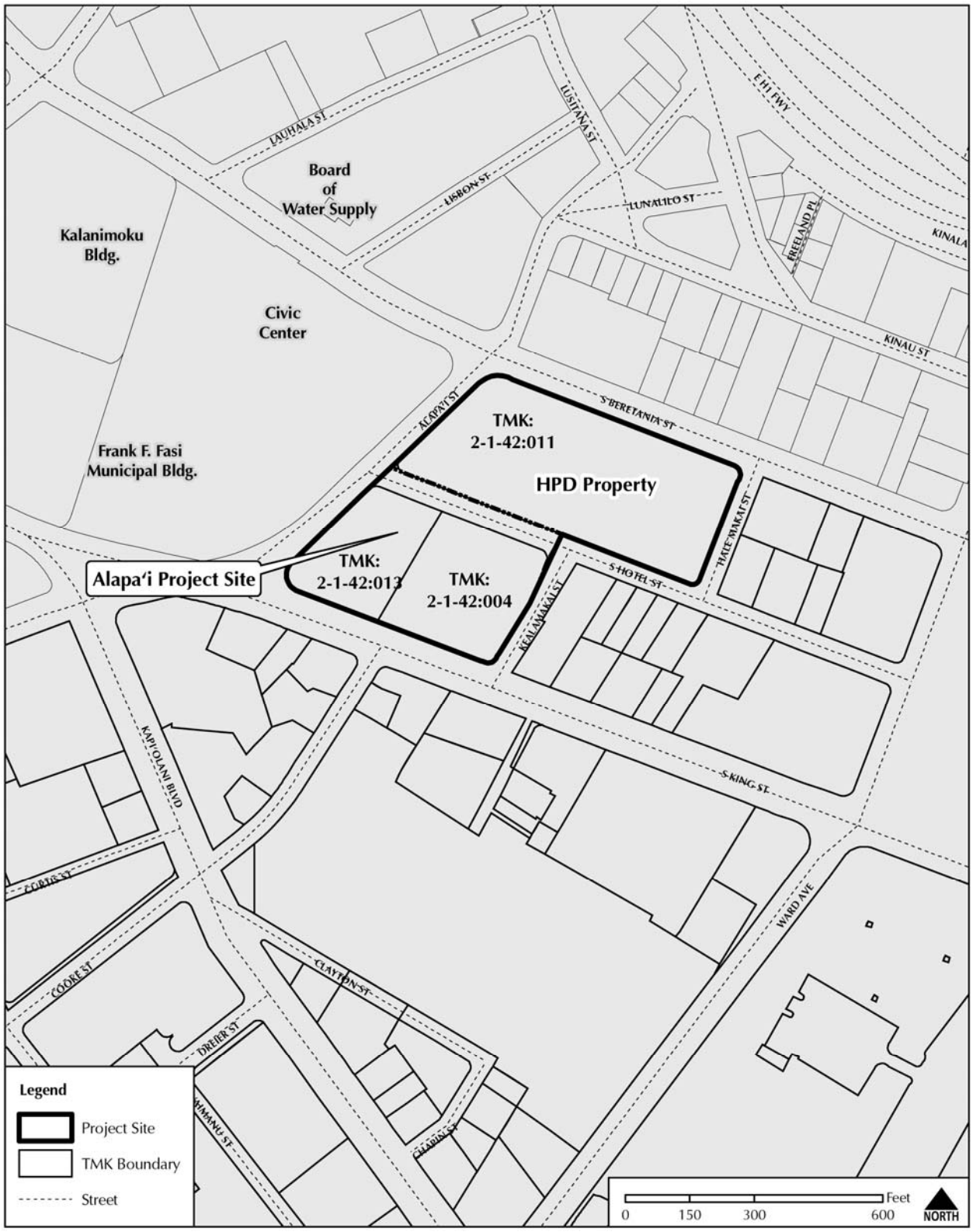


Figure 1.2. Tax Map Key

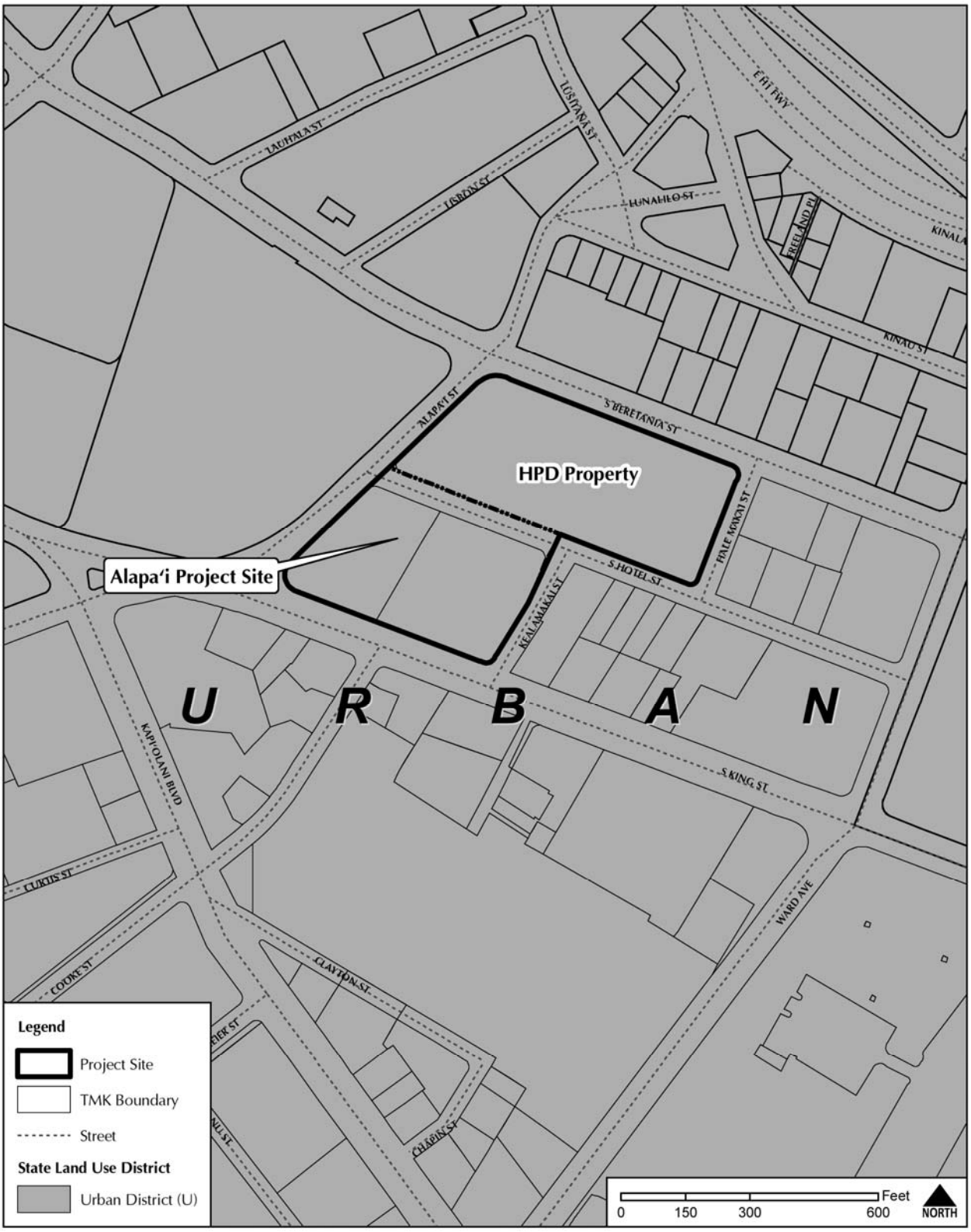


Figure 1.3. State Land Use Designation Map

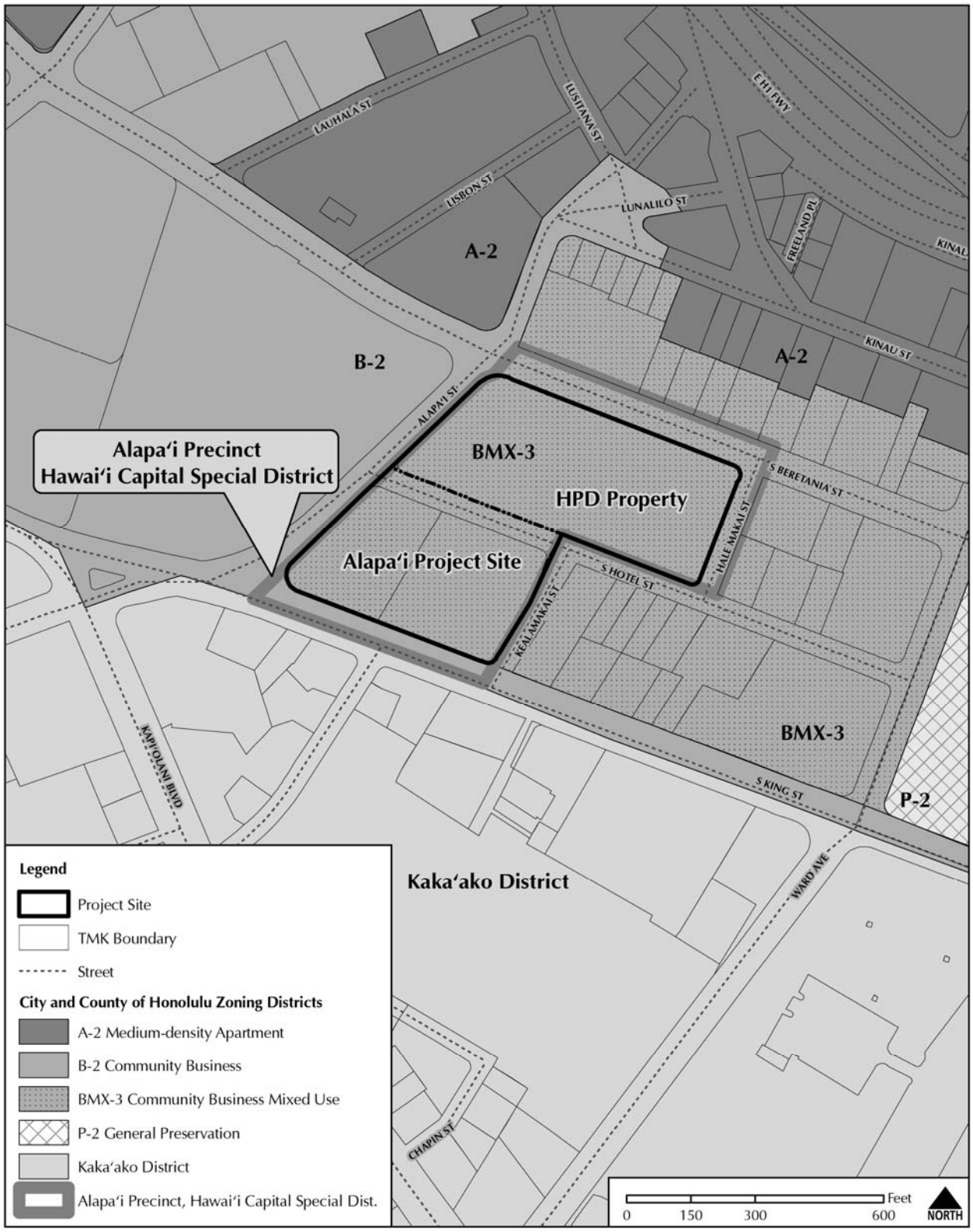


Figure 1.4. Zoning Map

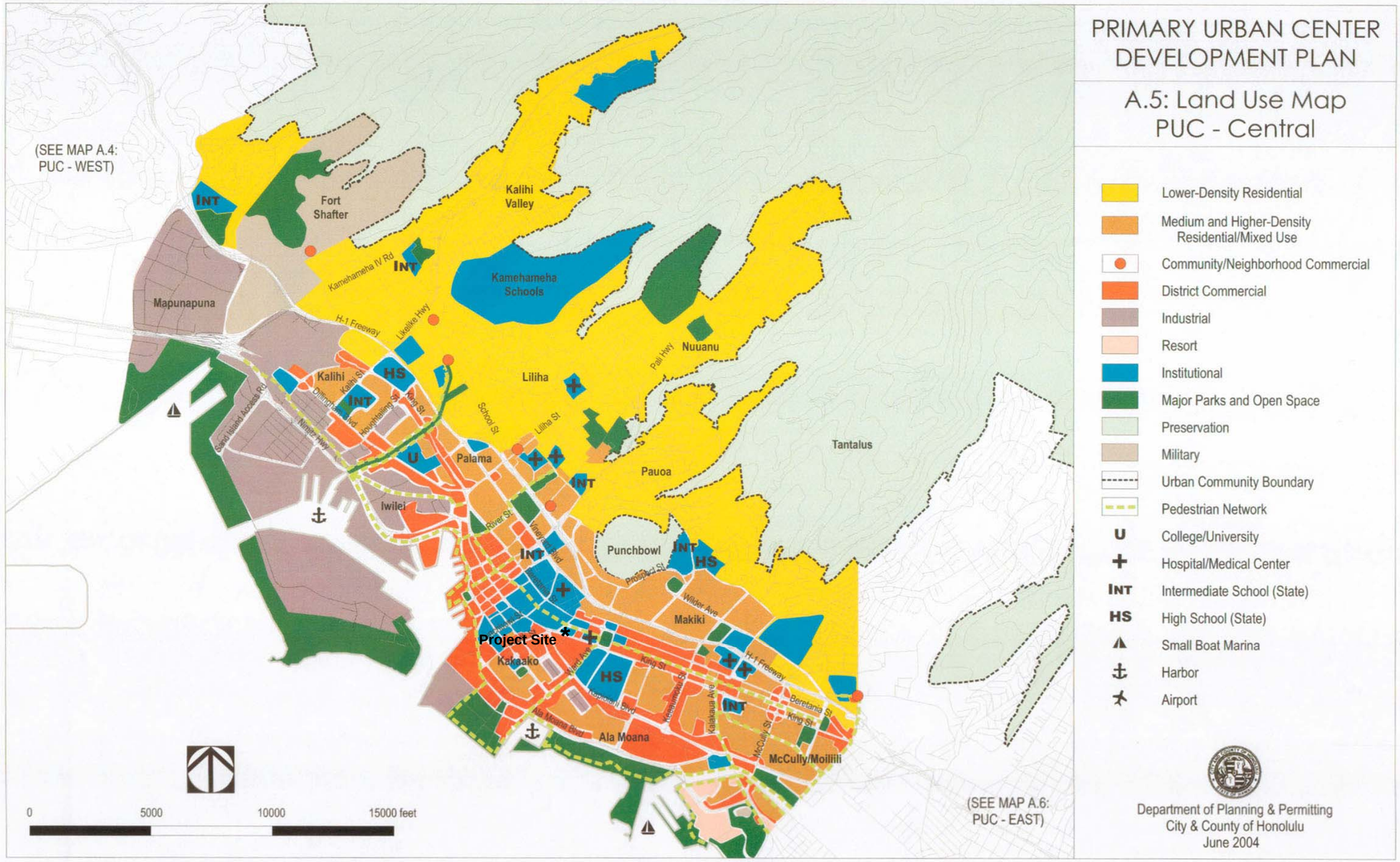


Figure 1.5. Primary Urban Center Development Plan, Land Use Map

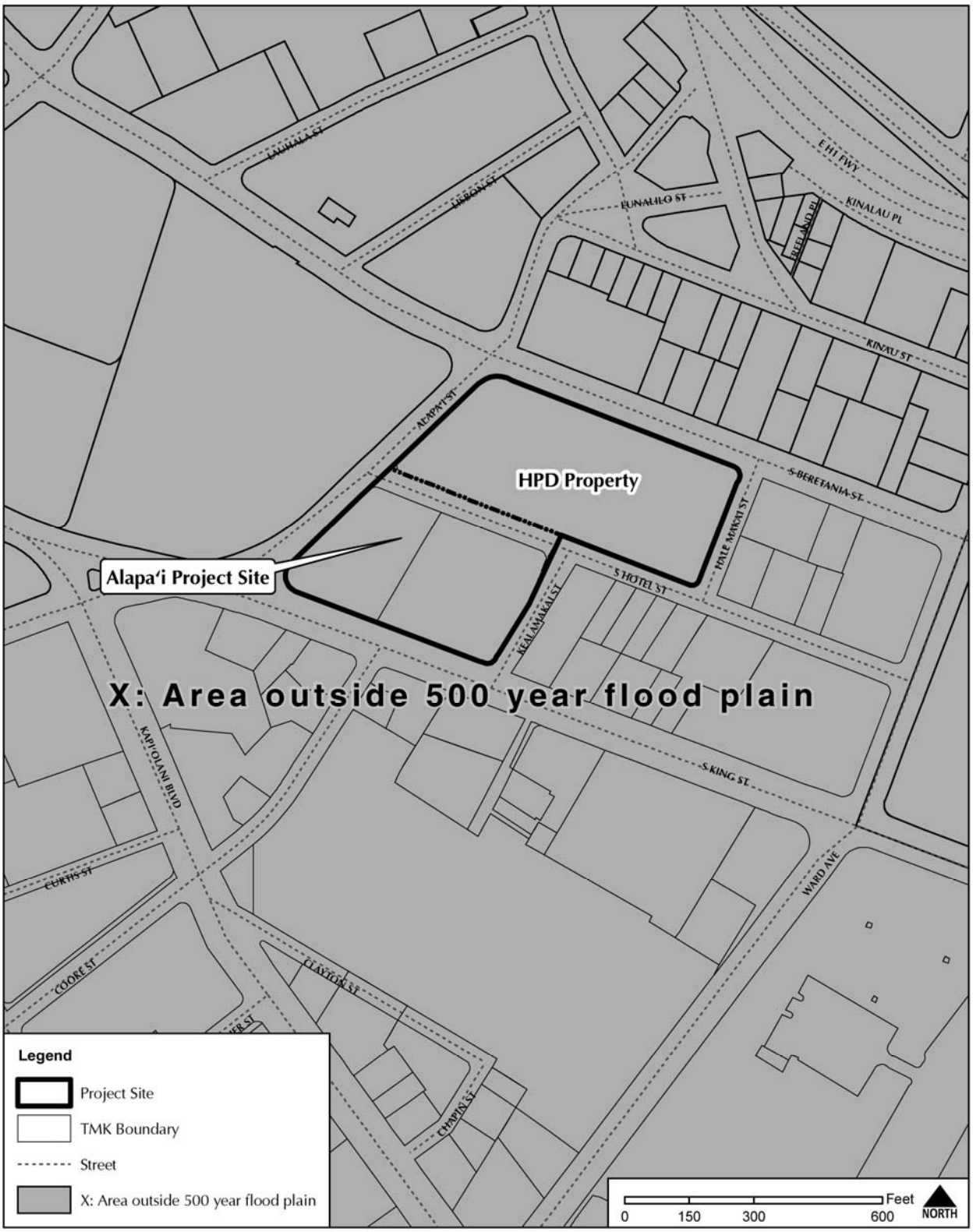


Figure 1.6. FIRM Map

1.3 PROJECT COSTS AND FUNDING

The Alapa'i project will be jointly funded by the City and County of Honolulu, Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA). FTA will contribute partial funding to the redevelopment of the bus transit center (ATC), and FHWA will contribute partial funding to the construction of the JTMC. A detailed funding program has not been developed yet. DTS will hire a Program Manager who will create and implement a financial program and budget as well as provide overall project management services. Ultimately, an MOU between participating agencies will be developed to determine program, budget and operations procedures. The MOU will be formed under the direction of the project Steering Committee which is comprised of representatives from participating JTMC agencies. A preliminary funding program is presented below, along with estimated project costs.

ATC Funding
ATC design and construction costs are estimated at approximately $5,000,000. The City and County of Honolulu has an initial $500,000 designated in the FY 2008 Transportation Improvement Program (TIP). Federal Transit Authority (FTA) has committed 50% of ATC design and construction costs approximately ($2,500,000) to the City which will be paid incrementally to reimburse the City. The net cost to the City for design and construction of the ATC will be approximately $2,500,000.

JTMC Funding
JTMC design and construction costs are estimated around $~~7~~104,000,000. Federal Highway Administration (FHWA) will fund a portion of the JTMC cost. OMPO has allocated approximately $7,000,000 federal dollars in the 2008-2011 Transportation Improvement Program (TIP) for the project. FHWA will incrementally fund their portion of the additional cost over a 16 year period.

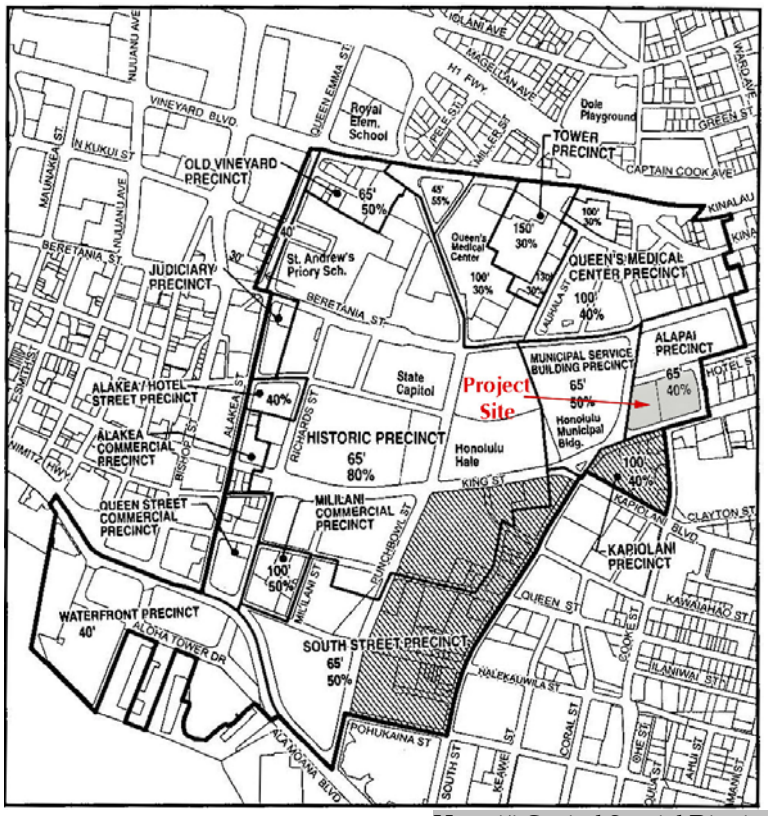
1.4 LAND USE APPROVALS

This section includes a description of the government approvals and permits required for the Alapa'i Project.

State of Hawai'i Revised Statutes, Chapter 343, Environmental Assessment: This EA has been prepared in accordance with the requirements of Chapter 343, Hawai'i Revised Statutes (HRS) and Hawai'i Administrative Rules (HAR), Title 11, Department of Health, as the proposed action involves the use of city land. It is anticipated that the outcome of this review will be a Finding of No Significant Impact (FONSI).

Federal National Environmental Policy Act (NEPA): This project is funded in part through Federal grants from the Federal Highway ~~Association~~ Administration (FHWA) and Federal Transit Administration (FTA), and is subject to environmental review under the Federal National Environmental Policy Act (NEPA) of 1969 (42 United States Code 4321 et seq.), as implemented by the Council on Environmental Quality regulations (Title 40, Code of Federal Regulations (CFR) Parts 1500 to 1508). The lead agency for this project is FHWA in ~~consultation~~ cooperation with FTA and State of Hawai'i Department of Transportation (HDOT). FHWA has determined that the appropriate level of environmental review is a Categorical Exclusion (CE).

Special District Permit (Major) (SDP-Major): Approval of a SDP-Major is required because the project site lies within the City and County of Honolulu's Hawai'i Capital Special District. A Final Environmental Assessment (EA)/FONSI is required prior to the acceptance of the SDP-Major application. Processing and approval of the SDP-Major requires review by the Department of Planning and Permitting (DPP), other agency review, and a public hearing prior to the DPP Director's ruling on the SDP-Major application.



Hawai'i Capitol Special District

Waiver Permit: The City and County Department of Transportation Services may apply for a permit from DPP to waive requirements such as the 40% minimum open space requirement of the Hawai'i Capital Special District.

Conditional Use Permit for Joint Development Agreement: The project proposes to use a portion of the adjacent Honolulu Police Department (HPD) property. This results in an encroachment onto the HPD property and will require a Joint Development Agreement from the City and County of Honolulu.

Subdivision: A Subdivision Application will be filed to subdivide the on-site Hotel Street section between Alapa'i Street and Kealamakai ~~Makai~~ Street from the adjacent off-site active Hotel Street roadway and capture the land area as part of the project site.

Required Permits for Construction: Several other approvals will be required from the City and County of Honolulu and State of Hawai'i to implement the proposed action, some of which will include:

State of Hawai'i

- National Pollutant Discharge Elimination System (NPDES) Permit – Storm water (State Department of Health[DOH])
- Individual Wastewater System (DOH)
- Department of Health's Administrative Rules, Chapter 11-62 "Wastewater Systems" (DOH)

City and County of Honolulu

- Building Permit for Buildings, Electrical, Plumbing, and Sidewalk/Driveway Work (DPP)
- Grading, Grubbing and Stockpiling Permit (DPP)
- Water System (Board of Water Supply [BWS])
- Sign Permit (Department of Design and Construction [DDC])
- Driveway Connection to King Street (DPP)
- Sewer Connection Permit (DPP)
- Street Usage Permit (DTS)

1.5 ANTICIPATED DETERMINATION

No significant adverse environmental impacts are anticipated from the construction or operation of the proposed improvements associated with the Alapa'i Project. A Finding of No Significant Impact (FONSI) is anticipated.

1.6 CONTENTS OF ENVIRONMENTAL ASSESSMENT

This Environmental Assessment report is presented in eight sections as follows:

Section 1.0 Summarizes general information on the Alapa'i project.
Section 2.0 Presents the proposed project.
Section 3.0 Describes the environmental setting, potential impacts and mitigation measures.
Section 4.0 Provides an analysis of alternatives.
Section 5.0 Relates the project to governing plans and policies.
Section 6.0 Provides anticipated determination and rationale for anticipated outcome.
Section 7.0 Provides a list of references.
Section 8.0 Lists the agencies, organizations consulted in the preparation of the Final ~~Draft~~ Environmental Assessment.

2.0 PROJECT DESCRIPTION

2.0 DESCRIPTION OF THE PROPOSED ACTION

The applicant will seek a Joint Development Agreement (JDA) with the adjacent HPD property due to a slight encroachment into their property. The JDA would create a single "project site." A previous EIS (Sam Chang Architects and Associates, August 1988) addressed environmental impacts and mitigative action associated with the development of the HPD property and are not repeated in this current EA. Also, the proposed Alapa'i project will not significantly impact the HPD property. Accordingly, this Environmental Assessment focuses discussion of the project setting and impacts to the Alapa'i site.

2.1 PROJECT LOCATION AND LAND USE

Location
The 4.13-acre Alapa'i project site is located on the northeastern corner of King Street and Alapa'i Street in downtown Honolulu, on the Island of O'ahu in the State of Hawai'i. The site is comprised of two Tax Map Key (TMK) parcels located on the mauka side of King Street, identified as TMK (1) 2-1-042: 013 and 004. The site also includes the adjacent Hotel Street right-of-way which is owned by the City and County of Honolulu. The site is zoned BMX-3, Community Business Mixed Use District. The project area is within the Alapa'i Precinct of the Hawai'i Capital Special District.

The project will involve a small encroachment onto the adjacent Honolulu Police Department (HPD) property along the makai end of the existing HPD parking garage. A Joint Development Agreement will be pursued to accommodate the encroachment. The existing Hotel Street section between Alapa'i Street and Kealamakai ~~Makai~~ Street will be subdivided from the adjacent off-site active Hotel Street roadway and incorporated as part of the project site.

Location and TMK maps are provided in *Figures 1-1* and *1-2*.

Ownership
The project site is owned in fee by the City and County of Honolulu. Federal Transit Administration (FTA) funds were used for the purchase of this property. A stipulation of the purchase required that the site remain in transit-related land use. The existing and proposed future use as a transit and traffic management center meets this requirement.

Physical Description
The Alapa'i Project site consists of a paved lot characterized by flat topography. There are two existing vehicular access points to the transit center, the main access/exit on Alapa'i Street and one additional entrance on King Street. There are no striped travel lanes to guide bus traffic. The transit center includes four bus shelters and wooden benches on a central raised concrete island. There is no interior landscaping on the site. Site perimeter landscaping is minimal and includes low plants and shower trees along the perimeter and on the corner of King Street and Alapa'i Street. A chain-link fence separates the bus transit area from paved areas near the Hotel Street right-of-way and Kealamakai ~~Makai~~ Street. Vehicles gain access to the on-site parking areas from Kealamakai ~~Makai~~ Street and from Hotel Street. There are no drinking fountains, vending machines, pay telephones, speaker system for announcements, or public restrooms (besides portables) on the site.

On-Site Land Uses
Existing on-site uses at the ATC include the current bus transit center and an overflow parking area. Approximately 60% of the site is used for the existing transit center for The Bus. Peak activity hours at the transit center are during the morning and afternoon rush hours from approximately 6:30 am to 8:30 am, and 2:30 pm to 5:30 pm, respectively. There is little activity between 8:30 am and 2:30 pm. Pedestrians access the bus transit center from crosswalks on King Street and Alapa'i Street. A portion of the transit center serves as an informal staging area for buses. The remaining 40% of the site is separated by fencing and currently used as an overflow parking area for municipal vehicles. Approximately 110 police cars, municipal vehicles, and municipal employees' personal vehicles park here at any given time. This temporary parking area and the abandoned section of Hotel Street is not open to through traffic or private vehicle parking.

The project site is currently under-utilized per allowable density under BMX-3 zoning, and the bus transit site is not operating at maximum efficiency due to the lack of traffic and parking controls. The ATC and JTMC are designed to maximize opportunity and efficiency on the Alapa'i site.

Adjacent Land Uses
Land uses adjacent to the project site include the Honolulu Police Department Headquarters and City parking structure to the north, the Frank Fasi Municipal Building across Alapa'i Street to the west, and the two-story ScanDesign furniture store to the east *(Figure 1.1)*. Makai of King Street to the south is a series of commercial and office buildings. Street level commercial uses include a Tesoro station, Hawai'i Central Credit Union, and the Kabuki Restaurant.

2.2 PURPOSE AND NEED FOR THE PROPOSED PROJECT

DTS will redevelop the Alapa'i site to replace the existing ATC and develop a new multi-agency JTMC. The project is proposed in the 2030 O'ahu Regional Transportation Plan (ORTP) prepared by the O'ahu Metropolitan Planning Organization (OMPO). Amendment #1 of the ORTP was ~~and~~ approved by the OMPO Policy Committee ~~on April 4,~~ in May 2007. The ORTP includes goals, objectives and list of projects designed to help decision makers integrate transportation needs with O'ahu's growth pattern over the next 25 years. OMPO expects 240,000 new residents and 130,000 new jobs on O'ahu by 2030, which means additional traffic congestion. The ~~Draft~~ ORTP 2030 names the ATC and JTMC as major capital improvement projects that will optimize operational and management services. The Alapa'i Project is included in the 2030 Mid-Range Plan, approved by the OMPO Policy Committee on April 4, 2006. The inclusion of a project into the ORTP plan does not guarantee its construction, rather, it advances a project to begin a detailed evaluation phase and eligibility for federal funding.

Existing program and facility needs are discussed for the ATC and JTMC building below.

Purpose and Need for the Redeveloped Alapa'i Transit Center
In 2001, Weslin Consulting Services, Inc. conducted a review of operations and facilities at the bus transit ~~station~~ center on Alapa'i Street. Based on their field survey work and perceived deficiencies of the current operations, Weslin Consulting Services, Inc. developed a list of recommended design improvements. The list of recommendations included the following:

- Construct center pedestrian island with four loading bays;
- Replace chain link fence with a series of decorative planters, shelters, trash cans and other furnishings;
- Provide a continuous wide canopy to shade waiting passengers;
- Provide 16 bus staging positions;
- Provide two TheHandiVan and four car parking positions;
- Provide signs to regulate access, traffic and security;
- Provide a crosswalk through the lot for transferring passengers dropped off on King Street; and
- Provide drinking fountains, pay telephones, speaker system for announcements, and public restrooms.

The report also noted a lack of overall organization of bus activity; for example, buses did not queue up in any consistent, established order. The order changed from day to day, and varied with each driver, ultimately resulting in confusion for many passengers if their bus was late and other buses were present.

The purpose of the proposed transit center replacement is to provide recommended facilities and improve the existing physical space and operational characteristics.

Purpose and Need for a New Joint Traffic Management Center (JTMC)
In 2005, Parsons Brinckerhoff developed a Concept of Operations (COOPS) for DTS to evaluate baseline resources, functions and overall readiness to pursue joint operations of Intelligent Transportation Systems (ITS) systems. The COOPS identified DTS and HDOT as the key stakeholders in a joint ITS venture and evaluated each agency in terms of personnel, ~~Intelligent Transportation Systems~~ ITS, equipment and facilities.

Personnel
The study found that DTS is understaffed by 14 personnel in the field and 10 personnel in the existing TMC office at Kinalau Place. Additional clerical staff was also recommended to support procurement and maintenance. Because of insufficient staffing levels, DTS is unable to perform preventative maintenance, which, in the long run, increases overall maintenance costs because it reduces the life cycle of ~~Intelligent Transportation Systems (~~ITS~~)~~ components. Staffing shortage are further compounded as advanced ITS systems are implemented. When staff levels remain the same, individual responsibilities multiplied, leaving less time to thoroughly attend to each responsibility due to competing needs.

HDOT is generally well staffed for its current operations.

ITS Systems
According to the OMPO O'ahu Regional ITS Plan (2003), ITS is a collection of technologies that enable multiple agencies to work together to collectively manage a transportation network. The COOPS study also recommended various systems and equipment upgrades for DTS such as replacement of loop detectors, upgrades to loop tracking systems and installation of performance measuring systems to track traffic systems data. The primary needs identified for HDOT were ITS systems consolidation and upgrade. The study noted that locating HDOT and DTS in the same facility would create an opportunity for sharing contracts or staff resources for services that both agencies employ.

Equipment
The study identified need at DTS for improved inventory and work order maintenance systems, two new bucket trucks, mobile communication methods, additional maintenance facility space, additional maintenance yard storage space, and additional TMC office space.

HDOT is reported to have aging equipment that is nearing the end of its life cycle, as well as multiple system interfaces that should be consolidated.

In addition to daily traffic management operations and coordination discussed in the COOPS report, island emergency response services should be greatly improved over existing conditions. Currently, individual agencies respond to situations, but there is no comprehensive coordinated system for response. In the event of a tsunami or other disaster situation, interagency communication could be compromised by geographical separation and interruption of communications infrastructure.

The JTMC would address current deficiencies in operations by providing the space and technology needed to accommodate an increase in staffing and service/maintenance levels. The JTMC would help to improve public safety and increase agency efficiency by providing a single operational control center allowing coordination of traffic and emergency operations. Day-to-day interagency coordination would be improved by means of locational proximity and coordinated technology. Through agency collaboration, the JTMC would also provide for efficiency in dispatch, faster mobilization of emergency governmental services, shorter response times to emergency and traffic incidents, faster clearing of traffic accidents, and shorter accident-related traffic delays.

Facilities
The COOPS reported inefficient facilities at DTS that were unable accommodate expansion. HDOT's H-3 Facility was reported to have adequate space for current operations and some space to allow expansion, with some strain on parking.

2.3 DESCRIPTION OF PROPOSED PROJECT

The proposed project consists of redevelopment of the existing bus transit facility (ATC) and construction of a new Joint Traffic Management Center (JTMC) on the Alapa'i site.

2.3.1 Alapa'i Transit Center

Physical Characteristics
A new transit center will replace the existing ATC facility. ATC operations will continue to be located on the makai half of the site. The new ATC includes a bus transit building, five bus passenger shelters, and a bus parking lot/staging area *(Figure 2.1* and *Table 2-1)*. The approximately 3,800 square foot bus transit building will be a one-story multi-function building that includes public restrooms, bus driver lounge area, and some ITS features such as bus schedule display boards. Bike racks and lockers for public use will also be located in the vicinity of the terminal.

Table 2-1
Alapa'i Bus Transit Center Site Data

Bus Pickup Areas	**6**
Standard buses [40-foot long]	4
Articulated buses [60-foot long]	2
Bus Staging Spaces	19
Bus Transit Building Floor Area	**3,863 sf**
Covered Passenger Waiting	2,650 sf
Restrooms	440 sf
Support Areas	773 sf
Total Passenger Shelters Provided	5
Peak Activity Hours	6:30-8:30am 2:30-5:30pm

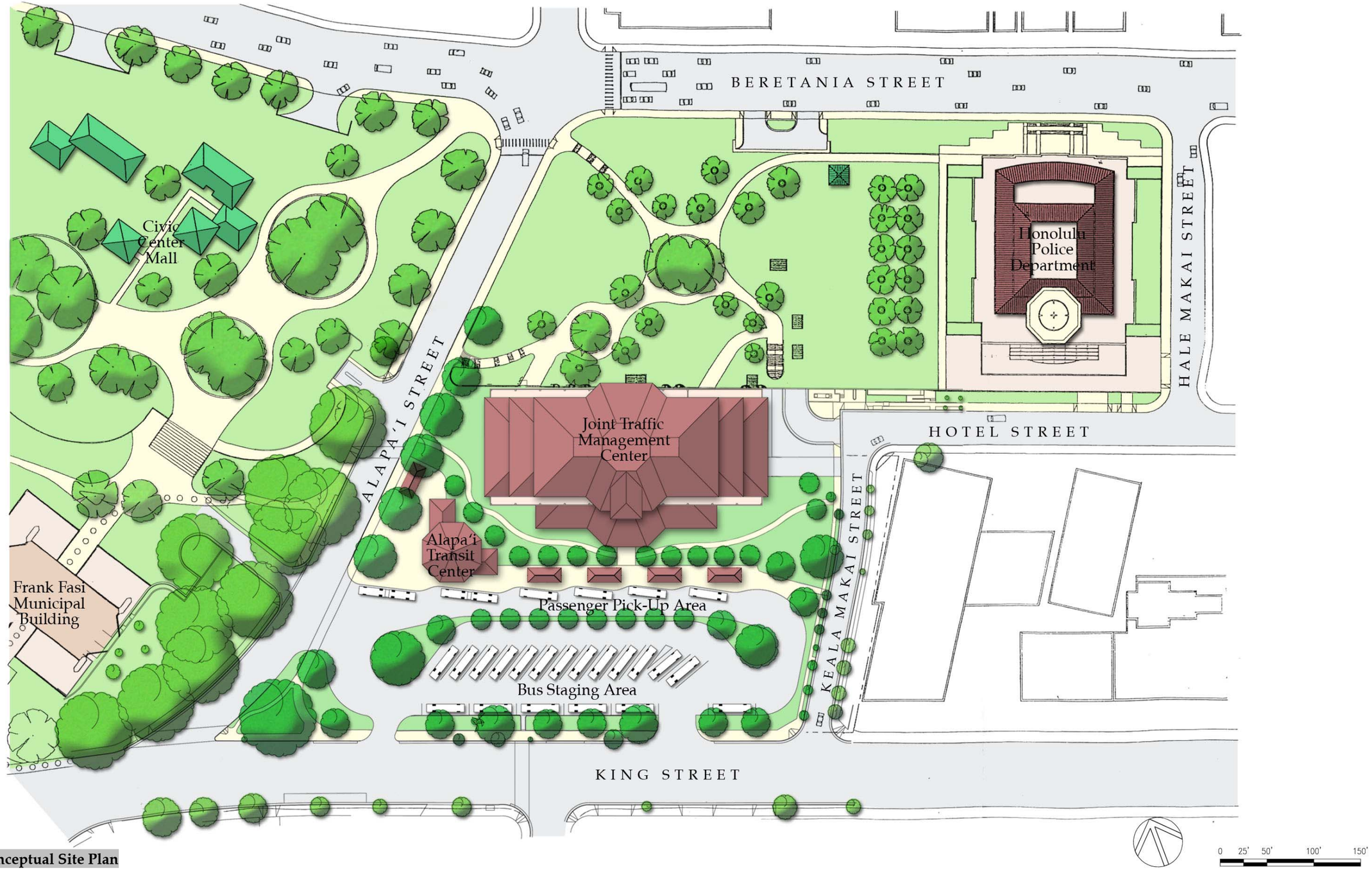


Figure 2.1 Conceptual Site Plan

Operational Characteristics
Buses will enter the transit center site via Alapa'i Street or King Street, then travel through a circular loop by the staging area, then the passenger pick up/drop off area, then exit onto Alapa'i Street. The passenger pick up/drop off area will accommodate four ~~4~~ standard buses and two ~~2~~ articulated buses. Articulated buses (60-foot) are programmed only for pick up/drop off stalls and not programmed for additional staging or parking stalls. Nineteen standard bus parking stalls will be provided in the bus staging area for buses that have a layover before their next run. All bus parking stalls will be 14 feet by 45 feet.

Pedestrians will access the site from Alapa'i Street, and Kealamakai ~~Makai~~ Street. Pedestrian traffic will be controlled and directed along the existing street sidewalks. The majority of pedestrians accessing the site are expected from Alapa'i Street. Pedestrian activity at the bus transit center will continue to be busiest during the morning and late afternoon commuting hours. During the rest of the day, and weekends, pedestrian activity will be light. For safety reasons, on-site pedestrian traffic and vehicular traffic will be separated and pedestrians will not be allowed to enter and walk through the bus staging area to get to the bus transit center.

Pedestrians and bicyclists traversing the site will be accommodated by a landscaped meandering walkway, shaded by canopy trees and kept separate from the adjacent bus circulation area. The walkway will traverse the site in an east-west direction, connecting Hotel Street with the Civic Center Mall. The landscaped pathway will match the style and design of pathways provided in the Civic Center park and HPD sites, and fulfill the Honolulu Bicycle Master Plan (1999) Lei of Parks and Bike-Friendly Route No. 1 objectives. Please refer to *Figure 2.1* for location of the pedestrian/bikeway corridor. The pedestrian/bikeway corridor as indicated on *Figure 2.1* is a schematic representation only. Corridor design will be finalized in the project landscape plan during the Special District Permit.

Passengers will have access to waiting areas in the transit building or in four covered passenger shelters in the pick up/drop off area. A fifth passenger shelter will be located along Alapa'i Street at the existing bus stop. The transit building will also provide passenger services such as bus passes, ticket sales, rest rooms and traffic and scheduling updates on ITS message boards. A bus driver lounge and vendor space will also be provided in the transit building.

In the past, the ~~County~~ City considered the option of a pedestrian overpass above Alapa'i Street to the Frank Fasi Municipal Building. This option is not proposed in association with this project. An increase in bus routes through the ATC is not proposed at this time.

2.3.2 Joint Traffic Management Center (JTMC)

Physical Characteristics
The JTMC building will occupy the mauka half of the site *(Figure 2.1)*. The ten-level, 295,000 square-foot (sf) structure will have four levels of parking, one below grade and three above grade, as well as six office floors above the parking levels.

The 100-foot tall building will provide a total of 121,000 ~~120,000~~ sf of office space for City and State transportation and emergency service agencies. The traffic control center will consolidate all the dispatching and monitoring operations of each agency and be used for day-to-day traffic management operations. The traffic control center will be located on the top two levels of the JTMC and will consist of an open, two-story room with up to 80 operational consoles equipped

with communications and computer monitoring devices for the different agencies. The consoles will face a central bank of traffic video screens that will provide the traffic control center live feeds of traffic activity throughout the island for use by HDOT, DTS, DEM, HPD, EMS and HFD. In this respect, the investment in traffic operations equipment and Intelligent Transportation Systems (ITS) technology will be maximized since it will be used jointly by many different agencies. An Emergency Operations Center (EOC) will be located on the top level of the JTMC for joint agency use during emergency events only. The remaining four stories would provide agency office space.

The parking structure on the lower four levels will provide 406 ~~407~~ parking spaces to serve the JTMC. Access will be secured with an entry gate and parking attendant. Employees driving to work will access the JTMC parking facility via a driveway off of Kealamakai ~~Makai~~ Street. An elevator will provide access to the main building. JTMC employees and visitors arriving by foot would enter through the main entrance on the makai side of the building. No public parking or bus passenger parking will be provided on-site. The perimeter of the JTMC site would include a barrier protection such as fencing or berming.

The building will adhere to Federal force protection guidelines requiring building hardening, building setbacks, perimeter protection and secured entry points, as outlined in the FEMA 426 and 427 Publication, Risk Management Series, Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings.

The following *Tables 2-2 to 2-5* provide preliminary program and site data for the JTMC. A more detailed analysis of project compliance with the Hawai'i Capital Special District design standards will be provided in the forthcoming Special District Major Permit.

Table 2-2
Alapa'i Joint Traffic Management Center Site Data

Land Use Ordinance (LUO)

Zoning:	BMX-3
Min Lot Area (sf):	5,000
Min Lot Width (ft):	50′
Min Lot Depth (ft):	50′
Yards (ft):	
Front	5′
Side & Rear	0
Max Bldg Area:	Not regulated
Max Density:	2.5
Open Sp Bonus:	Available
Height Limit (ft):	Per zoning map and transitional height setback

Parking Requirements

Parking Spaces Required:	400 [LUO requires 1 stall per 400 sf for offices, based on 160,000 sf JTMC office and common space]
Parking Spaces Provided:	406
Underground	172
1st Level	87
2nd Level	94
3rd Level	54
Loading Spaces Required:	3 [LUO requires 2 spaces for the first 100,000 sf, and 1 additional space for each additional 100,000 or major fraction, based on 160,000 sf JTMC office and common space]
Loading Spaces Provided:	3

Table 2-3
Hawai'i Capital Special District Design Guidelines*

Height Limit, Alapa'i Precinct (ft):	100′
Open Space Required:	40% per Hawai'i Capital Special District
Yards (ft):	20′
Pedestrian Mall:	connecting Hotel Street corridor
*Special District guidelines will be fully addressed in the forthcoming Hawai'i Capital Special District Permit Application.	

Table 2-4
JTMC Building Data

Total Number of Floors (Stories)		**10**
Parking Underground		1
Parking Above ground		3
Office Floors		6
Floor Area		
Offices		121,000 sf
Building Common		39,500 sf
Parking Garage		127,000 sf
Exterior Lanais		7,500 sf
	Total	**295,000sf**
Office Floor Area (by Levels)		
Ground		3,000 sf
1st Level Office		22,000 sf
2nd Level Office		23,000 sf
3rd Level Office		23,000 sf
4th Level Office		23,000 sf
5th Level Office (TMC 1)		18,000 sf
6th Level Office (TMC 2)		9,000 sf
	Total	**121,000sf**
Approximate Building Dimensions		
Parking Garage		122' x 286'
Typical Office Floor		90' x 286'

Table 2-5
Projected Employee Count

Agency	Number of Employees
Department of Transportation Services (DTS)	110
Emergency Medical Services (EMS)	16
Hawai'i Department of Transportation (HDOT)	62
Honolulu Fire Department (HFD)	27
Honolulu Police Department (HPD)	172
Department of Emergency Management (DEM)	13
New Mass Transit Agency	100 anticipated
Total Approximate No. of Employees	**400-500**

(based on initial interviews)

Figure 2.2 Agency Location Map

Operational Characteristics
The mission of the JTMC is to provide a centralized transportation operations center for O'ahu that will improve transportation networks and the public safety of those who use them. The JTMC will house traffic and emergency management agencies. Existing agency employment within the anticipated JTMC tenants is approximately 300. The JTMC building would accommodate 400-500 employees, allowing for agency growth to meet the demand for services. The following agencies are being considered for operations space in the JTMC: Department of Transportation Services (DTS), Hawai'i Department of Transportation (HDOT), Honolulu Fire Department (HFD), Honolulu Police Department (HPD), Department of Emergency Management (DEM), and Emergency Medical Services (EMS). See *Figure 2.2* for a map of existing agency locations.

City and County of Honolulu Department of Transportation Services (DTS): Five units of DTS are being considered for location in the JTMC: Traffic Signals and Technology Division, the Public Transit Division, the Transportation Planning Division, Traffic Engineering Division (TED) and DTS Administration. The Traffic Signals and Technology Division (TS&TD) is responsible for the operations and maintenance of signal systems, cameras, and managing traffic on arterial streets, during special events and during emergencies. (The Public Transit Division (PTD) runs "The Bus" under contract with O'ahu Transit Services (OTS).) PTD and TED also plan~~s~~ and manages all O'ahu public transportation ~~transit related~~ projects. The Transportation Planning Division (TPD) is responsible for long-range transportation planning activities for the City and County of Honolulu. DTS Administration directs and oversees all DTS division activities. Existing DTS ~~departments~~ divisions are located in the Fasi Municipal Building and the Traffic Management Center (TMC) located at 740 Kinalau Place. According to ICX Transportation Group (May 15, 2007 Memo to Pete Galvez), the TMC facility is at capacity for adding new video displays and camera equipment. In addition, currently the TV and radio broadcasters sit at the traffic control workstations. These same workstations are used by DTS staff to time traffic signals, troubleshoot problems, and control cameras. There is also no room to add more traffic operations staff.

Hawai'i Department of Transportation (HDOT): HDOT is responsible for all freeways, major arterials and tunnels within its jurisdiction. HDOT's Traffic Operations Center (TOC) is located at the Harano H-3 Tunnel Control Center, which was constructed in 1998. The TOC provides office space for ITS systems and staff that manage signals, lane control displays (LCD), dynamic message signs (DMS), changeable message signs (CMS), closed circuit television cameras (CCTV), emergency call boxes, HOV Zipper lane operations, and other systems associated with freeway operations.

City and County of Honolulu Fire Department (HFD): The HFD Fire Communications Center provides fire personnel and equipment dispatch, and coordinates communications between fire units and other emergency responders. The existing HFD dispatch center is located in the basement of the Fasi Municipal Building and will not accommodate future growth. The facility also lacks appropriate personnel support space such as rest areas, work-out areas, and meal preparation areas.

City and County of Honolulu Police Department (HPD): The HPD's Traffic Division, Civil Defense Coordinator, ~~Emergency Management Command Division (EMC)~~ Homeland Security Division, and ~~the~~ Communications Division are being considered for location in the JTMC. The Traffic Division is responsible for traffic enforcement, investigation and incident management.

~~The EMC was formed after 9/11 and acts as a liaison between the HPD and the Federal Department of Homeland Security.~~ The Homeland Security Division coordinates the Department's terrorism-related activities with federal, state and other local agencies. The Civil Defense Coordinator coordinates the Department's civil defense activities. The Communications Division plans and operates the centralized communication systems for 911 calls and police dispatch ~~within the HPD~~ for the island of O'ahu~~. The Communications Division is~~ and is currently located in the HPD's Alapa'i Headquarters at 801 South Beretania Street.

Department of Emergency Management (DEM) (formerly O'ahu Civil Defense Agency): DEM develops emergency and disaster plans, and, in the event of an emergency, assists in the implementation of the Emergency Management Plans to protect the public safety and welfare of the City. When the Emergency Operations Center is activated, DEM will take a lead role in coordinating emergency operations. The DEM EOC is located in the basement of the Fasi Municipal Building. The EOC was designed in the mid-1970's in "NASA mission control" configuration with fixed workstations and seating, and has a capacity of 20 operational stations and up to 15 non-operational (observer) stations. According to ICX Transportation Group (May 15, 2007 Memo to Pete Galvez), this capacity is well under current EOC needs. The City currently has 18 departments, each of which require operational space at the EOC. Many departments have essential functions requiring more than one operational space, which brings the total requirement to about 30. Many other key staff such as utilities (natural gas, electricity, telephone, cellular phone), large refineries, the Civil Air Patrol, volunteer organizations) will increase operational need to 60 or more spaces. The DEM EOC also lacks space for break-outs and other meeting rooms required to manage emergencies. In case of a long-term emergency, there is inadequate space for provisions, sleeping or other needs and/or lock-down of the facility.

City and County of Honolulu Emergency Services Department, Emergency Medical Services Division (EMS): EMS responds to 911 calls on O'ahu. HFD Communications Division dispatches the appropriate level of response and EMS dispatches first responders to provide medical backup for HFD. The existing EMS dispatch facility, located near the airport, lacks adequate space for expansion to add dispatch personnel.

The Rapid Transit Division of DTS is ~~future City agency~~ in charge of the fixed guideway ~~light rail~~ system and is being considered for location in the JTMC. This agency is still in the formation stages~~ and permanent agency location is under discussion~~.

2.4 PROJECT INFRASTRUCTURE

2.4.1 Water

New potable water lines and a fire protection system will serve the proposed project. Hydrant spacing and fire flow requirements will conform to Board of Water Supply (BWS) standards. A booster pump may be required to avoid loss of pressure on the upper floors. A mechanical engineer will specify the appropriate capacity and size of the fire protection system for the buildings during the design phase of this project. Existing potable water lines in the Hotel Street area of the project site will need to be relocated around the proposed JTMC building.

2.4.2 Wastewater

A new wastewater collection system will connect to an existing sewer manhole located at the intersection of Cooke Street and South King Street (See *Section 3.9* for additional information). The proposed connection will require trenching within the City and County of Honolulu Right-of-Way. The sewer discharge from the proposed connection will flow down an 18" diameter relief sewer main within Cooke Street. Existing wastewater lines in the Hotel Street area of the project site will need to be relocated around the proposed JTMC building.

2.4.3 Drainage

The project will provide a new on-site drainage system with drain inlets that connect to the City and County of Honolulu's storm drainage system (*Section 3.9* for additional information). In order to prevent flooding, the drainage system will be designed to capture runoff as it enters the underground parking structure of the JTMC.

2.4.4 Landscaping Irrigation

The project will provide perimeter landscaping with shade trees and road-buffering vegetation. Mature trees will be retained and new trees will be planted according to the overall landscape plan, which will be developed in detail during the design phase of the project. Landscaping will incorporate non-invasive, drought-tolerant species to minimize irrigation requirements and water needs. Irrigation will be installed to establish and maintain the plantings and will be controlled to prevent over-watering.

2.4.5 Other Utilities

The project will require other utility provisions such as gas, telephone, internet, and solid waste disposal. These are addressed further in *Section 3.9*.

2.5 GREEN BUILDING DESIGN & LEED CERTIFICATION

The JTMC building design and construction will meet sustainable building design standards and practices. Various design strategies will include incorporating natural lighting to illuminate interior spaces, installing energy-efficient mechanical and electrical systems to maximize energy savings, installing efficient plumbing systems to save water, installing Volatile Organic Compound (VOC)-free building materials and finishes to provide healthy working environments, and incorporating architectural design features such as shading fins, sun shelves, and energy-efficient windows to decrease cooling loads on the building and increase interior thermal comfort levels. Design strategies will be measured against the United States Green Building Council's sustainable design guidelines to attain a minimum Leadership in Energy and Environmental Design (LEED) rating of "Silver".

2.6 COMPLIANCE WITH ANTI-TERRORISM/FORCE PROTECTION STANDARDS

As much as possible, the project will conform to federal standards for providing protection for people and buildings as outlined in the FEMA 426 Publication, Risk Management Series, Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings and FEMA Form 427 Risk Management Series, PRIMER for Design of Commercial Buildings to Mitigate Terrorist Attacks.

In accordance with federal standards, the project will implement force protection setbacks. The term "force protection setback" refers to the distance from an occupied facility to the closest point of a non-secured or non-controlled vehicular approach area, such as a street, parking lot, or service alley. The setback is required on all federally-funded buildings that are considered at risk for terrorist attacks. In addition to other structural design strategies, the primary intent of the force protection setback is to limit potential damages to personnel in buildings from explosives by providing adequate distance between the building and point source of the explosive.

2.7 CONSTRUCTION CHARACTERISTICS AND SCHEDULE

Construction Characteristics
Construction of the project will be completed in two phases, with the ATC redevelopment in the first stage and JTMC construction in the second stage. Details for the construction phasing, staging, and management of bus operations during construction will be established during the design-build phase of the project.

For the JTMC building structure, approximately 9,000 cubic yards (CY) of earth will need to be excavated to accommodate one level of underground parking. Outside the building structure limits, approximately 1,365 CY of fill and less then 100 cubic yards of excavation will be required for landscaping and walkways. Excavated material will be re-used as on-site fill, and the remaining dirt will be hauled off to approved construction dump sites or re-used at other City & County project sites. The exact excavation and fill quantities for the buildings will be determined by the geotechnical engineer and structural engineer during the design phase of this project.

National Pollutant Discharge Elimination System (NPDES) permits will be obtained for storm water discharges from construction activities. Best Management Practices (BMPs) plans to control erosion during construction will be a component of the NPDES permits. Short-term construction-related activities are addressed in *Section 3.0* of this document.

Schedule
Development of the Alapa'i project will occur in two phases. The ATC site will be redeveloped during the first phase. DTS anticipates construction on the ATC site to begin in 2009 and end in 2010. The new ATC will be operational upon completion of construction. The JTMC will be constructed during the second phase, anticipated to start construction in 2010 and finish in 2012. Operation of the JTMC is projected to begin in 2012.

2.8 SUMMARY OF PROJECTED COSTS

Total costs for the Alapa'i project (ATC and JTMC) are estimated at ~~7~~104 million dollars. The costs will be met through a combination of City and County funding and Federal (FHWA and FTA) grants. A specific funding program has not been developed. DTS will hire a program manager to develop a financial plan.

3.0 DESCRIPTION OF THE ENVIRONMENTAL SETTING, POTENTIAL IMPACTS, AND MITIGATION MEASURES

3.0 DESCRIPTION OF THE ENVIRONMENTAL SETTING, POTENTIAL IMPACTS, AND MITIGATION MEASURES

This section describes the existing environmental setting and identifies possible impacts of the proposed project. Strategies to mitigate those potential impacts are also identified.

3.1 ARCHAEOLOGICAL RESOURCES

An Archaeological Inventory Survey (AIS) was conducted by Cultural Surveys Hawai'i for the proposed project *(Appendix A)*. This AIS documents all historic properties within the Alapa'i project site. A surface inventory survey was conducted and backhoe trench testing focused on location and evaluation of subsurface deposits, such as buried cultural layers that could not be located by surface pedestrian inspection.

The following archaeological inventory survey scope of work satisfies the State and County requirements and was employed for this project.

1. State rules have recently been established that require consultation with community members as part of the inventory survey process. This consultation requires contacting knowledgeable members of the community and requesting information on historic and cultural issues related to the property. The Cultural Impact Evaluation (CIE) for the property addresses this requirement *(Appendix A)*.
2. A ground survey of the entire project area was conducted for the purpose of further evaluating the likelihood of cultural deposits and for planning of the backhoe testing.
3. Limited subsurface testing (28 trenches) with a backhoe was conducted to determine if subsurface deposits were located in the project area. Documentation included trench profiles, stratigraphy descriptions, and photographs. All sites were located, described, and mapped with an evaluation of function, interrelationships, and significance. All sites were assigned State Inventory of Historic Places (SIHP) site numbers.
4. Research on historic and archaeological background, including search of historic maps, written records, and Land Commission Award documents, was conducted. This research focused on the specific area, with general background on the vicinity and an emphasis on settlement patterns.
5. The inventory survey report was prepared, which includes the following:
    a. A topographic map of the survey area, showing all archaeological sites and site areas;
    b. Results of consultation with knowledgeable community members about the property and its historical and cultural issues;
    c. Description of all excavations and all archaeological sites with profiles, selected photographs, scale drawings, and discussions of function;
    d. Historical and archaeological background sections summarizing pre-contact and historic land uses, as they relate to any archaeological features;
    e. A summary of site categories and their significance in an archaeological and historic context; and
    f. Recommendations based on all information generated that specifies what steps should be taken to mitigate the impact of development on archaeological resources – such as data recovery (excavation) and preservation of specific areas. These recommendations were developed in consultation with the client and the State agencies.

6. The report also includes an evaluation of the potential for adverse impact to cultural resources and practices on the parcel and documentation of the limited consultation.

This scope of work includes full coordination with the State Historic Preservation Division (SHPD) and the City relating to archaeological matters.

Existing Conditions
Cultural Surveys Hawai'i Inc. completed an archaeological inventory survey of the project site at the request of Group 70 International, Inc. The project area is in the Kewalo/Kulaokahu'a region of Honolulu and is located at 710 and 752 South King Street, bounded by King Street, Alapa'i Street, Hotel Street, and Kealamakai ~~Makai~~ Street (TMK 1-2-1-042: 013 and 004).

Background research into Kulaokahu'a indicated that the area was a "dry, dusty plain" in the pre-contact and early post-contact eras. It was used as a gaming field for *maika* and other sports by Hawaiians, and was traversed by foot trails and later horse paths that connected the two more populous areas of Kou (Honolulu) and Waikīkī. The area was thus not a focus for habitation or agriculture until the late nineteenth century, when people, mainly *haole* (foreign-born residents), began to move into this new suburb of Honolulu.

Māhele records show that Kulaokahu'a became Crown lands. Much of this area was quickly divided into lots and rented or sold as house lots, mainly to *haole* residents who dug wells in the area to provide much needed water.

Archaeological background research has shown that the Kulaokahu'a region of Honolulu, especially around the Capitol District, was not a focus for habitation in the pre-contact and early post-contact period. Typically, only historic artifacts have been found in trenches excavated in this district. Food midden, such as marine shells, and traditional Hawaiian artifacts, such as stone flakes and adzes, are very rare; only a handful have been found. Although not densely inhabited, a few burials, probably native Hawaiians, have been found in the area.

Fieldwork was carried out in close consultation with the State Historic Preservation Division and primarily consisted of the excavation of twenty-eight approximately 6 meter long test trenches. Two sites were identified: SIHP 50-80-14-6901 consisting of four historic trash pits and SIHP 50-80-14-6902 designating three burials.

SIHP 50-80-14-6901
State Inventory of Historic Properties (SIHP) 50-80-14-6901 consists of four historic trash pits, dating to between A.D. 1820 and 1920. This site is recommended as eligible for the National and Hawai'i Register under Criterion D (for its information content). The four trash pits (Site 50-80-14-6901, Features 1 to 4) contained a variety of artifacts typical for nineteenth and early twentieth century household refuse. The most common type of artifacts were bottles or bottle glass fragments. The bottles were for wine/champagne, gin, beer/whiskey/ale, soda/mineral water, beverages, condiments, medicine, and perfume. Most of the bottles date from 1850 to no later than 1920. Features 1-3 are believed to most likely post-date 1850 but to date to no later than 1920. Three bottles from Feature 4 may have been manufactured at an earlier date than the bottles from Features 1-3 and suggest mid-1800s deposition. While mid and late 1800s residents of Honolulu of various ethnicity would use a variety of products from various countries of origin the assemblages of SIHP 50-80-14-6901 are suggestive of relatively affluent European or Euro-American consumption patterns. The pattern of artifacts recovered would be consistent

with refuse from the Cooke and Atherton families resident in the immediate area in the indicated timeframe.

SIHP 50-80-14-6902
A burial was discovered on the 4th trench (located in the first row of parking stalls along Kealamakai ~~Makai~~ Street, halfway between King and Hotel Streets). Working in close consultation with the State Historic Preservation Division an additional five trenches (Trenches 15 to 19) were excavated to delimit the extent of the burials. Two additional burials were encountered in Trench 19. Two of these burials were perceived to be in coffins (Burials 1 & 2). In the third case (Burial 3) the presence or absence of a coffin was not determined before all work in the vicinity was halted (as per present norms following the identification of human remains). These three burials are collectively considered as constituting SIHP 50-80-14-6902

The three burials, by definition "previously identified" because they were found during inventory survey investigations (HAR Chapter 13-300-2), were documented. Following the procedures of HRS Chapter 6E-43/HAR Chapter 13-300, SHPD determined the remains were over 50 years old. Based on input from SHPD, there is currently insufficient information to make a burial ethnicity determination for the burials. Accordingly, appropriate burial treatment will be determined by SHPD, per HAR Chapter 13-300-31(h)(4).

Anticipated Impacts and Mitigation Measures
Both cultural resources/historic properties identified within the current project area are recommended eligible to the National/Hawai'i Register:

1) SIHP 50-80-14-6901 consists of four historic trash pits, dating to between A.D. 1820 and 1920, and is recommended eligible for the National and Hawai'i Registers under Criterion D (for its information content). Of the four trash pits, two will be preserved in place. For the other two, significant information was recorded during the inventory survey.
2) SIHP 50-80-14-6902 consists of three burials; Burial 1 and 2 are historic coffin interments, less information is available regarding Burial 3. This site is recommended eligible for the National and Hawai'i Registers under Criteria D and E (Hawai'i Register-only— for its potential traditional cultural significance to an ethnic group).

The proposed project will potentially affect these two cultural resources/historic properties recommended eligible to the National/Hawai'i Register. Under Hawai'i State historic preservation review legislation (HAR Chapter 13-275), a project effect recommendation of "effect, with proposed mitigation commitments" is warranted.

The proposed mitigation for the project area's two historic properties is two-fold. First, for SIHP 50-80-14-6902, the previously identified burials, a burial treatment plan will be prepared for the consideration of SHPD. The project proponents propose to preserve all three burials in place within a single burial preserve area, which will be appropriately landscaped and restricted from pedestrian access. Second, mitigation will include an archaeological monitoring program to help identify and properly treat any additional archaeological deposits, such as additional historic deposits of SIHP 50-80-14-6901, and/or burials located during the project's construction.

CSH submitted the AIS to SHPD for review on July 23, 2007. On November 29, 2007 SHPD sent a letter to CSH concluding fieldwork, but requesting a revised AIS to address their comments.

CSH revised the AIS per SHPD's requests and re-submitted it to SHPD on November 30, 2007. On December 7, 2007, SHPD issued a letter to CSH accepting the AIS as meeting the requirements of Chapter 13-276-5 of Hawaii Administrative Rules (HAR). The revised AIS and two aforementioned letters from SHPD are included in *Appendix A* of this document.

3.2 CULTURAL PRACTICES AND RESOURCES

Cultural Surveys Hawai'i prepared a Cultural Impact Evaluation (CIE) *(Appendix A)* for the proposed Alapa'i project area. The CIE seeks to assess traditional cultural practices as well as resources pertaining to the project area within the Honolulu ahupua'a. This section will convey the different types of traditional practices and cultural resources associated with the project vicinity.

Traditional cultural practices are based on a profound awareness concerning harmony between man and our natural resources. The Hawaiians of old depended on these cultural practices for survival. Based on their familiarity with specific places and through much trial and error, Hawaiian communities were able to devise systems that fostered sustainable use of nature's resources. Many of these cultural practices have been passed down from generation to generation and are still practiced in some of Hawai'i's communities today.

Existing Conditions

Gathering of Plant Resources

The present project area is understood to have been virtually entirely paved since circa 1938. The traditional vegetation of this arid area was probably limited to *pili* and other hardy grasses and shrubs. There were likely no gathering practices on these lands.

Marine and Freshwater Resources

The present project area is not adjacent to the coast or any bodies of water. The development of this parcel would not appear to have any effect on marine or freshwater resources.

Historic Properties

During this assessment there were two historic properties identified within the project area: SIHP 50-80-14-6901 consisting of four historic trash pits and SIHP 50-80-14-6902 designating three burials as discussed above. The trash pits included a variety of European, English and American wares but are not regarded as cultural properties. The burial site is discussed further below.

Burials

Archaeological reports have documented human burials at a number of locations within greater Kaka'ako. It now appears clear that at least in some areas of the lands between Kou and Waikīkī disposal of the dead was a pattern in both pre-contact times and the mid-1800s. The general pattern appears to have been to give preference to coastal sands for interment of the dead. There is no evidence pertaining to on-going cultural practices relating to burials on the property or in the immediate vicinity.

The inventory survey identified three burials on the east side of the project area that are collectively considered as constituting SIHP 50-80-14-6902. Based on input from SHPD, there is currently insufficient information to make a burial ethnicity determination for the burials.

Accordingly, appropriate burial treatment will be determined by SHPD, per HAR Chapter 13-300-31(h)(4). This site is recommended eligible for the National and Hawaiʻi Registers under Criteria D and E (Hawaiʻi Register-only— for its potential traditional cultural significance to an ethnic group). The discovery of the burials was announced in notices in *Ka Wai Ola o OHA* (May 2007) and the *Honolulu Advertiser* (April 11, 12 & 15 2007) and at meetings of the Oʻahu Island Burial Council (OIBC) to date no one has contacted the SHPD to supply information or assert lineal and/or cultural relationship.

Trails
Trails served to connect the various settlements. Based on nineteenth and twentieth century maps, primary transportation routes correlated closely to existing major roadways. The 19th-century Hawaiian historian John Papa ʻĪʻī, himself a member of the *aliʻi* (chiefly class), described the major routes extending east from Honolulu ("Kou") as primarily running seaward of the present project area: near the coast and along a major artery that became King Street (ʻĪʻī 1959:93). Of course King Street runs on the seaward side of the present project area. The close proximity of a major pre-contact trail/early post-contact road may have increased use of the project area in pre-contact and early post-contact times. King Street on the makai side and Beretania Street just inland remain today as major arteries for vehicular and pedestrian travel.

Anticipated Impacts and Mitigation Measures
The present project area on the eastern margin of downtown Honolulu is understood to have been virtually entirely paved since circa 1938. Other than interment of the dead there is no evidence of traditional Hawaiian use of the project area lands. The discovery of the burials was announced in notices in *Ka Wai Ola o OHA* (May 2007) and the *Honolulu Advertiser* (April 11, 12 & 15 2007) and at meetings of the Oʻahu Island Burial Council but no one has contacted the SHPD to supply information or assert lineal and/or cultural relationship. Written consultation with the Office of Hawaiian Affairs, Hui Mālama I Nā Kūpuna o Hawaiʻi Nei and the Oʻahu Island Burial Council developed no further information on traditional cultural practices and no expressions of concerns other than over the burials. Proposed mitigation measures for burials are discussed in Section 3.1 of the Archaeological Resources. No other impacts to cultural practices and resources are anticipated.

3.3 LAND REGULATION

Existing Conditions
Development patterns on the Island of Oʻahu are set by State Land Use District designations, the City and County of Honolulu General Plan, City and County of Honolulu Development Plans, and zoning and special district designations. The principal function of these plans and regulations is to specify where land uses such as commercial, residential, industrial, agricultural, open and public areas are permitted. The existing land use regulations relevant to the site are briefly summarized below.

- State Land Use Designation - The proposed site is situated within the State Land Use Urban District *(Figure 1.3)*. According to the Land Study Bureau Detailed Land Classifications, the area has been classified for "Urban" type uses.
- City and County of Honolulu Zoning - The subject property is located within the BMX-3 Community Business Mixed Use zone *(Figure 1.4)*.
- City and County of Honolulu Primary Urban Center Development Plan - The City and

County of Honolulu's Primary Urban Center Development Plan Land Use Map (A-5 PUC-Central) approved by the City Council in 2004, designates the project area for Institutional use *(Figure 1.5)*.

- City and County of Honolulu Public Infrastructure Map (PIM) – The project site has an existing "Government Building" (GB) symbol (#125 City Hall Annex Office Complex and Alapa'i Transportation Center).
- City and County of Honolulu Hawai'i Capital Special District - The project site is located in the Alapa'i Precinct of the Hawai'i Capital Special District and subject to the applicable guidelines of the special district.
- Hawai'i State Capital Civic Center Master Plan (1968) – The project is located within the study area of the Civic Center Master Plan and should meet the intent of its land use planning objectives.

The 4.13-acre project area is located at the intersection of Alapa'i Street and King Street, within the Alapa'i Precinct of the Hawai'i Capital District. This general area of downtown Honolulu comprises the State and County's civic core. The area is characterized by its park-like setting, open spaces, and concentration of State, and City and County facilities. The Hawai'i Capital Special District is dedicated to preservation of the architectural character and park-like setting of O'ahu's municipal center. Numerous buildings of historic significance are located in the neighboring Historic Precinct of the Hawai'i Capital Special District, such as the State Capital, Honolulu Hale, and 'Iolani Palace. The project site is located within the Alapa'i Precinct. Perimeter precincts such as the Alapa'i Precinct serve as transitional areas for height, open space, and density and design compatibility between the Historic Precinct and surrounding uses. Other uses in the transitional area include supporting commercial businesses such as shops and restaurants.

The project has been designed in accordance with applicable Hawai'i Capital Special District Design Guidelines and in consultation with the City and County of Honolulu, Department of Planning and Permitting. The applicant is preparing a Special District Permit (Major) application to allow for the proposed project within the Special District.

Anticipated Impacts and Mitigation Measures

The project site is situated on the perimeter of the civic core. Given existing uses at the project site, and adherence to special district design guidelines, the proposed improvements will not have significant adverse impacts on land regulation.

- State Land Use Designation – The proposed project is situated within the urban district and the proposed project is classified as an "Urban" type use.
- City and County of Honolulu Zoning – This action is consistent with the BMX-3 Community Business Mixed Use designation.
- City and County of Honolulu's Primary Urban Center Development Plan –This action is consistent with the County and community's long range plan for the area. The project site is part of the Civic Center and consistent with the "Institutional" land use designation.
- City and County of Honolulu Hawai'i Capital Special District Guidelines – This action is consistent with guidelines of the Hawai'i Capital Special District, Alapa'i Precinct.
- Hawai'i State Capital Civic Center Master Plan (1968) – The project conforms with the intent of the Master Plan.

3.4 LAND USES

Existing Conditions

Project Site

The project site is 4.13-acres completely within the Hawai'i Capital Special District area. Existing on-site land uses include the following:

- Bus transit center
- Four bus passenger shelters
- Bus circulation and parking space
- Limited perimeter landscaping
- Temporary overflow municipal parking

There are no designated bus parking spaces on site. Buses park where there is enough space, and passengers queue according to where the bus is parked. This can create confusion for passengers when multiple buses depart at similar times.

Adjacent Land Uses

The site is bounded by commercial, municipal and institutional uses. Specific land uses surrounding the project site are as follows:

North: Honolulu Police Department headquarters and City and County parking structure
West: Frank Fasi Municipal Building
East: ScanDesign furniture store and commercial and residential buildings
South: Street level commercial and office uses. Ground level uses include a Tesoro station, Pure Joy Day Spa, Hawai'i Central Credit Union, the Kabuki Restaurant.

Anticipated Impacts and Mitigation Measures

Some existing on-site land uses such as the bus transit uses, bus parking and staging, and bus passenger shelters and queuing will continue with the proposed project. New land uses on-site will consist of a new bus transit building and a new JTMC building. The bus transit building will house public restrooms, ticket sales booth, vending machine, drinking water fountain and a bus driver lounge. ATC operations will be improved through provision of 19 designated bus parking stalls, designated bus staging and passenger queuing area.

The new 10-level JTMC building will include 406 lower-level parking stalls for JTMC employees and six stories of office space totaling 121,000 square feet. JTMC grounds will be landscaped with grass, shrubs and trees.

The existing temporary overflow parking from the municipal parking lots Honolulu Police Department (HPD) and Fasi Municipal Building (FMB) will not be accommodated at the Joint Traffic Management Center (JTMC). Additional parking capacity should be available in the FMB and HPD parking lots after participating agencies, and their associated parking, relocate from existing buildings to the new JTMC site.

The project will help alleviate space deficiencies within State and City transportation and emergency operations agencies, located at the Frank Fasi Municipal Building and various locations across O'ahu, and provide the opportunity for coordinated effort and response to manage traffic and emergency incidents. The project will provide infill of existing, under-utilized, municipally owned land reserved specifically for transit-related uses. The project will

also help to maximize investments in traffic operations and ITS equipment, and help improve daily traffic management operations on O'ahu. The proposed project is consistent with existing and surrounding land uses.

3.5 NATURAL ENVIRONMENT

3.5.1. Air Quality

An Air Quality Study was conducted by B.D. Neal and Associates in December 2006 for the proposed project *(Appendix B)*. A supplemental Air Quality Analysis Letter was provided on March 14, 2007 *(Appendix C)*. The study and letter will be referred to collectively as the "report". The report examines the potential short- and long-term air quality impacts that could occur as a result of construction and use of the proposed facilities and suggests mitigative measures to reduce any potential air quality impacts where possible and appropriate.

Both Federal and State standards have been established to maintain ambient air quality. At the present time, seven parameters are regulated including: particulate matter, sulfur dioxide, hydrogen sulfide, nitrogen dioxide, carbon monoxide, ozone and lead. Hawai'i air quality standards are comparable to the national standards except those for nitrogen dioxide and carbon monoxide which are more stringent than the national standards.

Existing Conditions

Regional and local climate together with the amount and type of human activity generally dictate the air quality of a given location. Existing conditions include winds predominantly from the east or northeast (trade winds). During winter, occasional storms may generate strong winds from the south (kona winds) for brief periods. When the trade winds or kona winds are weak or absent, landbreeze-seabreeze circulations may develop. Temperatures in the O'ahu area leeward of the Ko'olau Mountains are generally very moderate with average daily temperatures ranging from about 70°F to 84°F. Extreme temperatures range from about 53°F to about 95°F. Rainfall is relatively low with an average of about 22 inches per year.

The present air quality of the project area appears to be reasonably good based on nearby monitoring data. Air quality data from the nearest monitoring stations operated by the Hawai'i Department of Health suggest that all state and national air quality standards are currently being met, although occasional exceedances of the more stringent state standards for carbon monoxide may occur near congested roadway intersections.

Anticipated Impacts and Mitigation Measures

If the proposed project is given the necessary approvals to proceed, it may be inevitable that some short- and/or long-term impacts on air quality will occur either directly or indirectly as a consequence of project construction and use. Short-term impacts from fugitive dust will likely occur during the project construction phase. To a lesser extent, exhaust emissions from stationary and mobile construction equipment, from the disruption of traffic, and from workers' vehicles may also affect air quality during the period of construction. State air pollution control regulations require that there be no visible fugitive dust emissions at the property line. Hence, an effective dust control plan must be implemented to ensure compliance with state regulations. Fugitive dust emissions can be controlled to a large extent by watering of active work areas, using wind screens, keeping adjacent paved roads clean, and by covering of open-bodied trucks. Other dust control measures could include limiting the area that can be disturbed at any given time and/or mulching or chemically stabilizing inactive areas that have been worked. Paving and landscaping of project areas early in the construction schedule will also reduce dust

emissions. Monitoring dust at the project boundary during the period of construction could be considered as a means to evaluate the effectiveness of the project dust control program. Exhaust emissions can be mitigated by moving construction equipment and workers to and from the project site during off-peak traffic hours.

After construction, motor vehicles coming to and from the proposed development will result in a long-term increase in air pollution emissions in the project area. To assess the impact of emissions from these vehicles, an air quality modeling study was undertaken to estimate current ambient concentrations of carbon monoxide at intersections in the project vicinity and to predict future levels both with and without the proposed project. During worst-case conditions, model results indicated that present 1-hour and 8-hour carbon monoxide concentrations are within both the state and the national ambient air quality standards. In the year 2012 without the project, carbon monoxide concentrations were predicted to decrease by about 10 to 15 percent in the project area. With the project in 2012, carbon monoxide concentrations were estimated to remain nearly unchanged compared to the without-project scenario, indicating that the project would have essentially no impact on air quality.

Implementing mitigation measures for project traffic-related air quality impacts is probably unnecessary and unwarranted.

3.5.2. Biology

Existing Conditions

The ground surface of the site has been completely disturbed. There is no natural vegetation. Sparse ornamental landscaping is located on the site perimeter, including a few shade trees. No "significant trees" are located on site.

Terrestrial fauna on the site and within the vicinity is limited to rats, mice, and feral cats. Avifauna that reside within the project area include the common mynah, cardinals, pigeons, doves, house finches, rice birds, and mockingbirds. These are common birds found throughout the urban areas of Honolulu. There are no rare, threatened, or endangered species on the site.

Anticipated Impacts and Mitigation Measures

The development and operation of the proposed improvements are not expected to result in any adverse impacts to plant species.

The project landscaping will incorporate non-invasive, drought-tolerant species to minimize irrigation requirements and water needs. Mature trees will be retained. New trees will be planted as part of the overall landscape plan. Irrigation will be installed to establish and maintain the plantings and will be controlled to prevent over-watering.

There are no anticipated adverse impacts to the area's wildlife habitat.

3.5.3 Climate

Existing Conditions

With an annual average temperature ranging from the high-60s to the mid-80s Fahrenheit (°F), downtown Honolulu has an average monthly low temperature of 65°F in January and February and average monthly high temperature of 88°F in August and September. Nestled in the leeward rain shadow of the Ko'olau Mountains, downtown Honolulu has an average annual

rainfall of 22 inches with most of it occurring between the months of November through January.

Winds from the northeast, known as trade winds, are the most predominant over the Hawaiian Islands. In the winter, there is a shift in the wind patterns characterized by the arrival of the westerly winds and frontal influences from the North Temperate Zone becoming more prevalent. Westerly winds typically are characterized by the presence of strong winds and high wave activity from the southwestern sector of the Pacific. Overall, the annual average wind speed in downtown Honolulu ranges from 9 to 11 miles per hour.

Anticipated Impacts and Mitigation Measures
The proposed action will have no effect on climatic conditions, and therefore no mitigation measures are required.

3.5.4 Soils
Existing Conditions
No soils are exposed on the project site as the site is entirely paved. Soil types or classifications for the project area are based on soil surveys by the USDA Soil Conservation Service (SCS). The SCS system classifies soils by type and permeability characteristics, including run-off and erosion, as shown in *Table 3-1*. The soil at the project site is classified as Makiki clay loam (MkA), 0-2% slopes. According to the "Soil Survey of Islands of Kauai, O'ahu, Maui, Moloka'i, and Lana'i," the Makiki Series soil consists of well drained soils in alluvium mixed with volcanic ash and cinders. Permeability is moderately rapid, runoff is slow, and the erosion hazard is no more than slight. A variety of soil types exist in the region including Tantalus Series (TCC), Ewa Series (EmA), and Fill Land (FL). *Figure 3.1* illustrates the types of soils found within the project area.

Table 3-1
Prominent Soil Types in the Project Area

Soil	Soil Type	Runoff	Erosion
Makiki Series (MkA)	Clay loam	Slow	Slight
Ewa (EmA)	Silty clay loam	Very slow	Slight
Fill land (FL)	Mixed	N/A	N/A
Tantalus (TCC)	Silty clay loam	Slow	Slight

(Soil Conservation Service Soil Classification)

Anticipated Impacts and Mitigation Measures
ATC construction will involve little to no earth disturbance. Excavation is anticipated for the JTMC underground parking. Existing asphalt removal will expose underlying soils.

Earth moving activities (eg. grading, grubbing, excavation) have potential to impact air quality through fugitive dust and water quality through storm water runoff. These impacts are addressed in *Section 3.5.1 Air Quality* and *Section 3.13 Water Quality*.

3.5.5 Topography
Existing Conditions
The Island of O'ahu was created through several stages of activity emanating from two volcanic domes. Through various stages of eruptions, erosion and land movement, the volcanic forms

became the Wai'anae and Ko'olau mountain ranges. The development of these large land mass forms emerged together, forming the Island and causing submergence to occur. The project area is located in an urbanized area of downtown and is characterized by relatively flat topography at approximately 9 to 15 feet above mean sea level (MSL) with a slope of approximately 1.6% from Hotel Street to King Street. *(Figure 3.2)* The entire site has been disturbed and no natural topography features remain.

Anticipated Impacts and Mitigation Measures

For the JTMC building structure, approximately 9,000 cubic yards (cy) of earth will need to be excavated to accommodate one level of underground parking. Outside the building structure limits, approximately 1,365 cy ~~cubic yards~~ of fill and less than 100 cy ~~cubic yards~~ of excavation will be required for the landscape and walkways. Excavated material will be re-used as on-site fill and the remaining dirt will be removed and dumped at approved construction dump sites or re-used at other City & County project sites. The exact excavation and fill quantities for the buildings will be determined by the geotechnical engineer and structural engineering during the design phase of this project.

A grading permit is required by DPP for projects that exceed 50 cy of grading. The project is estimated to exceed this amount. A grading permit from the City and County of Honolulu Department of Planning and Permitting will be required along with NPDES permits from the State. Temporary erosion control measures will also be implemented as outlined in the City and County of Honolulu Soil Erosion Standards and Guidelines, April 1999.

Grading will emulate existing conditions in order to minimize impacts on surrounding properties, the public roadways adjacent to the proposed development, and the existing drainage systems owned by the City and County of Honolulu outside the limits of the property. No adverse impacts to topography are anticipated.

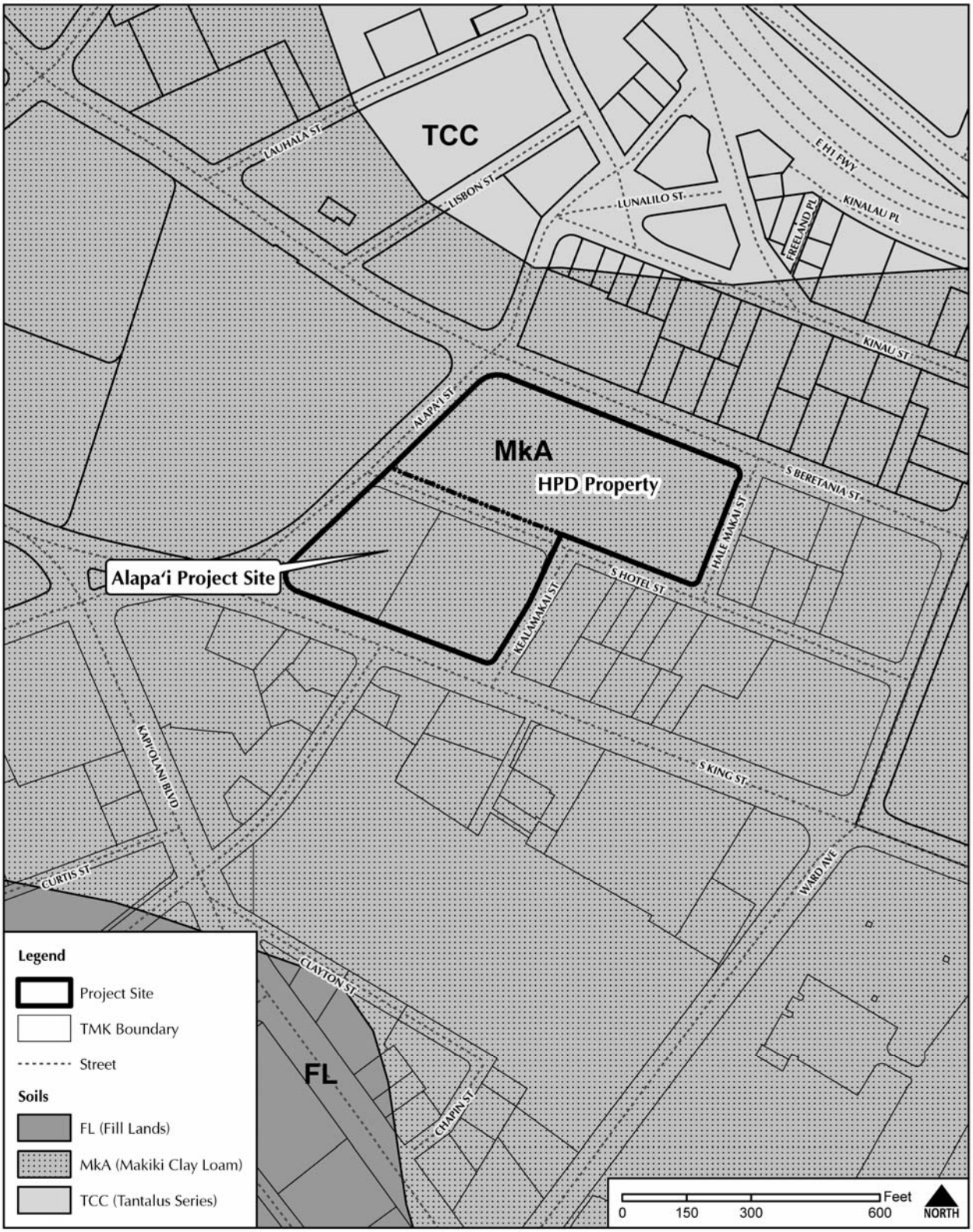


Figure 3.1 Soil Classifications

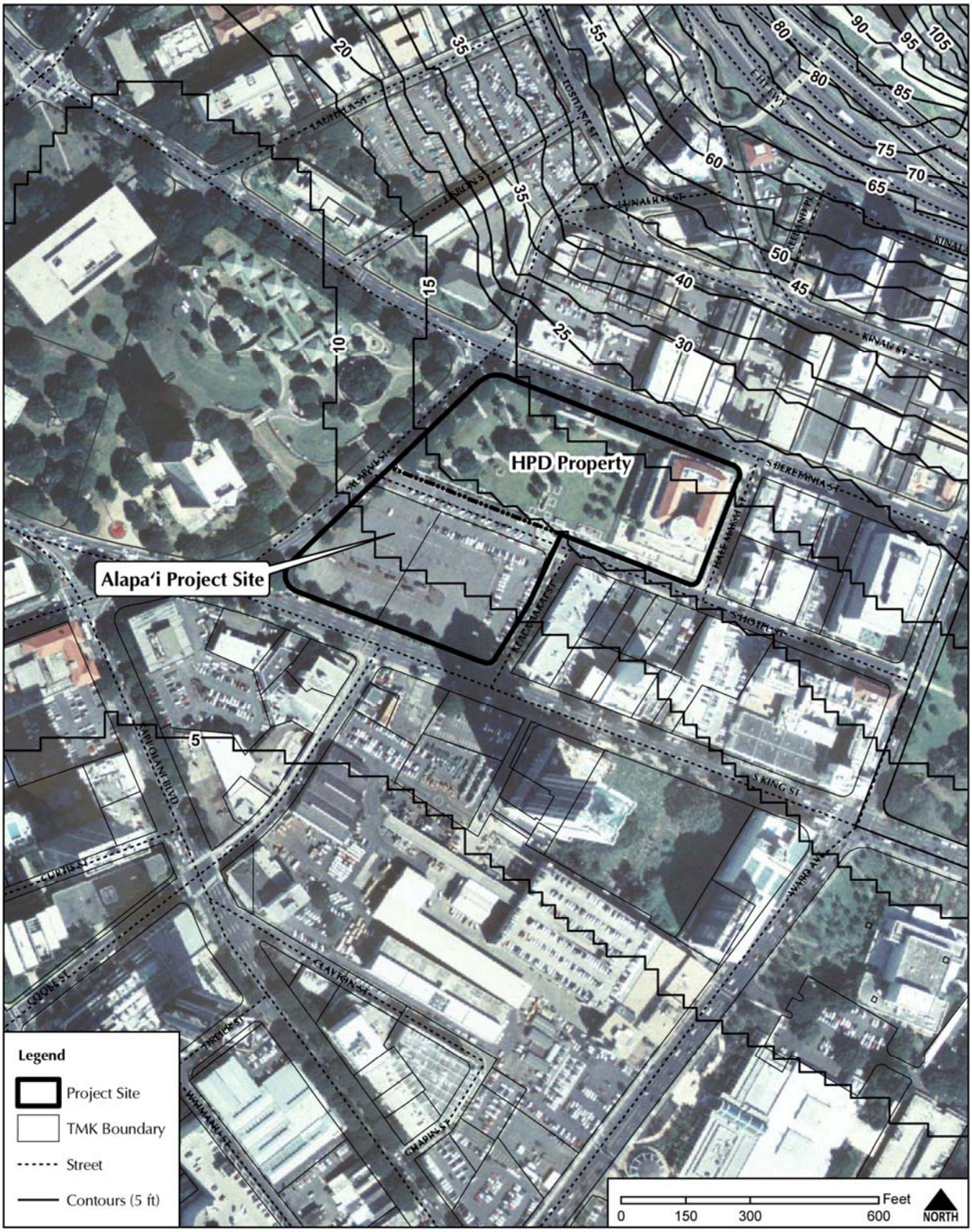


Figure 3-2. Topography

3.6 FLOOD AND TSUNAMI HAZARDS

Existing Conditions
Based on the Federal Emergency Management Agency's *Flood Insurance Rate Map, FIRM Community Panel No. 15003C0365F*, effective November 20, 2000, the project site is located in "Zone X". The flood Zone X designation indicates the area is outside of the 500-year floodplain. Elevations at the site range from approximately 10 feet to 15 feet above sea level, with maximum slopes approximately 2 percent *(Figure 1.6).*

Anticipated Impacts and Mitigation Measures
Although flood and tsunami conditions impose no major constraints on the project, all development at the site will be required to meet applicable building code standards for habitable structures in a tsunami zone. Code standards will include structural requirements and height requirements for habitable floors. Federal force protection measures will also add to the strength of the building, possibly over and above applicable tsunami requirements.

Zone X includes areas of minimal hazard from the principal source of flood in the area and the Flood Insurance Program does not have any regulations for development within this district. No mitigation measures are required.

3.7 NOISE

An acoustic study for the proposed project was conducted by Y. Ebisu and Associates in April 2007 *(Appendix D)*.

Existing Conditions
Major contributors to the existing background ambient noise levels within the project area are traffic along South King Street, South Beretania Street, Alapa'i Street, and South Street and buses which are idling or positioning within the Alapa'i Transit Center. Traffic noise levels tend to be lowest during the early morning hours between 3:00 and 5:00 AM, and highest during the AM and PM commuting hours. Existing traffic and background ambient noise levels were measured in the project environs during November 2006 to provide a basis for describing the existing noise environment in the project environs. Traffic noise calculations for the existing conditions as well as noise predictions for calendar year 2012 were performed using the Federal Highway Administration (FHWA) Traffic Noise Model Version 2.5 *(Appendix D, Reference 5).*

Based on noise level monitoring results, the report concluded that existing background noise levels in the project environs currently exceed 65 DNL along the rights-of-way of South King Street, South Beretania Street, Alapa'i Street, and South Street.

Anticipated Impacts and Mitigation Measures
Future traffic noise levels in the vicinity of the proposed Alapa'i Transit Center and Joint Traffic Management Center Project in Honolulu were evaluated for their potential noise impacts and their relationship to current FHA/HUD (Federal Housing Administration/Housing and Urban Development) noise standards. The traffic noise level increases along the major access roadways to and from the project site were calculated. No significant increases in traffic noise are predicted to occur along streets servicing the project site as a result of project traffic following project build-out by 2012. Traffic noise from South King Street, Alapa'i Street, South

Street, and South Beretania Street will continue to control background ambient noise levels in the project environs, with traffic noise levels exceeding 65 DNL (Day-Night Average Sound Level) at the Rights-of-Way along these roadways.

According to the noise study, project traffic will add less than 0.0 to 0.2 DNL units of noise along the high noise roadways such as South King Street, Alapa'i Street, South Street, and South Beretania Street. The increases in future traffic noise levels resulting from project generated traffic are not considered to be significant, and risks of adverse noise impacts from project traffic are considered to be low.

Larger increases in traffic noise levels of 0.6 to 0.7 DNL are predicted to occur along South King Street, Alapa'i Street, South Street, and South Beretania Street as a result of the increases in non-project traffic by 2012. These increases are expected to occur with or without the proposed project, are not considered to be significant, and will be difficult to perceive between 2006 and 2012.

The largest increases in traffic noise levels of 1.0 to 1.6 DNL are predicted to occur along Kealamakai ~~Makai~~ Street, Hotel Street, and Hale Makai Street, and primarily as a result of project traffic. However, since existing traffic noise levels along these roadways are relatively low, these increases should not cause future traffic noise levels to exceed noise impact criteria.

Unavoidable, but temporary, noise impacts may occur during the construction activities within the project area, and particularly during the excavation activities on the project site. Because construction activities are predicted to be audible within the project site and at adjoining properties, the quality of the acoustic environment may be degraded to unacceptable levels during periods of construction. Mitigation measures to reduce construction noise to inaudible levels will not be practical in all cases, but the use of quiet equipment is recommended as a standard mitigation measure. The implementation of Hawai'i State Department of Health permit procedures and curfew periods for construction activities is also expected for this project.

3.8 ROADWAYS AND TRAFFIC

A traffic study for the proposed Alapa'i Transit Center and Joint Traffic Management Center project was prepared by Wilson Okamoto Corporation (WOC) in November 2006 *(Appendix E)*. WOC also provided a supplemental assessment to the original study in March 2007 *(Appendix F)*. Whereas the original study analyzed 100,000 square feet of office space, the supplement accounted for the whole JTMC building at 160,000 square feet.

Existing Conditions

The following intersections were assessed in the traffic study:

- South King Street, Alapa'i Street, and South Street
- South King Street and Kealamakai ~~Makai~~ Street
- South Beretania Street and Alapa'i Street
- South Beretania Street and Hale Makai Street
- Hale Makai Street and Hotel Street

WOC conducted field investigations on September 6, 7 and 14, 2006. Investigations consisted of assessments of existing site conditions (i.e. traffic flow and queuing) and manual turning movement count surveys at the above intersections between the morning peak hours of 6:30AM and 8:30AM, and the afternoon peak hours of 3:00 PM and 6:00PM. Existing bus operations were included in this analysis for existing conditions and future with project scenarios, as bus operations are not anticipated to change dramatically.

Level of Service (LOS)is a quantitative and qualitative assessment of traffic operations. Levels of Service are defined by LOS "A" through "F"; LOS "A" representing ideal, free-flow traffic operating conditions and LOS "F" unacceptable or potentially congested traffic operating conditions. LOS designations for study intersections under existing conditions are provided in *Table 3-2*.

Anticipated Impacts and Mitigation Measures

The trip generation methodology used for the JTMC is based upon generally accepted techniques developed by the Institute of Transportation Engineers (ITE) and published in "Trip Generation, 7th Edition," 2003. The ITE trip generation rates are developed empirically by correlating the vehicle trip generation data with various land use characteristics such as the number of vehicle trips generated per 1,000 square feet of development. *Table 3-2* summarizes the trip generation characteristics related to the JTMC applied to the AM and PM peak hours of traffic.

Table 3-2
Trip Generation Characteristics (AM/PM Peak Hours of Traffic)

General Office Building
Independent Variable: 1,000 sf of Development = 160

		Projected Trip Ends
AM PEAK	ENTER	240
	EXIT	33
	TOTAL	273
PM PEAK	ENTER	44
	EXIT	214
	TOTAL	258

Existing and projected (with and without project) AM and PM peak hour traffic conditions with the development of the project are summarized below in *Table 3-3.*

Table 3-3
Existing and Projected (With and Without Project) Traffic Operating Conditions

Intersection	Critical Traffic Movement		AM			PM		
			Exist	Year 2012		Exist	Year 2012	
				W/out proj	W/ proj		W/out proj	W/ proj
South King St/ Alapa'i St	Eastbound	LT-TH	C	C	C	C	C	C
	Northbound	TH-RT	C	C	C	C	C	C
South King St/ Kealamakai ~~Makai~~ St	Eastbound	LT-TH	A	A	A	A	A	A
	Southbound	LT	C	C	D	B	C	D
South Beretania St/ Alapa'i St	Westbound	TH-RT	C	C	C	C	C	C
	Northbound	LT	C	C	C	C	C	C
		TH	B	B	B	B	B	B
	Southbound	RT	B	B	B	B	B	B
South Beretania St/ Hale Makai St	Westbound	LT-TH	B	C	C	B	B	C
	Northbound	LT	B	C	C	B	B	C
Hale Makai St/ Hotel St	Eastbound	LT-TH	A	A	A	A	A	A
	Southbound	LT-RT	B	B	B	B	B	B

According to the report, traffic operations in the vicinity of the project are generally expected to remain similar to 2012 without project traffic conditions during both peak hours of traffic, despite the increase in traffic along the surrounding roadways due to the development of the Alapa'i Transit Center and JTMC. The southbound approach of the intersection of South King Street with Kealamakai ~~Makai~~ Street is expected to operate at a slightly lower level of service during both peak periods while the critical movements at the intersection of South Beretania Street with Hale Makai Street are expected to operate at slightly lower levels of service during the PM peak period. The remaining critical traffic movements at these intersections, as well as, the remaining study intersection are anticipated to continue operating at levels of service similar to 2012 without project conditions.

Total traffic volumes entering the study intersections along Alapa'i Street are expected to increase by approximately 1-3% during both peak periods with the proposed project, while those at the intersections of South Beretania Street with Hale Makai Street and South King Street with Kealamakai ~~Makai~~ Street are expected to increase by approximately 3-5% during both peak periods. At the intersection of Hale Makai Street with Hotel Street, the increases are expected to be higher with the total traffic volumes entering the intersection expected to increase by approximately 25% during the AM peak period and approximately 35% during the PM peak period.

WOC made the following recommendations.

1. Provide sufficient driveway width to accommodate safe vehicle ingress and egress.
2. Provide adequate turning radii at all project driveways to avoid or minimize vehicle encroachments to oncoming traffic lanes.
3. Maintain adequate sight distances for motorists to safely enter and exit all project driveways.

4. Provide adequate on-site loading and off-loading service areas and prohibit off-site loading operations.
5. Provide adequate turn-around area for delivery and refuse vehicles to maneuver on the project site to avoid vehicle reversing maneuvers onto City and County of Honolulu roadways.

With the implementation of the above recommendations, the proposed project is not expected to have a significant impact on traffic operations in the vicinity of the project.

3.9 UTILITIES

Hida, Okamoto and Associates, Inc. (HOA) prepared a preliminary engineering study for the proposed project in June 2007 *(Appendix G)*.

Storm Drainage

Existing Conditions

HOA conducted site visits on 5/25/06 and 5/26/06. No onsite drainage structures (i.e. drain inlets, catch basins, etc.) to pickup the onsite storm water flow were observed. The existing drainage pattern for storm water is to sheet flow towards two (2) catch basins located on the north side of King Street. The total existing rain/storm water generated by the project site is approximately 16.15 cubic feet per second. Approximately 11.55 cubic feet per second of this drainage flows towards the catch basin located at the corner of King Street and Alapa'i Street. The remaining 4.60 cubic feet per second flows towards the catch basin located at the center of the property across from Cooke Street.

Probable Impacts and Mitigation Measures

The proposed project includes more landscaped areas than the existing site, therefore it is expected that the surface runoff from the proposed development to the City and County drainage system will be equivalent to or less than the existing surface runoff from the project site. The project will provide a new on-site drainage system with drain inlets. The drainage system will be designed to capture runoff as it enters the underground parking structure of the JTMC via the access ramp in order to prevent flooding.

A drainage study and construction drawings documenting the proposed drainage system will be submitted to the Department of Planning and Permitting, Civil Engineering Branch for review and approval prior to construction. A Drain Connection License request will also be submitted to the Department of Planning and Permitting, Civil Engineering Branch to connect the proposed drainage system to the City's drainage system.

Since the limits of grading are more than 1 acre, a National Pollutant Discharge Elimination System (NPDES) Permit for Discharge of Storm Water Associated with Construction Activity will be required and will be submitted to the State of Hawai'i Department of Health Clean Water Branch for review and approval.

The property is located within Flood Zone X which indicates that the area is determined to be outside the 500 year flood plain and will not be subjected to "No Rise" provisions.

The project proposes more landscaped areas than the current site, an on-site drainage system, and compliance with local and national storm water quality standards, therefore it is expected

that the surface runoff from the proposed development to the City and County drainage system will be equivalent to or less than the existing surface runoff from the project site.

No significant storm drainage impacts are anticipated.

Wastewater

Existing Conditions

Research conducted at the Wastewater Branch of the City and County of Honolulu determined that the site was once serviced by several sewer laterals. The sewer laterals are now capped at the property line. Five (5) sewer laterals connect to the 18-inch sewer main in King Street and two (2) sewer laterals connect to the 18-inch sewer main in Alapa'i Street *(Figure 3.3)*. On-site uses currently do not generate wastewater.

Probable Impacts and Mitigation Measures

Approximately 400 people will be using the ATC daily and approximately 500 employees will occupy the JTMC. The average daily wastewater generated is estimated at 5 gallons per day (gpd) per person. The wastewater flows generated from the ATC and the JTMC are then assumed to be 2,000 gpd and 2,530 gpd, respectively, totaling 4,530 gpd. The ATC estimate is conservative, as it will likely generate less than 5 gpd per person.

ATC: 400 people x 5 gallons per day/person = 2,000 gallons per day
JTMC: 506 people x 5 gallons per day/person = 2,530 gallons per day
TOTAL: The total wastewater generated shall be 4,530 gallons per day.

The new wastewater collection system will require connecting to an existing sewer manhole located at the intersection of Cooke Street and South King Street *(Figure 3.4)*. The proposed connection will require trenching within the City and County of Honolulu Right-of-Way. The sewer discharge from the proposed connection will flow down an 18" diameter relief sewer main within Cooke Street. No other connection to the existing City and County of Honolulu sewer will be permitted.

A sewer connection application was filed with the Wastewater Branch, Department of Planning and Permitting, City and County of Honolulu (2006/SCA-0411) and was approved with conditions. Construction plans will be submitted to the Wastewater Branch, Department of Planning and Permitting for review and approval.

The proposed development will increase the wastewater flow to the existing City and County of Honolulu sewer system; however, per the Sewer Connection Application the sewer connection is acceptable with the City and County of Honolulu as long as the connection is made to the existing 18-inch sewer line at the manhole located at the intersection of Cooke Street and South King Street. The connection to the existing manhole will require trenching within the City and County of Honolulu Right-of-Way which will impact the traffic traveling Eastbound along South King Street, as well as, several adjoining streets which fed into South King Street prior to the trenching work within the Right-of-Way. It is recommended that trenching work be phased by closing one traffic lane at a time to minimize the impact to traffic *(Appendix G)*.

No significant wastewater impacts are anticipated.

Water System

Existing Conditions

There is one existing 1 1/2-inch domestic water meter located on Alapa'i Street near the corner of South King Street and Alapa'i Street. The existing water meter monitors irrigation to the adjacent planter area. A 20-inch transmission main is located within Hotel Street, a 12-inch water main is located within King Street and 8-inch water mains are located within Alapa'i St, Kealamakai ~~Makai~~ Street and Hotel Street. Four (4) fire hydrants are located around the property on King Street and Kealamakai ~~Makai~~ Street and at the corners of Alapa'i and Hotel Street and Alapa'i and King Street *(Figure 3.3)*.

Probable Impacts and Mitigation Measures

Based on the preliminary fixture count provided by Group 70 International, the ATC and the JTMC will require an average domestic water demand of approximately 35 gallons per minute and 105 gallons per minute, respectively. The total domestic water demand shall be 140 gallons per minute. The minimum size of water meters for the Transit Center and the JTMC shall be 1-inch and 2-inch, respectively. It may be possible to utilize the existing 1 1/2-inch meter to service the proposed Transit Center. A mechanical engineer will specify the appropriate size and demand of the domestic water system for the buildings during the design phase of this project. A new fire protection system will be provided where all appurtenances, hydrant spacing and fire flow requirements will conform to Board of Water Supply (BWS) standards. A booster pump may also be required to avoid loss of pressure on the upper floors. A mechanical engineer will specify the appropriate size and demand of the fire protection system for the buildings during the design phase of this project. Fire apparatus access roads and fire hydrants will be provided in accordance with the 1997 Uniform Fire Code.

A letter was submitted to BWS to determine if the existing BWS system is adequate to accommodate the proposed Transit Center and JTMC. In response to the above-mentioned letter, BWS stated the existing BWS system is adequate to accommodate the proposed development *(Appendix G, Exhibit 4 BWS Availability Response Letter).* DTS will continue to keep BWS informed of project progress to ascertain water availability and coordinate utility line location and relocation plans.

Plans will be submitted to the Board of Water Supply for review and approval of the domestic water system. Plans will also be submitted to the Honolulu Fire Department for review and approval of the fire water system.

Low flow fixtures will be considered during the design phase of the project. This would lessen water demands and system operating pressures as well. A more comprehensive hydraulic analysis of the proposed system will be done by a mechanical engineer during the design phase of this project.

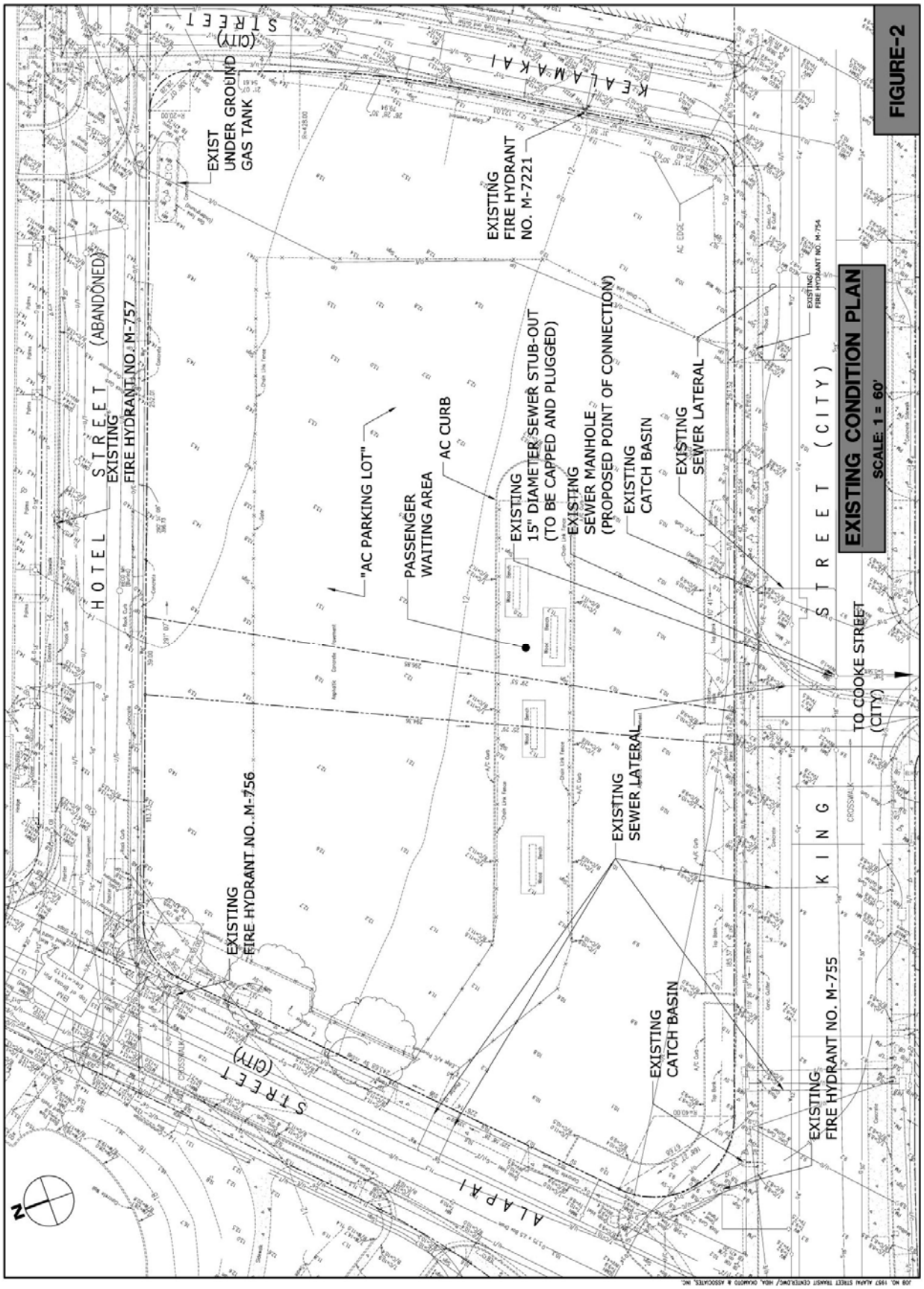


Figure 3.3 Existing Conditions – Water and Sewer

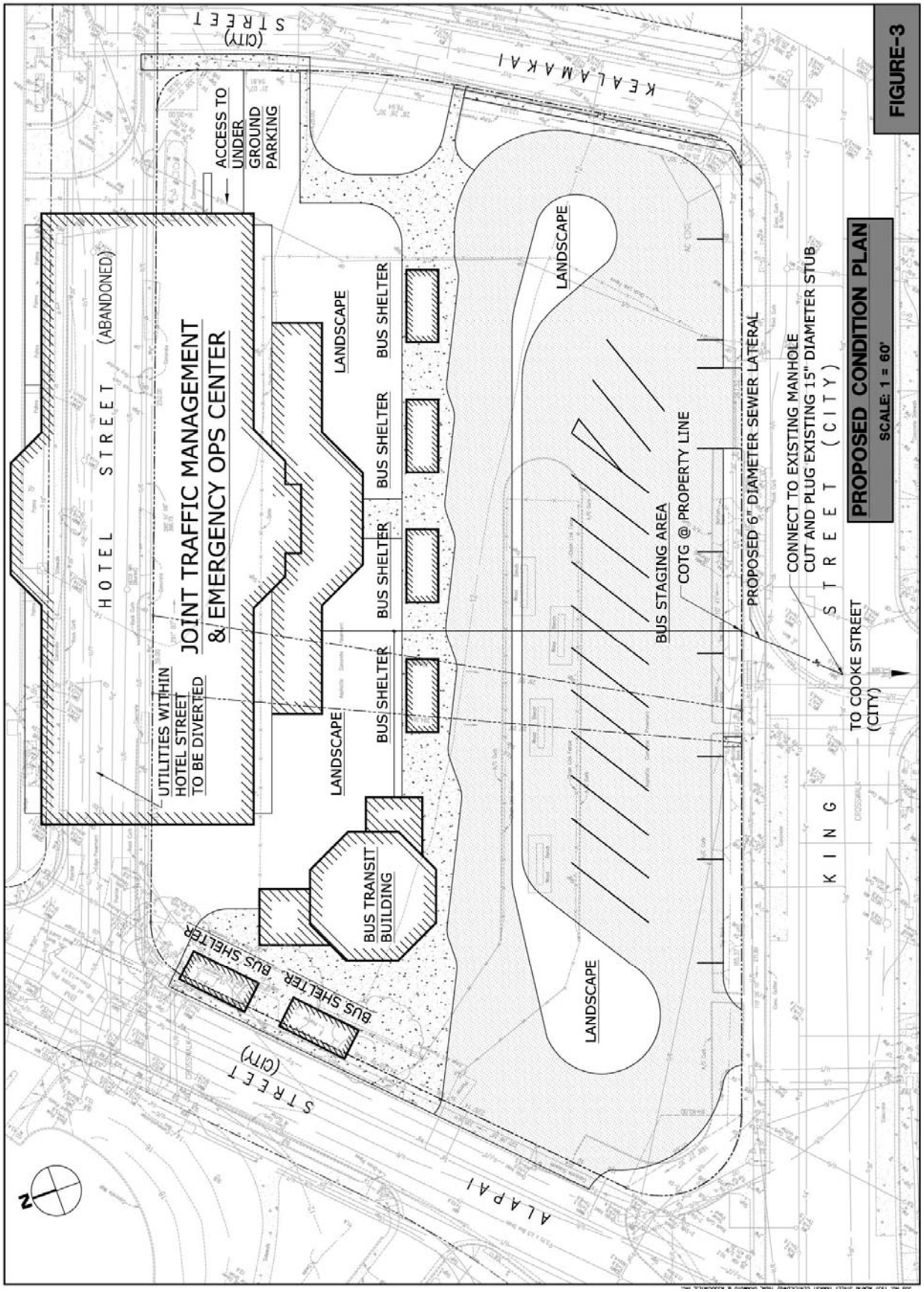


Figure 3.4 Proposed Conditions – Water and Sewer

On-Site Systems (Hotel Street Parcel)

Existing Conditions

The section of Hotel Street included in the proposed project area was once a 52' right-of-way under the jurisdiction of the City and County of Honolulu and is now considered abandoned as a roadway. Currently, Hotel Street is used as a parking area for municipal vehicles. As part of the project development strategies, Hotel Street will be subdivided and made a part of the overall project site.

The existing utilities within and above Hotel Street are as follows:

- 20-inch diameter water transmission main
- 8-inch diameter water main
- Fire Hydrant No. 757
- 6-inch gas main
- 2-inch gas line. This gas line services the Honolulu Police Department from an underground storage tank and is located on the proposed development
- 6-inch sewer main
- 18-inch storm drain system
- Underground and aboveground electrical utilities, which include HECO, Hawaiian Telecom and Oceanic Time Warner Cable. An electrical engineer will verify the type of existing electrical utilities.

Existing utilities are shown in *Figure 3.3*.

Probable Impacts and Mitigation Measures

The JTMC building will be situated partially within Hotel Street and will require the diversion of existing utilities within Hotel Street around the footprint of the building. Utilities affected by the diversion include potable water, natural gas, sewer, storm drainage and various electrical utilities such as HECO, Hawaiian Telecom, and Oceanic Time Warner Cable.

The 20-inch water transmission main and the 8-inch water main will be rerouted around the proposed building within the property.

The 6-inch gas main will be rerouted around the proposed building. The 2-inch gas line and on-site underground gas tank may pose a conflict with the proposed building. If the underground gas tank falls within the limits of excavation, the proposed design will require the relocation of the gas tank.

The 6-inch sewer main and the 18-inch storm drain line in Hotel Street service the Honolulu Police Department property. With the subdivision of the Hotel Street parcel and planned siting of the JTMC building, these utilities will need to be modified and relocated. The 6-inch sewer line will be rerouted around the building. The 18-inch drain line, which currently collects runoff from the HPD green space will be redesigned as part of a new drainage system that will tie in the HPD drains with the JTMC. A mechanical engineer will be utilized to design the new drainage system during the building design process.

Electrical and Communication

Existing Conditions

Electrical service for the project area is provided by Hawaiian Electric Company (HECO) which operates an integrated system of power generators and transmission facilities. Power for the project site is provided by 12KV underground transmission lines in the project vicinity. A HECO microwave link passes northeast of the site connecting the Ward Avenue and Tripler antennas. Telephone service in the project area is provided by Hawaiian Telcom. Oceanic Time Warner Cable provides cable TV to the project area.

Anticipated Impacts and Mitigation Measures

The proposed improvements will greatly increase the electrical power demand above existing levels. As a public utility, HECO has a regulatory obligation as well as an economic interest in providing reliable electrical power to its customers. The owner, consultant and contractor will initiate early consultation with HECO to allow time for infrastructure expansion to support project load requirements. Although a preliminary assessment shows that the proposed location of the JTMC building will not affect the existing microwave link, DTS will keep HECO apprised as building plans are finalized to ensure the link is not compromised. DTS will also coordinate with HECO regarding timing of construction and future underground utilities locations to ensure coordination, protection and ongoing access to utility lines and easements.

Any necessary off-site improvements required to provide communication services without compromising the quality and reliability of service to their existing customers would be the responsibility of Hawaiian Telcom, and Oceanic Time Warner Cable, respectively. Required project connections to the communication service systems will be coordinated with the respective service providers to minimize any potential disruption of service in adjacent areas.

An electrical engineer will verify the type of electrical utilities which will require diversion and the method the electrical utilities will be diverted. The diversion of the water, sewer, storm drain, gas and electrical utilities will require utility easements and may disrupt several customers serviced by these utilities during the course of the construction work.

Solid Waste

Existing Conditions

The project would generate primarily light, dry waste items such as cardboard, papers, packaging, and other materials associated with office activities. Collection of this refuse will occur according to the standard operating procedures and schedule of the Department of Environmental Services Refuse Division. A responsible recycling program will be encouraged.

Anticipated Impacts and Mitigation Measures

No adverse impacts are anticipated and no mitigation beyond implementing a thorough recycling program is recommended.

3.10 SOCIO-ECONOMIC CHARACTERISTICS

Existing Conditions

There is currently no population on the project site, however, occasionally homeless persons will sleep under the passenger shelters. There are no dedicated employees on the site. The Bus employees use the site temporarily for passenger drop off and pick up. County employees

either park on the site or traverse the site to access adjacent County facilities such as the Frank Fasi Municipal Building or the HPD Headquarters.

The mauka portion of the site is temporarily being used as a municipal overflow parking lot. The portion of the site that is used for parking is being under-utilized. The site has the space requirements and land use designations to accommodate additional development of County facilities. Additional development on this site could be considered infill, a desirable development pattern to focus growth in areas that are already developed.

Anticipated Impacts and Mitigation Measures

The anticipated socio-economic impacts for the local community are positive. The Alapa'i project will provide improved working facilities and technology for multiple agencies, improved traffic flow and safety. Each agency participating in the JTMC would vacate all or a portion of their current space and move operations to the JTMC. Additional space would allow other departments within participating agencies to reorganize and/or expand to better meet their needs. Backfill of vacated agency space may allow the County to free up leases in non-County owned facilities.

No additional jobs are planned as part of the project, however, the project will provide the additional space necessary for agencies to expand and grow. No additional population is anticipated in association with the project. Any secondary population growth induced by the project is considered negligible and would not result in significant impacts.

3.11 VISUAL RESOURCES

Existing Conditions

The project site is located in downtown Honolulu surrounded by developed urban municipal, commercial and business land uses. The existing views from the site consist of the surrounding urbanized area and roadways *(Figures 3.5 through 3.9)*. To the north, an approximately 20-foot high off-white blank wall from the adjoining parking structure is visible. The approximately 28-foot high exterior wall of the ScanDesign furniture store is visible to the east. To the west, there are partial urban views of the downtown Capital District, including the Frank Fasi Municipal Building, public parking and open space. No coastal views are visible from the site.

Views of the project site consist of an asphalt paved parking lot area separated from a bus transit area by chain link fencing. An elevated concrete pedestrian shelter platform is located in the makai half of the site. There are a few shade trees planted in perimeter landscaping. There are currently no structures on the site.

The project site lies within the Cooke Street mauka-makai view corridor. The JTMC building placement and orientation on the site is necessary to meet Federal anti-terrorist design standards that would not have been achievable with a mauka-makai building orientation *(Figure 3.10)*.

Figure 3.5. Existing View of Site

Figure 3.6. Existing View of the Adjoining Property (to the North)

Figure 3.7. Existing View of the Adjoining Property (to the East)

Figure 3.8. Existing View of the Adjoining Property (to the South)

Figure 3.9. Existing View of the Adjoining Property (to the West)

Figure 3.10 Perspective Rendering

Anticipated Impacts and Mitigation Measures

The proposed bus transit center improvements will develop paved areas with the ATC single story building and the JTMC at a maximum of 100 feet in height. The 100-foot tall JTMC building will provide a height transition between the Frank Fasi Municipal Building (approximately 200 feet high) and the Honolulu Police Department building (approximately 80 feet high). The JTMC may have some impact on mauka-makai viewsheds. To limit the impact to and protect the mauka views to Punchbowl Crater from the shoreline, the JTMC will be limited to the 100' maximum height allowed by the Hawai'i Capital Special District. The JTMC structure will also be stepped-down at the building ends to minimize viewing impacts to the crater from the shoreline and to give the building an aesthetically-pleasing profile. At an elevation of 400' above sea level, the Punchbowl Crater would still be approximately 275' higher than the top of the JTMC building (approximately 125' above sea level). At nearly 2 miles from the shoreline, the Punchbowl Crater will be visible above the JTMC building from the shoreline, and vice versa, the shoreline will be visible above the JTMC building from Punchbowl Crater.

The JTMC will remain within the allowable height limit for the Alapa'i Precinct and is not anticipated to significantly impact mauka-makai views.

Although most of the site will remain in some form of open space, open space will be lost in the location of the ATC and JTMC. The impact on open space will be offset by attractive architectural and landscape design elements. The visual character of the ATC and JTMC buildings will be consistent with the Hawai'i Capital Special District guidelines and compatible with adjacent buildings. Landscaping will be used to improve the visual character of the project site from pedestrian and roadway perspectives.

Significant adverse impacts on visual resources are not anticipated.

3.12 HAZARDOUS MATERIALS

Existing Conditions

A Phase I Environmental Site Assessment (ESA) and Limited Phase II ESA were conducted by EnviroServices & Training Center, LLC (ETC) (2006) for the Alapa'i project site. The complete reports are enclosed in *Appendices H and I*. The Phase I was conducted in conformance with the limitations of the American Society for Testing and Materials (ASTM) Practice E-1527-00.

For the Phase I, ETC conducted a historic records search, field visit, database search, and Hawai'i Department of Health (DOH) file reviews and to determine the potential for hazardous materials or contamination associated with the project site.

ETC's historic records review of aerial photographs, historical real property tax records, building permit records, and Sanborn maps did not reveal any evidence of recognized environmental conditions on the project site. No evidence of hazardous materials or hazardous wastes were observed during the field visit, conducted on July 28, 2006.

The project site was not listed on any federal or state hazardous material databases reviewed by ETC. The database search did identify numerous sites within a one mile radius of the project site, the majority of which were on listed on the Leaking Underground Storage Tank (LUST) and the State Hazardous Waste Sites (SHWS), the State's equivalent to the federal EPA's CERCLIS database. Based on ETC's review of the database findings, 15 facility file reviews

were conducted at the DOH Solid and Hazardous Waste Branch (SHWB) and DOH Hazardous Evaluation and Emergency Response (HEER) Office.

Of the 15 facility files reviewed, only the (former) MTL Bus Facility and the Honolulu Police Department facilities located on the north adjacent property were considered a significant concern. Review of the MTL Bus Facility file indicated that the facility was issued a "no further action" letter in 1995 regarding a 1989 petroleum release associated with one or more of 13 Underground Storage Tanks (UST). However, additional review indicated the contaminant plume may have migrated under Hotel Street, toward the project site. The Honolulu Police Department file indicated the presence of four in-use USTs close to the northeastern boundary of the project site, and that a citation was issued in March 2006 for UST monitoring record violations. Based on this citation, ETC was unable to preclude that contaminant migration from these USTs had impacted the project site.

ETC conducted a Limited Phase II ESA to further investigate potential areas of on-site contamination resulting from the MTL Bus Facility and Honolulu Police Department. ETC contracted the construction of three site-specific soil borings along with two temporary water monitoring wells (See *Appendix I* for specific locations). Three soil samples and two groundwater samples were collected from this effort and analyzed for petroleum content. Results indicated that the total petroleum hydrocarbons were not detected above method detection limits in either the soil or groundwater sample collected from the site. ETC therefore concluded that the project site has not been significantly impacted by petroleum migration from the former MTL Bus Facility or the Honolulu Police Department.

Anticipated Impacts and Mitigation Measures
Based on the 2006 Phase I and Phase II ESAs, no hazardous materials, hazardous waste, soil or water contamination was discovered on the project site. No mitigation measures will be necessary to treat existing hazardous materials.

Use or transport of hazardous materials is not anticipated in association with the ATC and JTMC operations. No significant adverse impacts associated with hazardous materials are anticipated with future project site operations.

3.13 WATER QUALITY

Surface Water Quality
Existing Conditions
Generally, surface water quality in Hawai'i is excellent. However, both stream and coastal waters are susceptible to point-source (from a discrete or distinct source) and nonpoint-source (from a diffuse or widely spread, scattered unconcentrated source) pollution.

There are no surface water features on or in the vicinity of the project site. Existing runoff from the site flows makai toward the ocean. Runoff from the site flows towards the King Street storm water catch basins. The site is primarily impervious, and existing runoff is moderately rapid.

Anticipated Impacts and Mitigation Measures
The proposed Alapa'i project will increase the amount of pervious surface on the site through the addition of new lawn, landscaping, shrubs and trees. Construction of the Alapa'i Project will modify the quantity of the water drainage and runoff by decreasing the amount of pervious surface *(See Appendix G, Civil Basis of Design for additional information)*.

An application for a National Pollutant Discharge Elimination System (NPDES) general coverage permit will be submitted for the anticipated construction activities associated with the project. The proposed development will comply with *Chapter 11-55, Water Pollution Control, Hawai'i Administrative Rules, Department of Health*, which requires an NPDES permit for certain construction activities. A Notice of Intent (NOI) will be submitted according to the 30-day requirement stipulated in the applicable section of *Hawai'i Administrative Rules (HAR), Title 11, Chapter 55-4(a)(5), Application for NPDES Permit*. Under provisions of the NPDES permit, quantities, constituents and velocities of drainage water must not exceed pre-development levels. Mitigation measures include using landscaping, screening and oil-water separators, where practical and appropriate. Oil-water separators and screening devices may be utilized to prevent trash and oil from parking areas from reaching surface waters. Best Management Practices such as silt fencing, hay bales and other siltation-reducing devices will be utilized to mitigate impacts during construction.

Groundwater Quality
Existing Conditions
During the Phase II Environmental Site Assessment *(Appendix I)* investigation process, EnviroServices & Training Center (ETC), LLC installed two temporary groundwater monitoring wells and analyzed groundwater samples for the presence of petroleum hydrocarbons. Analytical data from the groundwater samples indicated that total petroleum hydrocarbons were not detected above the method detection limits in either the soil or groundwater sample collected from the site.

Anticipated Impacts and Mitigation Measures
Based on field screening and analytical data, ETC believes that the site has not been significantly impacted by petroleum migration from the former MTL Bus Facility and the Honolulu Police Department's USTs (See *Section 3.12 Hazardous Materials* for full description).

3.14 PUBLIC SAFETY SERVICES

3.14.1 Police
Downtown Honolulu is served by Honolulu Police Department (HPD) District 1 which covers the area from Liliha Street to Punahou Street, from Round Top Drive to Ala Moana Beach, including Aloha Tower. District 1 includes Beats 150-158, 160-161, 163-165, 167-172, 174-176, and 178-180. The main police station for the island of O'ahu and HPD administrative office headquarters is the Alapa'i Station located at 801 South Beretania Street (beat 163 on the district beat map). An HPD substation is located in Chinatown at the corner of Mauna Kea and North Hotel Streets. It has workspace for District 1 patrol officers, detectives, and bicycle detail.

3.14.2 Fire

The Downtown region is in the 1st Battalion area designated by the Honolulu Fire Department. In the event of a fire at the proposed project, three engines, a ladder truck and a Battalion Chief would respond. Response to the project site is as follows:

- Station 9: The Kakaʻako Fire Station is located at the corner Queen Street and Paki Street. It is an engine and tower company.
- Station 1: The Central Fire Station is located at 104 South Beretania Street. Station 1 has an engine company.
- Station 2: The Pāwaʻa Fire Station Central Fire Station is located at 1610 Makaloa Street. It has a ladder company, engine company and rescue unit.

First response for medical and fire emergencies at the project site and the surrounding area is provided by Station 9, the Kakaʻako Fire Station. Station 9 is 0.309 miles from the project site and the response time would be approximately 1 minute. In the event of a first response or alarm fire, Station 9 would send a ladder and engine company. Stations 1 and 2 would both send engine companies, and Station 2 would also send a ladder company. The 1st Battalion Chief would respond as well.

HFD works with the Emergency Medical Services, or EMS, who dispatches the closest available unit. This may be either an EMS ambulance or a fire company and depends on the type of emergency and location. Since there are only 16 EMS stations on Oʻahu, fire companies are frequently the first responder. Depending on the traffic, it takes about two to five minutes to reach the project area.

3.14.3 Emergency Medical Services

The Honolulu Emergency Services Department (EMS) is responsible for providing the following an efficient, effective and economical operation of the pre-hospital emergency medical care and emergency ambulance service; a comprehensive aquatic safety program at City beach parks, including lifeguard services; injury prevention, public education and public health programs; and coordination with other agencies and jurisdictions.

The EMS has 18 Advanced Life Support Ambulance vehicles and two Rapid Response Paramedic vehicles in Honolulu and maintains a staff of over 200 trained personnel. In an emergency response, either EMS personnel or the nearest fire station is notified as part of a co-response agreement with other emergency responders. Average response time depending on the nature of the call is 4-15 minutes.

Anticipated Impacts and Mitigation Measures

The proposed project would increase the on-site population of employees by adding the JTMC office building. The above-mentioned agencies may be housed fully or partially in the new JTMC. This increase in population may require additional security and police protection services. As needed, private security could be utilized to lessen the need for public police protection. Entry to the JTMC parking and office areas will be gate and security attendant controlled. Design measures will ensure that public spaces are well-lit and visible as to deter the potential for crime-related opportunities.

Similarly, the project would impact fire protection and medical emergency services with a slight increase in the number of employees in the vicinity. Design measures for the building will meet fire flow and relevant building code and Uniform Fire Code requirements. Staff training initiated by retail and dining vendors will also provide an additional measure of safety and emergency response preparation.

3.15 RECREATION

Existing Conditions

The Alapa'i Transit Center project is located along "LP 13 Young Street", a Priority One Park Link of the Lei of Parks (Honolulu Bicycle Master Plan (HBMP), 1999). The intention of Priority One Park Links is to provide a continuous route through the major parks and attractions. Lei of Parks connective corridors aim to provide bicycle-friendly linkage and space for walkers, runners and families to enjoy the city's parks and waterfront setting.

Young Street Park Boulevard is an essential east-west link in the Lei of Parks. The objective is to provide a park-like atmosphere along the connector through landscape and hardscape. Furthermore, the HBMP designates the section of Hotel Street from Alapa'i Street to Ward Avenue as part of Bike-Friendly Route No. 1. Labeled FR 12, the HBMP planned this section of Hotel Street for a bike lane 0.2 miles in length.

Existing conditions on the Alapa'i site provide no connectivity along the Young Street Park Boulevard, i.e. Hotel Street. Hotel Street is closed to through traffic and used as a municipal parking lot. Adjacent to the west of the site is the City's Municipal building and covered parking facility. Above the parking facility is the Civic Center park which is a grassy landscaped area with pedestrian-oriented walkways. There are no visible pathways marked "Bike Path." To the north of the site is the Honolulu Police Department Headquarters with a similar park-like area with landscaped, pedestrian-oriented, connective walkways above their parking facility.

~~The section of King Street on the Makai side of the project site is noted in the Bikeway Master Plan as part of the Central Bike Corridor, one of the three 'Ewa-Diamond Head Corridors in the Regional Bikeway Concept.~~

~~This portion of King Street is also designated as a Priority 1 access route for connecting the City's "Lei of Parks." The Lei of Parks is a system of pedestrian friendly paths and bike lanes linking regional and local parks in urban Honolulu.~~

Anticipated Impacts and Mitigation Measures

The project is designed to meet the objectives of the HBMP by providing connectivity from Alapa'i Street to Hotel Street via a pedestrian and bicycle-friendly walkway that is pleasantly landscaped, shaded by canopy trees and kept separate from the adjacent bus circulation area. The walkway will centrally traverse the site in an east-west direction, match the style and design of pathways provided in the Civic Center park and HPD sites, and fulfill the objective of the HBMP Young Streek Park Boulevard Bike-Friendly Route No. 1 *(Figure 2.1)*. ~~The project will incorporate usable open space plazas, and park-like areas into the project's design. To improve the pedestrian network along Hotel Street, the project will implement a pedestrian path that will meander through the open spaces surrounding the JTMC building and a broad promenade~~

~~that will serve as a major pedestrian walkway and passenger gathering area for bus transit users. The pedestrian path, open spaces, and promenade will align with the current Hotel Street Mall across Alapa'i Street at the Civic Center site to preserve the pedestrian connectivity from Hotel Street. The open plaza at the bus transit building will serve as a node between the new promenade and Hotel Street Mall, strengthening the connection between the Civic Center and Alapa'i sites.~~ These open spaces and paths will blend in with the HPD green space to expand the park-like setting of the Alapa'i Precinct and pedestrian connectivity encouraged by the City and County's "Lei of Parks" concept. The project will not impact existing street configuration or bikeway activity.

For safety, the on-site pedestrian traffic and vehicular traffic will be separated. Pedestrians will not be allowed to enter and walk through the bus staging area to get to the bus transit station. Pedestrian traffic will be controlled and directed along the existing street sidewalks to pedestrian access points along Alapa'i Street, and Kealamakai ~~Makai~~ Street. Planting and low profile site features, such as low screen walls and berms, along the perimeter landscaped areas will be installed to discourage and block pedestrian access directly into the staging area.

3.16 POTENTIAL CUMULATIVE AND SECONDARY IMPACTS

Cumulative effects are impacts, which result from the incremental effects of an activity when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertake such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The project is not anticipated to generate substantial cumulative impacts. The new facilities will provide support services to help manage the increasingly congested traffic conditions on the island. Implementation of the project will actually help to offset the cumulative traffic impacts of growth for the next generations.

Secondary effects are impacts that are associated with, but do not result directly from, an activity. The environmental analysis of the proposed project addresses full development of the facilities in the context of known planned or approved land uses in the vicinity.

A minor increase in City jobs may result from the proposed project, however this would have incidental impacts on population. Overall, the project's secondary impact would be a beneficial effect on public transportation facilities and emergency response operations. This would result in tertiary impacts such as reduced commute times (happier commuters), faster emergency response, safer transportation systems, and other qualitative public benefits that are difficult to quantify.

4.0 ALTERNATIVES TO THE PROPOSED PROJECT

4.0 ALTERNATIVES TO THE PROPOSED PROJECT

This Final ~~Draft~~ Environmental Assessment evaluates alternatives to the proposed project described in *Section 2.0*. Future land use on the project site must be transit-related according to an FTA condition of funding for the purchase of the site. The following provides discussion of the alternatives to the proposed project.

4.1 ALTERNATIVE A – NO-ACTION ALTERNATIVE

The "no-action" is the baseline against which all other alternatives are measured. "No-action" refers to the future site and program conditions that will likely result should the proposed project not proceed.

This alternative will result in the continued use of the site as a bus transit center. A portion of the site would continue to be used as an overflow parking lot. Construction of the proposed ATC and JTMC facilities would not occur and the anticipated improvements to public transit operations would be foregone. This alternative would not generate new environmental impacts.

Potential effects of the no-action alternative are:

- Un-permitted vehicle parking along the site perimeter would continue.
- No restroom facilities (besides portables) would be provided for passengers and bus drivers.
- The site would continue to attract a homeless population.
- The City and County would continue to under-utilize the existing space.
- New municipal office space would be foregone and existing municipal facilities would continue to be challenged by lack of opportunities for expansion or more money expended for office rental or purchase.
- Traffic management agencies (DTS, DOT) would continue to operate separate day-to-day traffic incident management operations.
- Traffic management agencies (DTS, DOT) and emergency management agencies (DEM, EMS) would continue to operate separate emergency incident management systems.
- Agencies would continue to operate with inadequate facilities, equipment and ITS systems.
- Accommodation for future growth, staffing and technology would not be provided.
- Continued separation of agencies would impede efficient joint coordination.
- Federal funding slated for this project would be lost.
- City and County funds slated for the project could potentially be re-allocated to other projects.
- FTA mandate of transit-related site uses would not be fully met.
- Additional traffic would not be generated.

Due to the many potential benefits of the proposed site redevelopment, the "no-action" alternative was not considered.

4.2 ALTERNATIVE B – ALTERNATIVE LOCATIONS FOR THE PROPOSED PROJECT

The City Department of Transportation Services (DTS) owns the project site in fee, and, as the applicant, they envision a long-term, purposeful site redevelopment to improve existing bus transit operations as well as provide additional governmental office space for critical state and municipal services. As the site is currently under-utilized, and land use regulations allow and encourage the proposed redevelopment, alternative project sites were not considered.

4.3 ALTERNATIVE C – REPLACEMENT ATC AND PARKING LOT

Originally, DTS's concept was to redevelop the bus transit center and parking lot. This alternative would yield results similar to the "no-action" alternative, with the exception of improved bus circulation, improved pedestrian safety and parking layout. Although this alternative would potentially alleviate parking demand for City employees, it would not meet FTA funding conditions of maintaining transit-related uses on-site. It would also represent severe underutilization of the site. This alternative was not considered in order to meet the FTA mandate and pursue more efficient use of the project site.

4.4 ALTERNATIVE D – REPLACEMENT ATC AND TWO-STORY TRAFFIC MANAGEMENT CENTER (TMC)

This alternative would involve the construction of a replacement ATC on the makai portion of the site and a new two-story TMC on the mauka portion of the site. The ATC would be constructed as described in Chapter 2.0 Project Description. Federal funding was granted for construction of a new TMC. The two-story TMC design was based on the existing SunGuide prototype TMC (State) at 32,000 square feet. The two-story TMC would provide space for DTS Traffic Signals and Technology Division (TSTD) only. A main traffic control center with monitor displays would be located on the ground floor. Office space for DTS TS&TD including their traffic control center and staff office spaces would be provided on the first and second floors. Monitor displays would be visible from either floor. Approximately 80 parking spaces would be provided. Facilities and access would comply with the Americans with Disabilities Act of 1990 (ADA).

This alternative would result in less traffic, noise and air quality impacts. At a maximum of 40-feet in height, the two-story TMC would not be as visually prominent as the proposed JTMC. This would provide less of an impact to the Cooke Street view corridor as the proposed project.

This alternative would provide necessary improvements to the ATC, and necessary upgrades to support DTS functions. However, this alternative would also preclude EMS, DEM, DOT, HPD and HFD from jointly using the ITS technology. This alternative would represent moderate under-utilization of the site. With the need for additional governmental offices and the opportunity to jointly locate agencies in one facility with shared state of the art ITS technologies, Alternative D was considered, but not pursued.

4.5 ALTERNATIVE E – PROPOSED PROJECT WITH ALTERNATIVE JTMC BUILDING ORIENTATION AND SITE PLAN LAYOUT

This alternative would involve construction of the JTMC with a mauka-makai building orientation on the eastern portion of the project site. The ATC and bus circulation area would

be located in the western portion of the site. This alternative site layout was initially considered, however, the layout and mauka-makai JTMC building orientation resulted in more disadvantages than advantages.

With Mauka-Makai JTMC Orientation

- Meets objective of PUCDP and Hawai'i Capital SD to encourage mauka-makai building orientation and preserve views of Punchbowl
- Unable to meet Federal force protection setback requirements
- Impedes east-west pedestrian/bicycle access flow through the site
- Layout of bus circulation pattern compromises pedestrian safety from JTMC to ATC
- Incongruous spatial relationship between JTMC and HPD parking garage/upper deck outdoor plaza area due to grade separation
- Limited southern building exposure does not take advantage of natural daylighting potential
- JTMC building is exposed to vehicle access on three sides (Kealamakai Street, King Street, and ATC bus circulation corridor). Multiple access points compromise building surveillance and security

Without Mauka-Makai JTMC Orientation (Proposed Project)

- Does not provide mauka-makai building orientation, however, impacts on Punchbowl views are minimal
- Meets Federal force protection setback requirements
- Provides east-west pedestrian/bicycle access flow through the site, consistent with HBMP (1999).
- Site layout contributes to greater operational safety of bus transit center and of pedestrian traffic by providing direct access from Alapai Street and east-west pedestrian/bike corridor
- Site layout provides a better spatial relationship between JTMC and HPD parking garage by concealing a majority of the grade separation
- Provides desirable southern building exposure, increasing exposure to daylight and meeting green-building daylighting standards
- JTMC building orientation exposes two sides to vehicle access (Kealamakai Street, and ATC bus circulation corridor), increasing building security and ease of surveillance

For the above reasons, the mauka-makai building orientation was not pursued further. *Figure 4.1* shows for the alternative site layout.

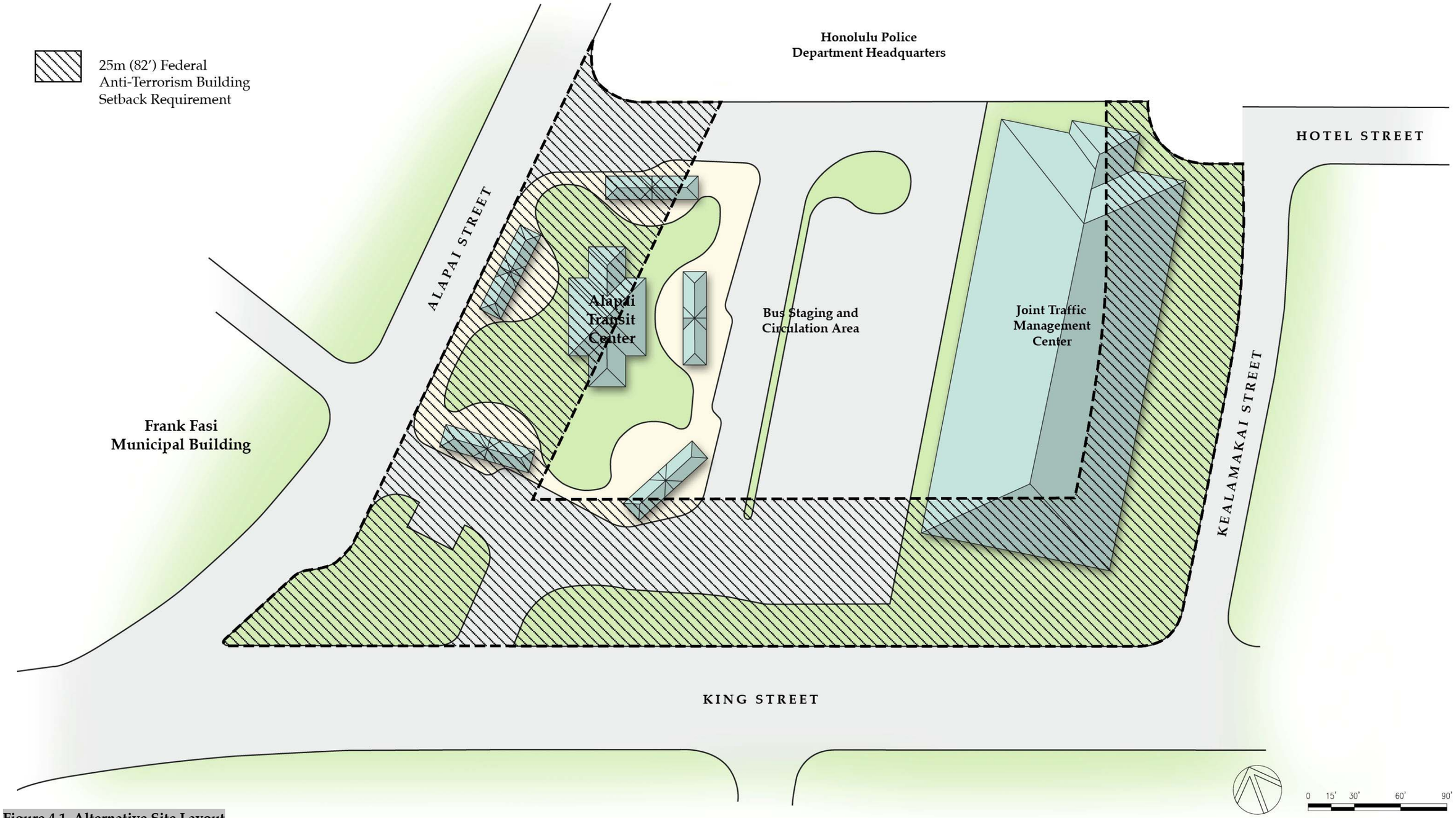


Figure 4.1 Alternative Site Layout

5.0 PLANS AND POLICIES

5.0 PLANS AND POLICIES

In this chapter, the project's consistency with applicable land use policies set forth in the Hawai'i State Plan, the State Functional Plan on Transportation, State Land Use District, General Plan, Primary Urban Center Development Plan, Land Use Ordinance and Americans with Disabilities Act are discussed.

5.1 HAWAI'I STATE PLAN

The Hawai'i State Plan establishes a statewide planning system that provides goals, objectives, and policies which detail property directions and concerns of the State of Hawai'i. Priority guidelines relating to the economy, housing, population growth, facility systems, and the physical environment will be discussed as they relate to the Alapa'i Project.

It is the goal of the State, under the Hawai'i State Planning Act (Chapter 226, HRS), to achieve the following:

- A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai'i present and future generations.
- A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.
- Physical, social, and economic well-being, for individuals and families in Hawai'i, that nourishes a sense of community responsibility, of caring, and of participation in community life (Chapter 226-4, HRS).

Specific objectivies and policies of the State Plan that pertain to the project are as follows:

Section 226-9 Objective and policies for the economy--federal expenditures.

(a) Planning for the State's economy with regard to federal expenditures shall be directed towards achievement of the objective of a stable federal investment base as an integral component of Hawai'i's economy.

(b) To achieve the federal expenditures objective, it shall be the policy of this State to:

(1) Encourage the sustained flow of federal expenditures in Hawai'i that generates long-term government civilian employment.

(2) Promote Hawai'i's supportive role in national defense.

(5) Promote federal use of local commodities, services, and facilities available in Hawai'i.

(6) Strengthen federal-state-county communication and coordination in all federal activities that affect Hawai'i.

Section 226-10.5 Objectives and policies for the economy--information industry.

(a) Planning for the State's economy with regard to the information industry shall be directed toward the achievement of the objective of positioning Hawai'i as the leading dealer in information businesses and services in the Pacific Rim.

(b)To achieve the information industry objective, it shall be the policy of this State to:

(2) Facilitate the development of new business and service ventures in the information industry which will provide employment opportunities for the people of Hawai'i;

(3) Encourage greater cooperation between the public and private sectors in developing and maintaining a well- designed information industry;

Section 226-14 Objective and policies for facility systems--in general.

(a) Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.

(b) To achieve the general facility systems objective, it shall be the policy of this State to:

(1) Accommodate the needs of Hawai'i's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.

(2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.

(4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.

Section 226-17 Objectives and policies for facility systems--transportation.

Planning for the State's facility systems with regard to transportation shall be directed towards the achievement of the following objectives:

(1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.

(2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.

(b) To achieve the transportation objectives, it shall be the policy of this State to:

(2) Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives;

(6) Encourage transportation systems that serve to accommodate present and future development needs of communities;

(12) Coordinate intergovernmental land use and transportation planning activities to ensure the timely delivery of supporting transportation infrastructure in order to accommodate planned growth objectives;

Section 226-26 Objectives and policies for socio-cultural advancement--public safety.

Planning for the State's socio- cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:

(1) Assurance of public safety and adequate protection of life and property for all people.

(2) Optimum organizational readiness and capability in all phases of emergency management to maintain the strength, resources, and social and economic well-being of the community in the event of civil disruptions, wars, natural disasters, and other major disturbances.

(d) To further achieve public safety objectives related to emergency management, it shall be the policy of this State to:

(1) Ensure that responsible organizations are in a proper state of readiness to respond to major war-related, natural, or technological disasters and civil disturbances at all times.

(2) Enhance the coordination between emergency management programs throughout the State.

Discussion:
The proposed Alapa'i project is consistent with the objectives and policies of the State Plan. The project strives to promote effective transportation services and coordinated emergency operations in the State of Hawai'i.

5.2 STATE TRANSPORTATION FUNCTIONAL PLAN

The Hawai'i State Plan provides for the development of State Functional Plans (SFP) in the areas of agriculture, conservation lands, education, employment, energy, health, higher education, historic preservation, housing, human services, recreation, tourism, transportation and water resources development. SFP are the primary implementing mechanisms for the Hawai'i State Plan. While the State Plan establishes long-term objectives for Hawai'i, the SFP focuses on policies and priority actions which can be implemented in the short term. The latest Transportation Functional Plan (TFP) was adopted in 1991. The following list represents the Department of Transportation's underlying strategies for the (TFP):

1) Construct facility and infrastructure improvements in support of Hawai'i's thriving economy and growing population base.
2) Develop a transportation system balanced with an array of new alternatives.
3) Implement Transportation Systems Management (TSM) to maximize the use of existing facilities and systems.
4) Foster innovation and use of new technology in transportation.
5) Maximize joint efforts with the private sector.
6) Pursue land use initiatives which help reduce travel demand.
7) Encourage resident quality-of-life improvements through improved mobility opportunities and travel reduction.

Discussion:
The proposed Alapa'i project is consistent with the objectives and policies of the Transportation Functional Plan. The project would incorporate the use of new technology in order to maximize the effectiveness of existing transportation systems and facilities. The project also includes a joint agency effort to improve travel, public safety, and quality of life improvements for Hawai'i residents.

5.3 HAWAI'I 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 in the area. All State lands are classified by the State Land Use Commission, as Urban, Rural, Agricultural, or Conservation, with consideration given to the General Plan of the County.

Discussion: The proposed project site lands are designated Urban District. The Hawai'i State Plan, Chapter 205-2 (b) Hawai'i Revised Statutes, states that:

"Urban districts shall include activities or uses as provided by ordinances or regulations of the county within which the urban district is situated."

Discussion:
The proposed project is consistent with this Statute, as the proposed land uses are consistent with City and County of Honolulu General Plan, Primary Urban Center Development Plan, and Land Use Ordinance, as discussed below.

5.4 CITY AND COUNTY OF HONOLULU GENERAL PLAN

Adopted by resolution in 1977, the 1992 revised edition of the General Plan for the City and County of Honolulu sets forth the long-range objectives for the general welfare and prosperity of the people of O'ahu and broad policies to attain those objectives. The General Plan provides objectives and policies intended to guide and coordinate City land use planning and regulation, and budgeting for operations and capital improvements.

Alapa'i Transit Center and Joint Traffic Management Center will be consistent with the objectives and policies of the City and County of Honolulu General Plan.

Transportation and Utilities

Objective A: To create a transportation system which will enable people and goods to move safely, efficiently, and at a reasonable cost; serve all people, including the poor, the elderly, and the physically handicapped; and offer a variety of attractive and convenient modes of travel.

Policy 4~~5~~: Improve roads in existing communities to reduce congestion and eliminate unsafe conditions.

Physical Development and Urban Design

Objective A: To coordinate changes in the physical environment of O'ahu to ensure that all new developments are timely, well-designed, and appropriate for the areas in which they will be located.

Policy 1: Plan ~~Provide~~ for the construction of new public facilities and utilities in the various parts of the Island according to the following order of priority; first, in the primary urban center; second, in the secondary urban center at Kapolei; and third, in the urban fringe and rural areas.

Objective B: To develop Honolulu (Waialae-Kahala to Halawa), Aiea, and Pearl City as the Island's primary urban center.

Policy 1: Stimulate development in the primary urban center by means of the City and County's capital improvement program and State and Federal grant and loan programs.

Public Safety

Objective A: To prevent and control crime and maintain public order.

Policy 1: Provide a safe environment for visitors on O'ahu.

Objective B: To protect the people of O'ahu and their property against natural disasters and other emergencies, traffic and fire hazards, and unsafe conditions.

Policy 4: Cooperate with State and Federal agencies to provide tsunami warning and protection for O'ahu.

Policy 5: Cooperate with State and Federal agencies to provide protection from war, civil disruptions and other major disturbances.

Policy 6: Reduce hazardous traffic conditions.

Policy 8: Provide adequate search and rescue and disaster response services.

Policy 11: Develop civil defense plans and programs to protect and promote public health, safety and welfare of the people.

Policy 12: Provide educational materials on civil defense preparedness, fire protection, traffic hazards and other unsafe conditions.

Discussion:
The proposed project promotes the objectives of the City and County General Plan by serving as a public facility for improvement of traffic operations, improvement of public safety and improvement of emergency/disaster response. The proposed project is located in the Primary Urban Center and is partially federally funded.

5.5 PRIMARY URBAN CENTER DEVELOPMENT PLAN

The Primary Urban Center Development Plan (PUCDP) by the City and County of Honolulu Department of Planning and Permitting establishes policy to shape the growth and development of the PUC over the next 20 years. The planning goal of the PUCDP is to enhance the livability of the PUC while accommodating a moderate amount of growth. The PUCDP establishes the region's role in O'ahu's development pattern by establishing policies in the following areas:

- Natural, historic, cultural and scenic resources
- Parks and recreation areas
- Lower- and higher-density residential neighborhoods
- Commercial and visitor industry facilities
- Military installations, transportation centers and industrial areas
- Design of streets and buildings
- Neighborhood planning
- Transportation networks and systems

The project site is designated Institutional on the PUCDP Land Use Map.

Section 2.5 A Balanced Transportation System Provides Mobility

Discussion:
The project will promote a balanced transportation system through consolidation of traffic management, dispatching, and monitoring operations of each agency in the JTMC to increase management efficiency and response times. The JTMC will be equipped with highly-developed intelligent transportation systems (ITS). All agencies in the JTMC will be able to benefit from this technology, benefiting the agency and maximizing the investment return. Efficient management of the existing roadway system and faster incident response times will allow optimum utilization of existing roadway capacity.

The project will include a mid block promenade with shade trees and pathways, promoting connectivity for bus passengers and pedestrians, and emphasizing the regional pedestrian network. Sidewalks, paths and bus shelters are designed to assure excellent mobility for disabled individuals and access to the HandiVan pickup/dropoff area.

Section 3.1.2 Policies

- Preserve Panoramic views of natural landmarks and urban skyline

Discussion:
The project site lies within the Cooke Street mauka-makai (northeast-southwest) view corridor. The PUCDP Section 3.1.1.2, Figure 3.1, and Map A-1 illustrate that mauka views of Punchbowl from Kaka'ako along Cooke Street should be preserved. The proposed JTMC building placement is in line with this view corridor and its' northwest-southeast orientation suggests disregard to the DP's intention. The JTMC's northwest-southeast orientation is, however, necessary to meet Federal anti-terrorist design standards that would not have been achievable with a mauka-makai building orientation. The JTMC design will adhere to the 100' height limit specified by the Hawai'i Capital Special District Standards and will create a stepped roofline to further minimize viewshed impacts.

Section 3.1.3 Guidelines

Guideline 3.1.3.3 Urban Skyline and Mauka-Makai Views

- Maintain visual prominence of important districts by allowing a greater height and massing of buildings, such as Downtown area.
- Apart from Downtown and other central Honolulu locations, promote mid-rise or low-rise scale for new buildings.
- Preserve the Panoramic views indicated schematically by *Figure 3.1* by establishing building height limits and setbacks that are based on viewplane analyses to determine the sight lines and desired view dimensions and characteristics: -From Kaka'ako Waterfront Park toward Punchbowl and the Ko'olau Range
- Preserve and enhance significant mauka-makai view corridors along major collectors streets indicated in Figure 3.1 through a combination of zoning controls and streetscape improvements.

Discussion:
The proposed project is consistent with the above guidelines, as they allow for greater massing and building height within the downtown district, within adopted zoning standards. To limit the impact to and protect the mauka views to Punchbowl Crater from the shoreline, the JTMC will be limited to the 100' maximum height allowed by the Hawai'i Capital Special District. The JTMC structure will also be stepped-down at the building ends to minimize viewing impacts to the crater from the shoreline and to give the building an aesthetically-pleasing profile. At an elevation of 400' above sea level, the Punchbowl Crater would still be approximately 275' higher than the top of the JTMC building (approximately 125' above sea level). At nearly 2 miles from the shoreline, the Punchbowl Crater will be visible above the JTMC building from the shoreline, and vice versa, the shoreline will be visible above the JTMC building from Punchbowl Crater.

Section 3.5.2 Policies

- Implement land use strategies to achieve a balanced transportation system
- Improve the public transit system, including development of a rapid transit component
- Implement transportation demand management (TDM) strategies
- Implement the Honolulu Bicycle Master Plan
- Enhance and improve pedestrian mobility

Discussion:
The project complies with the above Policies in Section 3.5.2 by facilitating the operations of agencies most closely connected to transportation management, including the anticipated Mass Transit agency. Implementation of the project will facilitate installation of TDM strategies,

development of rapid transit, and pedestrian safety/mobility. The project seeks to implement the Honolulu Bicycle Master Plan's "Lei of Parks" concept through emphasis on pedestrian connectivity.

Section 3.5.3 Guidelines

- The Project should stimulate transit-oriented development on infill and redevelop the properties within Bus Rapid Transit corridor.
- Implement Honolulu's Bicycle Master Plan
- Establish pedestrian districts

Discussion:
The project is considered infill development, is located adjacent to bus transit hub, and is a major investment in public infrastructure. Also, see discussion under Section 3.5.2 above.

Appendix B Section 3.2 Potential Implementation Strategies for Cultivating Livable Neighborhoods

- Apply existing zoning
- Revitalize older commercial streets by providing municipal parking lots
- Design municipal parking to be convenient
- Improve pedestrian network
- Create midblock pathway
- Create usable open space
- Plant shade trees

Discussion:
The project will implement the above strategies, specifically to revitalize the site with pedestrian friendly open space and roadway frontages. Alapa'i Street and King Street frontages will be public pedestrian-friendly open space with landscaping and shade trees. A mid-block open shared pedestrian/bicycle promenade will provide walkways, shade trees and bus passenger shelters.

Appendix B Section 3.4 Potential Implementation Strategies for Developing a Balanced Transportation System

- Coordinate land use policies and regulations with transit development
- Support transit and manage transportation demand
- Improve roadway planning and design
- Improve bicycling facilities

Discussion:
This project is consistent with the above strategies and will facilitate enhanced transportation networks and systems for residents and visitors. The JTMC will add a high density government employment center adjacent to the bus transit route. The project will help manage transportation demand through the joint-location of transportation management and emergency response agencies. Improved roadway planning, roadway design, and bicycling facilities are anticipated results of project implementation.

PUCDP Land Use Map A-5 PUC-Central

- The project site is designated "Institutional" on the PUCDP's Land Use Map.

- A "Pedestrian Network" is designation to run adjacent and mauka of the site, through the HPD property.

Discussion:
The "Institutional" designation includes the Civic Center and other institutional campuses. The project site is considered part of the Civic Center and is consistent with the "Institutional" Land Use designation.

Currently, the HPD site provides a pedestrian network above their parking structure. The project will also support the designated "Pedestrian Network" through provision of a mid-block pathway providing connectivity for the Hotel and Young Street corridor. In the event that HPD decides to construct additional offices above their parking structure, the Alapa'i site will provide an alternative circulation route.

5.6 PRIMARY URBAN CENTER PUBLIC INFRASTRUCTURE MAP (PUC PIM)

The project site has an existing "Government Building" (GB) symbol on the PUC PIM (#125 City Hall Annex Office Complex and Alapa'i Transportation Center). The project is in conformance with the designation and the PUC PIM will not require revision.

5.7 CITY AND COUNTY OF HONOLULU LAND USE ORDINANCE

The purpose of the LUO is to regulate land use in a manner that will encourage orderly development in accordance with adopted land use policies, including the County General Plan and development plans. The LUO is also intended to provide reasonable development and design standards. These standards are applicable to the location, height, bulk and size of structures, yard areas, off-street parking facilities, and open spaces, and the use of structures and land for agriculture, industry, business, residences or other purposes (Revised Ordinance for the City and County of Honolulu, Chapter 21).

Discussion:
The subject property is designated as "BMX-3: Business Mixed-Use District" by the City and County of Honolulu's Land Use Ordinance *(Figure 1.4)*. Public uses and structures such as office buildings and facilities are permitted uses in BMX-3 district.

The proposed bus terminal, parking areas, JTMC, landscaping, outdoor lighting, irrigation system, pathways and other support facilities will comply with Article 4, General Development Standards, of the LUO, and the Hawai'i Capital Special District guidelines where applicable. The parking and loading provisions will comply with requirements in Article 6, Off-street Parking and Loading. See *Section 2.0 Tables 2-1 to 2-5* for Site Development Standards.

5.8 HAWAI'I CAPITAL SPECIAL DISTRICT GUIDELINES

The project is located within the Hawai'i Capital Special District (SD) and a Special District Permit will be required for the proposed project. The SD ~~Special District~~ guidelines are provided to guide aesthetic and architectural aspects of project development. The Hawai'i Capital SD ~~Special District~~ provides guidelines for height, roofing, façade treatment, entrance, arcade and porch design, doors, windows, building materials, color scheme, courtyard, paving,

signs, lighting, landscaping and parking. The proposed project is located within the Alapa'i Precinct and applicable guidelines for the Alapa'i Precinct are listed below:

- Height Limit: 100 feet
- Open Space requirement: 40%
- Density and design compatibility with surrounding precincts
- Orient structures to minimize intrusion into mauka-makai views, especially to and from Punchbowl
- Minimize views of parking, service areas and driveways to preserve park-like setting of the Hawaii Capital Special District

Discussion:
To limit the impact to and protect the mauka views to Punchbowl Crater from the shoreline, the JTMC will be limited to the 100' maximum height allowed by the Hawai'i Capital SD. The proposed JTMC building's northwest-southeast orientation suggests disregard to mauka-makai views, however, this orientation is necessary to meet Federal anti-terrorist design standards that would not have been achievable with a mauka-makai building orientation (for setbacks from public roadways, see Figure 4.1). The JTMC design will adhere to the 100' height limit specified by the Hawai'i Capital Special District standards and will create a stepped roofline to further minimize viewshed impacts. Please see Section 5.5 above for further discussion of viewshed impacts. The project will be designed to complement the design of surrounding areas while providing generous setbacks and park-like open space landscaped with canopy trees. The City will pursue a waiver of the 40% open space requirement in order to accommodate the proposed bus transit center, municipal office space and parking requirements on-site. ~~The project will comply with the regulations of the Hawai'i Capital Special District guidelines.~~ These issues will be fully discussed in the forthcoming Hawai'i Capital Special District Permit application.

5.9 HAWAI'I STATE CAPITAL MASTER PLAN

The Hawai'i State Capital Master Plan (CMP) was written by John Carl Warnecke & Associates in 1968 to guide future planning efforts in the Civic Center. A Policy Committee and Citizens Committee jointly set forth guidelines in 1964 that are summarized in the 1968 CMP as Goals and Objectives. Applicable Goals and Objectives are listed below.

- The Civic Center of Honolulu should encompass major government structures.
- The Civic Center of Honolulu is ideally located adjacent to the central business district where it can best serve the general public.
- The historic buildings form the core of the Civic Center and governmental structures shall be related to this core.
- The structures and spaces within the Civic Center must be visually correlated. To this end plans will provide adequate and modulated open spaces unified by landscaping.
- The Civic Center must be related to its surrounding environment through land use planning, architectural design and functional relationships and surrounding land uses must be compatible.
- Multiple usage of civic center facilities should be encouraged.

Discussion:
The proposed project will meet the spirit of the plan by providing a major governmental structure related to the Civic Center core that is intended for usage by multiple agencies. Architectural design, site layout and landscaping would be visually harmonious with surrounding land uses.

5.10 AMERICANS WITH DISABILITIES ACT OF 1991

In 1991, the Federal government enacted the American with Disabilities Act to provide equal accessibility for persons with disabilities. Part of this statue is having building design consider the needs of persons with disabilities. Chapter 103-50 of the HRS states, "…all plans and specifications for the construction of public buildings, facilities, and sites shall be prepared so that the buildings, facilities, and sites are accessible to and usable by persons with disabilities." The disability and communication access board shall adopt rules for the design of buildings, facilities, and site, by or on behalf of the State and counties.

Discussion:
The intent of the proposed Alapa'i Transit Center is to serve as a public facility, and provide ADA accessible facilities for the community and visitors. The project will also provide a pickup/drop off area for the HandiVan. The proposed JTMC building design will also comply with ADA requirements.

6.0 FINDINGS SUPPORTING ANTICIPATED DETERMINATION

6.0 FINDINGS SUPPORTING ANTICIPATED DETERMINATION

6.1 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, the proposed action has been determined to not result in significant adverse effects on the natural or human environment. A Finding of No Significant Impact (FONSI) is anticipated.

6.2 REASONS SUPPORTING THE ANTICIPATED DETERMINATION

The potential impacts of the facilities improvements and future and operation of the proposed Alapa'i Transit Center and Joint Traffic Management Center have been fully examined and discussed in this Draft Environmental Assessment. As stated earlier, there are no significant environmental impacts expected to result from the proposed action. This determination is based on an evaluation of the project vis-a-vis Chapter 343, HRS significance criteria. Per HAR 11-200-12, an action is determined to have a significant impact if it meets any of the following 13 criteria:

(1) Involve an irrevocable loss or destruction of any natural or cultural resources.

As detailed in Section 3.0 of this report, the project does not involve any known loss or destruction of existing natural or cultural resources. Known cultural resources will be preserved. The only specific area of concern is the unknown potential for the inadvertent discovery of subsurface historical or cultural resources, including the unknown possibility of an inadvertent discovery of iwi kūpuna (ancestral remains). The archaeological and cultural landscapes have been documented in studies conducted specifically for the project area. Extensive sampling was conducted to test for the possibility of subsurface resources with two historic properties found.

Given the potential for an inadvertent find, it is recommended that archaeological monitoring be conducted during construction. If any cultural, historic, or archaeological resources are unearthed or ancestral remains are inadvertently discovered, the State Department of Land and Natural Resources, Historic Preservation Division, the O'ahu Island Burial Council representative, and participating interests from lineal descendents and individuals will be notified. The treatment of these resources will be conducted in strict compliance with the applicable historic preservation and burial laws.

(2) Curtail the range of beneficial uses of the environment.

Existing uses conform to existing zoning and land use designations. The project would actually increase beneficial uses of the project site. Project site enhancements will be more compatible with the surrounding park-like setting of the Hawai'i Capital Special District.

(3) 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.

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.

(4) Substantially affects the economic or social welfare of the community or State.

Short-term economic benefits anticipated during construction will include direct, indirect, and induced employment opportunities and multiplier effects but not at a level that would generate significant economic expansion. Long-term economic benefits anticipated during future operations include improved traffic flow, coordinated emergency response to traffic incidents, and increased travel safety.

(5) Substantially affects public health.

The project is consistent with existing land uses and is not expected to affect public health, except in beneficial ways mentioned in item (4) above. However, there will be temporary short-term impacts to air quality emanating from possible dust emissions and temporary degradation of the acoustic environment in the immediate vicinity resulting from construction equipment. Construction-related impacts of noise, dust, and emissions will be mitigated by compliance with the State Department of Health Administrative Rules. Anticipated duration of construction is 24 plus months.

(6) Involves substantial secondary impacts, such as population changes or effects on public facilities.

Secondary impacts such as population changes are not anticipated. A minor increase in City jobs may result from the proposed project, however, this would have incidental impacts on population. The overall impact of the project would be a beneficial effect on public transportation facilities and emergency response operations.

(7) Involves a substantial degradation of environmental quality.

The proposed development will not involve a substantial degradation of environmental quality. To the contrary, improvements to the project area serve to transform a paved lot into a unique multi-agency governmental office building adjacent to a refurbished major bus transit hub.

(8) Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.

The project is a small part of the overall improvement to the character of the Hawai'i Capital Special District area, but is not a precursor for other future actions.

(9) Substantially affects a rare, threatened or endangered species, or its habitat.

The project will not affect rare, threatened or endangered species or habitat. No impact is anticipated.

(10) Detrimentally affects air or water quality or ambient noise levels.

General temporary impacts associated with construction have been identified in this EA. Mitigation measures which are outlined in this EA will be applied during the on-going

construction activity. No detrimental long-term impacts to air, water, or acoustic quality are anticipated with the proposed redevelopment.

(11) Affects or is likely to suffer damage by being located in an environmentally sensitive area such as flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

The entire project site is paved and redevelopment will not affect environmentally sensitive areas. No impact is anticipated.

(12) Substantially affects scenic vistas and view-planes identified in county or state plans or studies.

The project will have a minimal effect on mauka-makai views within the Cooke Street view corridor. The JTMC building will adhere to the adopted 100-foot height limit, and provide a stepped roofline to minimize view impacts.

(13) Require substantial energy consumption.

The JTMC building wil increase power consumption in the downtown area. However, pursuit of LEED Silver certification for the JTMC building will have energy-saving measures such as a selection of energy-efficient systems for air-conditioning, lighting, water heating, and motorized equipment to help to reduce consumption needs and lower overall operational costs.

7.0 LIST OF REFERENCES AND PERSONAL COMMUNICATIONS

7.0 LIST OF REFERENCES AND PERSONAL COMMUNICATIONS

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State of Hawai'i, Department of Land and Natural Resources, State Historic Preservation Division. July 5, 2007. Letter regarding National Historic Preservation Act (NHPA) Section 106 Review – Alapai Transit Center Archaeological Studies, Honolulu Ahupua'a, Kona District, Island of O'ahu, TMK: (1) 2-1-042:013 & 004.

State of Hawai'i, Department of Land and Natural Resources, State Historic Preservation Division. November 29, 2007. Letter regarding Chapter 6E-42 Historic Preservation Review – Archaeological Inventory Survey and Cultural Impact Evaluation for the Alapai Transit Center and Joint Traffic Management Center Project, Honolulu Ahupua'a, Kona District, Island of O'ahu, TMK: (1) 2-1-042:004 & 013.

State of Hawai'i, Department of Land and Natural Resources, State Historic Preservation Division. December 7, 2007. Letter regarding Chapter 6E-42 Historic Preservation Review – Revised Archaeological Inventory Survey and Cultural Impact Evaluation for the Alapai Transit Center and Joint Traffic Management Center Project, Honolulu Ahupua'a, Kona District, Island of O'ahu, TMK: (1) 2-1-042: 004 & 013.

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http://O'ahumpo.org/ortp/ORTP2030/whatis.html
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http://www.honolulupd.org/patrol/d1home.htm
http://www.co.honolulu.hi.us/hfd/index.htm

Personal Communication:

Chew, Jodi. Federal Highways Administration
Ching, Anthony. Urban Design Branch, Department of Planning and Permitting
Enrique Che, Director, Planning and Design Division , HECO
Fukumitsu, Ty. Branch Chief, Traffic Signals and Technology Division, DTS
Koike, Pierson. Traffic Engineer, Traffic Signals and Technology Division, DTS
Kurio, Phyllis. DTS
Les Loo, Outside Plan Engineer, Network Engineering Division, Hawaiian Telcom
Operator C3, Fire Fighter, 911 Dispatch Center for Fire Communications, Honolulu Fire Department
Takara, Richelle. Federal Highways Administration

8.0 AGENCIES AND PUBLIC CONTACTED

8.0 AGENCIES AND PUBLIC CONTACTED DURING THE PRE-CONSULTATION AND DRAFT EA REVIEW PERIODS

As part of the pre-consultation process, community meetings and presentations were conducted in order to involve the community in the planning and development of the Alapa'i project.

- January 17, 2007: A community meeting was conducted with neighbors and interested members of the community to discuss planning issues and address public concerns regarding the Alapa'i project.
- June 21, 2007: The preliminary plans were presented and reviewed by the Makiki/Lower Punchbowl/Tantalus Neighborhood Board No. 10 and attending public.
- June 26, 2007: A presentation to the Ala Moana/Kaka'ako Neighborhood Board No. 11 was conducted to provide an informational update.
- July 5, 2007: The preliminary plans were presented and reviewed by the Downtown Neighborhood Board No. 13 and attending public.
- Ideas and insight gathered from the community during the pre-consultation activities have been addressed in the analysis contained in this document.

Listed below are the agencies and other parties contacted for input and comment regarding the proposed project prior to the publication of the Final ~~Draft~~ EA.

Respondents and Distribution	Pre-Consultation	Pre-Cons. Comments Received	Received Draft EA	DEA Comments Received	Received Final EA
Federal Agencies					
Federal Highway Administration (FHWA)	X		X		X
USDOT Federal Transit Administration (FTA), Region 9	X		X		X
State Agencies					
Department of Business, Economic Development & Tourism (DBEDT) Office of Planning	X		X		X
Department of Land and Natural Resources (DLNR)	X	X	X	X	X
DLNR State Historic Preservation Division (SHPD)	X		X		X
Oahu Island Burial Council (OIBC), SHPD Burial Sites Program	X		X		X
Office of Environmental Quality Control (OEQC)	X		X	X	X
Office of Hawaiian Affairs (OHA)	X	X	X		X
Hawai'i Department of Transportation (HDOT)	X		X		X
Department of Health (DOH) Environmental Planning Office			X	X	X

Respondents and Distribution	Pre-Consultation	Pre-Cons. Comments Received	Received Draft EA	DEA Comments Received	Received Final EA
City and County of Honolulu					
Board of Water Supply (BWS)			X	X	X
Department of Design and Construction (DDC)	X	X	X	X	X
Department of Planning and Permitting (DPP)	X	X	X	X	X
Department of Environmental Services (DES)	X	X	X		X
Department of Facility Maintenance (DFM)			X		X
Honolulu Fire Department (HFD)	X	X	X	X	X
Honolulu Police Department (HPD)	X	X	X	X	X
Emergency Medical Services (EMS)	X		X		X
Department of Transportation Services (DTS)	X		X		X
Department of Emergency Management (DEM), (formerly O'ahu Civil Defense Agency)	X	X	X	X	X
Elected Officials					
State House Representative, 28th District, Karl Rhoads	X		X		X
State Senator, Gordon Trimble	X		X		X
City Council Representative, Rod Tam	X		X		X
Libraries					
Hawai'i State Library			X		X
Citizen Groups, Individuals & Consulted Parties					
Makiki/Lower Punchbowl/Tantalus Neighborhood Board No. 10	X		X		X
Ala Moana/Kakaako Neighborhood Board No. 11	X		X		X
Downtown Neighborhood Board No. 13	X		X		X
Scan Design and Scan Line	X		X		X
Local Utilities					
Hawaiian Electric Company (HECO)			X	X	X
Hawaiian Telcom			X		X

PRE-CONSULTATION COMMENTS AND RESPONSES

LINDA LINGLE
GOVERNOR OF HAWAII

ALLAN A. SMITH
INTERIM CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

RECEIVED
MAY 11 2007
GROUP 70 INT'L

May 8, 2007

Group 70 International, Inc.
925 Bethel Street 5th Floor
Honolulu, Hawaii 96813-4307

Attention: Ms. Rachel Shaak

Ladies and Gentlemen:

Subject: Pre-Consultation for Draft Environmental Assessment for Alapai Transit Center and Joint Traffic Management Center, Honolulu, Oahu, Tax Map Key: (1) 2-1-43:13, 4

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources has no comment to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

Russell Y. Tsuji
Administrator

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July 27, 2007

Mr. Russell Y. Tsuji
Administrator
State of Hawaii
Department of Land and Natural Resources
Post Office Box 621
Honolulu, HI 96809

SUBJECT: Alapai Transit Center – Responses to Comments on the Pre-Consultation for the Draft Environmental Assessment

Dear Mr. Nāmu'o,

Thank you for your comment letter concerning the Alapai Transit Center Pre-Consultation for the Draft Environmental Assessment.

We acknowledge that DLNR had "no comment" on the project at the time of DEA Preconsultation.

Your comment letter and this response will be included in the Draft Environmental Assessment. We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Rachel Shaak

Rachel Shaak, AICP
Planner

PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
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RECEIVED
MAY 24 2007
GROUP 70 INT'L

May 18, 2007 HRD07_2968B

Rachel Shaak, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawai'i 96813-4307

Dear Ms. Shaak:

Re: Pre-Consultation for Draft Environmental Assessment
Alapai Transit Center and Joint Traffic Management Center
Honolulu, O'ahu, TMK (1) 2-1-042:013, 004

The Office of Hawaiian Affairs (OHA) is in receipt of your May 3, 2007 letter initiating the consultation process prior to the preparation of a draft Environmental Assessment (EA) for a proposed development project in Honolulu.

OHA recommends that a comprehensive archaeological inventory survey be conducted in an effort to identify any traditional, cultural, or burial sites and engage in appropriate consultation and mitigation prior to the initiation of construction activities on the subject parcels.

Thank you for the opportunity to comment at this early stage, and we look forward to providing a more substantive review of the draft EA when it is prepared. Should you have any questions, please contact Keola Lindsey, Lead Advocate-Culture at (808) 594-1904 or keolal@oha.org.

'O wau iho nō,

Clyde W. Nāmu'o
Administrator

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July 27, 2007

Mr. Clyde W. Nāmu'o
Administrator
State of Hawaii
Office of Hawaiian Affairs
711 Kapi'olani Blvd. Suite 500
Honolulu, HI 96813

SUBJECT: Alapai Transit Center – Responses to Comments on the Pre-Consultation for the Draft Environmental Assessment

Dear Mr. Nāmu'o,

Thank you for your comment letter concerning the Alapai Transit Center Pre-Consultation for the Draft Environmental Assessment (DEA). The following statements are offered in response to your comments.

In conjunction with the preparation of the DEA, we have been involved in an intensive archaeological and cultural consultation effort. Led by Cultural Surveys Hawaii, efforts have included preparation of an archaeological inventory survey and cultural impact evaluation, subsurface testing totaling 28 trenches, consultation with State Historic Preservation Division, consultation with the O'ahu Island Burial Council, and federal Section 106 consultation. The DEA will discuss results from the research and consultation effort.

Your comment letter and this response will be included in the Draft Environmental Assessment. We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Rachel Shaak

Rachel Shaak, AICP
Planner

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
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DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

May 25, 2007

RECEIVED
MAY 29 2007
GROUP 70 INT'L

Ms. Rachel Shaak, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4308

Dear Ms. Shaak:

Subject: Draft Environmental Assessment
Pre-Consultation for Alapai Transit Center and Joint Traffic Management Center
TMK: (1) 2-1-042:013, 004 (Honolulu, Oahu, Hawaii)

Thank you for giving us the opportunity to comment on the above Draft Environmental Assessment.

The Department of Design and Construction has the following comments:

- General comment on plan - The proposed project seems like an under-development of the site. With the shortage of government office space in this Capitol District, the plan does not fully develop the site to its maximum potential.
- Page 1-3, section 1.3.4 - Where will HPD and personnel vehicles be accommodated. No space in FMB parking lot.
- Page 1-4, section 1.4.1 - Will traffic be exiting to King Street? Only Alapai mentioned.
- Page 1-6, section 1.5.4 - The HPD parking structure was constructed so the headquarters building could expand towards the Ewa side over the parking facility. If this permit is approved, does this mean that this option is no longer possible?

- Figure 1-4 - They need to check impact to utilities by building over Hotel Street. There are existing HECO, HTCO, Oceanic, Gasco, etc., lines in the road. Will there be easements? Ducts run in the Hotel Street area from HPD to FMB. Also, existing USTs from HPD in these areas.
- Check old master plans for views, pedestrian and bikeways linking Thomas Square to Capitol District via Hotel Street.

Should you have any questions, please contact Clifford Lau, Chief of our Facilities Division, at 768-8483.

Very truly yours,

Eugene C. Lee, P.E.
Director

ECL:lt (207500)

c: DDC Facilities Division

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Ralph E. Portmore, AICP
Of Counsel

July 27, 2007

Mr. Eugene C. Lee
Director
City and County of Honolulu
Department of Design and Construction
650 South King Street, 11th Floor
Honolulu, HI 96813

SUBJECT: Alapai Transit Center – Responses to Comments on the Pre-Consultation for the Draft Environmental Assessment

Dear Mr. Lee,

Thank you for your comment letter concerning the Alapai Transit Center Pre-Consultation for the Draft Environmental Assessment. The following statements are offered in response to your comments.

It is true that the existing project site is grossly underutilized. The proposed "infill" project intends to maximize the site potential while maintaining necessary setbacks. As proposed, the new Joint Traffic Management Center (JTMC) building will meet the 100' height limit for the Hawaii Capital Special District. At nearly 300,000 square feet, the JTMC building has been sized to maximize the building footprint within the required federal anti-terrorism setbacks. Approximately 160,000 s.f. of government office space, 40,000 s.f. of common space and 130,000 s.f. of employee parking will be provided.

We understand the critical need for parking in the Capital District. The project will provide all employee parking on-site in the first four floors of the proposed JTMC building. Because offices from the both the Fasi Municipal Building (FMB) and adjacent HPD building will be provided in the new JTMC, personnel from these offices will no longer park at the FMB and HPD parking structures. The openings at these locations may accommodate HPD vehicles that currently park on the Alapai site.

All buses will exit onto Alapai Street.

The project is no longer considering incorporating the open space above the HPD parking structure in order to meet open space requirements. To the extent possible we will be meeting open space requirements on site. If necessary we will apply for a Waiver Permit in order to meet the 40% open space requirements in the Hawaii Capital Special District, Alapai Precinct.

We are aware that the siting of the JTMC building conflicts with existing utilities in the Hotel Street right of way. The Hotel Street utilities will need to be rerouted around the building. This issue is addressed conceptually in the EA and will be addressed in

more detail during the design phase of the project. We are also aware of the existing USTs and will design the site to accommodate continued access for HPD.

We will incorporate the objectives of applicable planning documents regarding pedestrian connectivity, bikeways and viewsheds.

Your comment letter and this response will be included in the Draft Environmental Assessment. We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Rachel Shaak

Rachel Shaak, AICP
Planner

DEPARTMENT OF PLANNING AND PERMITTING
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RECEIVED
JUN - 4 2007
GROUP 70 INT'L

2007/ELOG-1285 (TH)

May 31, 2007

Ms. Rachel Shaak, AICP
Planner
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Ms. Shaak:

Subject: Pre-Consultation for Draft Environmental Assessment
Alapai Transit Center and Joint Traffic Management Center
TMK: (1) 2-1-042:013 & 004 (Honolulu, Oahu, Hawaii)

We have reviewed the subject project and offer the following comments:

1. The Draft Environmental Assessment (DEA) should discuss how the project complies with the City's General Plan by citing specific objectives and policies.

2. The DEA should discuss how the project complies with the Primary Urban Center (PUC) development Plan (DP). The proposed project is consistent with the PUC DP's vision for a balanced transportation system that provides excellent mobility for residents and visitors (Section 2.5). The DEA should discuss how the project will help implement the polices and guidelines pertaining to developing a balanced transportation system (Section 3.5.2 and 3.5.3), including the following:

   - Appendix B, Section 3.4 of the PUC DP (Implementation Strategies) discusses strategies for supporting transit and managing transportation demand. The DEA should discuss whether a parking facility would be developed in conjunction with the new Alapai Transit Center (ATC), which would support transit rider-ship.

   - Section 1.4.2 of the project's Pre-Consultation memorandum states that initially, the Joint Traffic Management Center (JTMC) will accommodate 300 personnel and 406 parking spaces. However, in the future, the JTMC may have as many as 400-600 personnel.

     The DEA should explain 1) exactly who will be using the three (3) above-grade parking levels of the JTMC; 2) why the FMB, or other County facilities will be needed for off-site parking for JTMC personnel; 3) the possibility of increasing the number of

     parking spaces at the JTMC to accommodate the anticipated complement of 400-600 employees; and 4) why parking spaces at the JTMC could not be used by employees of the FMB who currently park at the Blaisdell Center or elsewhere.

The DEA should mention that the project site is designated "Institutional" on the PUC DP's Land Use Map (A-5 PUC-Central). The "Institutional" land use designation includes the Civic Center and major institutional campuses-including public and private secondary schools, colleges, and hospitals. The project site is considered part of the Civic Center and is consistent with the "Institutional" land use designation. The DEA should also discuss the following:

- The project's design should incorporate usable open space-plazas, parks, courtyards, and pedestrian pathways that would be integrated seamlessly into the Civic Center (Appendix B, Section 3.2, PUC DP). The corner/ frontages of King and Alapai Streets can be transformed into public pedestrian open spaces, especially since the majority of pedestrians will be accessing the ATC from those streets.

  The ATC's proposed bus staging/parking lot creates an inappropriate streetscape along King Street and may affect pedestrian safety. The DEA should address measures to increase the safety of pedestrians entering and leaving the ATC from Alapai and King Streets, such as moving the bus staging/parking area to the interior of the lot where it is not directly fronting a major street.

- The DEA should acknowledge the *Hawaii State Capital Master Plan* (1968) written by John Carl Warnecke & Associates and discuss how the project meets the spirit of the plan.

The project site is located in the Cooke Street view corridor intended to provide mauka views Punchbowl Crater from the shoreline. However, the proposed site design (building placement and orientation) of the JTMC does not respect this view corridor or the DP's policies (3.1.2) and guidelines (Section 3.1.3). The PUC DP discusses scenic views (Section 3.1.1.2); and illustrates significant panoramic views (Map A-1) and view corridors (Figure 3.1). The DEA should discuss how mauka views of Punchbowl Crater from the Cooke Street view corridor will be protected.

The DEA should discuss the pedestrian network that runs behind the Honolulu Police Department (HPD) Headquarters and continues along Hotel and Young Streets that is identified as a green dashed line on Map A-5 in the PUC DP. Maintaining this pedestrian network is consistent with the Department of Planning and Permitting's initiative on connectivity (providing alternative circulation routes to alleviate traffic congestion) and the City's Honolulu Bicycle Master Plan. Furthermore, Appendix B, Section 3.2 of the PUC DP provides strategies to improve the pedestrian network including retaining public roads and rights-of-way and creating midblock pathways.

Therefore, the project should be redesigned to preserve the existing pedestrian network along Hotel and Young Streets.

Section 1.5.4 of the project's Pre-Consultation memorandum mentions the term "force protection setback and clearance standards." The DEA should clarify this term.

3. We confirm that the project site is currently zoned BMX-3 Community Business Mixed Use District, and is in the Alapai Precinct of the Hawaii Capital Special District. However, the DEA should include a table(s) of how the proposed project meets the development standards (including parking and loading) for BMX-3 zoning and the design guidelines for the Hawaii Capital Special District.

   If the project does not provide the required 40 percent (40%) open space/acre in accordance with the Hawaii Capital Special District, then the applicant will need a waiver for the project.

4. The DEA should discuss how the proposed project complies with the City's Public Infrastructure Map (PIM). The proposed project will not require a revision to the PUC PIM because there is an existing "Government Building" (GB) symbol (#125 City Hall Annex Office Complex and Alapai Transportation Center) on the PUC PIM. In our review of the Executive Capital Budget and Program for the Fiscal Year 2007-2008, we classified the proposed Alapai Transit Center (CIP # 001501 and the proposed Alapai Transportation Management Center (CIP #2006018) as conforming projects because they were already represented by a GB symbol on the PUC PIM.

5. The DEA should discuss City plans and needs, if any, for additional office space, (e.g., possible overflow) from the FMB to the project site.

6. The DEA should discuss how this facility will support the proposed fixed guideway and stations.

7. The DEA should mention that a sewer connection application (2006/SCA-0411) for both projects was approved by the Department of Planning and Permitting (DPP) with conditions in June 2006. In accordance with the approved sewer connection application, the project shall be connected to the existing 18-inch sewer line on South King Street between Cooke Street and Kealamakai Street. The applicant must also submit construction plans to the DPP for review and approval.

8. Regarding transportation issues, the DEA should include the following:

   - The applicant should consider multiple access points to the project from adjacent streets to distribute the internal traffic load more evenly among the adjacent streets.

   - A grade separated pedestrian crossing from the proposed project to the FMB should continue to be considered in an effort to provide a safer and more efficient crossing over Alapai Street.

   - A traffic impact analysis report should be prepared for the DEA.

Thank you for the opportunity to comment on this matter. Should you have any questions, please contact Tim Hata of our staff at 768-8043.

Very truly yours,

Henry Eng, FAICP, Director
Department of Planning and Permitting

HE:js

cc: OEQC

P:\DivFunction\EA-EIS\2007\AlapaiTC\elog1285.doc

GROUP 70 INTERNATIONAL

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July 27, 2007

Mr. Henry Eng, FAICP
Director
City and County of Honolulu
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, HI 96813

SUBJECT: Alapai Transit Center – Responses to Comments on the Pre-Consultation for the Draft Environmental Assessment

Dear Mr. Eng,

Thank you for your comment letter concerning the Alapai Transit Center Pre-Consultation for the Draft Environmental Assessment (DEA). The following statements are offered in response to your comments.

1. We will address project compliance with the City's General Plan in the DEA.

2. The DEA will address project compliance with the Primary Urban Center (PUC) Development Plan (DP), with particular attention to the specific sections mentioned in DPP's pre-consultation comment letter.

   With regard to incorporation of usable open space-plazas, parks into the project's design, the project will incorporate ample open spaces around the JTMC building, as well as a pedestrian path, a broad promenade and passenger gathering area, and a corner plaza at the Bus Transit Building. These open spaces and paths will blend in with the HPD green space to expand the park-like setting of the Alapai Precinct. The JTMC open spaces, paths, promenade, and plaza will also align with the Hotel Street Mall, providing connectivity between the project site and Civic Center site across Alapai Street and visually extending the mall into the Alapai Precinct.

   Placement of the bus staging area allows the JTMC building to be set back from the surrounding streets to meet Federal design standards for protection against terrorist attacks along the site perimeter. Curbed planting islands and landscaping within the bus circulation and staging areas will help soften the expanse of asphalt paving visible from the surrounding streets. Landscaping and trees along the site perimeter will help provide visual screening of the staged buses.

   Pedestrian activity at the Bus Transit Station will be busiest during the morning and late afternoon hours. During the rest of the day, and weekends, pedestrian activity will be light. For safety, the on-site pedestrian traffic and vehicular traffic will be separated. Pedestrians will not be allowed to enter and walk through the bus staging area to get to the bus transit station. Pedestrian traffic will be controlled

   and directed along the existing street sidewalks to pedestrian access points along Alapai Street, and Keala Makai Street. Planting and low profile site features, such as low screen walls and berms, along the perimeter landscaped areas will be installed to discourage and block pedestrian access directly into the staging area. The low walls and berms will also prevent vehicular access along the site perimeter, as required by the Federal anti-terrorist design standards. Bus access points along King Street will also be controlled by vehicular barriers or gates and signage to prevent pedestrian access.

   The project site lies within the Cooke Street view corridor. The JTMC building placement and orientation on the site is necessary to meet Federal anti-terrorist design standards that would not have been achievable with a mauka-makai building orientation. To limit the impact to and protect the mauka views to Punchbowl Crater from the shoreline, the JTMC will be limited to the 100′ maximum height allowed by the Hawaii Capital Special District. The JTMC structure will also be stepped-down at the building ends to minimize viewing impacts to the crater from the shoreline and to give the building an aesthetically-pleasing profile. At an elevation of 400′ above sea level, the Punchbowl Crater would still be approximately 275′ higher than the top of the JTMC building (approximately 125′ above sea level). At nearly 2 miles from the shoreline, the Punchbowl Crater will be visible above the JTMC building from the shoreline, and vice versa, the shoreline will be visible above the JTMC building from Punchbowl Crater.

   In order to fit the necessary program requirements and functions on the Alapai site, the City will subdivide the Hotel Street parcel between Alapai Street and Keala Makai Street and capture the land area as part of the project site. To improve the pedestrian network along Hotel Street, the project will implement a pedestrian path that will meander through the open spaces surrounding the JTMC building and a broad promenade that will serve as a major pedestrian walkway and passenger gathering area for bus transit users. The pedestrian path, open spaces, and promenade will align with the current Hotel Street Mall across Alapai Street at the Civic Center site to preserve the pedestrian connectivity from Hotel Street. The open plaza at the bus transit building will serve as a node between the new promenade and Hotel Street Mall, strengthening the connection between the Civic Center and Alapai sites.

   The term "Force Protection Setback" refers to the distance from an occupied facility to the closest point of a non-secured or non-controlled vehicular approach area, such as a street, parking lot, or service alley. The setback is required on all Federally-funded buildings that are considered at risk for terrorist attacks. In addition to other structural design strategies, the primary intent of the force protection setback is to limit potential damages to buildings from explosives by providing adequate distance between the building and point source of the explosive. Damages may include progressive collapse of floors, wall failures, and window breakage. The specified setback distance helps to mitigate the effects of air-blast shock waves produced by explosives on buildings and other occupied facilities.

Anticipated JTMC personnel and proposed parking will be discussed in the DEA.

3. We will provide a table of development standards in the DEA for the project. Regarding open space, to the extent possible, we will be meeting open space requirements on site. If necessary we will apply for a Waiver Permit in order to meet the 40% open space requirements in the Hawaii Capital Special District, Alapai Precinct.

4. Compliance with the City's Public Infrastructure Map (PIM) will be discussed in the DEA.

5. It is envisioned that the proposed JTMC will house several City agencies, thus freeing space within the FMB for expansion.

6. The project would serve the fixed guideway system by possibly providing office space for the new City agency created to manage mass transit operations.

7. The DEA will address the sewer connection application, connection points, and require submittal of construction plans to DPP as mitigation.

8. Only bus traffic will be allowed in the Transit Center portion of the project. Busses will have ingress and egress options via Alapai Street and King Street. Employees driving to the JTMC will have one access/egress point via Keala Makai Street for security purposes. A second vehicular exit point connecting the parking garage to Alapai Street will be considered. A grade separated crossing has been discussed, and will not be pursued in association with this project.

Your comment letter and this response will be included in the Draft Environmental Assessment. We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Rachel Shaak

Rachel Shaak, AICP
Planner

DEPARTMENT OF ENVIRONMENTAL SERVICES
CITY AND COUNTY OF HONOLULU
1000 ULUOHIA STREET, SUITE 308, KAPOLEI, HAWAII 96707
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MUFI HANNEMANN
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ERIC S. TAKAMURA, Ph.D., P.E.
DIRECTOR

KENNETH A. SHIMIZU
DEPUTY DIRECTOR

ROSS S. TANIMOTO, P.E.
SECOND DEPUTY DIRECTOR

IN REPLY REFER TO:

PRO 07-042

June 4, 2007

VIA FACSIMILE: 808-523-5874

Rachel Shaak, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Ms. Shaak:

Subject: Pre-Consultation for Draft EA Alapai Transit Center and Joint Traffic Management Center, TMK: (1) 2-1-042:013, 004 (Honolulu)

In response to your letter of May 3, 2007 on subject topic, we provide our comments below for your consideration.

- Page 1-10, Figure 1-4: The location of the proposed Joint Traffic Management Center conflicts with our existing sewer lines (see attached map). The EA should include a plan for relocation of these existing sewer lines, so that adequate access for maintenance is provided.

- The Department of Planning and Permitting should be consulted on in regards to the capacity of the existing sewer lines to handle sewer flows from the project.

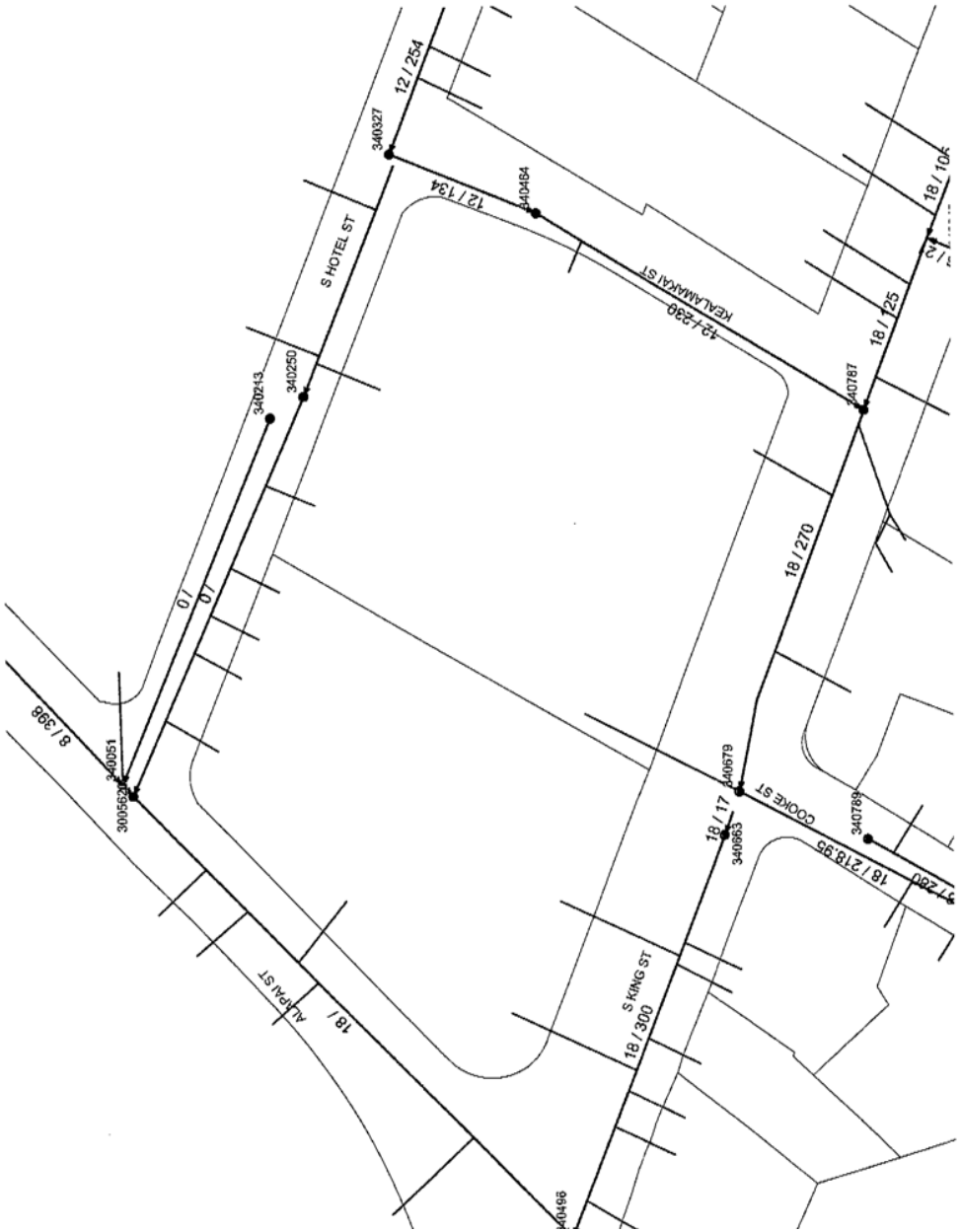
Thank you for the opportunity to comment. Should you have any questions or comments, please call me at 692-5727.

Sincerely,

Jack Pobuk
CIP Program Coordinator

Attachment

cc: DTS-Pierson Koike
DPP-Wastewater Branch



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Of Counsel

July 27, 2007

Mr. Jack Pobuk
CIP Program Coordinator
City and County of Honolulu
Department of Environmental Services
1000 Uluohia Street, Suite 308
Kapolei, HI 96707

SUBJECT: Alapai Transit Center – Responses to Comments on the Pre-Consultation for the Draft Environmental Assessment

Dear Mr. Pobuk,

Thank you for your comment letter concerning the Alapai Transit Center Pre-Consultation for the Draft Environmental Assessment. The following statements are offered in response to your comments.

We are aware that the siting of the JTMC building conflicts with existing utilities, including sewer, in the Hotel Street right of way. The 6-inch sewer main in Hotel Street services the Honolulu Police Department property will need to be rerouted around the building. This issue is addressed conceptually in the EA and will be addressed in more detail during the design phase of the project.

A sewer connection application was filed with the City and County of Honolulu, Department of Planning and Permitting, Wastewater Branch and has been accepted with conditions. Construction plans will be submitted to the Wastewater Branch, Department of Planning and Permitting for review and approval.

Your comment letter and this response will be included in the Draft Environmental Assessment. We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Rachel Shaak

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HONOLULU FIRE DEPARTMENT

CITY AND COUNTY OF HONOLULU

636 South Street
Honolulu, Hawaii 96813-5007
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

MUFI HANNEMANN
MAYOR

KENNETH G. SILVA
FIRE CHIEF

ALVIN K. TOMITA
DEPUTY FIRE CHIEF

RECEIVED
MAY 29 2007
GROUP 70 INT'L

May 21, 2007

Ms. Rachel Shaak, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Ms. Shaak:

Subject: Preconsultation for Draft Environmental Assessment
Alapai Transit Center and Joint Traffic Management Center
Honolulu, Oahu, Hawaii
Tax Map Key: 2-1-042: 013 and 004

In response to your letter dated May 3, 2007, regarding the above-mentioned project, the Honolulu Fire Department (HFD) reviewed the material you provided and requires that the following be complied with:

1. Provide a fire apparatus access road for every facility, building, or portion of a building hereafter constructed or moved into or within the jurisdiction when any portion of the facility or any portion of an exterior wall of the first story of the building is located more than 150 feet (45 720 mm) from a fire apparatus access road as measured by an approved route around the exterior of the building or facility. (1997 Uniform Fire Code, Section 902.2.1.)

2. Provide a water supply, approved by the county, capable of supplying required fire flow for fire protection to all premises upon which facilities or buildings, or portions thereof, are hereafter constructed or moved into or within the county.

   On-site fire hydrants and mains capable of supplying the required fire flow shall be provided when any portion of the facility or building is in excess of the 150 feet (45 720 mm) from a water supply on a fire apparatus access road, as measured by an approved route around the

exterior of the facility or building. (1997 Uniform Fire Code, Section 903.2, as amended.)

3. Submit civil drawings to the HFD for review and approval.

Should you have any questions, pleas call Battalion Chief Lloyd Rogers of our Fire Prevention Bureau at 723-7151.

Sincerely,

KENNETH G. SILVA
Fire Chief

KGS/SK:bh

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Of Counsel

July 27, 2007

Mr. Kenneth G. Silva
Fire Chief
City and County of Honolulu
Honolulu Fire Department
636 South Street
Honolulu, HI 96813-5007

SUBJECT: Alapai Transit Center – Responses to Comments on the Pre-Consultation for the Draft Environmental Assessment

Dear Chief Silva,

Thank you for your comment letter concerning the Alapai Transit Center Pre-Consultation for the Draft Environmental Assessment. The following statements are offered in response to your comments.

Fire apparatus access roads and fire hydrants will be provided in accordance with the 1997 Uniform Fire Code. Hydrant spacing and fire flow requirements will conform to Board of Water Supply (BWS) standards. A mechanical engineer will specify the appropriate size and demand of the fire protection system for the buildings during the design phase of this project. Fire water system engineering plans will be submitted to the Honolulu Fire Department and BWS for review and approval.

Your comment letter and this response will be included in the Draft Environmental Assessment. We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Rachel Shaak

Rachel Shaak, AICP
Planner

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU
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MUFI HANNEMANN
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BOISSE P. CORREA
CHIEF

GLEN R. KAJIYAMA
PAUL D. PUTZULU
DEPUTY CHIEFS

OUR REFERENCE BS-DK

RECEIVED
MAY 31 2007
GROUP 70 INT'L

May 29, 2007

Ms. Rachel Shaak, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Ms. Shaak:

This is in response to your letter of May 3, 2007, regarding the Pre-Consultation, Draft Environmental Assessment, for the Alapai Transit Center and Joint Traffic Management Center.

The Honolulu Police Department (HPD) has been involved since the beginning in the planning for this project and is in favor of the venture.

At this time, we would like to note that section 1.5.4 erroneously states that the open space on the HPD's site could be used "in order to meet open space requirements." This open space at Alapai and Beretania Streets was originally designed, and is still designated, for the expansion of the HPD's own facilities.

We understand that the city Department of Transportation Services and Group 70 International, Inc., are aware of this and are making the necessary adjustments in their planning.

If there are any questions, please call Mr. Brandon Stone of the Executive Bureau at 529-3644.

Thank you for the opportunity to review and comment.

Sincerely,

BOISSE P. CORREA
Chief of Police

By MAC Kenneth Simmons
JOHN P. KERR
Assistant Chief of Police
Support Services Bureau

Serving and Protecting With Aloha

GROUP 70 INTERNATIONAL

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Of Counsel

July 27, 2007

Mr. Boisse P. Correa
Chief of Police
City and County of Honolulu
Police Department
801 South Beretania Street
Honolulu, HI 96813

SUBJECT: Alapai Transit Center – Responses to Comments on the Pre-Consultation for the Draft Environmental Assessment

Dear Chief Correa,

Thank you for your comment letter concerning the Alapai Transit Center Pre-Consultation for the Draft Environmental Assessment. The following statements are offered in response to your comments.

Thank you for calling the matter concerning HPD's expansion area at Alapai and Beretannia Streets to our attention. As stated in your letter, we have made necessary adjustments in our plans to remedy this matter. To the extent possible we will be meeting open space requirements on site. If necessary we will apply for a Waiver Permit in order to meet the 40% open space requirements in the Hawaii Capital Special District, Alapai Precinct.

Your comment letter and this response will be included in the Draft Environmental Assessment. We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Rachel Shaak

Rachel Shaak, AICP
Planner

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DEPARTMENT OF EMERGENCY MANAGEMENT
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

MUFI HANNEMANN
MAYOR

PETER J. S. HIRAI, CEM
ACTING DIRECTOR

May 21, 2007

Ms. Rachel Shaak, AICP
Planner
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Ms. Shaak:

SUBJECT: Pre-Consultation for Draft Environmental Assessment
Alapai Transit Center and Joint Traffic Management Center
TMK: (1) 2-1-042:013, 004 (Honolulu, O'ahu, Hawaii)

Thank you for allowing the Department of Emergency Management (DEM, fka Oahu Civil Defense Agency) to comment on the above subject matter.

Attached please find FEMA Form 427, Risk Management Series, PRIMER for Design of Commercial Buildings to Mitigate Terrorist Attacks dated December 2003. The concern is to be structurally sound based on Federal Emergency Management guidelines.

Should you have any questions, please feel free to contact me at 527-5367 or email at phirai@honolulu.gov.

Sincerely,

PETER J. S. HIRAI, CEM
Acting Director

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Of Counsel

July 27, 2007

Mr. Peter J. S. Hirai, CEM
Acting Director
City and County of Honolulu
Department of Emergency Management
650 South King Street
Honolulu, HI 96813

SUBJECT: Alapai Transit Center – Responses to Comments on the Pre-Consultation for the Draft Environmental Assessment

Dear Mr. Hirai,

Thank you for your comment letter concerning the Alapai Transit Center Pre-Consultation for the Draft Environmental Assessment. The following statements are offered in response to your comments.

In accordance with the Department of Emergency Management's recommendation, the project will employ structural design strategies, in accordance with FEMA Form 426 and 427 of the Risk Management series, to limit and mitigate potential building damage in the event of a terrorist attack.

Your comment letter and this response will be included in the Draft Environmental Assessment. We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Rachel Shaak

Rachel Shaak, AICP
Planner

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DRAFT ENVIRONMENTAL ASSESSMENT
COMMENTS AND RESPONSES

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
EPO-07-162

September 4, 2007

RECEIVED
SEP 13
GROUP 70 INT'L

Mr. Ty Fukumitsu, Acting Chief
Traffic Signals and Technology Division
City and County of Honolulu
Department of Transportation Services
650 South King Street, 3rd Floor
Honolulu, Hawaii 96813

Mr. Fukumitsu:

SUBJECT: Draft Environmental Assessment for Alapai Transit Center and Joint Traffic Management Center
Honolulu, Oahu, Hawaii
TMK: (1) 2-1-042: 004, 011 and 013

Thank you for allowing us to review and comment on the subject application. The document was routed to the various branches of the Department of Health (DOH) Environmental Health Administration. We have the following Clean Water Branch, Clean Air Branch, Noise, Radiation & Indoor Air Quality Branch, and General comments.

Clean Water Branch

The Department of Health, Clean Water Branch (CWB), has reviewed the subject document and offers these comments on your project. Please note that our review is based solely on the information provided in the subject document and its compliance with Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at http://www.hawaii.gov/health/environmental/env-planning/landuse/CWB-standardcomment.pdf:

1. Any project and its potential impacts to State waters must meet the following criteria:

   a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.

   b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.

   c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).

2. You are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). For the following types of discharges into Class A or Class 2 State waters, you may apply for NPDES general permit coverage by submitting a Notice of Intent (NOI) form:

   a. Storm water associated with construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. An NPDES permit is required before the start of the construction activities.

   b. Once through cooling water less than one (1) million gallons per day.

   c. Hydrotesting water.

   d. Construction dewatering effluent.

   You must submit a separate NOI form for each type of discharge at least 30 calendar days prior to the start of the discharge activity, except when applying for coverage for discharges of storm water associated with construction activity. For this type of discharge, the NOI must be submitted 30 calendar days before to the start of construction activities. The NOI forms may be picked up at our office or downloaded from our website at: http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html.

4. You must also submit a copy of the NOI to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the CWB that SHPD has or is in the process of evaluating your project. Please submit a copy of your request for review by SHPD or SHPD's determination letter for the project along with your NOI or NPDES permit application, as applicable.

5. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 Water Quality Certification are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of $25,000 per day per violation.

If you have any questions, please visit our website at http://www.hawaii.gov/health/environmental/water/cleanwater/index.html, or contact the Engineering Section, CWB, at 586-4309.

Clean Air Branch

Control of Fugitive Dust

Fugitive dust emissions occur during all phases of construction and operations. Activities close to existing residences, businesses, public areas or thoroughfares can cause dust problems. For cases involving mixed land use, we strongly recommend that buffer zones be established, wherever possible, in order to alleviate potential nuisance problems. We recommend that the contractors operate under a dust control management plan. The plan does not require the Department of Health approval, however it will help with identifying and minimizing the dust problems from the proposed project.

Examples of measures that can be included in the dust control plan are:

a) Planning the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potential dust-generating equipment in areas of the least impact;
b) Providing an adequate water resource at the site prior to start-up of construction activities;
c) Landscaping and providing rapid covering of bare areas, including slopes, starting from the initial grading phase;
d) Minimizing dust from shoulders and access roads;
e) Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
f) Controlling dust from debris being hauled away from the project site.

All activities must comply with the provisions of Hawaii Administrative Rules, §11-60.1-33 on Fugitive Dust. If you have any questions, please contact the Clean Air Branch at 586-4200.

Noise, Radiation & Indoor Air Quality Branch

Project activities shall comply with the Administrative Rules of the Department of Health, Chapter 11-46, Community Noise Control. Should there be any questions, please contact Russell S. Takata, Environmental Health Program Manager, Noise, Radiation and Indoor Air Quality Branch, at 586-4701.

General

We strongly recommend that you review all of the Standard Comments on our website: www.state.hi.us/health/environmental/env-planning/landuse/landuse.html. Any comments specifically applicable to this project should be adhered to.

If there are any questions about these comments please contact Jiacai Liu with the Environmental Planning Office at 586-4346.

Sincerely,

KELVIN H. SUNADA, MANAGER
Environmental Planning Office

c: EPO
CWB
CAB
NRIAQB

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Scott Tangonan
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Ralph E. Portmore, AICP
Of Counsel

January 18, 2008

Mr. Kelvin H. Sunada, Manager
Environmental Planning Office
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, HI 96801-3378

Dear Mr. Sunada,

Thank you for the September 4, 2007 comment letter concerning the Alapa'i Transit Center and Joint Traffic Management Center Draft Environmental Assessment. The following are offered in response to your comments.

Clean Water Branch (CWB)
The project will comply with standards referenced by the CWB, including adherence to National Pollutant Discharge Elimination System requirements.

Clean Air Branch (CAB)
The project will comply with standards referenced by the CAB, including implementation of a dust control plan.

Noise, Radiation & Indoor Air Quality Branch
Referenced State noise control regulations will be complied with.

General
Standard Comments applicable to the project will be adhered to.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Rachel Shaak

Rachel Shaak, AICP
Planner

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LINDA LINGLE
GOVERNOR OF HAWAI'I

LAURENCE K. LAU
ACTING DIRECTOR

STATE OF HAWAI'I
DEPARTMENT OF HEALTH
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
LEIOPAPA A KAMEHAMEHA, SUITE 702
HONOLULU, HAWAI'I 96813
Telephone (808) 586-4185
Facsimile (808) 586-4186
Electronic Mail: OEQC@doh.hawaii.gov

AUG 28

August 22, 2007

Melvin N. Kaku, Director
Department of Transportation Services
City and County of Honolulu
650 South King Street, 3rd Floor
Honolulu, Hawaii 96766-1326

Dear Mr. Costa:

Subject: Draft Environmental Assessment for the Alapa'i Transit Center and Joint Traffic Management Center
Tax Map Key 2-1-042:013 and 004 plus a portion of Hotel Street
Honolulu, O'ahu, Hawaii

Thank you for the opportunity to review the subject document. The Office of Environmental Quality Control has these comments:

1. It would be helpful to provide a list of all the acronyms in the introduction.

2. Please clarify if private vehicles will be allowed to drop-off and pick-up passengers on-site. Will the proposed project accommodate this?

3. One of the existing land uses at the site is the temporary overflow from the municipal parking across the street. Please clarify if the proposed 406 parking stalls will continue to accept this overflow.

Please call Herman Tuiolosega at (808) 586-4185 if you have any questions.

Sincerely,

Laurence K. Lau
Acting Director

c: Rachel Shaak, Group 70 International, Inc.

GROUP 70 INTERNATIONAL

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Of Counsel

January 18, 2008

Mr. Laurence K. Lau, Acting Director
State of Hawaii
Department of Health
Office of Environmental Control
235 South Beretania Street
Leiopapa A Kamehameha, Suite 702
Honolulu, HI 96813

Dear Mr. Lau,

Thank you for your August 22, 2007 comment letter concerning the Alapa'i Transit Center and Joint Traffic Management Center Draft Environmental Assessment (EA). The following are offered in response to your comments.

1) A list of acronyms will be provided in the introductory section of the Final EA.
2) The Department of Transportation Services will investigate on-site options for a pick-up and drop-off area, however, on-site availability is limited by space requirements for bus circulation, physical security requirements for the JTMC building and a cultural preserve area.
3) The existing perimeter parking from the municipal parking lots will not be accommodated at the Joint Traffic Management Center (JTMC). The proposed Alapa'i project will provide 406 municipal parking stalls for City agencies that will occupy the JTMC. Additional parking should be available in the FMB and HPD parking lots after participating agencies, and their associated parking, relocate from existing buildings to the new JTMC site.

Your comment letter and this response will be included in the Final EA. We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Rachel Shaak

Rachel Shaak, AICP
Planner

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To: Rachael Shaak
Fm. Pierson.

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
INTERIM CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

August 6, 2007

City & County of Honolulu
Department of Transportation Services
650 South King Street 3rd Floor
Honolulu, Hawaii 96813

Attention: Mr. Ty Fukumitsu

Gentlemen:

Subject: Draft Environmental Assessment for Alapai Transit Center and Joint Traffic Management Center, Honolulu, Oahu, Tax Map Key: (1) 2-1-42:4, 11, 13

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources has no comment to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

Russell Y. Tsuji
Administrator

From: (808)521-2501 Page: 1/1 Date: 9/19/2007 12:31:16 PM

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Ralph E. Portmore, AICP
Of Counsel

January 18, 2008

Mr. Russell Y. Tsuji, Administrator
State of Hawaii
Department of Land and Natural Resources
Land Division
P.O. Box 621
Honolulu, HI 96809

Dear Mr. Tsuji,

Thank you for your August 6, 2007 "no comment" letter concerning the Alapa'i Transit Center and Joint Traffic Management Center Draft Environmental Assessment (EA). Your comment letter and this response will be included in the Final EA. We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Rachel Shaak

Rachel Shaak, AICP
Planner

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BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843

SEP 10
GROUP 70 INT'L

September 6, 2007

MUFI HANNEMANN, Mayor

RANDALL Y. S. CHUNG, Chairman
SAMUEL T. HATA
ALLY J. PARK
ROBERT K. CUNDIFF
MARC C. TILKER

LAVERNE T. HIGA, Ex-Officio
BARRY FUKUNAGA, Ex-Officio

CLIFFORD P. LUM
Manager and Chief Engineer

DEAN A. NAKANO
Deputy Manager and Chief Engineer

Ms. Rachel Shaak, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Dear Ms. Shaak:

Subject: Draft Environmental Assessment for Alapai Transit Center and Joint Traffic Management Center

Thank you for the opportunity to comment on the proposed project.

The existing water system is presently adequate to accommodate the proposed development. However, please be advised that this information is based upon current data and, therefore, the Board of Water Supply reserves the right to change any position or information stated herein up until the final approval of your building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

There are two water mains, located within the project limits (20" and 8") that may need to be relocated. The construction drawings should be submitted for our review and approval.

If you have any questions, please contact Robert Chun at 748-5440.

Very truly yours,

K. Shida

KEITH S. SHIDA
Principal Executive
Customer Care Division

cc: Ty Fukumitsu, Department of Transportation Services

Water for Life . . . Ka Wai Ola

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Of Counsel

January 18, 2008

Mr. Keith S. Shida, Principal Executive
Customer Care Division
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, HI 96843

Dear Mr. Shida,

Thank you for your September 6, 2007 comment letter concerning the Alapai Transit Center and Joint Traffic Management Center Draft Environmental Assessment (EA). The following are offered in response to your comments.

Department of Transportation Services will continue to keep the Board of Water Supply (BWS) informed of project progress to ascertain water availability and water main relocations. Project construction drawings will be submitted to BWS for approval prior to issuance of building permits.

Your comment letter and this response will be included in the Final EA. We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Rachel Shaak

Rachel Shaak, AICP
Planner

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Phone: (808) 768-8480 • Fax: (808) 523-4567
Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR

EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

AUG 28

August 27, 2007

MEMORANDUM

TO: MELVIN N. KAKU, DIRECTOR
DEPARTMENT OF TRANSPORTATION SERVICES

FROM: EUGENE C. LEE, P.E., DIRECTOR

SUBJECT: ALAPAI TRANSIT CENTER AND JOINT TRAFFIC MANAGEMENT CENTER, DRAFT ENVIRONMENTAL ASSESSMENT

Thank you for giving us the opportunity to comment on the above Draft Environmental Assessment.

The Department of Design and Construction (DDC) has the following comments:

- The description of existing conditions in section 3.15, Recreation, concerning the Central Bike Corridor appears to be in error. Hotel Street has long been a bike corridor and the City's Bicycle Master Plan of 1999 planned for it to continue to be used and improved as such from the intersection of Alapai and Hotel Streets to the vicinity of Ward Avenue.

- The proposed plan for development of the Joint Traffic Management Center, the Bus Transit yard, and passenger pick-up area does not seem to accommodate the bike traffic which presently exists along this corridor. Contrary to the report's assertion, the proposed plan appears to conflict with existing bikeway activity. We recommend that the final report explicitly identify and illustrate the bikeway corridor on the Conceptual Site plan.

- DDC requests a copy of the drainage study for review when it becomes available.

ECL:lt (221008)

c: Group 70 International, Inc. – Rachel Shaak
Dept. of Transportation Services – Ty Fukumitsu
DDC Facilities Division

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Ralph E. Portmore, AICP
Of Counsel

January 18, 2008

Mr. Eugene C. Lee, P.E., Director
City and County of Honolulu
Department of Design and Construction
650 South King Street, 11th Floor
Honolulu, HI 96813

Dear Mr. Lee,

Thank you for your August 27, 2007 comment letter concerning the Alapa'i Transit Center and Joint Traffic Management Center Draft Environmental Assessment (EA). The following are offered in response to your comments.

The Alapa'i Transit Center project is located along "LP 13 Young Street", a Priority One Park Link of the Lei of Parks (Honolulu Bicycle Master Plan (HBMP), 1999). The intention of Priority One Park Links is to provide a continuous route through the major parks and attractions. Lei of Parks connective corridors aim to provide bicycle-friendly linkage and space for walkers, runners and families to enjoy the city's parks and waterfront setting.

The project will provide essential east-west connectivity in the Lei of Parks. The objective is to provide a park-like atmosphere along the connector through landscape and hardscape. Furthermore, the HBMP designates the section of Hotel Street from Alapa'i Street to Ward Avenue as part of Bike-Friendly Route No. 1. Labeled FR 12, the HBMP planned this section of Hotel Street for a bike lane 0.2 miles in length.

Existing conditions on the Alapa'i site provide no connectivity along the Young Street Park Boulevard, i.e. Hotel Street. Hotel Street is closed to through traffic. Adjacent to the west of the site is the City's Municipal building and covered parking facility. Above the parking facility is the Civic Center park which is a grassy landscaped area with pedestrian-oriented walkways. There are no visible pathways marked "Bike Path." To the north of the site is the Honolulu Police Department (HPD) Headquarters with a similar park-like area with landscaped, pedestrian-oriented, connective walkways above their parking facility.

The project is designed to meet the objectives of the Honolulu Bicycle Master Plan (1999) by providing connectivity from Alapa'i Street to Hotel Street via a pedestrian and bicycle-friendly walkway that is pleasantly landscaped, shaded by canopy trees and kept separate from the adjacent bus circulation area. The walkway will centrally traverse the site in an east-west direction and match the style and design of pathways provided in the Civic Center park and HPD site (see Final EA Figure 2.1).

By providing connectivity from Alapa'i to Hotel Street the Alapa'i Transit Center project will meet the objectives of the HBMP.

A copy of the drainage study will be made available to DDC .

Your comment letter and this response will be included in the Final EA. We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Rachel Shaak

Rachel Shaak, AICP
Planner

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DEPARTMENT OF EMERGENCY MANAGEMENT
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

Mufi Hannemann
MAYOR

PETER J. S. HIRAI
Acting Director

SEP 11

September 6, 2007

Mr. Ty Fukumitsu, Acting Chief
Department of Transportation Services (DTS)
Traffic Signals and Technology Division
650 South King Street, 3rd Floor
Honolulu, Hawaii 96813

Dear Mr. Fukumitsu:

Subject: Alapai Transit Center and Joint Traffic Management Center - Draft Environmental Assessment

Thank you for the opportunity to review and comment on the above mentioned project. The Department of Emergency Management does not have any comments at this time.

Sincerely,

PETER J. S. HIRAI, CEM
Acting Director

cc: Mel Kaku, Director, DTS
✓Rachel Shaak, AICP
Group 70 International, Inc.
OEQC, Laurence Lau

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Kimberly Polkinhorn, AIA, LEED
Scott Tangonan
Tom Young, AIA

Ralph E. Portmore, AICP
Of Counsel

January 18, 2008

Mr. Melvin N. Kaku, Director
Department of Emergency Management
City and County of Honolulu
650 South King Street
Honolulu, HI 96813

Dear Mr. Kaku,

Thank you for the September 6, 2007 "no comment" letter issued by Peter Hirai concerning the Alapai Transit Center and Joint Traffic Management Center Draft Environmental Assessment. We look forward to working with the City Department of Emergency Management as the project progresses.

Your comment letter and this response will be included in the Final Environmental Assessment. We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Rachel Shaak

Rachel Shaak, AICP
Planner

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SEP 14
CNO/DP/OUT'L

MUFI HANNEMANN
MAYOR

HENRY ENG, FAICP
DIRECTOR

DAVID K. TANOUE
DEPUTY DIRECTOR

2007/ELOG-2153 (TH)

September 12, 2007

MEMORANDUM

TO: MELVIN N. KAKU, DIRECTOR
DEPARTMENT OF TRANSPORTATION SERVICES

ATTN: TY FUKUMITSU, ACTING CHIEF
TRAFFIC SIGNALS AND TECHNOLOGY DIVISION
DEPARTMENT OF TRANSPORTATION SERVICES

FROM: HENRY ENG, FAICP, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

SUBJECT: ALAPAI TRANSIT CENTER AND JOINT TRAFFIC MANAGEMENT CENTER DRAFT ENVIRONMENTAL ASSESSMENT (DEA)
TMK: (1) 2-1-042:004, 011 & 013 (HONOLULU, OAHU, HAWAII)

We have reviewed the subject project and offer the following comments:

1. Regarding reference to the General Plan's Policy 4 on Page 5-4 that states: "Improve roads in existing communities to reduce congestion and eliminate unsafe conditions" should be corrected to read "Policy 5."

2. The reference to the General Plan's Physical Development and Urban Design, Objective A, Policy1: "Provide for the construction…" should be revised to read "Plan for the construction…"

3. Section 2.3 should include a subsection describing the pedestrian network for the site connecting Hotel Street and the Hotel Street Mall. The intent is to also accommodate cyclists. So its design should accommodate pedestrians and cyclists crossing the site without major impact on bus loading activity. Figure 2.1 should show and identify the meandering pedestrian paths and promenade as discussed in the July 27, 2007, Group 70 letter to DPP.

4. We recommend that Section 4.0 of the Final EA include other alternatives to the proposed building's orientation. See number 4 below.

5. Section 5.8 of the FEA should discuss the proposed building's orientation so as to minimize intrusion into mauka-makai views, especially to and from Punchbowl Crater. The FEA should also discuss how the proposed project meets the open space and height requirements of the Hawaii Capital Special District Guidelines.

   The FEA should also discuss the spatial relationship between the proposed project and adjacent buildings such as but not limited to: the Honolulu Police Department Headquarters, Frank F. Fasi Municipal Building, the Board of Water Supply, Home World, Scan Design, and One Kapiolani.

Thank you for the opportunity to comment on this matter. Should you have any questions, please contact Tim Hata of our staff at 768-8043.

HE:js

cc: Group 70 International, Inc., Attn: Ms. Rachel Shaak, AICP
OEQC

P:\DivFunction\EA-EIS\2007\Alapai TC\elog2153

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Ralph E. Portmore, AICP
Of Counsel

January 18, 2008

Mr. Henry Eng, FAICP
Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, HI 96813

Dear Mr. Eng,

Thank you for your September 12, 2007 comment letter concerning the Alapa'i Transit Center and Joint Traffic Management Center Draft Environmental Assessment (EA). The following are offered in response to your comments.

1. The change has been made in the Final EA as requested.
2. The change has been made in the Final EA as requested.
3. The project is designed to meet the objectives of the Honolulu Bicycle Master Plan (1999) by providing connectivity from Alapa'i Street to Hotel Street via a pedestrian and bicycle-friendly walkway that is pleasantly landscaped, shaded by canopy trees and kept separate from the adjacent bus circulation area. The walkway will centrally traverse the site in an east-west direction and match the style and design of pathways provided in the Civic Center park and Honolulu Police Department site. Figure 2.1 has also been updated to identify the meandering bicycle and pedestrian path on the site.
4. A mauka-makai building orientation was initially proposed, however, due to site constraints, it was not possible to maintain federally-required force protection setback standards with a mauka-makai building orientation. This will be more fully discussed in Section 4.0 and 5.8 of the Final EA.
5. Project compliance with the requirements of the Hawai'i Capital Special District will be summarized in Section 5.8. Per a phone conversation with Tony Ching, UDB (12/27/07), the spatial relationship of the proposed building with surrounding buildings and the Hawai'i Capital Special District will be addressed graphically in Figure 1.1 and through inclusion of the Hawai'i Capital Special District Map, respectively.

Your comment letter and this response will be included in the Final EA. We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Rachel Shaak

Rachel Shaak, AICP
Planner

HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
636 South Street
Honolulu, Hawaii 96813-5007
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MUFI HANNEMANN
MAYOR

KENNETH G. SILVA
FIRE CHIEF

ALVIN K. TOMITA
DEPUTY FIRE CHIEF

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AUG 29
C. TOM & INTL

August 22, 2007

TO: MELVIN N. KAKU, DIRECTOR
DEPARTMENT OF TRANSPORTATION SERVICES

ATTN: TY FUKUMITSU, ACTING CHIEF
TRAFFIC SIGNALS AND TECHNOLOGY DIVISION

FROM: ALVIN K. TOMITA, ACTING FIRE CHIEF

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
ALAPAI TRANSIT CENTER AND
JOINT TRAFFIC MANAGEMENT CENTER
TAX MAP KEY: 2-1-042: 004, 011, AND 013

In response to a letter from Group 70 International, Inc. dated August 3, 2007, regarding the above-mentioned subject, the Honolulu Fire Department (HFD) reviewed the material provided and requires that the following be complied with:

1. Provide a fire apparatus access road for every facility, building, or portion of a building hereafter constructed or moved into or within the jurisdiction when any portion of the facility or any portion of an exterior wall of the first story of the building is located more than 150 feet (45 720 mm) from a fire apparatus access road as measured by an approved route around the exterior of the building or facility. (1997 Uniform Fire Code, Section 902.2.1.)

2. Provide a water supply, approved by the county, capable of supplying required fire flow for fire protection to all premises upon which facilities or buildings, or portions thereof, are hereafter constructed or moved into or within the county.

   On-site fire hydrants and mains capable of supplying the required fire flow shall be provided when any portion of the facility or building is in excess of the 150 feet (45 720 mm) from a water supply on a fire

apparatus access road, as measured by an approved route around the exterior of the facility or building. (1997 Uniform Fire Code, Section 903.2 as amended.)

3. Submit civil drawings to the HFD for review and approval.

Should you have any questions, please call Battalion Chief Lloyd Rogers of our Fire Prevention Bureau at 723-7151.

Alvin K. Tomita

ALVIN K. TOMITA
Acting Fire Chief

AKT/SY:bh

cc: Office of Environmental Quality Control
Rachel Shaak, AICP, Group 70 International, Inc. ✓

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Ralph E. Portmore, AICP
Of Counsel

January 18, 2006

Alvin K. Tomita., Acting Fire Chief
City and County of Honolulu
Honolulu Fire Department
636 South King Street
Honolulu, HI 96813

Dear Mr. Tomita,

Thank you for your August 22, 2007 comment letter concerning the Alapa'i Transit Center and Joint Traffic Management Center Draft Environmental Assessment (EA).

The project will comply with the fire and water standards provided in your comment letter. Civil engineering drawings will be submitted to Honolulu Fire Department for review prior to issuance of building permits.

Your comment letter and this response will be included in the Final EA. We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Rachel Shaak

Rachel Shaak, AICP
Planner

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POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

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TELEPHONE: (808) 529-3111 · INTERNET: www.honolulupd.org

MUFI HANNEMANN
MAYOR

BOISSE P. CORREA
CHIEF

PAUL D. PUTZULU
MICHAEL D. TUCKER
DEPUTY CHIEFS

OUR REFERENCE BS-DK

August 22, 2007

TO: MELVIN N. KAKU, DIRECTOR
DEPARTMENT OF TRANSPORTATION SERVICES

ATTENTION: TY FUKUMITSU, ACTING CHIEF, TRAFFIC SIGNALS AND TECHNOLOGY DIVISION

FROM: BOISSE P. CORREA, CHIEF OF POLICE
HONOLULU POLICE DEPARTMENT

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
ALAPA`I TRANSIT CENTER AND JOINT TRAFFIC MANAGEMENT CENTER
TAX MAP KEY: (1) 2-1-042: 004, 013, AND 011

This is in response to a letter dated August 3, 2007, from Ms. Rachel Shaak, AICP of Group 70 International, Inc.

The Honolulu Police Department (HPD) continues to support and participate in the development of this project. However, we would like to clarify the terminology appearing on page 2-11, which should read as follows:

City and County of Honolulu Police (HPD): The HPD's Traffic Division, Homeland Security Division, Civil Defense Coordinator, and Communications Division are being considered for location in the JTMC. The Traffic Division is responsible for traffic enforcement, investigation, and incident management. The Homeland Security Division coordinates the department's terrorism-related activities with federal, state, and other local agencies. The Civil Defense Coordinator coordinates the department's civil defense activities. The Communications Division plans and operates the centralized communications systems for 9-1-1 calls and police dispatch for the island of Oah`u and is currently located in the HPD's Alapa`i headquarters located at 801 South Beretania Street.

If there are any questions, please call Mr. Brandon Stone of the Executive Office at 529-3644.

BOISSE P. CORREA
Chief of Police

By
JOHN P. KERR
Assistant Chief of Police
Support Services Bureau

cc: Ms. Rachel Shaak, AICP
Group 70 International, Inc.

Serving and Protecting With Aloha

GROUP 70 INTERNATIONAL

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Ralph E. Portmore, AICP
Of Counsel

January 18, 2008

Boisse P. Correa
Chief of Police
Honolulu Police Department
City and County of Honolulu
801 South Beretania Street
Honolulu, HI 96813

Dear Chief Correa,

Thank you for your August 22, 2007 comment letter concerning the Alapa'i Transit Center and Joint Traffic Management Center Draft Environmental Assessment (EA). The following are offered in response to your comments.

Thank you for clarifying the terminology presented on page 2-11 of the Draft EA. We will incorporate the text you provided in the Final EA. Your continued support of the project is appreciated.

Your comment letter and this response will be included in the Final EA. We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Rachel Shaak

Rachel Shaak, AICP
Planner

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Hawaiian Electric Company, Inc. • PO Box 2750 • Honolulu, HI 96840-0001

EIS

October 9, 2007

Mr. Ty Fukumitsu, Acting Chief
Traffic Signals & Technology Div.
Dept. of Transportation Services
City & County of Honolulu
650 South King Street - 3d Floor
Honolulu, HI 96813

Dear Mr. Fukumitsu:

Re: DEA - Alapai Transit Center &
Joint Traffic Management Center
TMKs: 2-1-042: 004, 011 & 013

Thank you for the opportunity to comment on the above-referenced project. We apologize for this late response. HECO has no objections at this time. The following comments were received from various divisions of our Engineering Department:

(1) HECO has existing overhead and underground facilities within the project area that will require continued access for maintenance purposes.

(2) A microwave link passes near northeast of the site. That shot links HECO's Ward Avenue and Tripler antennas. A preliminary assessment shows that the shot will not be affected by the new Alapai Transit Center and Joint Management Center.

(3) HECO has proposed the installation of an underground 46kV ductline on Cooke and South Streets as part of the East Oahu Transmission Project, Phase 2 (see enclosure). A portion of the 46kV ductline will be in the same vicinity as the proposed six-inch sewer lateral for the subject project that crosses South King Street to Cooke Street. Construction of the ductline is tentatively scheduled to start in 2010, but is subject to change. We recommend that the City's consultant review the *East Oahu Transmission Project 46kV Phased Project Final Environmental Assessment, January 2005*, which provides more detailed information on our ductline.

We appreciate your efforts to keep us apprised of the planning process and reserve the opportunity to further comment on the protection of existing power facilities and lines, as well as easements, that may be affected by the project. As the project progresses, please continue to keep us informed. We will be better able to evaluate any effects on our system facilities further along in the project's development. We request that development plans show all affected HECO facilities, and address any conflicts between the proposed plans and HECO's existing facilities. Please forward the pre-final development plans to HECO for review.

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GROUP 70 INT'L

Should it become necessary to relocate HECO's facilities, please immediately submit a request in writing and we will work with you so that construction of the project may proceed as smoothly as possible. Please note that there may be costs associated with any relocation work, and that such costs may be borne by the requestor. Because any redesign or relocation of HECO's facilities may cause lengthy delays, upon determination that HECO facilities will need to be relocated, HECO should be notified immediately in order to minimize any delays in or impacts on the project schedule.

I suggest dealing directly with the following Engineering division contacts to coordinate HECO's continuing input in this project:

Transmission & Distribution - Colin Chang (543-5619)
Telecommunications - Rena Chock (543-4810)
Distribution Planning/Project Mgt - Kerstan Wong (543-7059)

Sincerely,

Kirk S. Tomita
Senior Environmental Scientist

Enc.

cc (w/ enc): OEQC
Mr. Mel Kaku/ DTS-C&C
Rachel Shaak, AICP/Group 70

cc (w/o enc): C. Chang/P. Nakagawa
R. Chock/D. Lau
K. Wong

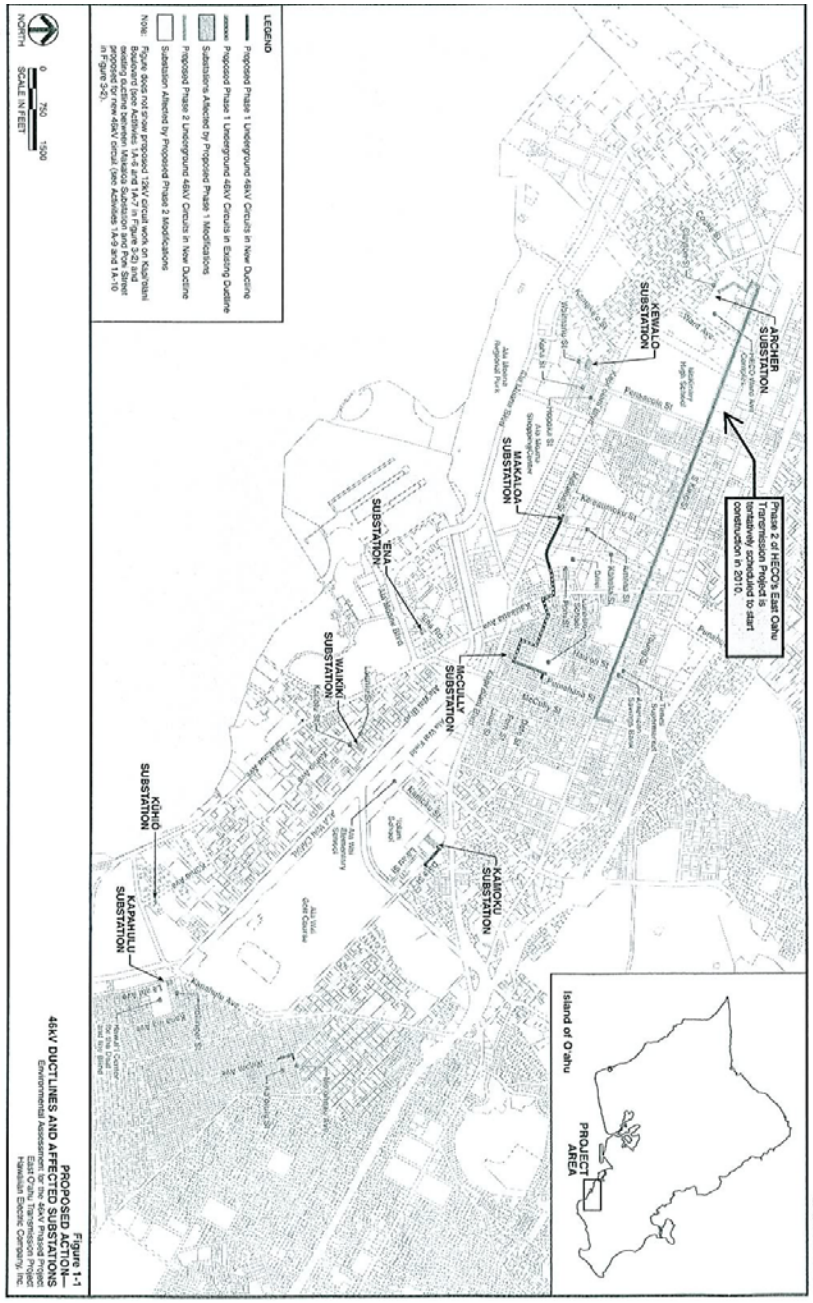

Figure 1-1
PROPOSED ACTION—
46kV DUCTLINES AND AFFECTED SUBSTATIONS
Environmental Assessment for the 46kV Proposed Project
East O'ahu Transmission Project
Hawaiian Electric Company, Inc.

GROUP 70 INTERNATIONAL

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Of Counsel

January 18, 2008

Mr. Kirk S. Tomita, Senior Environmental Scientist
Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, HI 96840-0001

Dear Mr. Tomita,

Thank you for your comment letter concerning the Alapa'i Transit Center and Joint Traffic Management Center Draft Environmental Assessment (EA). The following are offered in response to your comments.

1. The City Department of Transportation Services (DTS) will continue to work with Hawaiian Electric Company, Inc. (HECO) to ensure continued access to existing facilities on the project site through construction and operation stages of the project.
2. Thank you for alerting us to the presence of the microwave link. We will continue to provide HECO with updates as the proposed building plans are finalized to ensure the shot is not affected by the building.
3. DTS will coordinate with HECO regarding timing of construction and future underground utility locations.

DTS will provide HECO with pre-final development plans to identify and mitigate potential utility conflicts or relocation needs and minimize delay times.

Your comment letter and this response will be included in the Final EA. We appreciate your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Rachel Shaak

Rachel Shaak, AICP
Planner

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APPENDICES

APPENDIX A. ARCHAEOLOGICAL INVENTORY SURVEY AND CULTURAL IMPACT EVALUATION

Archaeological Inventory Survey and Cultural Impact Evaluation For the Alapai Transit Center and Joint Traffic Management Center Project Honolulu Ahupuaʻa, Honolulu District, Island of Oʻahu TMK: (1) 2-1-042:004, 013

Prepared for

Group 70 International

and the

City and County of Honolulu

Prepared by

Constance R. O'Hare,

David W. Shideler, M.A.,

and

Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawaiʻi, Inc.

Kailua, Hawaiʻi

(Job Code: HONOL 7)

November 2007

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Management Summary

Reference	Archaeological Inventory Survey and Cultural Impact Evaluation for the Alapai Transit Center and Joint Traffic Management Center Project, Honolulu Ahupuaʻa, Honolulu District, Island of Oʻahu, TMK: (1) 2-1-042:004, 013 (Oʻ Hare, Shideler, and Hammatt 2007)
Date	November 2007)
Project Number (s)	Cultural Surveys Hawaiʻi, Inc. (CSH) Job Code: HONOL 7
Investigation Permit Number	CSH completed the inventory survey fieldwork under state archaeological permit numbers 06-05 and 07-19, issued by the State Historic Preservation Division (SHPD), per Hawaiʻi Administrative Rules (HAR) Chapter 13-13-282.
Project Location	The Alapai Transit Center (ATC)is located at 710 and 752 South King Street, *mauka* (inland) of King Street, east of Alapaʻi Street, *makai* (seaward) of Hotel Street, and west of Kealamakai Street (TMK [1] 2-1-042: 013 and 004). This area is depicted on the 1998 Honolulu USGS 7.5-minute topographic quadrangle (see Figure 1).
Land Jurisdiction	Municipal, City and County of Honolulu (County)
Agencies	Federal Highway Administration (FHWA), Federal Transit Authority (FTA), County Department of Transportation Services (DTS), SHPD
Project Description	County DTS's proposed redevelopment of the existing ATC site would replace the current bus facility with a replacement bus transit center and a new, multi-agency, Joint Traffic Management Center (JTMC). The *makai* portion of the project area will be a redeveloped bus staging area, passenger-loading zone, and throughway for buses. The multi-story JTMC building will be constructed on the *mauka* portion of the project area.
Project Acreage	4.13-acres
Area of Potential Effect (APE) and Survey Area	For this investigation, the project's APE is defined as the entire 4.13-acre footprint of the proposed ATC and JTMC development. The project area's surrounding built environment is urban (paved streets and low rise and high rise buildings), and the proposed construction poses no additional auditory, visual, or other environmental impacts to any surrounding potential historic properties (for example historic buildings or structures). Accordingly, for the current investigation the survey area and the project APE are the same.
Historic Preservation Regulatory Context	Due to FHWA and FTA funding, this project is a federal undertaking requiring compliance with Section 106 of the National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA). As a County project within County-owned land, the project is subject to Hawaiʻi State environmental and historic preservation review legislation [Hawaiʻi Revised Statutes (HRS) Chapter 343 and HRS 6E-8 / Hawaii Administrative Rules (HAR) Chapter 13-275, respectively].
Document Purpose	At the request of Group 70 International, the County's consultant for the project, CSH, completed this archaeological inventory survey and cultural impact evaluation. This investigation was prepared in consideration of the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation and was conducted to identify, document, and make National Register of Historic Places (National Register) and Hawaiʻi Register of Historic Places (Hawaiʻi Register) eligibility recommendations for the subject

	parcel's cultural resources[1]. The investigation also fulfills Hawai‘i State archaeological inventory survey requirements (per HAR Chapter 13-276). The cultural impact evaluation component provides information pertinent to the assessment of the proposed project's cultural impacts[2] [per Hawai‘i Revised Statutes (HRS) Chapter 343 and the Office of Environmental Quality's *Guidelines for Assessing Cultural Impacts)*. This document is intended to support project-related historic preservation consultation among stake-holding federal and state agencies, interested Native Hawaiian groups and individuals, and community groups.
Fieldwork Effort	Kevin Dalton, B.A., Amy Hammermeister, B.A., Matthew Bell, B.A., Michelle Pammer, B.A., Katie Whitman, B.S. and Matt McDermott, M.A. (principal investigator), completed the fieldwork on December 26 and 27, 2006, January 23 and 24, 2007, and June 18 and 19, 2007, requiring approximately 17 person-days. No surface cultural resources were identified during pedestrian inspection of the project area. Accordingly, the historic property identification effort focused on a subsurface testing program. Twenty-eight test trenches were excavated, documented, and sampled.
Cultural Resources/Historic Properties[3] Identified and Recommended Eligibility to the National/Hawaii Register[4]	Both cultural resources/historic properties identified within the current project area are recommended eligible to the National/Hawai‘i Register: 1) State Inventory of Historic Properties (SIHP) 50-80-14-6901 consists of four historic trash pits, dating to between A.D. 1820 and 1920, recommended eligible to the National and Hawai‘i Register under Criterion D (for its information content). 2) SIHP 50-80-14-6902 consists of three burials; Burial 1 and 2 are historic coffin interments, less information is available regarding Burial 3, recommended eligible to the National and Hawai‘i Register under Criteria D and E (Hawaii Register-only—for its potential traditional cultural significance to an ethnic group).
Burial Ethnicity and Treatment Jurisdiction	Three burials, by definition "previously identified" because they were found during inventory survey investigations (HAR Chapter 13-300-2), were documented. Following the procedures of HRS Chapter 6E-43/HAR Chapter 13-300, SHPD determined the remains were over 50 years old. Based on input from SHPD, there is currently insufficient information to make a burial ethnicity determination for the burials. Accordingly, appropriate burial treatment will be determined by SHPD, per HAR Chapter 13-300-31(h)(4).
Effect Recommendation	The proposed project will potentially affect two cultural resources/historic properties recommended eligible to the National/Hawai‘i Register. With the understanding that the proposed mitigation measures, described below, are implemented, a federal Section 106 project effect determination of "no adverse effect" is warranted for the proposed transit center development. Under Hawai‘i State historic preservation review legislation (HAR Chapter 13-275), a project effect recommendation of "effect, with proposed mitigation commitments" is warranted.

Mitigation Recommendation	The proposed mitigation for the project area's two historic properties is two-fold. First, for SIHP 50-80-14-6902, the previously identified burials, a burial treatment plan should be prepared for the consideration of SHPD. The project proponents propose to preserve all three burials in place within a single burial preserve area, which will be appropriately landscaped and restricted from pedestrian access. Second, mitigation should include an archaeological monitoring program[5] to help identify and properly treat any additional archaeological deposits, such as additional historic deposits of SIHP 50-80-14-6901, and/or burials located during the project's construction.

[1]In historic preservation parlance, cultural resources are the physical remains and/or geographic locations that reflect the activity, heritage, and/or beliefs of ethnic groups, local communities, states, and/or nations. Generally, they are at least 50 years old, although there are exceptions, and include: buildings and structures; groupings of buildings or structures (historic districts); certain objects; archaeological artifacts, features, sites, and/or deposits; groupings of archaeological sites (archaeological districts); and, in some instances, natural landscape features and/or geographic locations of cultural significance.

[2]CSH's scope of work and methods for cultural impact evaluation studies includes consultation with knowledgeable individuals and/or groups regarding current cultural practices, but does not include formal ethnographic interviews and oral histories. Cultural impact evaluation studies are intended as a more time and cost effective means of addressing potential impacts to cultural practices within project areas that have been fully developed for a long time and where, accordingly, there is less likelihood of ongoing cultural practices.

[3]Historic properties, as defined under federal historic preservation legislation, are cultural resources that are at least 50 years old (with exceptions) and have been determined eligible for inclusion in the National Register of Historic Places based on their integrity and historic/cultural significance in terms of established significance criteria. Determinations of eligibility are generally made by a federal agency official in consultation with SHPD. Under federal legislation, a project's (undertaking's) potential effect on historic properties must be evaluated and potentially mitigated. Under Hawai‘i State historic preservation legislation, historic properties are defined as any cultural resources that are 50 years old, regardless of their historic/cultural significance under state law, and a project's effect and potential mitigation measures are evaluated based on the project's potential impact to "significant" historic properties (those historic properties determined eligible, based on their integrity and historic/cultural significance in terms of established significance criteria, for inclusion in the Hawai‘i Register of Historic Places). Determinations of eligibility to the Hawai‘i Register result when a state agency official's historic property "significance assessment" is approved by SHPD, or when SHPD itself makes an eligibility determination for a historic property.

[4]Cultural resource significance is evaluated and expressed as eligibility for listing on the National and/or Hawai‘i Register. To be considered eligible for listing on the National and/or Hawai‘i Register a cultural resource should possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet one or more of the following broad cultural/historic significance criteria: "A" reflects major trends or events in the history of the state or nation; "B" is associated with the lives of persons significant in our past; "C" is an excellent example of a site type/work of a master; "D" has yielded or may be likely to yield information important in prehistory or history; and, "E" (Hawaii Register only) has traditional cultural significance to an ethnic group, includes religious structures and/or burials.

[5]Under Hawai‘i State historic preservation review legislation, there are five potential forms of historic preservation mitigation: A) Preservation; B) Architectural Recordation; C) Archaeological Data Recovery; D) Historical Data Recovery; and E) Ethnographic Documentation (HAR Chapter 13-275-8). Under this legislation, an archaeological monitoring program is considered a form of archaeological data recovery.

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Section 1 Introduction

1.1 Project Background

Cultural Surveys Hawai‘i, Inc. (CSH) has undertaken the production of an inventory survey report for their client, Group 70 International, Inc. (925 Bethel Street, 5th Floor, Honolulu, Hawai‘i 96813). The project area is the 4.13-acre Alapai Transit Center (ATC), located at 710 and 752 South King Street *mauka* (inland) of King Street, east of Alapa‘i Street, *makai* (seaward) of Hotel Street, and west of Kealamakai Street (TMK 1-2-1-042: 013 and 004). The project site is owned in fee by the City and County of Honolulu. The site also includes the adjacent Hotel Street right-of-way, which is owned by the County (Figure 1 to Figure 3).

The ATC is located within the County’s Hawai‘i Capital Special District, requiring a Special District Permit (Major). The project area is zoned as BMX-3, Community Business Mixed Use District within the Hawai‘i Capital Special District – Alapai Precinct (Figure 4). The Alapa‘i site has been in municipal use as a bus transit center and parking area since circa 1938. It was purchased in 1973 with Federal Transit Authority (FTA) funds; use of federal grant monies requires that the site remain in transit-related land use.

The Alapa‘i project site consists of a flat, paved lot. There are two access points, one to Alapa‘i Street and one to King Street. Presently, the only structures on the lots are four bus shelters and wooden benches on a central raised concrete island. The area is used only as a bus transit area and as an overflow parking area for municipal vehicles.

The City and County of Honolulu (County), Department of Transportation Services (DTS), (DTS) will redevelop the site to replace the current Alapai Transit Center (ATC) and develop a new multi-agency, Joint Traffic Management Center (JTMC). A new transit center will replace the existing ATC facility. ATC operations would continue to be located on the *makai* half of the site. The new ATC will include a 3,000 square foot bus terminal building, four bus passenger shelters, a bus parking lot with nineteen stalls, and a passenger drop off area. The JTMC building will occupy the *mauka* half of the site and provide office space for City and State transportation and emergency service. The 100-foot tall building will have ten stories, four levels of parking, one below grade and three above grade, and six office floors above the parking levels (Figures 5 & and 6).

Group 70 International’s proposed development of the ATC and JTMC constitutes a project requiring compliance with and review under state of Hawai‘i historic preservation review legislation (Hawai‘i Revised Statutes (HRS) Chapter 6E-42 and HAR 13-284). This archaeological inventory survey report was prepared to support the proposed ATC and JTMC’s historic preservation review and any other project-related historic preservation consultation. For the purposes of this study the area of potential effect (APE) and the project area are considered one and the same.

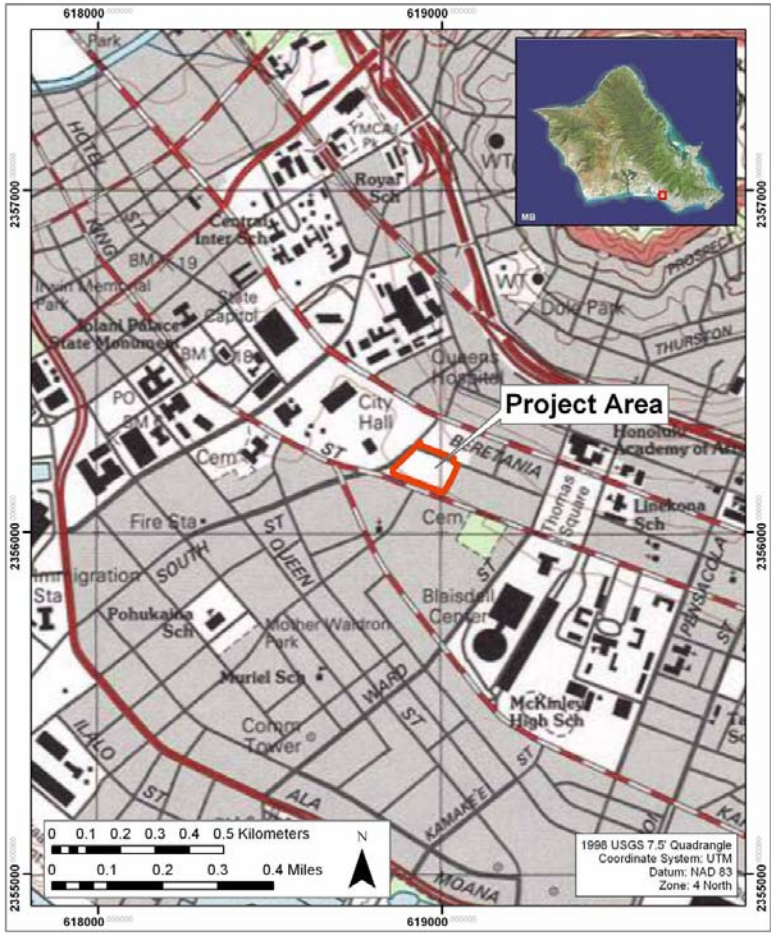


Figure 1. U. S. Geological Survey, Honolulu Quad, showing project area

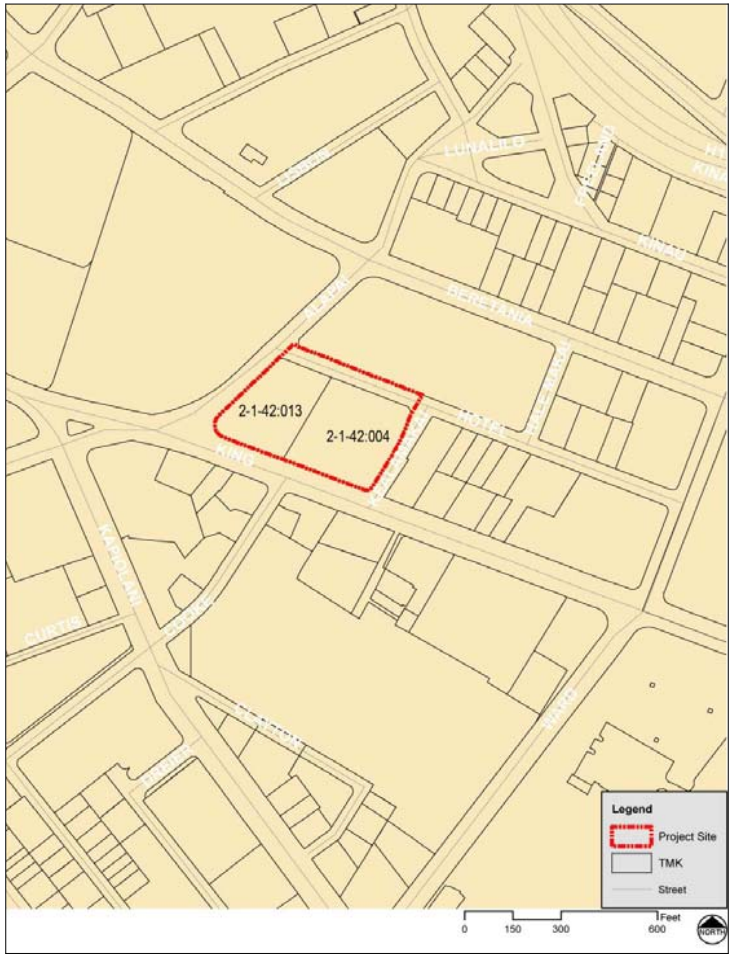


Figure 2. Honolulu Street map, showing location of project area in tax map key lots (1) 2-1-042: 004, and 013

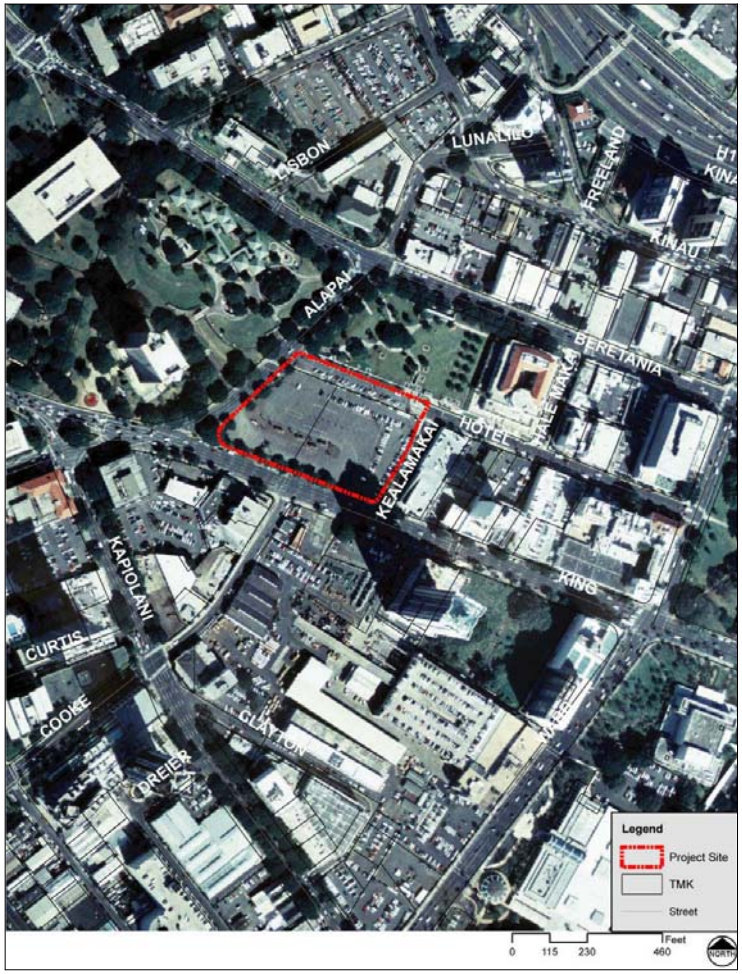


Figure 3. Aerial photograph of downtown Honolulu, showing location of project area

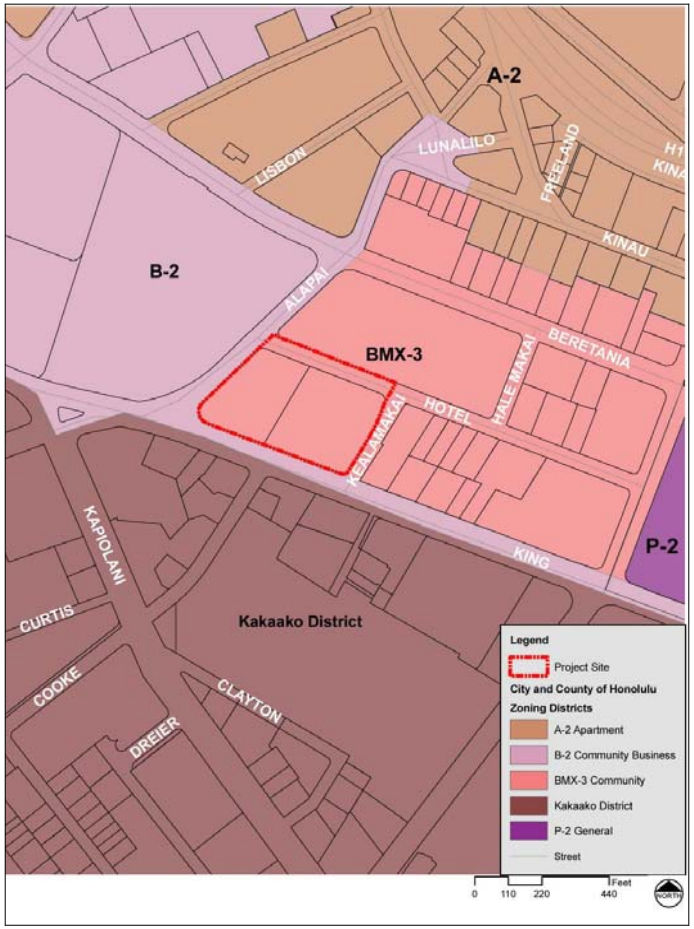


Figure 4. Honolulu Street map showing project area in Zoning District BMX-3, Community Business Mixed Use District within the Hawai‘i Capital Special District – Alapa‘i Precinct

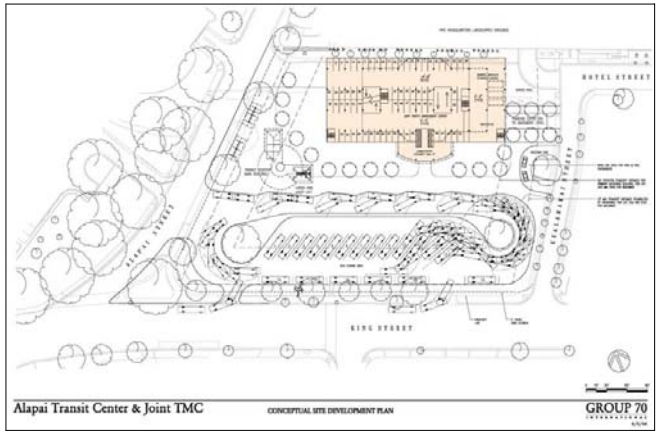


Figure 5. Group 70 International Plan for the new Alapai Transit Center and Joint Traffic Management Center (JTMC) Conceptual Site Development Plan

Figure 6. Group 70 International Plan for the new Alapai Transit Center and Joint Traffic Management Center (JTMC) complex

1.2 Scope of Work

This archaeological inventory survey report documents all historic properties within the subject parcel. A surface inventory survey was conducted and backhoe trench testing focused on location and evaluation subsurface deposits, such as buried cultural layers that could not be located by surface pedestrian inspection.

The following archaeological inventory survey scope of work satisfies the State and County requirements.

1. State rules have recently been established that require consultation with community members as part of the inventory survey process. This consultation requires contacting knowledgeable members of the community and requesting information on historic and cultural issues related to the property. This document includes the Cultural Impact Evaluation (CIA) for the property to address this requirement. The findings of the evaluation are presented in this report.
2. A ground survey of the entire project area was conducted for the purpose of further evaluating the likelihood of cultural deposits and for planning of the backhoe testing.
3. Limited subsurface testing (28 trenches) with a backhoe was conducted to determine if subsurface deposits were located in the project area, and, if so, evaluate their significance. Documentation included trench profiles, stratigraphy descriptions, and photographs. All sites were located, described, and mapped with evaluation of function, interrelationships, and significance. All sites were assigned State Inventory of Historic Places (SIHP) site numbers.
4. Research on historic and archaeological background, including search of historic maps, written records, and Land Commission Award documents was conducted. This research focused on the specific area, with general background on the vicinity, and with an emphasis on settlement patterns.
5. The inventory survey report was prepared, which includes the following:
    a. A topographic map of the survey area, showing all archaeological sites and site areas;
    b. Results of consultation with knowledgeable community members about the property and its historical and cultural issues;
    c. Description of all excavations and all archaeological sites with profiles, selected photographs, scale drawings, and discussions of function;
    d. Historical and archaeological background sections summarizing pre-contact and historic land uses, as they relate to any archaeological features;
    e. A summary of site categories and their significance in an archaeological and historic context; and
    f. Recommendations based on all information generated that specifies what steps should be taken to mitigate impact of development on archaeological resources – such as data recovery (excavation) and preservation of specific areas. These recommendations were developed in consultation with the client and the State agencies.
6. The report also includes an evaluation of the potential for adverse impact to cultural resources and practices on the parcel and documentation of the limited consultation.

This scope of work includes full coordination with the State Historic Preservation Division (SHPD), and the County, relating to archaeological matters. This coordination took pace after consent of the owner or representatives.

1.3 Environmental Setting

The project area is a paved parking lot devoid of vegetation, although there are a few exotic trees along the Alapa‘i and King streets curbs. According to the 1983 USGS Honolulu Quadrangle map, the parcel is between 15-20 ft (feet), or 4.5-6 m (meters) AMSL (above mean sea level). It is located approximately 1 mile (1.6 kilometers) inland of the shore. Although there is a slight decline in elevation towards the sea, the topographic relief is negligible. Temperatures of downtown Honolulu range from 52 and 95°F, with the warmest temperatures in September and the coolest temperatures in January. Average annual rainfall ranges between 20 to 30 inches, with 15 to 20 inches between November and March and 0 to 5 inches between June and August (Armstrong 1983:62-64). The soil matrix within the project area is classified as Makiki clay loam (MkA) with 0 to 2 percent slopes. The Makiki soil series consists of well-drained soils on alluvial fans and terraces in the city of Honolulu. These soils formed in alluvium mixed with volcanic ash and cinders. Makiki clay loam is found on smooth fans and terraces (Foote et al. 1998:3-5). Adjacent areas of downtown Honolulu have been observed to have substantial deposits of a coarse black cinder. These cinder deposits are understood to relate to one or more eruptions from the Pu‘u ‘Ōhi‘a, Pu‘u Kāhea and/or Pu‘u ‘Ualaka‘a volcanic events.

Section 2 Methods

2.1 Field Methods

This section details the methodologies used by CSH personnel during the course of fieldwork and the preparation of this report.

Kevin Dalton, B.A., Amy Hammermeister, B.A., Matthew Bell, B.A., Michelle Pammer, B.A., Katie Whitman, B.S. and Matt McDermott, M.A. (principal investigator), completed the fieldwork on December 26 and 27, 2006, January 23 and 24, 2007, and June 18 and 19, 2007, requiring approximately 17 person-days. CSH completed the inventory survey fieldwork under state archaeological permit No. 06-05 and 07-19 issued by the State Historic Preservation Division (SHPD), per Hawai‘i Administrative Rules (HAR) Chapter 13-13-282.

No surface cultural resources were identified during pedestrian inspection of the project area. Accordingly, the historic property identification effort focused on a subsurface testing program. Twenty-eight test trenches were excavated, documented, and sampled. There was little indication of prior subsurface ground disturbance within the project area. As the underlying volcanic cinder layer clearly pre-dates Polynesian colonization of Hawai‘i, test trenches were only sufficiently deep to expose pure cinder deposits, which were typically 80 to 130 cmbs (centimeters below surface) of the current land surface. A 70 cm wide bucket was used on the backhoe, and one-bucket width trenches were dug. CSH personnel closely monitored all excavations. Trenches were placed to provide adequate coverage of all portions of the project parcel.

The stratigraphy was drawn and photographed and sediments were described for each of the 28 trenches. Sediment descriptions include Munsell color, texture, consistence, structure, plasticity, cementation, origin of sediments, descriptions of any inclusions such as cultural material and/or roots and rootlets, lower boundary distinctiveness and topography, and other general observations. Sediments exposed in the trench walls were not screened, but one 5-gallon sample of soil from one trash pit was screened to collect historic artifacts for dating.

The fieldwork methodology for this project was worked out in close consultation with the State Historic Preservation Division. Prior to the fieldwork the methodology was discussed in e-mail interchanges with Dr. Chris Monahan of the SHPD. Following the discovery of the first burial the methodology for further excavations in the vicinity were discussed with Mr. Adam Johnson. Subsequent trenching methodology was discussed with Mr. Allen Smith, Ms. Melanie Chinen and Ms. Jenny Pickett and the O‘ahu Island Burial Council.

The issue of utilizing ground penetrating radar (GPR) was brought up in the course of consultation with the OIBC. In the past Cultural Surveys has employed the technology to try and identify burial locations in Waikīkī only to be dismayed at the technology’s inability to locate large diameter iron pipes let alone anomalies relating to burials. Cultural Surveys did follow-up with Dr. Lawrence B. Conyers, Associate Professor in the Department of Anthropology at the University of Denver and author of *Ground-Penetrating Radar: An Introduction for Archaeologists* to solicit his guidance. Dr. Conyers was kind enough to supply a copy of a recent article by himself and Samuel Connell entitled “*An Analysis of Ground Penetrating Radar’s Ability to discover and Map Buried Archaeological sites in Hawai‘i*.” We were particularly

impressed by the results of efforts at locating burials at Punchbowl Cemetery in sediments we believe to be quite similar as those of the project area. The results are given below:

> As a test of basalt soils on the leeward side of the island [of O‘ahu] GPR reflection profiles were collected at the National Memorial Cemetery of the Pacific, also called Punchbowl Cemetery where metal caskets were known to be located at standard depths in the ground. The soil in this area is composed of weathered basalt, with additions of some weathered coral rubble that was imported to level the ground. The ground has been heavily irrigated and fertilized (until a few years ago with iron-rich liquid fertilizer). A number of reflection profiles were collected using the 400 and 270 MHz antennas over known graves. Radar energy was severely attenuated below about 10 nanoseconds, which is approximately 40 centimeters in the ground. No coherent reflections were obtained below 20 nanoseconds (80 centimeters) in any of the profiles, and none of the caskets, whose tops were about 120-150 centimeters below ground surface were visible. These tests confirm those performed here by Sabrina Buck (2003), who reported similar results. At this location the shallow energy attenuation is probably the result of highly conductive clays in the soil, but could also be partially the result of some magnetic attenuation due to the application of iron-rich fertilizer for many years. This high iron content, perhaps from magnetite that had not completely weathered to ferrous oxide minerals in the basaltic fill and possibly from the fertilizer, could have caused the attenuation. Of all the GPR data collected (away from salt water) as part of this study, those at Punchbowl showed the most severe attenuation with depth. Other GPR tests in similar leeward areas of Kauai (Doolittle 1990) showed similar poor results in analogous soils.

It needs to be noted that in personal communications Dr. Conyers advocated carrying out GPR testing (“Do it and see!”) – but of course he is an advocate of GPR testing. He did suggest that unique conditions at Punchbowl involving iron-rich fertilizer and watering may have lead to the failure to locate known graves in metal caskets at a depth of 120-150 centimeters below ground surface. However he did also note the relative failure of GPR testing in cinder deposits at Mōkapu, O‘ahu (a target 6” diameter plastic pipe could not be detected at 80 cm depth) where the Conyers and Connell paper concluded: “This test suggests that there is something about these recently erupted basaltic cinders that is highly attenuating to radar energy at a very shallow depth.”

Cultural Surveys Hawai‘i regards Ground Penetrating Radar as a potentially very useful tool for such studies as the present case but perceives that the interpretation of software readouts remains quite experimental at the present time - particularly in recently erupted basaltic cinder environments. Our efforts to pursue the matter with a recognized leading expert indicate both a recent lack of success in what seem to us to be similar environments but also the prospect for successful application in the near future.

2.2 Laboratory Methods

Laboratory work was undertaken only on historic artifacts, mainly glass bottles and a few ceramics, collected from trash pits in four trenches. To provide consistency in the analysis, all terminology for glass bottle characteristics and dating age ranges for different glass bottle manufacturing techniques were taken from the Bureau of Land Management (U.S. Dept. Interior) “Historic Glass Bottle Identification and Information Website” (http://www.blm.gov/historic_bottles/index.htm).

2.3 Document Review

Background research included a review of previous archaeological studies on file at the State Historic Preservation Division (SHPD) of the Department of Land and Natural Resources (DLNR). Historic books, maps and photographs contained within the CSH library were also consulted. In addition, Māhele records were examined from the Waihona ‘Aina database (www.waihona.com).

This research provided the environmental, cultural, historic, and archaeological background for the project area. The sources studied were used to formulate a predictive model regarding the expected type and location of sub-surface pre and post-contact historic properties in the project areas.

2.4 Consultation

Cultural Surveys Hawai‘i sent out letters (on 14 March 2007) to Hui Mālama I Nā Kūpuna o Hawai‘i Nei, the Office of Hawaiian Affairs and the O‘ahu Island Burial Council (see Appendix D for an example) requesting historic preservation cultural consultation and/or comment regarding the cultural resource management investigation associated with the proposed redevelopment of the Alapai Transit Center and Joint Traffic Management Center. These letters presented the inventory survey findings, the proposed historic property significance assessments, the traditional cultural use of the project area, and the proposed historic property mitigation measures and requested comment within 30 days of receipt.

Mr. Edward Halealoha Ayau of Hui Mālama I Nā Kūpuna o Hawai‘i Nei responded as follows:

> Our main comment is that although three ethnic groups are listed, the reality is that haole people did not bury in individual graves on the properties they lived on and tended to bury their deceased in church cemeteries or in community cemeteries. Hawaiians and Chinese were known to bury on lands lived upon and the overwhelming majority of those instances involved Hawaiian ancestors.
>
> Ola na iwi,
>
> Halealoha April 1, 2007

Mr. Jace McQuivey, chairperson, O‘ahu Island Burial Council responded as follows:

> I have forwarded the letter to Council members to elicit any response they may have. I have asked them further to copy me on a response so I know what you have received.
>
> In the event you would like to come before the council to provide an update or presentation - our next meeting is scheduled for April 11th and then every second Wednesday thereafter. You would need to make a request to be on the agenda at least 7 days prior to the 11th. The request can be made to me or the department.
>
> Thank you,
>
> Jace McQuivey March 14, 2007

Presentations on the project were made before the O‘ahu Island Burial Council at their April and June 2007 meetings.

The discovery of burials during the inventory survey was announced in notices in *Ka Wai Ola o OHA* (May 2007) and the *Honolulu Advertiser* (April 11, 12 & 15) (see Appendix C) and at meetings of the O‘ahu Island Burial Council. Inquiries were received from Mr. Kealoha Kuhea of O‘ahu and Ms. Hanna Reeves of Hawai‘i Island but no one contacted the SHPD to supply information or assert lineal and/or cultural relationship.

Section 3 Background Research

3.1 Mythological and Traditional Accounts

The area of Honolulu known as Kulaokahu‘a, which translates as “The Plains,” seems to have consisted of the *mauka* portions of the lands of Kewalo, Kaka‘ako, Makiki, Pāwa‘a, and Mō‘ili‘ili (Fitzpatrick 1989:25). The project area is in the *mauka* section of Kewalo, as can be seen in an 1847 map (Figure 7) and thus would have been a part of Kulaokahu‘a. In *Place Names of Hawai‘i*, (Pukui et al. 1974:123), Kulaokahu‘a is defined as “old name of a section of Honolulu between Alapa‘i and Punahou streets, inland of King street . . . *Lit*., plain of the boundary.”

In 1865, John Papa ‘Ī‘ī identified Kulaokahu‘a as a “play ground, where the ‘maika’ etc. was played” (Boundary Commissioners Record Book, Kewalo, cited in King 1989:26). *Maika* is a Hawaiian sport that uses a disc-shaped stone, called an ‘*ulu maika*, for a bowling type of game. The flat sparsely-vegetated, plain would have been a favorable place to play this sport. Pukui et al. (1974:142) state that the name *makiki* comes from the type of stone used to make octopus lures. This is the same type of stone that was used to make ‘*ulu maika*, and Fitzpatrick (1989:29) has speculated that the name of the *ahupua‘a* may have originated from its association with the *maika* sport rather than, or in addition to, the making of octopus lures. Several legends are associated with Kalaokahu‘a.

Hi‘iaka, sister of the goddess Pele, passed through this area before her departure from O‘ahu:

> . . . she wasted no time in leave-taking . . .Their route lay eastward across the dusty, wind-swept plain of **Kula-o-kahu‘a** – destined in the coming years to be the field of many a daring feat of arms; - then through the wild regions of Ka-imu-ki, thickset with bowlders [*sic*] – a region at one time chosen by the dwarf Menehune as a sort of stronghold where they could safely plant their famous ti ovens and be unmolested by the nocturnal depredations of the swinish Kama-pua‘a. Hi‘iaka saw nothing or took no notice of these little rock-dwellers. Her gaze was fixed upon the ocean beyond, whose waves and tides they must stem before they reached and passed Moloka‘i and Maui, shadowy forms that loomed in the horizon between her and her goal [Emerson 1915:185-186].

The description of this area as a playing field (a place for “daring feat of arms”) is also recounted in the “Legend of Pikoi the Rat Killer.” In this tale, a chief on Kaua‘i had eight children, six “god daughters or demi-gods,” one human daughter, and one human son. The human son, Pikoi, became a noted rat hunter on Kaua’i, using a bow and arrow to kill the rats. The human daughter moved to O‘ahu and married the chief of Mānoa. One day Pikoi and his father decided to travel to O‘ahu to visit their sister at Mānoa. While in O‘ahu, Pikoi wandered from Mānoa toward the harbor at Honolulu:

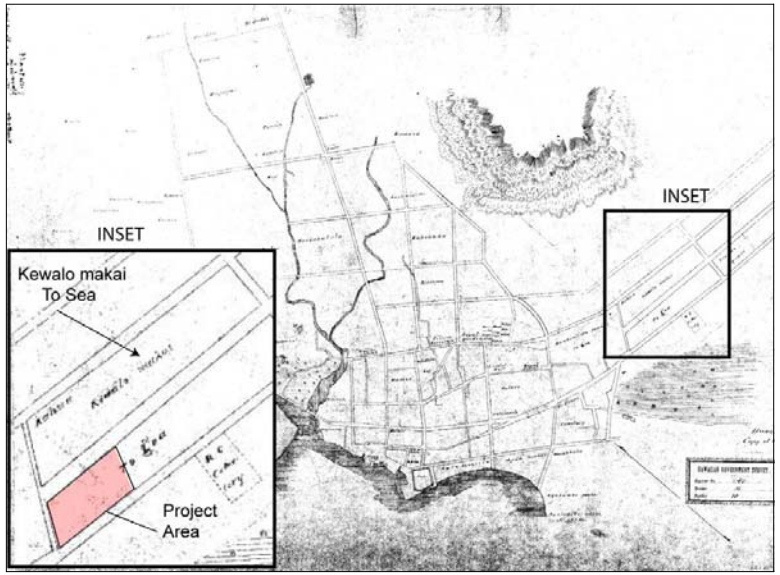


Figure 7. 1847 map by T. Metcalf of upper Honolulu, showing project area within “Kewalo”

> On the plain called **Kula-o-ka-hua** he saw a chiefess with some of her people. This plain was the comparatively level ground below Makiki Valley. Apparently it was covered at that time with a small shrub or dwarf-like tree, called aweoweo. Rats were hiding under the shelter of the thick leaves and branches [Westervelt 1963:160].

Pikoi impressed the chiefess and her followers by shooting at a hidden rat, and striking and entangling the whiskers of three rats in one shot. He then proceeded to kill an additional number of rats in one shot, all strung along the length of the arrow.

This arid plain was also mentioned in the “Legend of Hanaaumoe” as a place that must be crossed to travel to the more agriculturally productive area of Nu‘uanu. Halali‘i, the king of the spirits, designated the spirit, Hanaaumoe, to guard the coasts of O‘ahu. When canoes from other islands were seen, Hanaaumoe invited the crews to land and promised them food and wives. One day several canoes appeared with friends of the king of Kaua‘i, including a lame man named Kaneopa. Hanaaumoe enticed them to land at Kou and sleep in the canoe shed while they waited for the food and wives that he had promised. When the spirit thought that everyone was asleep, he returned to the shed and said:

Kahea ana o Hanaaumoe, moe ea?	Asleep are you?
Halahala kau e,	Piled on one another,
Halahala kau e,	Scattered here and there,
Ua moe oukou?	Are you all asleep?

Only the man Kaneopa was awake. Beginning to suspect Hanaaumoe was a spirit who wished to eat the people, Kaneopa answered that all were awake and waiting for the food, meat, and wives promised. Hanaaumoe lied and said that these things could not arrive quickly since the road down from Nu‘uanu (Valley) was long, the climb from Kapūkaki (crater near Pearl Harbor) was long, and the plain of Kulaokahu‘a (plain in Makiki) was far off. When Kaneopa could stay awake no longer, he dug a hole under the sill of the house, knowing that if the king of the spirits came to the house, he would sit at this place of honor. Hanaaumoe came back to the house and again asked if everyone was sleeping. When he got no reply, he summoned the rest of the spirits, including the king Halali‘i, who sat on the sill of the house. The spirits ate all of the people inside, and dug up the floor to search for anyone hiding. The only place they did not dig was the spot under the sill where the king was sitting.

When the spirits left, Kaneopa came out of his hiding place, launched a canoe, and fled back to Kaua‘i. He told the king of Kaua‘i about the evil spirits. The king and his followers returned to O‘ahu, bringing with them a number of wooden carvings made to look like men. They landed at Lē‘ahi (Diamond Head). Hanaaumoe again enticed the people to land and sleep in the canoe shed by promising food and wives. When Hanaaumoe left, the people left the wooden carvings in the shed and went back to their canoes to wait. The spirits with their king entered the shed and began to gnaw on the wooden idols. When all of the spirits were within, the Kaua‘i people crept up on them and burned the house down (Fornander 1917, Vol. IV:476-482; 1919, Vol. V:428-434).

This legend led to a Hawaiian saying, used to describe any unkept promise of food, fish, etc. (Pukui 1983:84-85).

He Lō‘ihi o ‘Ewa; he pali o	‘Ewa is a long way off;
Nu‘uanu; he kula o ***Kulaokahu‘a****;*	Nu‘uanu is a cliff; **Kulaokahu‘a** is a dry plain;
He hiki mai koe.	but all will be here before long.

3.2 Pre-Contact and Early Post-Contact Honolulu

By the time of first contact with Europeans during the late eighteenth century, the area today encompassed by downtown Honolulu – also known to the Hawaiians as Kou – had long been an area of population and activity on the south shore of O‘ahu. Kou comprised shoreward fishponds and taro *lo‘i* (irrigated fields) fed by ample streams descending from Nu‘uanu and Pauoa Valleys, but it was Waikīkī to the southeast that could claim pre-eminence as the traditional residence of the *ali‘i* (Hawaiian aristocracy) and as the center of political power on the island. Thus, it was in Waikīkī that Kamehameha would take up residence after he had wrested control of O‘ahu in 1795.

Increasing commerce and association with newly-arrived foreigners would alter the traditionally evolved patterns of Hawaiian life on O‘ahu, typified by the shifting fortunes of Waikiki and Honolulu. By the first decade of the nineteenth century, as Ralph S. Kuykendall notes:

> Honolulu was becoming a place of some importance commercially. It is situated in a rich and productive island and its protected harbor, the only accessible one in the entire group, caused foreign ships to go there in preference to other places. To the Hawaiians themselves, Honolulu and its snug harbor had been of very little importance compared with the nearby reef-protected romantic beach and town of Waikiki. But the foreigners’ rendezvous at Honolulu caused the natives to congregate in the place [Kuykendall 1938:27].

By 1899, Kamehameha himself had moved his residence to Honolulu. Francisco de Paula Marin, a Spaniard who’d arrived in the Hawaiian islands in 1793 or 1794, and had become a confidant of the king, recorded in his journal:

> In the end of 1809 & beginning of 1810 was employed building a stone house for the king. . . . [cited in Gast and Conrad 1973:200].

This was the first stone structure in Honolulu, which, according to Ross Gast, was:

> . . . [by 1810] a village of several hundred native dwellings centered around the grass house of Kamehameha on Pakaka Point near the foot of what is now Fort Street. Of the sixty white residents on Oahu, nearly all lived in the village, and many were in the service of the king [Gast and Conrad 1973:29].

Kamehameha himself likely never resided in the completed house, as in 1810 he returned to Hawai‘i Island where he lived the remainder of his life. Building in Honolulu, however continued apace with Marin and other foreign residents building their own stone houses and buildings during the ensuing decade. Thus, a visitor to Honolulu in 1819 could report:

> The port of Onorourou [Honolulu], generally frequented today by all the European vessels that come to the Islands, is without doubt the most favorable location with respect to shelter, commerce, and resources necessary for the supply of ships. . . .
>
> The town of Onorourou is located on a large, flat plain. It is on the shores of a bay of the same name. The houses similar for the most part to those of Owhyhi and of Mowi, are however interspersed with a certain number of houses built of stone that belong for the most part to Europeans or to Anglo-Americans [de Freycinet 1978:40-42].

The area that today comprises the portion of downtown Honolulu that surrounds Honolulu Harbor was known to the Hawaiians as “Kou,” a center of population and activity, similar to Waikīkī, its preeminent neighbor to the southeast. The present project area lies just outside the eastern periphery of Kou, on what some referred to the barren, leeward plains. Kou stretched from “Nu‘uanu to Alakea streets and from Hotel Street to the sea” (McAllister 1933:80) and possessed shoreward fishponds and irrigated fields fed by streams descending from Nu‘uanu and Pauoa valleys. Kou was known as a place where chiefs gathered to play and where the people gathered to watch them. Pukui (1983:1128) relates the poetical saying *“Hui aka nā maka i Kou”* (“the faces will meet at Kou”) in reference to just such gatherings. In the accounts of the Pele and Hi‘iaka saga (Emerson 1915:168), Hi‘iaka from Hawai‘i Island and Lohi‘au chief of Kaua‘i,

joined with Pele‘ula, chiefess of O‘ahu, for pleasure at Kou. This vignette probably was based on a long tradition of Kou as a royal center where the *ali‘i* would meet and entertain.

Kou was somewhat slow to catch on as a major destination for foreigners visiting the archipelago. The only stop of Cook’s ships on O‘ahu was at Waimea Bay (1779), not viable as a significant port owing to the famous winter swell that breaks there. A discouraging factor for early trade at O‘ahu was political instability. The ruling chief Peleiōhōlani died around 1780, and his heir, Kumuhana was almost immediately deposed in a *coup d’etat*. A period of political unrest followed including the successful invasion by Kahekili of Maui in 1783, the bloody crushing of the O‘ahu rebellion in 1786, the invasion by the Kaua‘i ruler, Ka‘eokūlani in 1791, the passing of the rule following Kahekili’s death in 1794 to Kalanikūpule, and finally, his defeat by Kamehameha I in 1795. These events all contributed to political and economic instability, and in turn, delayed the development of Honolulu as a major port. In addition, such events as the *Daedalus* killings in 1792, the mysterious death of Captain Kendrick in 1794, the seizure of the *Jackal* and *Prince Lee Boo* ships with the killing of Captains Brown and Gordon in 1795, and the wreck of the *Arthur* under Captain Henry Barber in 1796 did not enhance O‘ahu’s reputation as a port of call. The earliest accounts of the south shore of O‘ahu relate the fear of attack and the difficulty of getting water and food, particularly yams (Portlock 1968), and in one instance, the efforts of natives to seize a whaleboat (Dixon 1789).

Another factor for the delay in development of Kou as a major port was the relatively late discovery of Honolulu harbor, attributed to Captain William Brown in early 1793. Furthermore, Honolulu’s prominence had to await the peace established by Kamehameha I and his encouragement of trade there. Kamehameha defeated Kalanikūpule at the battle of Nu‘uanu in 1795, and in 1809, moved his court, government, and residence from Waikīkī to Honolulu.

3.3 1815 to 1850: Honolulu in Transition

The development of Honolulu during the nineteenth century was inevitably a rapid substitution of the traditional patterns that had once shaped the land by new responses to the pressures of a burgeoning western presence. Into the 1820s, Honolulu remained more notable for its native culture than for any western urbanization imposed on that culture.

Accounts written by Protestant missionaries who first arrived in 1820 depict Honolulu as it had evolved by the first quarter of the nineteenth century. In 1820, the American Board of Commissioners for the “Foreign Missions Sandwich Islands” arrived in Hawai‘i and quickly made Honolulu its headquarters. As a member of that mission, Reverend Hiram Bingham, writing in 1847, describes Honolulu as viewed from “Punchbowl Hill” in 1820:

> From the highest part of the rim we had a beautiful view of the village and valley of Honolulu, the harbor and the ocean, and of the principal mountains of the island. . . . Below us, on the south and west, spread the plain of Honolulu, having its fishponds and salt making pools along the seashore, the village and fort between us and the harbor, and the valley stretching a few miles north into the interior, which presented its scattered habitations and numerous beds of *kalo* (*Arum esculentum*) in its various stages of growth, with its large green leaves, beautifully embossed on the silvery water, in which it flourishes. Through this

> valley, several streams descending from the mountains in the interior, wind their way, some six or seven miles, watering and overflowing by means of numerous artificial canals, the bottoms of kalo patches, and then, by one mouth, fall into the peaceful harbor [Bingham 1981:92-93].

In contrast to this idyllic evocation is Bingham’s terse record of the land, today the site of the Mission Houses Museum and the Kawaiaha‘o Church, designated by the *ali‘i* for the missionaries’ use in 1820:

> Boki [governor of O‘ahu] at length, by the order of the king, gave the mission a building spot for the Honolulu station, on the arid plain, about a half a mile east of the landing, then some distance from the village, but now [1847] included in it [Bingham 1981:112].

Bingham’s characterization of the Honolulu mission site is seconded by another early missionary, C.S. Stewart, who, arriving in Lahaina on Maui, proclaimed it “so refreshing an asylum [after] four weeks’ residence on the dreary plain of Honoruru” (Stewart 1970:177).

Another visitor to Honolulu in the 1820s, Jacobus Boelen (1988), hints at the possible pre-contact character of the Honolulu lands that include the present project site:

> It would be difficult to say much about Honoruru. On its southern side is the harbor or the basin of that name . . . The landlocked side in the northwest consists mostly of tarro fields. More to the north there are some sugar plantations and a sugar mill, worked by a team of mules. From the north toward the east, where the beach forms the bight of Whytetee [Waikīkī] the soil around the village is less fertile, or at least not as greatly cultivated [Boelen 1988:62].

Boelen’s description suggests that the present project site lay within that portion of Honolulu where the soil “is [was] less fertile, or at least not as greatly cultivated.”

By the 1840s, western commercial and missionary interests had supplanted the native Hawaiian traditions that had previously shaped the environment. D. Gilman (1903:97), who arrived in Honolulu in 1841, described the limits of the town of Honolulu during the early 1840s:

> The boundaries of the old town may be said to have been, on the *makai* side, the waters of the harbor; on the *mauka* side, Beretania Street; on the Waikīkī side [i.e., the area just beyond Punchbowl Street], the barren and dusty plain, and on the ‘ewa side, the Nu‘uanu stream.

The plain was called “Kulaokahu‘a,” a dry, dusty wasteland without a shrub to relieve its barrenness. From 1840 to 1875, only a few unpaved roads were in the area, probably along the present course of King, Young, Beretania, and Punahou Streets. These roads “ran a straggling course which changed as often as the dust piled up deep” (Clark 1939:12). There were several horse paths criss-crossing the Kulaokahu‘a Plains. In the 1840s, it was described as “nothing but a most exceedingly dreary parcel of land with here and there a horse trail as path-way” (Gilman 1909:91). The flat plains were perfect for horse racing, and the area between present-day Pi‘ikoi and Makiki Streets were a well-known racing track (Peterson 1984:371)

About Punchbowl Street, Gilman (1903:89) remembered:

> There was on the entire length of this street, from the *makai* side to the slopes of Punchbowl, but one residence, the two-story house of Mr. Henry Dimond, *mauka* of King Street. Beyond the street was the old Kawaiahao church and burying ground. A more forsaken, desolate-looking place than the latter can scarcely be imagined.

Thus, the present project site, which is east of Kawaiaha‘o Church, was situated between the boundary of the “old town” to its west and the “barren and dusty plain” beyond Punchbowl Street to its east.

The latter half of the nineteenth century was a period of rapid change for Honolulu. An excellent overview of Honolulu from the harbor to Beretania Street, circa 1850, constructed by Albert Peary, is located at the Judiciary History Center across from the ‘Iolani Palace. Reverend Sereno Bishop (1916:58) offers a unique perspective of the changes in the layout of Honolulu and the structures that lined the streets:

> When I returned to Honolulu in 1853, after an absence of thirteen years, I was struck by the many changes. . . . [in 1840] the major portion of the residents of Honolulu still lived in thatched houses. In fact the town was almost entirely composed of this kind of dwellings. . . .
>
> When I went away there were only Punchbowl Road, Beretania Street, King Street and Merchant Street. This was the condition of the city in 1840. . . .
>
> The settled portion of the city was then [1853] substantially limited by the present Alapai and River streets and mauka at School street. There was hardly anything outside of those limits and the remainder was practically an open plain.
>
> Above Beretania street, on the slopes and beyond Alapai street, there was hardly a building of any nature whatever. . . .
>
> The plains remained open until within twenty-five years [ca. 1878], before there was any building there of any description.

A map of 1855 (Figure 8) shows the grid of Honolulu streets at mid-nineteenth century, with Beretania Street still defining the *mauka* edge of the town, and trails or roads leading to Nu’uanu and Pauoa valleys, and Pūowaina (Punchbowl Crater). Houses are shown adjacent to the eastern boundary of the project area, but not within the project area itself.

3.3.1 Early 1800s – the Oahu Charity School

The first record for historic use of the Alapai Transit Center property is associated with the establishment of a school for the children of Hawaiian mothers and foreign fathers. The school was run by Mr. and Mrs. Andrew Johnstone, who had arrived as missionaries of the American Board of Commissioners for Foreign Missions (ABCFM) in 1831. Mr. Johnstone had originally

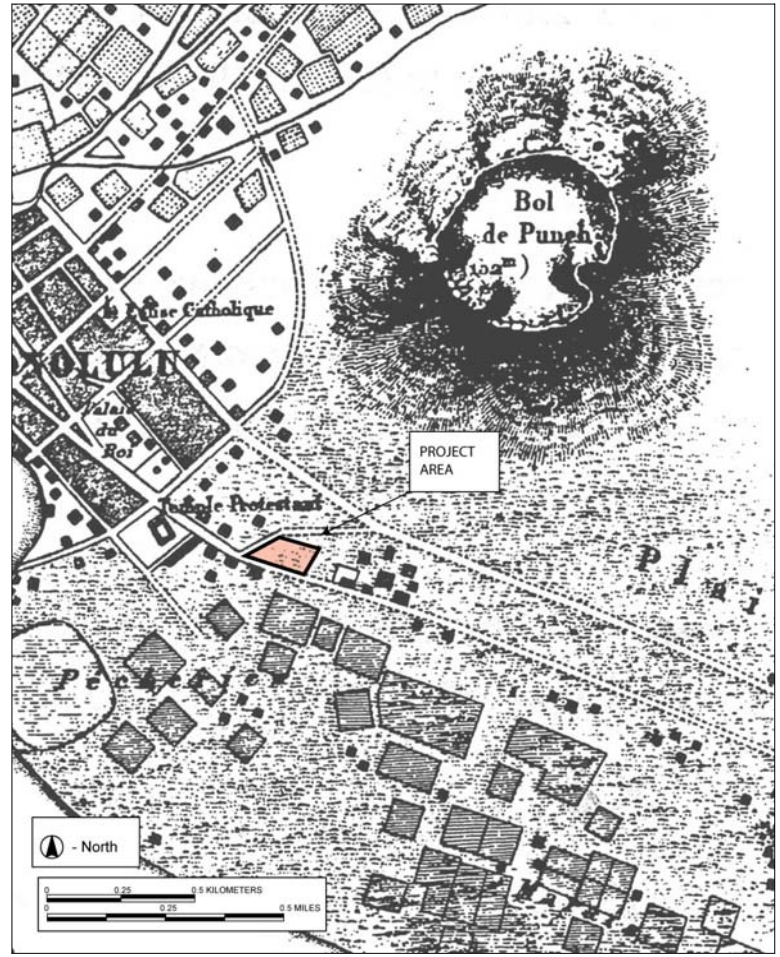


Figure 8. Portion of 1855 La Passe map of Honolulu, showing no development of the project area

taught students at the Kawaiaha‘o Seminary, but also helped out handing religions material to sailors at the harbor and in downtown Honolulu (Kamakau 1992:305). From this contact, he became aware of the problem of the number of children with Hawaiian mothers and foreign fathers, often sailors. These children had no access to education. He contacted several prominent businessmen in Honolulu, including the well-known resident Stephen Reynolds, who recorded the progress of the school several times in his daily journal. A subscription was raised for the erection of a school house, fist called the Oahu Charity School for “English-speaking children.” A large donation was submitted by the seaman of the U.S. Frigate *Potomac*. The lot for the school house was purchased from the *ali‘i* (chiefess) Ka‘upena, wife of Manuia (commander of the Honolulu fortifications) (Kamakau 1992:295) on the *makai* side of Punchbowl and King Street, west of Kawaiaha‘o Church, in an area of Honolulu called “Mililani.” Ali‘iōlani Hale, the Judiciary Building, now stands on the spot where this school was built.

Many of the Honolulu businessmen were often in opposition to missionaries’ efforts, and did not want the new school to be a “religious” school, so Mr. Johnstone dissolved his connection to the American Missions Board. Since he could no longer look to the Mission to provide room and board, he petitioned the trustees of the school to provide him with a salary and a residence. A salary of $500 per annum was granted, and, for the residence:

> Several meetings of the subscribers were held, at which various plans were proposed, but finally in October, 1836, it was decided to offer Harry Zupplien $1800 “for his place on the plains,” which he accepted. This place was situated on the southeast corner of King and Alapai streets, and is now [in 1909] owned by Mr. C. H. Atherton.
>
> By Mr. Reynolds’ advice, a second story (of wood) was built upon the first story of stone, and verandahs were added to the house [Alexander 1909:28].

Thus the O‘ahu Charity School itself was built west of Kawaiaha‘o Church (as seen in Figure 9), and the residence for the schoolteacher was built east of the church, within the current project area. Subscribers not only built the schoolhouse structure, but also built the house for the teacher (Dibble 1909:295).

In a reminiscence of the streets of Honolulu in the early 1840s, Gorman D. Gilman (1903:84) wrote of the dwelling house:

> This school was conducted by Mr. A. Johnstone, whose square two story residence stood the last house on the mauka side of King street before coming to the plains, called Kulaokahua. I think that the present residence of Mr. C. H. Atherton occupies the spot where Mr. Johnstone’s house stood. Beyond this the plain stretched from the slopes of Punchbowl to the sea, broken only by two residences . . . [Gilman 1903:84].

Although on the edge of the dry, arid, Kulaokahu‘a plains, the dwelling lot was a pleasant place, with an uninterrupted view of the coast and the mountains, according to Gustavus Hines, a missionary who visited the islands for a few days during a voyage around the world in 1840:

Figure 9. Photograph of Honolulu taken in 1854 from Kawaiaha‘o Church, view to the west; the Oahu Charity School, with the tall bell tower, is in the center of the photograph (Photo from *Honolulu Advertiser* Archives)

> It fell to my lot, with my family, to be entertained by Mr. and Mrs. Johnstone, the teachers of Oahu Charity School, whose dwelling commands a fine view of the mountain scenery, the rolling surf, and the city and harbor of Honolulu [Hines 1852:78].

Mr. Johnstone moved into the new house on May 16, 1837. Because of disputes with some of the trustees, Mr. Johnstone resigned as the teacher of the Oahu Charity School in 1844 and tried to open his own private school. He moved out of the Alapa‘i house, which was then “rented to Mr. Sea for a term of years” (Alexander 1909:32).

Various short-term teachers followed Mr. Johnstone at the O‘ahu Charity School, but it does not seem that they lived at the Alapa‘i residence, rather the residence was rented out and the funds were used to help run the school. The records for the school show that the residence was rented to a Mr. Henry S. Swinton on March 7, 1849 for $10 a month and finally sold for $1500 dollars to a Mr. Chas. Taner in 1854 (Alexander 1909:34-35). Thus, the connection of the Alapa‘i residence lot to the Oahu Charity School was severed in 1854.

In 1847, the Hawaiian serial, the *Polynesian*, conducted a survey of Honolulu, the number of native and foreign residents, the number and types of buildings, and a list of foreigners residing in Honolulu, along with their occupation (type of work) and address of business. Richard Greer (1970:92-95) reproduced this list of foreigners in Honolulu for an article in *The Hawaiian Journal of History*, and added to the list all names of resident foreigners mentioned in 1847 from

the serials the *Polynesian* and *The Friend*. Several of the principals mentioned in the early history of the Oahu Charity School are found in this article. Andrew Johnstone, who had resigned as the teacher for the school three years earlier, is listed as a “Book-keeper.” One of the major trustees for the school, Stephen Reynolds, is listed as “Merchant-Bremen Consul.” Henry Sea, who was the High Sheriff of O‘ahu for many years, is listed (Greer 1968:8). This may be the same Henry Sea who was the second tenant of the Alapa‘i residence.

Also listed is an H. Zupplein, “Retail spirit dealer.” Thus the former owner of the land on which the teacher’s residence on Alapa‘i Street was built, may be a colorful early resident of the islands called Henry Zupplein, also called “Dutch Harry,” who opened a grog shop in 1823 in Honolulu, called at various times the “Dog and Bell, the “Rising Sun” and the “White Swan.” In 1833, this grog-shop was on King Street, opposite the Seaman’s Bethel Church in Honolulu, near present day Bethel Street (Greer 1994:56-57). Although Harry Zupplein supplied the land, he was not necessarily a supporter of the Oahu Charity School. When the school was dedicated in January of 1833, a grand procession through Honolulu was planned.

> “Dutch Harry” refused to lend his bass drum for the grand procession and was insolent to the king. He worked up such a tizzy that he grabbed an ax and split the drum. Zupplien’s mood proved contagious. The king had Harry’s house nailed shut (a favorite gambit) and turned him out with very little of his property. “Many residents exulted.” Their exultation faded three days later when Zupplien coughed up $100 and got his place back. He was still at his old stand in the late 1840s [Greer 1994:57].

Neither Mr. Swinton nor Mr. Taner, the last tenant and the first owner of the house on Alapa‘i Street, are mentioned in the 1847 list of foreign residents, so either they came to Hawai‘i later or were omitted from the list. Greer (1970:95) mentions that the census of Honolulu indicates that there were as many as 100 additional residents of Honolulu in 1847 that are not on the list for some reason or other.

3.3.2 Mid 1800s and the Great Māhele

The Organic Acts of 1845 and 1846 initiated the process of the Māhele, the division of Hawaiian lands, which introduced private property into Hawaiian society. In 1848, the crown and the *ali‘i* (royalty) received their land titles. The common people (*maka‘āinana*) received their *kuleana* awards (individual land parcels) in 1850. It is through records for Land Commission Awards (LCAs) generated during the Māhele that the first specific documentation of daily activities in the vicinity of the project area, as it had evolved up to the mid-nineteenth century, come to light.

The Kulaokahu‘a Plains were awarded to the Crown in March of 1848 (Chinen 1961:54) during the Great *Māhele*. These Crown lands, set aside for Kamehameha II, were leased to private individuals. The *mauka* section was later divided into lots and sold to private individuals between 1877 and 1882.

Title of the land for the Oahu Charity School and the land for the Alapa‘i residence were confirmed during the *Māhele*, when both lots were awarded to the Oahu Charity School in 1848

as Land Commission Award #8511, Royal Patent #1880½ (full text of LCA 8511 presented in Appendix A, downloaded from www.waihona.com):

> To the Board of Commissioners, &c. Gentlemen,
>
> In behalf of the Trustees, Friends and Patrons of the Oahu Charity School, I beg leave to call your attention to their claims to two plots of ground, one on which the schoolhouse stands, and the other on which the dwelling house is situated. . . .
>
> No. 8511, F. W. Thompson for the Trustees Oahu Charity School, 21 March 1853.
>
> John Meek, sworn, says he knows the School house lot and also the house lot. I [Thompson] built the adobie wall round the house lot myself some years ago for the benefit of the charity.
>
> S. Reynolds, sworn, says the dwelling house lot claimed by the Trustees was purchased of Harry Zupplien for $1500. There was a vacant piece of ground between the original lot & the road which was subsequently got from the King. The Trustees have held undisturbed possession of this lot ever since 1836. The adobie wall by which the lot is at present enclosed is the true boundary.

The funding for the Oahu Charity School could not keep up with expenses, and in 1851 a bill was passed to support the school with a tax on all foreigners. The name of the school was changed to the Town Free School. In 1865, it was decided that girls and boys should be taught at separate schools; all boys were then sent to the Royal School on the corner of Punchbowl and Emma Streets, and the Oahu Charity School became the Mililani Girls’ School (Alexander 1909:35). In 1874, the Board of Education traded the schoolhouse lot to the Department of the Interior. The upper story of the school house was moved to a location on Punchbowl Street called Pohukaina; the new school was Pohukaina School. The rest of the Oahu Charity School was then demolished to build Ali‘iōlani Hale, the Judiciary Building (Putzi and Dye 2004:8).

3.3.3 Late 1800s to 1900s: The Atherton Family and “Fernhurst”

In the reorganization of the government in 1846, Dr. Gerrit P. Judd, in charge of the finances of the kingdom, suggested that funds for the government should be raised by selling some of the government and crown lands in fee simple title. They selected an area in Kulaokahu‘a and placed an advertisement in the newspaper, the *Polynesian* on November 21, 1846. Sale of the lots was slow, as there was no available water in this area. As an incentive, the government allowed aliens to obtain title to the lands after a commutation fee, with the restriction that they could only sell the land to Hawaiian subjects. This spurred sales of the lots. In 1846, 850 acres were sold; by 1852, the yearly sales of lands reached 7,938 acres. Many of the lots were sold to prominent Honolulu businessmen, who bought the land as an investment (Greer 1992:133-139). Although a few people began to dig wells on their lots, T. Blake Clark (1939:12) has noted that “the settling of the Plains did not come until the 1880s, after water was brought from Makiki Valley.” The majority of the buyers bought the land as an investment, not for their own residence (Greer 1992:133-139).

A 1906 Land Court Application map (LCAp 93; Figure 10) shows some of these lots. The southwestern section on Alapa‘i Street was the original Oahu Charity School residence lot, listed as LCA 1880½. The remaining portion of the project area consisted of: a triangular lot in the northwest, R. P. (Royal Patent) Grant 197 to Warren Goodale; a rectangular lot in the center, R.P. Grant 646 to B. Soden; a rectangular lot in the northeast, R.P. Grant 197 to J. Sweetman; and, two rectangular lots to J. [John] A. Magoon in the southeast corner of the project area.

Included on two of the pages of the Index of Grants Kulaokahu‘a (Figure 11), compiled between 1846 and 1857, are several of the names shown on the LCAp 93 map: Bartholomew Soden, W. Goodale, and J. Sweetman (Greer 1992:133-139).

B. Soden is probably Bartholomew Soden, a short-term teacher at the charity school from 1850 to 1851 (Alexander 1909:36), Warren Goodale was the Collector of Customs for the Kingdom for many years, and J. Sweetman may be the same as the John Sweetman, a mason, who is mentioned in the 1847 list of foreign residents (Greer 1970:95). John Sweetman’s purchase was something of an embarrassment to the government, as the four lots that he bought for $40 a piece, actually belonged to Mataio Kekūanāo‘a, the Governor of O‘ahu. Greer (1992:134) notes that Kekūanāo‘a “got a $160 credit.” From LCAp 93, J. A. Magoon is probably John Alfred Magoon, a lawyer in Honolulu who married Emmeline Marie Afong, the daughter of a wealthy Chinese businessman in Hawai‘i (Dye 1997:211-212). There is no evidence that these grantees built houses on these lots in the 1840s and 1850s; they may simply have bought the lots for land speculation or as an investment.

LCAp 93 map (see Figure 10) shows that in 1906, the entire project area was owned by a J. B. Atherton. Joseph Ballard Atherton came to Hawai‘i in 1858 and soon became the chief clerk at the company of Castle and Cooke, a major investment firm and the agent for many of the Hawaiian sugar plantations. In 1865, he married Juliette Montague Cooke, the daughter of Samuel Northrup Cooke and Juliette Montague Cooke (mother and daughter have the same name) and became a junior partner in the firm. He held the position of the president of the firm from 1894 to 1903, the year of his death. He was a strong supporter of many organizations, such as the Kawaiaha‘o Seminary, the O‘ahu College, and the YMCA (Taylor et al. 1976:81-81, 135).

From the LCAp 93 map (see Figure 10), it can be seen that the original owner of the western portion of the lot was J. P. Cooke, or Joseph Platt Cooke, the brother of Juliette Atherton, and thus the brother-in-law of J. B. Atherton. In 1871, the western section was subdivided into two lots; Joseph Cooke sold the eastern half to Joseph Atherton. This can be clearly seen on an 1873 map of Makiki, which shows the two lots and their owners (Figure 12).

In a letter dated May 26, 1871 by Juliette Montague Cooke (Juliette Atherton’s mother), she writes of this property:

> Joe [Cooke] is to move down near us so as to superintend the doings on his new lot. I believe I wrote you that my two Joes [Joseph Cooke and Joseph Atherton] have bought a lot together and are to build soon. So they have fenced and laid on water and are now endeavoring to gather trees of every sort to make a young forest around them for the district is dry and dusty and a little hot [Richards 1941:517].

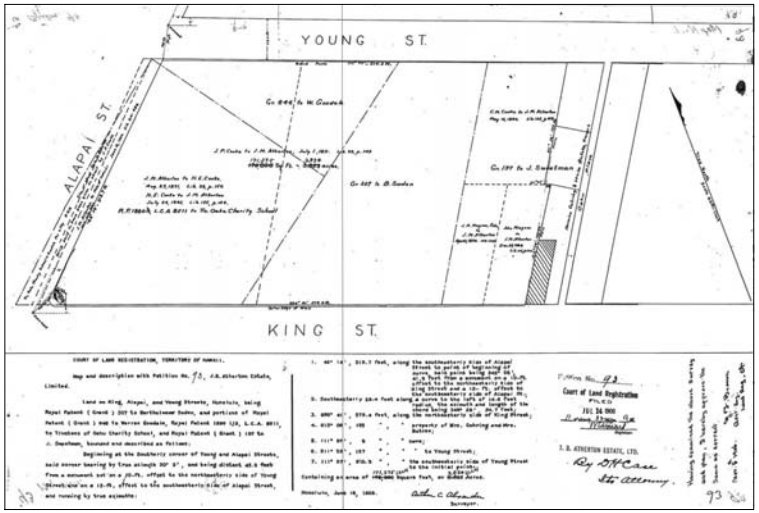
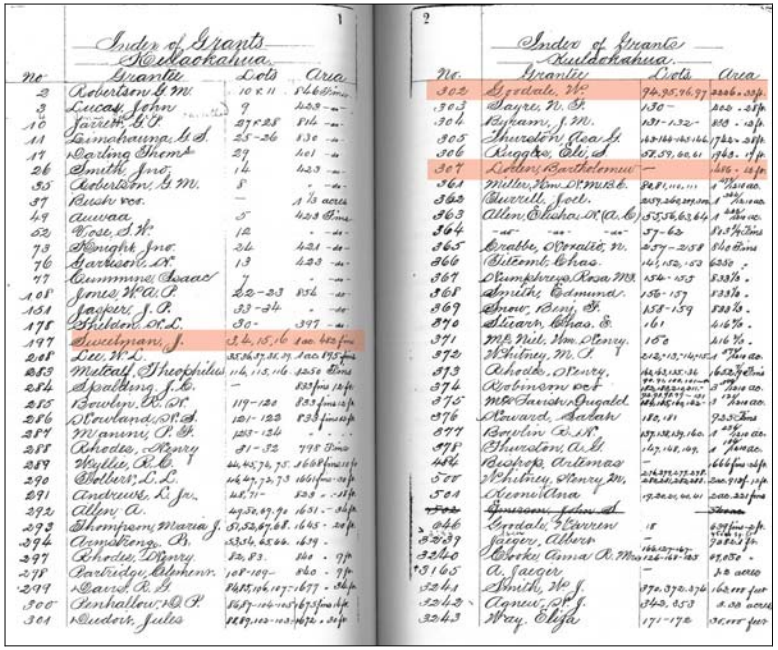


Figure 10. 1906 Land Court Application 93, Map 1, showing project area owned by J. B. Atherton



Index of Grants
Kulaokahua.

No.	Grantee	Lots	Area
2	Robertson G. M.	10 & 11	5.6 Acres
3	Lucas John	9	423 - do -
10	Jarrett G. P.	27 & 28	8½ - do -
11	Kaimahauna L. S.	25 - 26	836 - do -
17	Darling Thos.	29	401 - do
26	Smith Jno.	14	423 - do -
35	Robertson G. M.	8	- do -
37	Rush Wm.	—	1 ⅓ acres
49	Auwaa	5	423 Perches
62	Rose S. N.	12	- do -
73	Knight Jno.	24	421 - do -
76	Garrison C. N.	13	423 - do -
77	Cummins Isaac	7	- do -
108	Jones W. A. P.	22 - 23	836 - do -
151	Jagger J. P.	33 - 34	- do -
175	Shilden D. L.	30 -	397 - do -
197	Swetman J.	3, 4, 15, 16	1 ac. 162 fms
208	Lee W. L.	35, 36, 37, 38, 39	1 ac. 195 fms
253	Metcalf Theophilus	114, 115, 116	1256 Perches
254	Spalding J. K.	—	832 fms 12 sp
255	Bowlen R. W.	119 - 120	833 fms 12 sp
256	Rowland R. S.	121 - 122	833 fms 12 sp
257	Manini P. K.	123 - 124	- - -
258	Rhodes Henry	31 - 32	798 Perches
259	Wylie R. C.	44, 45, 74, 75	1668 fms 12 sp
290	Bolles L. L.	46, 47, 72, 73	1661 fms 12 sp
291	Andrews L. Jr.	48, 71 -	833 - 12 sp
292	Allen A.	49, 50, 69, 70	1651 - 12 sp
293	Thompson Maria J.	51, 52, 67, 68	1645 - 12 sp
294	Armstrong B.	53, 54, 65, 66	1639 -
297	Rhodes Henry	82, 83	840 - 9 sp
298	Partridge Stephens	108 - 109	840 - 9 sp
299	Dana R. H.	105, 106, 107 - 107	- 12 sp
300	Conhallow W. P.	103 - 106 - 105	1673 fms 12 sp
301	Rudolph Julius	101, 102 - 103	1672 - 12 sp

No.	Grantee	Lots	Area
302	Goodale W.	94, 95, 96, 97	2286 - 12 sp
303	Sayre N. P.	130 -	260 - 12 sp
304	Byham J. M.	131 - 132 -	838 - 12 sp
305	Thurston Asa S.	143 - 144 - 145 - 146	1782 - 12 sp
306	Ruggles Eli S.	58, 59, 60, 61	1783 - 12 sp
307	Lidon Bartholomew	—	416 - 12 sp
361	Miller Hon. D. Mills	98, 81, 110, 111	1 Acre ac.
363	Burrill Joel	2057, 2064, 2073, 2074	1 Acre ac.
363	Allen Elisha R. (A. L.)	55, 56, 63, 64	1 Acre ac.
364	- do - - do - - do -	57 - 62	1 ¼ Perches
365	Crabbe Donald N.	2057 - 2058	8 Perches
366	Bitterman Chas.	146, 152, 153	6330 -
367	Humphreys Rosa M.	154 - 155	833⅓ -
368	Smith Edmund	156 - 157	833⅓ -
369	Snow Benj. F.	158 - 159	833⅓ -
370	Swan Chas. E.	161	416⅔ -
371	M. P. Mil. Hon. Henry	160	416⅔ -
372	Whitney M. C.	212, 213, 214, 215	1 Acre ac.
373	Rhodes Henry	44, 45, 132, 133	1 ¼ Perches
374	Robinson Rev.	99, 98, 100, 101	1 Acre ac.
375	M. P. Parker Augustus	134, 135, 136, 137	1 Acre ac.
376	Howard Sarah	180, 181	933 Perches
377	Bowlen R. N.	137, 138, 139, 140	1 Acre ac.
378	Thurston A. H.	147, 148, 149	1 Acre ac.
484	Bishop Artemas	—	666 fms 12 sp
555	Whitney Henry M.	214, 215, 216, 217, 218, 219, 220, 221	2 ac. 9 rod. 12 sp
504	Keomilana	17, 20, 21, 22, 23	2 ac. 32 fms
~~502~~	~~Simpson John A.~~		~~Stone~~
846	Goodale Warren	15	639 fms 12 sp.
3237	Jaeger Albert	—	3 ac. 12 sp.
3240	Cooke Anna R. Mrs	126 - 127 - 147 - 148	1 Acre
3165	A. Jaeger	—	1.2 acres
3241	Smith W. J.	372, 373, 374	1 Acre ac.
3242	Agnew R. J.	342, 343	1.38 acres
3243	Way Eliza	171 - 172	1 Acre ac.

Figure 11. Two pages from Index of Grants Kulaokahu‘a, 1846-1857; pertinent names are highlighted (reproduced in Greer 1970:95)

On Nov. 7, 1871, Juliette Cooke wrote:

> Joe’s [Cooke] home is almost done; it is much praised as being in very good taste. If I was an artist, I would give you a view of it. His little boy is beautiful and bright but delicate. . . .
>
> Mr. Atherton has over two hundred trees planted on his lot which is over two acres in extent. Beautiful pines and other shade and ornamental trees, also many fruit trees. Julie has over sixty roses planted, about thirty five different kinds. She is beginning to have flowers. When I returned from the States, the lot was a barren waste without tree or shrub. It proved excellent soil and they proved diligent workers [Richards 1941:520-521].

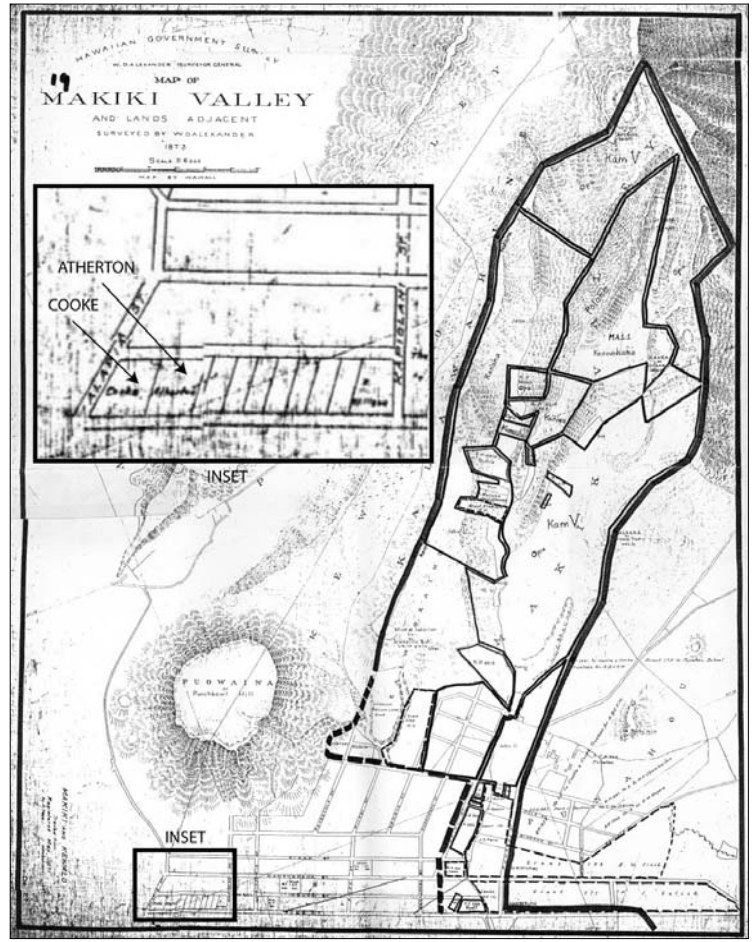


Figure 12. 1873 map of Makiki Valley and Lands Adjacent, showing project area in lower left corner of map (magnified inset portion of map shown in upper left corner of map), showing one lot owned by Cooke and one owned by Atherton

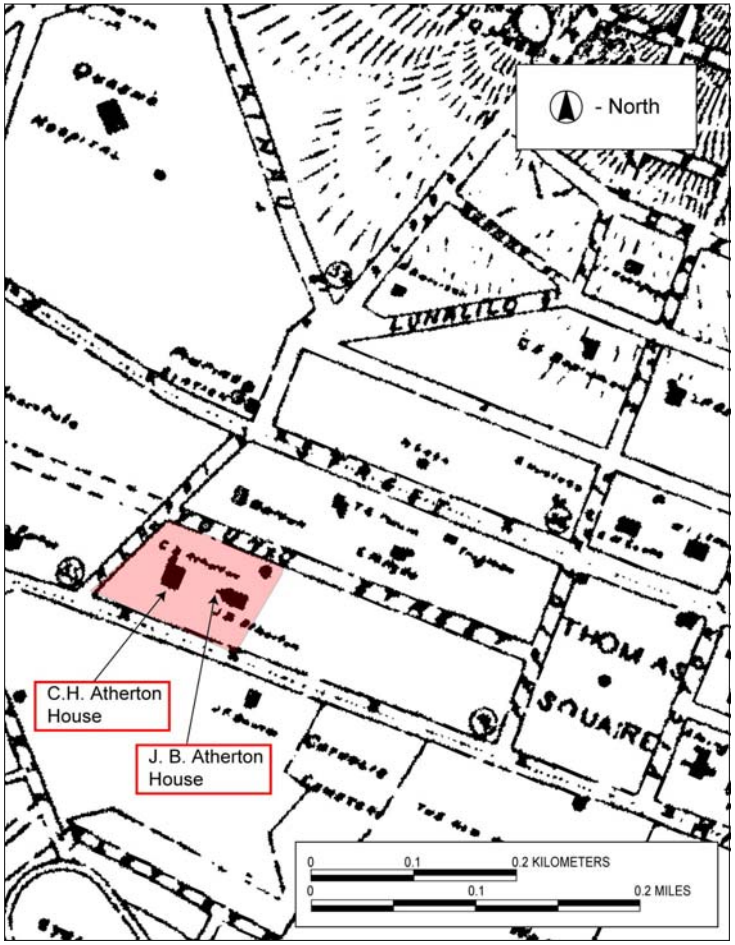


Figure 13. 1897 Monsarrat map of Honolulu, showing the C.H. Atherton house and the J.B. Atherton house within the shaded (red) project area

The Athertons expanded their lot in 1888 when they bought the eastern Magoon lot, in 1890 when they bought the Sweetman lot, and in 1896, when they bought the western Magoon lot. Joseph Platt Cooke died in 1879, and J.B. Atherton bought the Cooke lot from his widow, Harriet Emilita Wilder Cook in 1895 (see Figure 10).

Sometime after Joseph Cooke's death, the J. P. Cooke house was inhabited by Charles H. Atherton, son of J. B. and Juliette Atherton. It is this house, on the western section of the project area, which is often mentioned as the former location of the Oahu Charity School residence lot (Alexander 1909:28). These two houses can be seen on an 1897 map of Honolulu (see Figure 13). By 1906, J. B. Atherton owned the entire 3.9-acre lot. His two-story house was in the center of the project area, and was called "Fernhurst."

> In 1871, the family moved to a beautiful home on King St. near the corner of Alapai St. The two-story colonial building, surrounded by extensive gardens, was given the name of Fernhurst. It was Mrs. Atherton's home [Juliette Atherton] for 42 years [Allen 1970:33].

The Athertons were noted for their hospitality, inviting the social elite, visiting sea captains, and even poor teachers, such as Theodore Richards, who married their daughter Mary at Fernhurst in 1892 (Allen 1970:28). J. B. Atherton, and his son Charles H. Atherton, took care in the landscaping of their properties, as can be seen in these two photos (one dated 1912) of the C. H. Atherton house and the lot (Figures 14 & 15).

In 1918, use of the Fernhurst property was given to the Y.W.C.A (Allen 1970:124) in memory of the J. B. and Juliette's daughter, Kate Atherton. They donated money to erect a new building to house 50 girls, which was designed by the noted architect, Julia Morgan (Thrum 1927:64). This large three-story structure can be seen in two photographs (one dated ca. 1930) (Figures 16 & 17).

The new structure was dedicated on November 13, 1921, as reported by Thomas Thrum in the *Hawaiian Annual* for 1922:

> . . . in the presence of some 200 Y.W. members and friends. The new home is three stories in height, with built-in lanais; has thirty-five bedrooms, roomy halls and stairways, and has been constructed specially to meet the needs of the Association with tropic comfort [Thrum 1921:87].

Around 1938, the original Fernhurst Y.W.C.A. was demolished and the property was sold to the Honolulu Rapid Transit Co. for the parking of buses. A new Y.W.C.A. was built at the corner of Punahou and Wilder Street in 1952, and the name Fernhurst was chosen for this new building (Pukui et al. 1974:29).

A series of Sanborn Fire Insurance maps shows the evolution of the property in the early nineteenth century. The Atherton house, Fernhurst, is shown on a 1914 fire insurance map (Figure 18) in the middle of this large estate, with several outbuildings, including a garage and servants' quarters. The C. H. Atherton home is not shown, so it must have been demolished by this time. Some portion of this house may have been modified into the servants' quarters (see Figure 10). The 1927 fire insurance map (Figure 19) shows the Fernhurst Y.W.C.A., which is a much larger structure than the Atherton home, but was built over the general location of the

house. The next fire insurance map shows changes made to the area between 1927 and 1951 (Figure 20), but doesn't document the exact year of the change. On this map, the Fernhurst Y.W.C.A. building is in the same area, and a large tennis court has been added to the western half of the lot, over the former location of the C.H. Atherton house and the preceding Oahu Charity School residence. The 1927-1956 fire insurance map (Figure 21) shows an empty lot for the property labeled "Bus Parking." The property was sold to the Honolulu Rapid Transit Co. around 1938, so this change was probably made to the Sanborn fire insurance map at this time.

3.3.4 Modern Land Use

The Honolulu Rapid Transit and Land Co. (HRT&L) was first organized in 1898 by Hawaiian businessmen, including Clinton Ballentyne, and James B. Castle of Honolulu. Before this time, mass transit in Honolulu consisted of mule-drawn tram cars. A local experiment with electric streetcars in the Pacific Heights subdivision preceded the HRT&L's endeavor, and was later absorbed into their system. The first electric cars on tracks in Honolulu ran in 1901 (Simpson and Brizdle 2000:25, 29, 35). Ridership of the streetcars reached its peak in 1923, but declined steadily afterwards, as automobiles became more affordable to the average family, and jitney buses became a major rival for the electric streetcar (Simpson and Brizdle 2000:111). To face this competitive threat, HRT&L bought their first gasoline-operated coach buses in 1933 and added electric trolley cars (no tracks) in 1938. The streetcars were phased out in 1940, and the trolley cars in 1957 (Simpson and Brizdle 2000:126-127, 151).

A series of labor disputes and strikes in the in the 1960s and 1970s led to the takeover of the system in 1970 by the City and County of Honolulu, which operates it as the Mass Transit Line (MTL) (Schmitt 1979:102). The complex of buildings that made up the transit station on the *mauka* side of Hotel/Young Street (on the opposite of King Street to the present project area) consisted of a large car barn, various wood and metal maintenance and repair shops, and buildings for the employees, such as a clubhouse and a pool. These can be seen in the series of Sanborn Fire Insurance maps from 1914 to 1956 (see Figures 18 to 21). As noted before, the HRT&L bought the property on the *makai* side of Hotel/Young Street (the present project area), around 1938 for bus parking. The property is illustrated on a c. 1938-1956 map as an empty lot (see Figure 21).

Figure 14. Home of C. H. Atherton, view to north, photograph ca. 1912 (Hawai'i State Archives)

Figure 15. Home of C. H. Atherton, view to northeast, undated photograph (Hawai'i State Archives)

Figure 16. Fernhurst Y.W.C.A., view to northeast, photograph ca. 1930 (Hawai‘i State Archives)

Figure 17. Fernhurst Y.W.C.A., view to northeast, undated photograph (Hawai‘i State Archives)

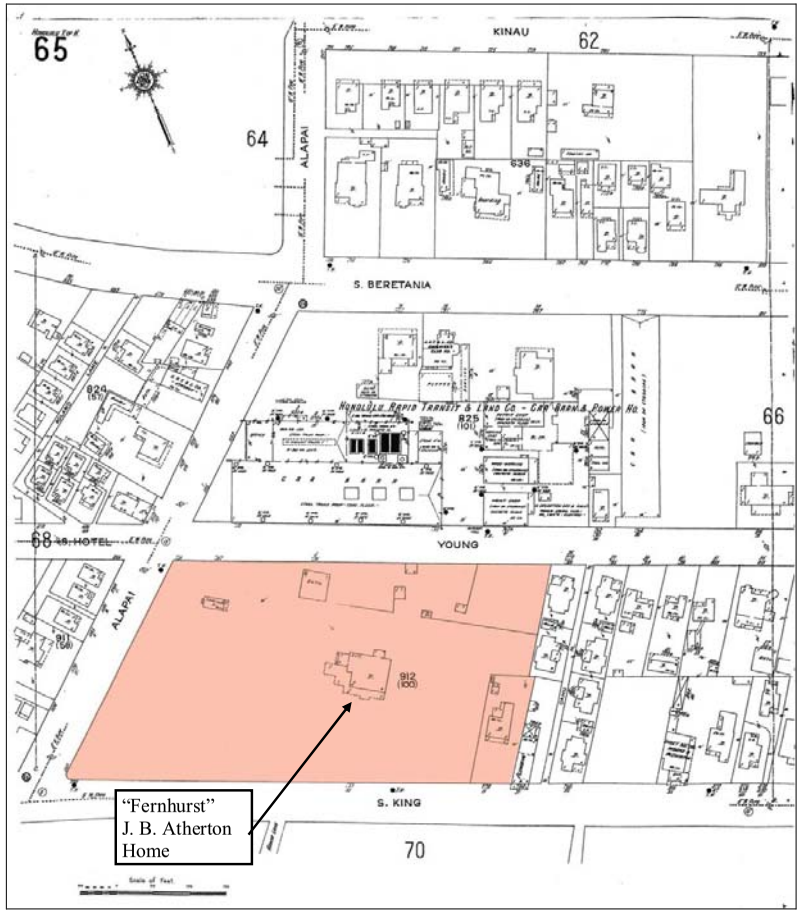


Figure 18. 1914 Sanborn Fire Insurance map, showing Atherton House "Fernhurst" in project area; structure in left upper corner is "Servant's Quarters"; upper central structure labeled "Auto"; structure on lower left is a dwelling (D)

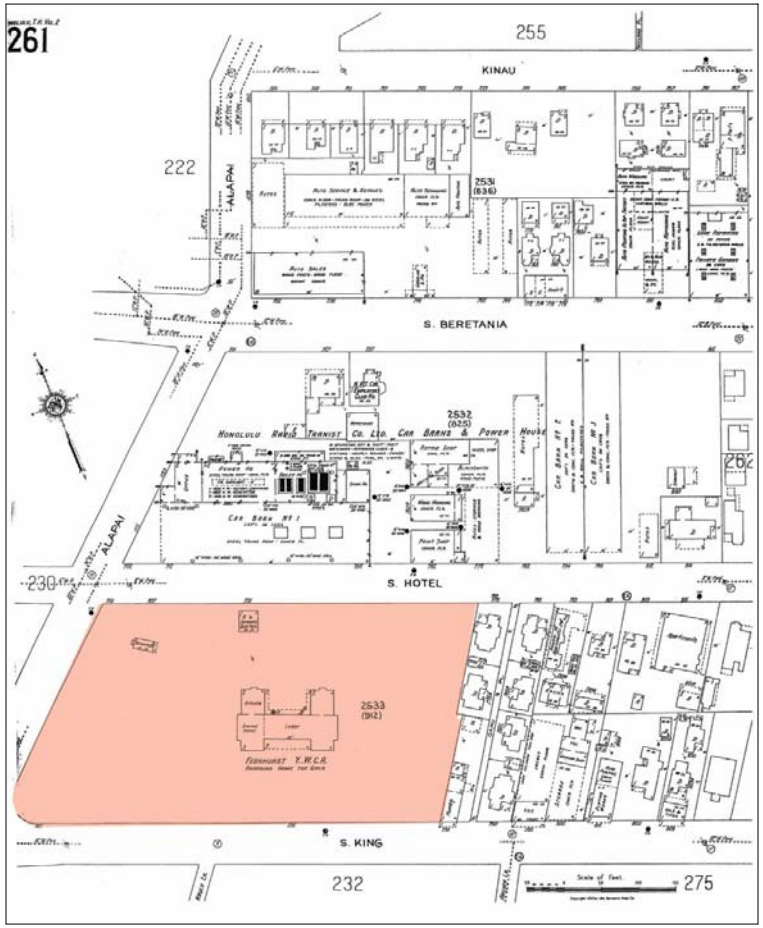


Figure 19. 1927 Sanborn Fire Insurance Map, showing Fernhurst Y.W.C.A., which was built in 1921 in the project area

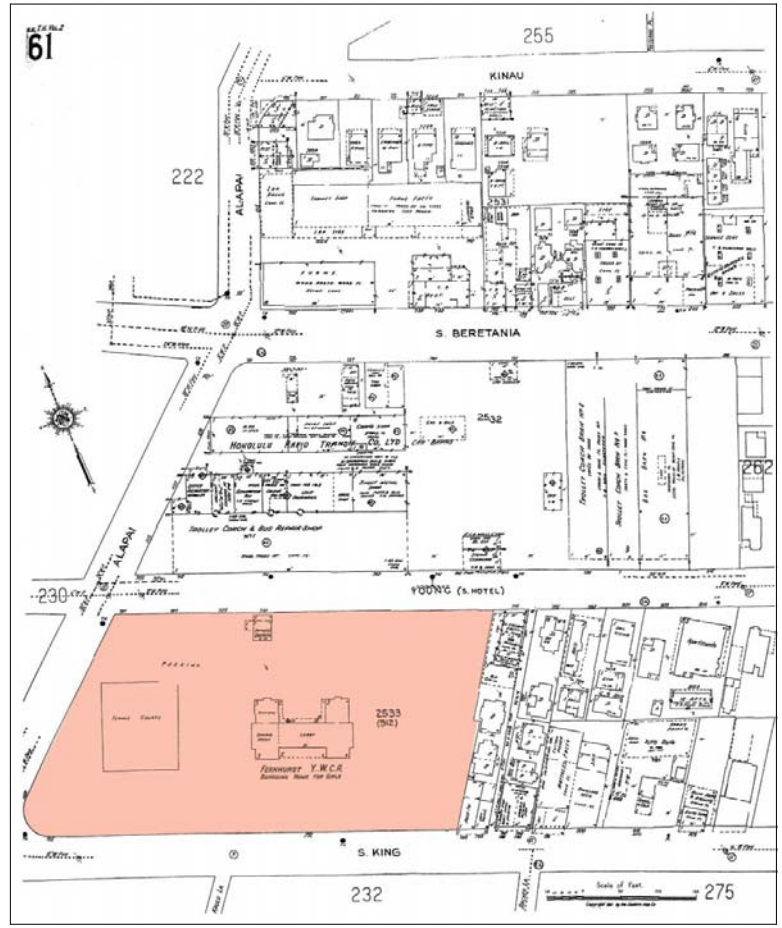


Figure 20. 1927-1951 Sanborn Fire Insurance Map, showing addition of tennis court to the Fernhurst Y.W.C.A.

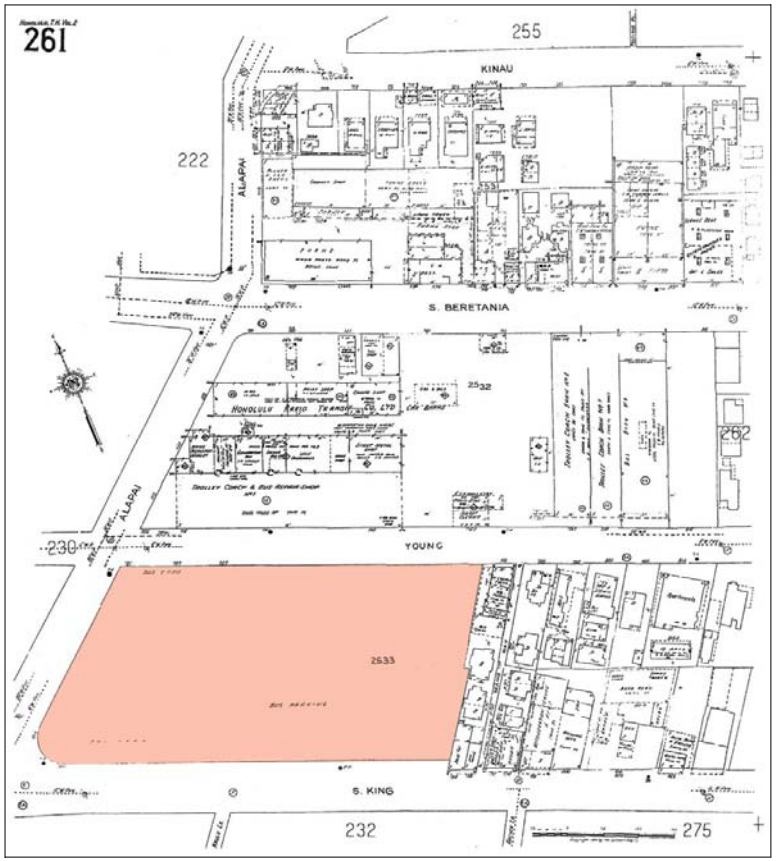


Figure 21. 1927-1956 Sanborn fire insurance map, showing project area used for “ Bus Yard” and “Bus Parking;” property sold to HRT & L around 1938

Section 4 Previous Archaeological Research

Several studies have been conducted in the Civic Center (also called the Capitol District) and the Capitol Historic District (a section within the Civic Center/Capitol District) of the city of Honolulu. Projects conducted within a block or two of the Alapai Transit Center are discussed below. Locations for these project areas are illustrated on Figure 22 and a summary of the projects is presented in Table 1.

4.1 Miller Street Block

In 1994, Cultural Surveys Hawai‘i conducted an archaeological assessment of an 8.4-acre parcel between Punchbowl Street, Miller Street, and Beretania Street (Chiogioji and Hammatt 1994). No surface structures or remnants of archaeological concern were found on the project area, but the background research did suggest that pre-contact and historic artifacts and cultural deposits could be found intact during any subsurface excavations.

On these grounds are now the Department of Health Building (Hale Kīna‘u), the Armed Forces Memorial, and a roadway connecting Punchbowl Street to the underground parking area of the State Capitol Building via a tunnel across Beretania Street. A total of eight land commission awards were claimed within this property, including two for foreign residents, Henry Farmer and Stephen Reynolds. Farmer took possession of the land in the 1820s and built a house on the property, and Reynolds acquired his land in the 1840s, where his family lived. By 1892, this area, called the “Miller Street Block” was fully developed as a residential block of downtown Honolulu.

4.2 Washington Place

Washington Place is a 3-acre parcel of land on the west side of Miller Street, one block west of Queen’s Medical Center. It is currently the official residence for the Governor of Hawai‘i. The lot now has eight buildings, a main house built in 1842-1846, an adjacent house, and six modern buildings. The property, LCA 850, was granted to the British Consul, Richard Carlton, who sold it to the ship captain John Dominis in 1840. Dominis built a coral block building on the property in 1842, which was completed in 1846 and 1847. His son, Governor John Owen Dominis, moved into the house after his father’s death in 1847 and also rented some of the rooms to the American Commissioner, Anthony TenEyck. He christened the house “Washington Place,” after George Washington, founder of American Independence (Jackson 1964). In 1862, John Owen Dominis married Lydia K. P. Kapa‘akea, who became Queen Lili‘uokalani in 1891, two years after her husband’s death. She lived in this house from 1862 until her death in 1917. Prince Kalaniana‘ole suggested that the house should be purchased by the Territory of Hawai‘i and used as the Governor’s mansion (Dockall 2003:5-6).

There are five archaeological studies concerning the Washington Place property: the monitoring of kennel construction by State Park archaeologists (Carpenter and Yent 1995); two reports on the monitoring of sidewalk construction by State Park archaeologists (Majors and Carpenter 2000; Nagata 2000); the Bishop Museum archaeological inventory survey (Dockall 2003) of the portion of the Washington Place grounds to be impacted by construction of a new

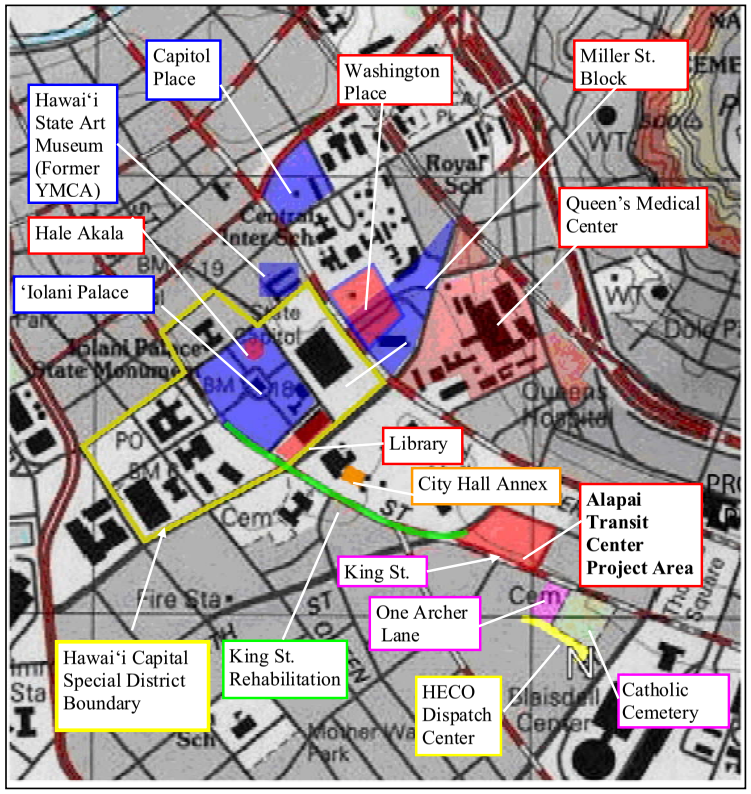


Figure 22. USGS, Honolulu Quad, showing previous archaeological work near the project area (North is straight up the page—approximate scale 1 inch = 250 meters)

Table 1. Previous archaeological work near the project area

Report Author (s)	Year	Type of Work	Location	*SIHP # (50-80-14)	Findings
Chiogioji & Hammatt	1994	Assessment	**Miller St. Block**		No surface archaeological or historic features
Carpenter & Yent	1995	Monitoring	**Washington Place**	-9907	Historic artifacts and two marine shells found during monitoring of kennel construction
Majors & Carpenter	2000	Monitoring	**Washington Place**	-9907	Historic artifacts found during monitoring of sidewalk construction
Nagata	2000	Monitoring	**Washington Place**	-9907	No further work for sidewalk monitoring recommended
Dye	2002	Monitoring	**Washington Place**	-9907	Only historic artifacts found during monitoring of trench across Beretania Street into Washington Place
Dockall	2003	Monitoring	**Washington Place**	-9907	Historic artifacts and a few volcanic glass and basalt flakes were recovered during monitoring of a new governor's residence
Tomonari-Tuggle	1983	Assessment	**Capitol Place**	-5760	Literature Search and limited coring led to recommendation of further work
Chiogioji & Hammatt	1998	Assessment	**Capitol Place**	-5760	Archaeological assessment led to recommendation of further work
Perzinski et al.	2000a	Inventory Survey	**Capitol Place**	-5760	Historic artifacts from the 1820s to the mid 20th century recovered from trenches
Perzinski et al.	2000b	Data Recovery	**Capitol Place**	-5760	Historic artifacts and one basalt adze recovered from excavated trenches and units
Seelye	1968	Excavation	**'Iolani Palace**	-4606	Excavation to determine location of Hale Akala; only historic artifacts recovered
Rosendahl	1971	Excavation	**'Iolani Palace**	-4606	Excavation of old macadamized road; only historic artifacts found
Luscomb et al.	1976	Monitoring	**'Iolani Palace**	-4606	Only historic artifacts found during monitoring

Report Author (s)	Year	Type of Work	Location	*SIHP # (50-80-14)	Findings
Sinoto	1977	Monitoring	**'Iolani Palace**	-4606	Only historic artifacts found during monitoring
Denham & Kennedy	1993	Monitoring	**'Iolani Palace**	-4606	Two historic trash pits recorded
Denham & Kennedy	1993	Monitoring	**State Capitol Complex**	-4605; -4606	A multi-component subsurface cultural deposit, with a fire pit dated to A.D. 1390-1700, was recorded as part of Site 4605 (designation used for entire State Capitol Complex); nine historic trash pits, one with a drilled marine shell were recorded under a separate site number -4606
Simons et al.	1991	Monitoring	**Hawaii State Art Museum (former YMCA)**	-1307	Only historic artifacts recovered
Chiogioji et al.	1991	Excavation & Monitoring	Hawai'i State Public **Library**	-9959	Historic subsurface features and artifacts were recovered
O'Hare et al.	2006	Monitoring Plan	**Queen's Medical Center**		The monitoring plan reported that historic bottle dumps had been found during previous construction. Five human burials, probably native Hawaiian, were also found by construction workmen.
Perzinski et al.	2006	Inventory Survey	**HECO Dispatch Center**	-5455	Two historic coffin burials associated with the adjacent historic Catholic Cemetery SIHP #-5455
Mann and Hammatt	2002	Monitoring Report	**King Street Rehabilitation** Project	-6371	SIHP # -6371, human burial thought to be Native Hawaiian, found at the *mauka/`ewa* corner of South King and Punchbowl Streets
Bevan et al.	2004	Monitoring Report	**City Hall Annex**	-1321	No significant archaeological deposits found.
Anderson	1995a	Historical Background Research	**One Archer Lane** aka King Street Place Property		Background research regarding the likelihood of encountering burial or other archaeological deposits in the project area

Report Author (s)	Year	Type of Work	Location	*SIHP # (50-80-14)	Findings
Anderson	1995b	Sub-Surface Inventory Survey	**One Archer Lane** aka King Street Place Property	-5373	SIHP # -5373--Historic trash pits and an adze fragment. No burials associated with the adjacent Catholic Cemetery were found; however, testing was deemed insufficient along the cemetery boundary to rule out cemetery-related burials within the project area.
Kapeliela	1996	Inadvertent Burial Discovery Report	**One Archer Lane**	-5455	Documentation of first inadvertent burial find during One Archer Lane construction (Anderson and Aronson 1997)
Anderson	1997a	Subsurface Testing	**One Archer Lane**	-5455	Subsurface testing of the proposed reinterment plot for the historic burials (SIHP 3 - 5455) found on the One Archer Lane property during archaeological monitoring (Anderson and Aronson 1997)
Anderson	1997b	Monitoring and Archaeological Testing Plan	**One Archer Lane**	-5373 and -5455	Monitoring plan for storage tank installation, monitoring procedures and assessment of potential for finding additional archaeological deposits
Anderson and Aronson	1997	Monitoring and Emergency Data Recovery	**One Archer Lane**	-5455	Monitoring and data recovery documentation for the 30 burials found at the One Archer Lane Property during project construction (SIHP # - 5455). These burials are located approximately 115 meters (380 feet) outside the current Alapai Transit Center project area.

*State Inventory of Historic Places (SIHP) numbers are for the entire property, unless otherwise noted

Governor's residence; and, the monitoring of a trench along Beretania Avenue, which extended into Washington Place (Dye 2002). The material collected has primarily consisted of historic artifacts, and is consistent with the findings of other previous archaeological research in the immediate vicinity of the project area.

In 1995, State Park archaeologists (Carpenter and Yent 1995) monitored the kennel construction at Washington Place (SIHP site 50-80-14-9907). Subsurface excavations, consisting of six footings and two shallow trenches, revealed no cultural deposits, yet yielded a small

collection of historic artifacts comprised of ceramic, glass, and metal fragments dating from the early nineteenth century up to the recent past. The majority of artifactual material recovered dated from the nineteenth century and appears to be associated with occupation of the residence by the Dominis family and Queen Lili'uokalani. In addition, the recovery of two shells of traditional marine shell food species, according to the report, "although secondarily deposited, does provide evidence for the archaeological potential of the grounds, even at relatively shallow depth . . . and suggests that there may be intact cultural deposits, refuse pits, etc. buried within the compound" (Carpenter and Yent 1995:12).

In 2000, during the placement of footings and foundation material for the construction of sidewalks in compliance with the Americans with Disabilities Act (ADA), State Park archaeologists (Majors and Carpenter 2000) again monitored ground-disturbing activity at Washington Place. Consistent with previous findings, the three excavation trenches yielded historic artifacts, including metal, glass, and building materials. No indigenous artifacts were collected. A higher density of historic cultural material and coral cobbles found in the *makai* half of Trenches 1 and 3 indicated a possible dump or demolished structure, and the area was given the State Site number 50-80-14-5944. Due to historic disturbance and the lack of significant cultural deposits, no further work was recommended (Nagata 2000).

In 2002, T.S. Dye and Colleagues monitored a trench that extended across Beretania Avenue into Washington Place. Stratigraphy was similar to other projects in the area, and only historic artifacts were recovered, including building materials such as window glass, roofing slate, square nails, lead sheeting, iron straps, and white-plastered sandstone and concrete (Dye 2002).

In 2003, Bishop Museum conducted an archaeological inventory survey to locate, identify, and assess the significance of subsurface cultural materials within the portion of the Washington Place grounds *mauka* and east of the current residence to be impacted by construction of the proposed new Governor's residence. Eleven 1.0 x 0.50 meter test units were excavated, and despite extensive subsurface investigations, the only indigenous artifacts collected were a few scattered volcanic glass and basalt flakes. According to the excavation summary (Dockall 2003:14-15):

> . . . much of the area is composed of three basic strata. Layer I is composed of turf or grass cover and occasional artifacts of various time periods. Layer II is the primary artifact-bearing layer but is similar in overall structure and appearance to Layer I with the exception of fewer roots and more artifacts. Layer III in most areas is a volcanic cinder that is fairly close to the surface in most areas. . . . Layer II contains a mix of artifacts from different time periods. Within every test unit, Layer II yielded primarily 19th and 20th century artifacts related to domestic uses and construction-related debris. Artifact types include window glass fragments, ceramics (Japanese and English/American), machine-cut and wire nails, glass bottle fragments, plastic and rubber fragments.

In addition, three personal items were collected that consisted of a phonograph record fragment, a nineteenth century tobacco pipe stem, and an early twentieth century 2-hole button (Dockall 2003:37). Due to the high level of historic ground disturbance, the cultural materials collected provided little insight into particular residential and building activities.

Based on the results of the inventory survey, the following recommendation for archaeological monitoring was provided:

> The Miller property [Grant 1428/4828] is unique in that its 19th century buildings were spread out over the parcel, leaving open spaces, providing some measure of protection for underlying deposits. It is possible that intact native Hawaiian cultural deposits may still exist; therefore, it is recommended that any construction or ground altering processes be monitored to mitigate impacts to cultural resources [Dockall 2003:43].

4.3 City Hall Annex

Between May 2003 and January 2004, Archaeological Consultants of the Pacific, Inc., carried out an archaeological monitoring program associated with the City Hall Annex Auditorium Restoration Project (Beven et. al. 2004). The City Hall Annex Auditorium is listed on the National Register of Historic Places as part of the Capitol Historic District, State Inventory of Historic Properties (SIHP) number 50-8014-1321. The monitoring program found no significant archaeological deposits; archaeological observation indicated that the areas excavated for the restoration project had been disturbed by prior construction and landscaping activity.

4.4 King Street Rehabilitation Project

Between August 2001 and June 2002, Cultural Surveys Hawaii, Inc., carried out an archaeological monitoring program associated with the King Street Rehabilitation Project (Mann and Hammatt 2002). The Rehabilitation project was carried out along South King Street from Alapai Street, north to Dillingham Boulevard. A historic trash pit, containing mostly butchered faunal bone was documented at the corner of Richards and South King Streets Additionally, human skeletal remains of one individual (SIHP # 50-80-14-6371) were documented beneath King Street, in front of Honolulu Hale, immediately Diamondhead of Punchbowl Street. The human remains were poorly preserved and had been previously disturbed by prior utility excavations beneath King Street.

4.5 Capitol Place/Block J (SIHP site 50-80-14-5760)

In 1999, Cultural Surveys Hawai'i (CSH) performed an archaeological inventory survey on the "Block J" parcel, located at the east corner of the intersection of Pali Highway and Beretania Street, two blocks west of The Queen's Medical Center (Perzinski et al. 2000a). The inventory survey built upon two previous archeological and historical assessments of the same parcel. Tomonari-Tuggle's (1983) assessment included background research and analysis of subsurface cores, which demonstrated the potential for subsurface archaeological deposits within the parcel. Chiogioji and Hammatt (1998) conducted an archaeological assessment of a slightly larger project area, which included Block J. The findings and recommendations of both of these assessment reports are similar; Block J has a high potential for subsurface archaeological deposits and an archaeological inventory survey was recommended.

The site at that time was a paved, municipal parking lot with separate portions designated for the general public and city employees. Background research revealed that the parcel had been

used continuously and with increasing intensity since the early historic beginnings of Honolulu in the early nineteenth century. In the mid-nineteenth century, it contained a reservoir and the home of Jules Dudoit, the French Consul. Installation of the municipal parking lot on the project area in 1955 had removed all remnants of surface historic properties that may have once existed on the property. Accordingly, the inventory survey field investigations focused on subsurface testing.

A program of backhoe test excavations was implemented and twelve 11-m long trenches were excavated. Stratigraphy within the project area was uniform, consisting of: Stratum I, a 10 cm (centimeter) thick asphalt surface; Stratum II, the 10-25 cm gravel bed for the asphalt pavement; Stratum III, a 50-110 cm thick dark brown clay loam (Makiki clay loam); Stratum IV, the black volcanic cinder/sand derived from the eruption of Tantalus-Sugarloaf; and, Stratum V, the underlying coral substrate. The trenches exposed numerous historic subsurface features, including trash pits (some of which may have functioned as privies as well), utility installation trenches, and other subsurface disturbances. Several historic trash-filled pit features extended down to Stratum V, which was approximately two m below the parking lot surface (Perzinski et al. 2000a:43).

There was no evidence of pre-contact occupation from any of the soil layers or features. The numerous subsurface features represented variable age-ranges of use from as early as the 1820s and 1830s to the first half of the twentieth century. A single state site number, 50-80-14-5760, was assigned to this portion of historic Honolulu. Data recovery was recommended for further documentation of this site.

In 1999, data recovery was conducted by CSH within the "Block J" parcel. Data recovery consisted of four large areas positioned on the seaward potion of the public parking lot. The areas were stripped until features beneath the asphalt were visible. The privy and trash-filled pit features were excavated by a total of 26 1.5x1.5 m (meter) units, one 1x1 m unit, and 16 trenches. Historic artifacts dominated the artifact assemblage, which included 407 glass bottles, 405 ceramic vessel fragments, 176 personal items, 1010 household goods, and 447 miscellaneous artifacts. The majority of the artifacts were manufactured in Europe and the mainland United States from the early nineteenth to the early twentieth century. One polished basalt adze was recovered, but was not associated with any particular feature or traditional Native-Hawaiian cultural layer. No other traditional native Hawaiian implements were observed during the data recovery project. The results of the data recovery revealed that Block J was occupied by a mix of residential and commercial enterprises during the nineteenth and twentieth centuries. The inhabitants of the parcel were most likely of European, American, or Hawaiian descent and of average economic status. A draft report (Perzinski et al. 2000b) on this work has been written, but a final report has not yet been produced.

Construction at the property, now called "Capitol Place," has been monitored by a CSH crew since February 1, 2006 and is still on-going. At the present, one human burial and sixteen historic trash pits, with bottles dating from the early nineteenth century to the 1950s, have been recorded.

4.6 'Iolani Palace and the Capitol Historic District

Several other archaeological studies have been conducted in the Capital Historic District, especially at 'Iolani Palace.

In 1968, the Division of State Parks conducted salvage archaeology on the 'Iolani Palace grounds to locate the foundations of the Hala Akala, the Royal Bungalow (Seelye 1968) and to search for other sites, including a possible *heiau* foundation. Hale Akala, also called the Pink House, was the personal residence of King Kalākaua and was built in 1882; it was demolished in 1919. Numerous historic artifacts were recovered and recommendations were made for further data recovery.

In 1971, the Bishop Museum excavated an old macadamed carriage road at 'Iolani Palace (Rosendahl 1971). In 1976, the Bishop Museum also monitored the installation of public utilities to the main palace building (Luscomb et al. 1976) and at the 'Iolani Barracks (Sinoto 1977). During these projects, the crew:

> . . . recorded a three depositional phase stratigraphic sequence consisting of Layer 1, an organic A horizon with mixed artifacts throughout, a Layer II, consisting of a highly disturbed matrix with artifacts and features, and a third layer (Layer III) consisting of a culturally sterile Tantalus cinder . . . the materials recorded for these projects consisted of nontraditional artifacts including ceramics, glass, and metal, and building materials including bricks, mortar, coral, and stone. None of these projects yielded traditional native Hawaiian artifacts, features, or cultural deposits [Rosendahl 1971; Luscomb et al. 1976, cited in Dockall 2003:9].

In the early 1990s, Archaeological Consultants of Hawai'i, Inc. monitored subsurface excavations for the State Capitol Complex Telecommunications Conduits, Phase III (Denham and Kennedy 1993). The project area included the grounds of 'Iolani Palace. Two historic trash pits were encountered during excavations for conduits on the palace ground fronting South King Street. Materials in the trash pit, designated Feature A of site 50-80-14-4606, included:

> . . . a variety of historic materials . . . Of particular interest were a number of ceramic pipes, a glass stopper (WB-009 which dated to the later 1800's), and selected items of ceramic which dated to the early nineteenth century. In addition to the historic trash, a variety of shells and faunal material were also collected . . . The material present within this trash pit suggested that it dated to the early twentieth century [Denham and Kennedy 1993:10].

The second trash pit encountered along the King Street side of the palace grounds, designated Feature F of Site 50-80-14-4606, contained a variety of historic artifacts:

> While ceramic was collected which dated to the early nineteenth century, no specific pieces of particular interest were collected. In addition to these manufactured items, a variety of shell and faunal material was also collected . . . The material collected from this trash pit suggested that it dated to the mid-nineteenth century [Denham and Kennedy 1993:44].

The ARCH report (Denham and Kennedy 1993) also contained the monitoring results for the State Capitol Complex outside of the ‘Iolani Palace grounds. Two sites were identified. SIHP 50-80-14-4605 is a multi-component site with a historic trash pit, a ditch, a pit, a firepit, six postholes, and a burial; the firepit was dated to A.D. 1390-1700, and the posthole was dated to A.D. 830-1330. Site 50-80-14-4606 consisted of nine historic trash pits. Only one traditional artifact, a drilled *Nerita* shell, was found; the rest of the artifacts were all historic, dating to the late nineteenth and twentieth century.

In 1991, Bishop Museum’s Applied Research Group (Simons et al. 1991) conducted archaeological monitoring and data recovery services during the historic renovation of the Armed Forces Young Men’s Christian Association (YMCA) Building, SIHP site 50-80-14-1307. The building was constructed in 1927 and is considered part of the Hawai‘i Capitol Historic District, which is listed on the National Register of Historic Places. In the late nineteenth century, structures on the property included the Hawaiian Hotel, built in 1872, native huts, a bath house, hotel cottages, domestic dwelling, and storage sheds. In 1914, this building was leased to the Armed Forces YMCA; they bought the buildings and land in 1917, demolished the old buildings, and then built a new structure, the present one (in 1991, the date of the report) in 1926 (Simons et al. 1991:6-13). For the subsurface testing, no pre-Contact features were observed; the only artifacts recovered were manufactured in the United States and Europe and dated from the late eighteenth to early twentieth centuries (Simons et al. 1991:73).

Archaeological investigations were conducted at the Hawai‘i State Public Library Addition Site (SIHP site 50-80-14-9959) by CSH in 1991 (Chiogioji et al. 1991). The present library building was built in 1911 and opened in 1913. The investigations included preliminary test excavations and on-site monitoring during construction activities. These procedures revealed the presence of sixteen features, two of which, a manhole shaft and a coral construction fill layer, were assessed as modern – related to maintenance or landscaping activities on the library grounds. The remaining fourteen features – which included trash pits, privies, septic tanks, and a posthole – were determined to have dated from the last half of the nineteenth century to the first quarter of the present century, when the project area was incorporated into the Library of Hawai‘i grounds.

A total of 344 historic era artifacts were recovered from the features and from random localities within the project area. Sixty-five percent of the artifacts were of glass and included many whole champagne, liquor, beer, soda, medicine, and perfume bottles. These bottles provided the clearest evidence dating the features within the project are to the period between the 1880s and the 1920s. Historical research conducted by Cultural Surveys Hawai‘i suggested that this was the period when the project area was most likely to have been intensively utilized.

4.7 1971 Construction Excavations at Queen’s Medical Center

As reported in a recent monitoring plan (O’Hare et al. 2006), in the fall of 1971, excavation for a new Community Mental Center was in progress at the Queen’s Medical Center; this would later become the site of the Kekela Building, now used for psychiatric services and classrooms. In September (*Honolulu Advertiser/Star-Bulletin* Sept. 19, 1971), the construction crew related to the daily newspapers that many glass bottles had been found during the excavation for this building. During excavations for the new foundation, over 100 artifacts were found, including

many “caches” of bottles. This portion of the southeastern corner of the Queen’s Medical Center grounds, in the early twentieth century, was used for outbuildings, such as a chicken yard and a laundry, and for residential dwellings.

The bottles were for patent medicines, castor oil, whiskey, beer, rice wine, vinegar, olive oil, vanilla, and Worcestershire sauce. The project director believed the bottles and other artifacts were discarded trash from the residential dwellings on the southeastern corner of the property. Some of the bottles were medicines with patent dates of 1877, 1903, and 1906. These patent dates can not be used to identify the bottles, however, since the medicines may have been manufactured for many years. The director remarked that the bottles were “common household items 50 years ago.” The type of bottles found does support the suggestion that the refuse is from habitation debris, not related to the hospital operations.

In October (Altonn 1971), construction workers at the same construction site found human bones at a depth of six feet (1.8 meters). The bones were from five individuals. The workers called the Rev. Abraham Akaka of Kawaiaha‘o Church to bless the site and called the Medical Examiner to examine the bones. There were no coffins or associated artifacts; one Hawaiian minister believed that at least some of the burials were native Hawaiian based on their “position.” This is not explained further, but it probably means the burials were found in a flexed or semi-flexed position. The project director also believed that more burials could be “concealed in the earth banks.”

The newspaper article mentioned that the construction workers planned to call in the Bishop Museum to inspect the remains. On August 23, 2005 a telephone call was placed to Ms. Betty Lou Kam of the Cultural Division of the Bishop Museum. She checked the museum records for 1971 and stated that there were no records that the Bishop Museum either inspected the bones or took possession of the bones. She believed that considering the large number of individuals (five), that there would definitely be some record of this find if the Bishop Museum had been involved. On August 25, 2005 a fax was then sent to the State Historic Preservation Division, Burials Program, to determine if the SHPD had any records of this burial find. The SHPD responded on September 21, 2005 to say that their burial records did not extend back to the year 1971, and they had no information on these burials.

4.8 One Archer Lane

Ogden Environmental and Energy Services Co., Inc. (OGDEN) conducted historical background research for the proposed One Archer Lane Development (Anderson 1995a). The results indicated that there was potential for archaeological deposits, including the remains of historic residences, within the One Archer Lane project area. Regarding burials from the adjacent Catholic Cemetery (refer to Figure 22) within the One Archer Lane project area, based on Anderson’s (1995a) research, it appeared that the boundaries of the cemetery had not extended into the One Archer Lane project area and that it was unlikely that historic burials from the Catholic Cemetery extended into the project area. Anderson (1995a) recommended a subsurface inventory survey to establish whether or not burials from the adjacent cemetery extended into the One Archer Lane parcels.

OGDEN carried out subsurface inventory survey at One Archer Lane (Anderson 1995b). Eight backhoe trenches were excavated and historic subsurface features (SIHP # 50-80-14-5373) were encountered. Anderson concluded:

> The lack of historic era burials present in Trench 1 may indeed indicated that the cemetery boundary adjoining the project area has remained constant through time and that no historic era burials extend into the project area. Since only a small portion of the trench was actually excavated, however, we can not fully conclude this at this point in the study (Anderson 1995b:83).

Anderson (1995b) recommended that archaeological monitoring take place during the construction activities along the project area boundary shared with the Catholic Cemetery.

In 2006, during the course of this recommended archaeological monitoring of construction activities at One Archer Lane, a single human burial (SIHP # 50-80-14–5455) was inadvertently encountered (Anderson 1997b; Kapeliela 1996). Following the discovery of the human burial, it was believed that any further work would not intrude into the cemetery boundary. As a result, in consultation with the SHPD, monitoring was halted for the remainder of the project. Later, a concentration of burials was inadvertently encountered during construction activities. In all, a minimum of 30 individuals were encountered. Analysis of the burials showed that the burials dated from the mid-1800s to the 1920s (Anderson 1997b), suggesting that the burials were associated with the adjacent cemetery. The burials were regarded as portions of the already designated SIHP # 50-80-14-5455 (Anderson and Aronson 1997:73 ff.). These 30 burials are located approximately 115 meters (380 feet) southeast of the current Alapai Transit Center project area.

OGDEN also completed subsurface testing of the proposed reinterment plot for the burials discovered at One Archer Lane (Anderson 1997a) and archaeological monitoring for the excavation of an underground storage tank (Anderson 1997b). Disarticulated human remains were found during the excavation of the One Archer Lane reinterment plot (Anderson 1997b)

4.9 Hawaiian Electric Company (HECO) Dispatch Center

Between November 2004 and February 2005, Cultural Surveys Hawaii, Inc. (CSH) carried out archaeological inventory survey investigations related to the proposed HECO Dispatch Center project (Perzinski et al. 2006). The project area abuts the southern boundary of the Catholic Cemetery on King Street (refer to Figure 22), and one of the research objectives was to determine if historic burials associated with the Catholic Cemetery extended south, outside the current cemetery boundaries into the HECO project area. Two historic coffin burials associated with the adjacent historic Catholic Cemetery were documented as additional features of the already designated SIHP # 50-80-14-5455 (refer to the discussion of One Archer Lane, above).

4.10 Background Summary and Predictive Model

The documentary review in this report suggests that the locale, which includes the present project area, may not have been intensively utilized or populated during the centuries before Western contact – the primary areas cultivated by Hawaiians being the coastline and the lands surrounding Nu‘uanu Stream. During the first decades after contact, while other areas of

Honolulu were developed in response to Western commerce, the area around Pūowaina (Punchbowl Crater) could still be described as part of the “dreary plain of Honolulu.”

Several archaeological projects that have included subsurface testing have been conducted in one or two blocks around the current project. No pre-contact cultural strata have been found in any of the project areas. One traditional artifact, an adze, was found (Capitol Place project), but was not associated with any subsurface deposits or features. One drilled *Nerita* shell was found in the Capitol Historic District. Two pre-contact subsurface features, dated to A.D. 1390-1700 and A.D. 830-1330 have been recorded in the Capitol Historic District (Denham and Kennedy 1993).

All other deposits, subsurface pits, features, and artifacts recovered from other projects have contained historic artifacts dating to the nineteenth or twentieth century. It is therefore unlikely that pre-Contact/Early post-Contact Hawaiian habitation sub-features, agricultural features, or concentrations of traditional Hawaiian artifacts would be found in the project area.

4.11 Burials

One probable Native Hawaiian burial has been recorded in the Capitol Historic District (Denham and Kennedy 1993). One burial was documented during the monitoring associated with the King Street Rehabilitation Project (Mann and Hammatt 2002). One burial has been recorded in the Capitol Place project area (CSH project still in progress). Five burials were found on the grounds of The Queen’s Medical Center in a 1971 excavation for the Kekela Building, in an area used as a residential division since at least 1914 (Altonn 1971). Since there were no coffins and the individuals were in traditional “positions,” probably flexed or semi-flexed, it is likely that the five individuals were native Hawaiians, probably buried in the first half of the nineteenth century, or earlier. The human remains of at least 30 individuals were documented from the One Archer Lane project area, southeast of the current project area and adjacent to the historic Catholic Cemetery on King Street (Anderson 1997b) (refer to Figure 22). Relatedly, two historic burials were encountered on the south side of the King Street Catholic Cemetery during the archaeological inventory survey for the HECO Dispatch Center (Perzinski et al. 2006). According to the predictive model, therefore, burials might be present within the Alapai Transit Center property.

Section 5 Results of Fieldwork

Kevin Dalton, B.A., Amy Hammermeister, B.A., Matthew Bell, B.A., and Matt McDermott, M.A. (principal investigator), completed the initial fieldwork on December 26 and 27, 2006. A total of 14 backhoe trenches (numbered 1 to 14) (Figure 23) were excavated and recorded at that time. Since an historic burial was discovered in Trench 4, near the east central edge of the project area, a total of 5 additional trenches (numbered 15-19, refer to Figure 23) were excavated near Trenches 3 and 4 on January 23 and 24, 2007. Two more burials, one post-contact and the other of uncertain age, were discovered in trench 19. The upshot of subsequent consultations with SHPD and the OIBC was a request for 9 more trenches within the project area to address concerns over the presence of human remains and cultural resources. Amy Hammermeister, B.A., Michelle Pammer, B.A., Katie Whitman, B.S., and Matt McDermott, M.A. (principal investigator) completed these additional 9 trenches (numbered 20-28, refer to Figure 23) on June 18 and 19, 2007. This section of the report summarizes the findings by the field personnel for the total 28 backhoe trenches. Drafted profiles from four trenches (trenches 3, 18, 22 & 26) that included historic trash pits and drafted profiles from two trenches (trenches 4 & 19) that included burials are included within the body of this section. Drafted profiles of the other twenty-two test trenches (that yielded no significant finds) are presented in Appendix B of this study.

5.1 Survey Findings

A pedestrian inspection was conducted of the entire project area prior to commencing the excavation of trenches. No surface cultural resources were identified during this pedestrian inspection of the project area. Accordingly, the historic property identification effort focused on a subsurface testing program. The excavation of backhoe trenches began on December 26.

5.2 Test Excavations Findings

A total of 28 six-m (meter) long backhoe trenches were excavated within the project area. Trench locations were selected to insure a comprehensive coverage of the project area, as well as to test specific utility corridors in the project area's *makai* portion, toward King Street. A single backhoe bucket was used for all of the trenches resulting in a standard trench width of approximately 80 cm (centimeters). Field personnel observed and documented all excavations.

Based on the subsurface testing results, the project area's stratigraphy is uniform and relatively undisturbed for a portion of downtown Honolulu. Typical stratigraphy consisted of:

Stratum Ia:	the modern asphalt paving, with its associated
Stratum Ib, c	base course of either basalt gravel or crushed coral, over
Stratum IIa, b	a layer(s) of clay loam alluvium (Makiki clay loam), over
Stratum III	volcanic cinders.

In a few cases, an additional stratum, Stratum Ic, consisted of blacker colored disturbed clay loam alluvium (Makiki clay loam) that contained cultural materials such as pottery, glass, and burned and rusted metal. This layer was found adjacent to, or within Stratum II in Trenches 20, 22, and 25.

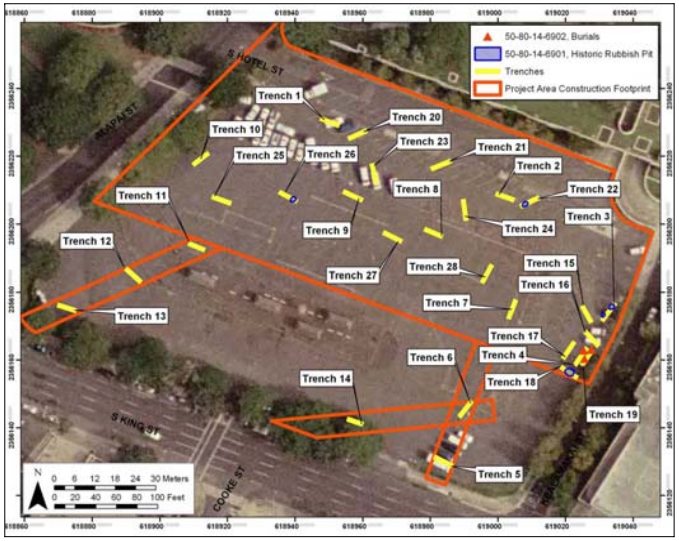


Figure 23 Aerial photo showing location of trenches 1-28 and SIHP numbers

There was little indication of prior subsurface ground disturbance within the project area. As the underlying volcanic cinder layer clearly pre-dates Polynesian colonization of Hawai‘i, test trenches were only sufficiently deep to expose pure cinder deposits, which were typically 80 to 130 cmbs (centimeters below surface) of the current land surface.

No cultural material or subsurface features were found in twenty-two of the twenty-eight trenches excavated. Profiles of the twenty-two trenches that had no cultural deposits are presented in Appendix B of this study in numeric order.

Cultural material, consisting of four trash pits with historic material dating to the late nineteenth-early twentieth century (ca. 1850-1920), was found in four trenches (Trenches 3, 18, 22 and 26) located in the northeastern quadrant of the project area (refer to Figure 23). The stratigraphy of these four trenches is presented next. Three historic burials were recorded in two closely placed trenches (Trenches 4 and 19) (refer to Figure 23) in the northeastern quadrant of the project area. The stratigraphy of these two trenches is presented last within this section.

On December 26, in Trench 4, a coffin burial was discovered approximately 1.0 m below the current land surface. The burial was within a burial pit—a clear protrusion of the overlying brown alluvium down into the underlying cinder that was visible in the trench’s west/northwest profile. Hand excavation exposed corroded coffin nails and the powdery residue of the completely decomposed wood coffin surrounding the skeletal remains. Although the coffin remnants extended slightly into the test trench, the frontal and portion of the parietal bones were exposed by excavating slightly into the trench sidewall. Based on available evidence the burial appears to be oriented east/west with the head to the east. The burial is clearly older than 50 years and clearly historic. Based on the information currently available, there is no archaeological evidence to support an ethnicity determination.

Burial 2 was discovered on January 23, 2007, in Trench 19. Based on the exposed skull and proximal humerus, it extends north/*mauka*, roughly parallel to Trench 19. Coffin nails, but no coffin residue were found in association with Burial 2. A burial pit was clearly seen in the west/northwest profile, but not in the east.

Burial 3 was discovered the same day, also in Trench 19. It is not clear how it was oriented, or how it was interred (with coffin or without)--only the right foot was exposed--it does not extend into the adjacent Trench 4, however. No coffin nails were found in association with Burial 3--but only a very small portion of the burial pit was exposed in Trench 19.

Based on the small portions observed of each of the skeletons, all burials appear to be adults. All burials were found approximately 100-110 cm below the current parking lot surface. The burials are clearly older than 50 years and clearly historic. Based on the information currently available, there is no archaeological evidence to support an ethnicity determination.

Table 2. Soil Descriptions for Trenches 1-28

Trench No.	Str.*	Depth (cmbs)**	Soil Description
1	Ia	0 - 12	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
	Ib	12 - 26	Fill; 10 YR 4/2, dark grayish brown; silt loam; medium, granular structure; slightly hard dry consistency; non-plastic; weak cementation; very abrupt smooth lower boundary;
	II	26 - 46	10 YR 3/3, dark brown; clay loam; moderate, granular structure; weakly coherent dry consistency; friable moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; no cultural material;
	III	46 - 95	10 YR 2/1, black; volcanic cinders; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.
2	Ia	0-25	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
	II	25 - 65	B Horizon; 10 YR 3/3, dark brown; clay loam; moderate, granular structure; weakly coherent dry consistency; friable moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; partially disturbed/removed during parking lot installation; no cultural material;
	III	25 - 85	10 YR 2/1, black; volcanic cinders; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; intact banding of Strata III is clear indication that this layer has not been previously disturbed; bottom of excavation.
3	Ia	0 - 15	Asphalt; 10 YR 3/3, black; very abrupt wavy lower boundary;
	Ib	15-25	Fill; 10 YR 8/2, very pale brown; mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
	II	25 - 80	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; has subfeature**: SIHP Site 50-80-14-6901, Feature 1**;the trench also contained a small pocket of pale yellow (2.5 Y 8/2) silty clay loam with some fragments of window glass, a large concrete fragment, a red brick, and a pocket of white sand;
	III	80 - 125	10 YR 2/1, black; cinders; structureless; loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.
4	Ia	0 - 15	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
	Ib	15 - 33	Fill; 10 YR 8/2, very pale brown; mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
	II	33 - 70	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; sticky wet consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; nails and wood from Burial 1# were noted;
	Burial Pit	38-120	10 YR 3/2, very dark grayish brown; sandy loam; weak, granular structure; loose dry consistency; non-sticky wet consistency; slightly plastic; no cementation; abrupt smooth lower boundary**; SIHP Site 50-80-14-6902 , Burial 1** and coffin - nails and wood were recorded;
	III	70 - 120	10 YR 2/1, black; volcanic cinders; structureless; loose dry consistency; non-plastic; no cementation; Some nails and wood from Burial 1 were present
5	Ia	0 - 13	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
	Ib	13 - 26	Fill; 10 YR 8/2, very pale brown; mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
	II	26 - 66	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; sticky wet consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; no cultural material;

Trench No.	Str.*	Depth (cmbs)**	Soil Description
5	III	66 - 133	10 YR 2/1, black; volcanic cinders; structureless; loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.
6	Ia	0 - 12	10 YR 2/1, black; asphalt; very abrupt smooth lower boundary;
	Ib	12 - 25	Fill; 10 YR 8/2, very pale brown; coral fill; moderate, coarse or thick, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
	II	25 - 80	10 YR 3/3, dark brown; clay loam; weak, fine, granular structure; very friable moist consistency; slightly plastic; no cementation; wavy lower boundary; no cultural material;
	III	80 - 130	10 YR 2/1, black; volcanic cinders; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.
7	Ia	0 - 15	Asphalt; 10 YR 2/1, black; very abrupt lower boundary;
	Ib	15 - 18	Fill; 10 YR 8/2, very pale brown; coral fill; moderate, coarse or thick, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
	II	18 - 80	10 YR 3/3, dark brown; clay loam; weak, fine, granular structure; loose moist consistency; sticky wet consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; no cultural material;
	III	80 - 132	10 YR 2/1, black; volcanic cinders; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.
8	I	0-27	Asphalt; 10 YR 2/1, black; very abrupt lower boundary;
	II	27 - 49	10 YR 3/3, dark brown; clay loam; weak, fine, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; no cultural material;
	III	49 - 93	10 YR 2/1, black; volcanic cinders; structureless, loose dry consistency; non-plastic; no cementation; bottom of excavation.
9	Ia	0 -13	Asphalt; 10 YR 2/1, black; very abrupt lower boundary;
	Ib	13 - 31	Fill; 10 YR 8/2, very pale brown; coral fill; moderate, coarse or thick, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
	II	31-110	10 YR 3/3, dark brown; clay loam; weak, fine, granular structure; loose moist consistency; sticky wet consistency; slightly plastic; no cementation; wavy lower boundary; concrete blocks, pipes, cement, asphalt and other construction rubble is mixed throughout;
	III	110-140	10 YR 2/1, black; volcanic cinders; structureless; loose dry consistency; non-plastic; no cementation; bottom of excavation.
10	Ia	0 - 12	Asphalt; 10 YR 2/1, black; structureless; very abrupt smooth lower boundary;
	Ib	10 - 2-	Fill; 10 YR 4/2, dark grayish brown; gravel fill; structureless; hard dry consistency; non-plastic; no cementation; abrupt smooth lower boundary;
	II	20 - 40	10 YR 3/3, dark brown; clay loam; weak, fine, granular structure; loose moist consistency; non-sticky wet consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; no cultural material
	III	40 - 115	10 YR 2/1, black; volcanic cinders; structureless; loose dry consistency; non-plastic; no cementation; bottom of excavation.
11	Ia	0 - 12	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
	Ib	12 - 36	Fill; 10 YR 4/2, dark grayish brown; gravel; structureless; slightly hard dry consistency; non-plastic; no cementation; clear smooth lower boundary; None
11	Ic	36 - 152	Fill; 10 YR 3/3, dark brown; clay loam; weak, granular structure; loose moist consistency; non-sticky wet consistency; non-plastic; no cementation; disturbed by the construction of a light pole foundation, and consists of mixed soil, concrete and asphalt

Trench No.	Str.*	Depth (cmbs)**	Soil Description
			fragments, and volcanic cinders
	II	36 - 56	10 YR 3/3, dark brown; clay loam; weak, granular structure; loose moist consistency; slightly plastic; no cementation; no cultural material;
	III	56 - 115	10 YR 2/1, black; volcanic cinders; structureless, single grain structure; loose dry consistency; non-plastic; no cementation; bottom of excavation.
12	Ia	0 - 12	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
	Ib	10-35	Fill; 10 YR 3/2, very dark grayish brown; gravelly silt loam; weak, granular structure; slightly hard dry consistency; non-sticky wet consistency; non-plastic; no cementation; clear smooth lower boundary;
	II	35 - 50	10 YR 3/3, dark brown; clay loam; weak, granular structure; loose moist consistency; sticky wet consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; no cultural material;
	III	50 - 105	10 YR 2/1, black; volcanic cinders; structureless; loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.
13	Ia	0 - 13	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
	Ib	13 - 19	Fill; 5 YR 3/2, Dark reddish brown; gravel; structureless; hard dry consistency; non-plastic; weak cementation; abrupt smooth lower boundary;
	Ic	19 - 142	10 YR 2/2, very dark brown; gravelly clay loam; weak, granular structure; loose moist consistency; sticky wet consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; no cultural material;
	II	142 - 153	10 YR 2/1, black; volcanic cinders; structureless; weakly coherent dry consistency; non-plastic; no cementation; bottom of excavation.
14	Ia	0 - 12	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
	Ib	10 - 29	Fill; 10 YR 8/2, very pale brown; coral; structureless; slightly hard dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
	IIa	29 - 42	10 YR 3/1, very dark gray; clay loam; moderate, fine, granular structure; hard dry consistency; non-plastic; strong cementation; clear lower boundary; no cultural material;
	IIb	29 - 53	10 YR 3/3, dark brown; clay loam; weak, granular structure; weakly coherent dry consistency; non-sticky wet consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; no cultural material;
	III	53 - 130	10 YR 2/1, black; volcanic cinders; structureless; loose dry consistency; non-plastic; no cementation; bottom of excavation.
15	Ia	0 - 25	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
	II	25 - 150	10 YR 3/3, dark brown; clay; moderate, slightly hard dry consistency; weak cementation; very abrupt wavy lower boundary; no cultural material;
	III	50 - 160	10 YR 2/1, black; volcanic cinders; structureless; loose dry consistency; non-plastic; no cementation; bottom of excavation.
16	Ia	0 - 30	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
	II	30 - 155	10 YR 3/2, very dark grayish brown; clay; moderate, slightly hard dry consistency; weak cementation; very abrupt irregular lower boundary; None
	III	50 - 185	10 YR 2/1, black; very coarse, sand/cinder; structureless, loose dry consistency; non-plastic; no cementation; bottom of excavation.
17	I	0-29	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
	II	29 - 152	10 YR 3/3, dark brown; clay loam; moderate, granular structure; weakly coherent dry consistency; friable moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; no cultural material;

Trench No.	Str.*	Depth (cmbs)**	Soil Description
17	III	50 - 168	10 YR 2/1, black; volcanic cinders; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.
18	I	0 - 25	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
	II	26 - 115	10 YR 3/3, dark brown; clay loam; moderate, granular structure; friable moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; Glass bottles, ceramic tablewares, a cork screw, and bird and cow bones were within a large pit, possibly a privy, **SIHP Site 50-80-14-6901, Feature 2**
	III	70 - 250	10 YR 2/1, black; volcanic cinders; structureless; loose dry consistency; non-plastic; no cementation; bottom of excavation.
19	Ia	0 - 28	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
	IIa	28 - 123	10 YR 3/2, very dark grayish brown; sandy clay; weak, granular structure; loose moist consistency; non-sticky wet consistency; non-plastic; no cementation; clear smooth lower boundary**; SIHP Site 50-80-14-6902 , Burials 2 and 3** and coffin nails were within this stratum, no other cultural material;
	Ib	35 - 110	10 YR 3/3, dark brown; clay loam; moderate, granular structure; sticky wet consistency; slightly plastic; weak cementation; abrupt wavy lower boundary; no cultural material;
	III	48 - 138	10 YR 2/1, black; volcanic cinders; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.
20	Ia	0-12	10 YR 2/1, black; very abrupt smooth lower boundary; asphalt
	Ib	12-26	10 YR 8/2, very pale brown; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary; mixed coral fill, base course
	Ic	28-118	5YR 2.5/2, dark reddish brown; clay loam; weak, fine/medium, granular structure; very friable moist consistency; sticky wet consistency; slightly plastic; no cementation; clear wavy lower boundary; orange and black splotches due to burnt and rusted metal
	II	28-115	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary
	III	38-120	10 YR 2/1, black; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; Sugerloaf/Tantalus cinders
21	Ia	0-12	10 YR 2/1, black; asphalt; very abrupt smooth lower boundary; asphalt
	Ib	12-16	10 YR 8/2, very pale brown; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary; base course
	II	26-70	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; alluvium
	III	35-105	10 YR 2/1, black; loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; Sugarloaf Cinders bottom of excavation
22	Ia	0-12	10 YR 2/1, black; asphalt; very abrupt smooth lower boundary; asphalt
	Ib	12-26	10 YR 8/2, very pale brown; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary; base course
	Ic	28-160	7.5 YR 3/1, very dark grey; fine to medium, sandy clay loam; structureless, fine, granular structure; very friable moist consistency; no cementation; clear wavy lower boundary; disturbed stratum containing **SIHP Site 50-80-14-6901, Feature 3**; semicircular layer of black and orange stained sediment; dog bones found just above this stain; rusted and burned metal, glass, saw-cut cattle bone and other garbage
	II	28-88	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt irregular lower boundary

Trench No.	Str.*	Depth (cmbs)**	Soil Description
	III	32-152	10 YR 2/1, black; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; Sugarloaf-Tantalus Cinder; bottom of excavation
23	Ia	0-12	10 YR 2/1, black; asphalt; very abrupt smooth lower boundary
	Ib	12-30	10 YR 8/2, very pale brown; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary; base course
	Ic	30-170	2.5 YR 2.5/1, reddish black; clay loam; structureless, single grain structure; loose moist consistency; non-plastic; no cementation; previously disturbed; mixture of alluvium and Sugarloaf cinder; chunks of concrete, pipe, a *keawe* stump, a glass insulator, and asphalt chunks
	II	255-203	10 YR 2/1, black; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; Sugarloaf-Tantalus cinders
24	Ia	0-12	10 YR 2/1, black; asphalt; very abrupt smooth lower boundary
	Ib	10-26	10 YR 8/2, very pale brown; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary; base course
	II	26-90	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt irregular lower boundary;
	III	30-110	10 YR 2/1, black; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; Sugarloaf-Tantalus cinder
25	Ia	0-12	10 YR 2/1, black; asphalt; very abrupt smooth lower boundary
	Ib	10-28	10 YR 8/2, very pale brown; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary; base course
	Ic	28-196	2.5 Y 3/2, very dark greyish brown; sandy clay; structureless, fine/medium, granular structure; loose moist consistency; non-plastic; no cementation; abrupt wavy lower boundary; modern fill deposit; two bowling pins found
	II	25-98	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary
	III	32-210	10 YR 2/1, black; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; Sugarloaf-Tantalus cinder
26	Ia	0-10	10 YR 2/1, black; asphalt; very abrupt smooth lower boundary
	Ib	10-130	10 YR 8/2, very pale brown; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary; base course
	II	28-48	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; contains **SIHP Site 50-80-14-6901, Feature 4**, a historic trash pit that extends into stratum III; matrix is a mix of II and III; contains historic household type refuse like bottles and ceramics
	III	35-160	10 YR 2/1, black; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; Sugarloaf-Tantalus cinder
27	Ia	0-10	10 YR 2/1, black; asphalt; very abrupt smooth lower boundary
	Ib	10-30	10 YR 8/2, very pale brown; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary; base course
	II	22-78	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary;
	III	65-140	10 YR 2/1, black; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; Sugarloaf-Tantalus Cinder

Trench No.	Str.*	Depth (cmbs)**	Soil Description
28	Ia	0-12	10 YR 2/1, black; asphalt; very abrupt smooth lower boundary
	Ib	12-26	10 YR 8/2, very pale brown; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary; base course
	IIa	26-108	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt irregular lower boundary
	IIb	90-115	5 Y 2.5/2, black; fine to medium, sandy clay loam; structureless, fine/medium, granular structure; loose moist consistency; slightly plastic; no cementation; clear wavy lower boundary; mixture of alluvium and cinder; darker than regular alluvium
	III	48-120	10 YR 2/1, black; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; Sugarloaf-Tantalus cinder

*Str.=Stratum
** Depth (cmbs)=Depth (centimeters below surface)

5.2.1 Stratigraphy for Four Trenches – Site 50-80-14-6901, Features 1 -4, Historic Trash Pits

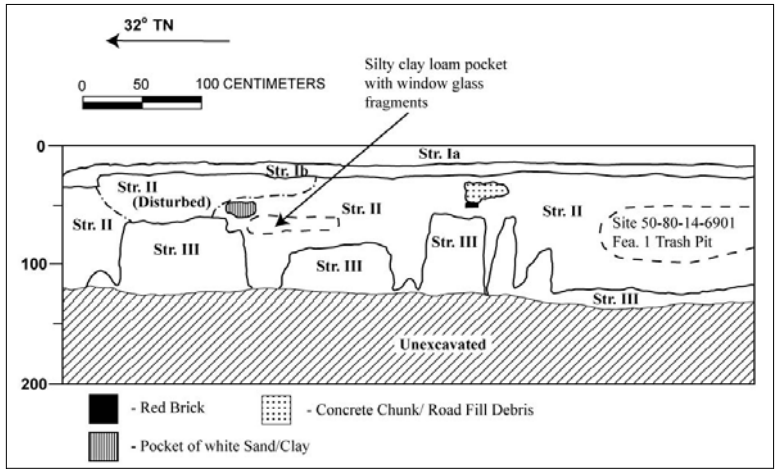


Figure 24. Backhoe Trench 3, northeast quadrant of project area, west wall profile, with Site SIHP 50-80-14-6901 Feature 1

BACKHOE TRENCH 3

Str.	Depth (cmbs)	Soil Description
Ia	0 - 15	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
Ib	15 - 25	Fill; 10 YR 8/2, very pale brown; mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
II	25 - 80	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; has subfeature: **SIHP Site 50-80-14-6901, Feature 1;**the trench also contained a small pocket of pale yellow (2.5 Y 8/2) silty clay loam with some fragments of window glass, a large concrete fragment, a red brick, and a pocket of white sand;
III	80 - 125	10 YR 2/1, black; cinders; structureless; loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.

Backhoe Trench 3 (Figure 24) contained historic material throughout Stratum II, including a trash pit with historic artifacts, designated **SIHP Site 50-80-14-6901, Feature 1**. The pit contained bone, glass, bottles, ceramic, and housewares. The four glass bottles were dated to A.D. 1850-1920.

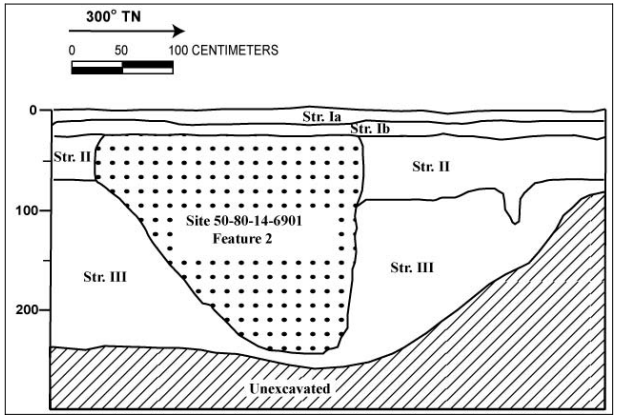


Figure 25. Backhoe Trench 18, northeast quadrant of project area, south wall profile, with Site 50-80-14-6901 Feature 2 Trash Pit

BACKHOE TRENCH 18

Str.	Depth (cmbs)	Soil Description
I	0 - 25	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
II	26 - 115	10 YR 3/3, dark brown; clay loam; moderate, granular structure; friable moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; Glass bottles, ceramic tablewares, a cork screw, and bird and cow bones were within a large pit, possibly a privy, designated **SIHP Site 50-80-14-6901, Feature 2**;
III	70 - 250	10 YR 2/1, black; volcanic cinders; structureless; loose dry consistency; non-plastic; no cementation; bottom of excavation.

Backhoe Trench 18 (Figure 25) contained a large trash pit feature, possibly a privy, designated **SIHP Site 50-80-14-6901, Feature 2.** All glass bottles from this pit were dated to A. D. 1850-1920. Several bottles with narrow age ranges were dated to pre-1870 to 1904.

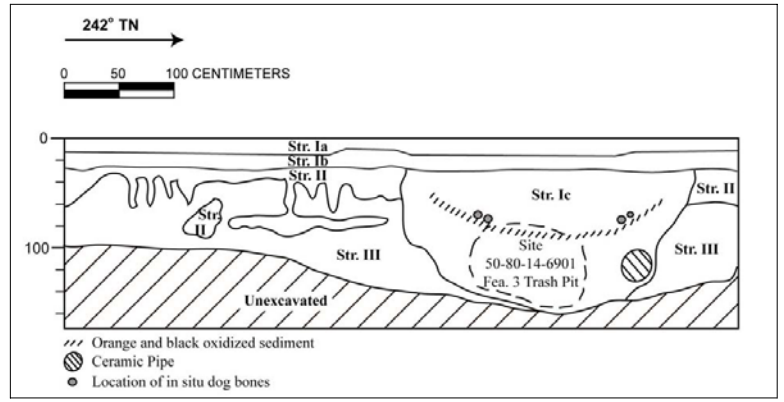


Figure 26. Backhoe Trench 22, northeast quadrant of project area, South Wall profile with Site SIHP 50-80-14-6901 Feature 3

BACKHOE TRENCH 22, South Wall Profile

Str.	Depth (cmbs)	Soil Description
Ia	0 - 12	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
Ib	12 - 26	Fill; 10 YR 8/2, very pale brown; mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
Ic	28 - 160	Disturbed Fill; 7.5 YR 3/1, very dark grey; medium sand and clay loam; granular; fine and medium grains; moist; very friable; no cementation; terrestrial sediments; clear boundary; wavy topography; Glass bottles, pottery, metal, dog and cattle bone, semi-circular layer of black and orange stained sediment, designated **SIHP Site 50-80-14-6901, Feature 3**. A ceramic pipe was embedded in the wall next to, but not part of, Feature 3.
II	28 - 88	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; irregular
III	32 - 152	10 YR 2/1, black; cinders; structureless; loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.

Backhoe Trench 22 (Figure 26) contained a large trash pit feature, designated **SIHP Site 50-80-14-6901, Feature 3.** All glass bottles from this pit were dated to A. D. 1820-1920. Several bottles with narrow age ranges were dated 1850 to 1890. Unburned dog bone (much of skeleton – both humeri, skull fragments, teeth, mandible fragments, ribs, tibia, podials, and metapodials) was found just above the semi-circular layer.

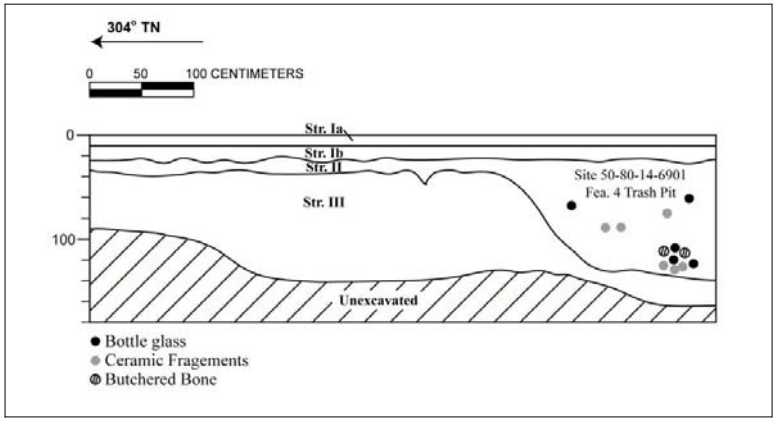


Figure 27. Backhoe Trench 26, northwest quadrant of project area, NE Wall profile with Site SIHP 50-80-14-6901 Feature 4

BACKHOE TRENCH 26, Northeast Wall Profile

Str.	Depth (cmbs)	Soil Description
Ia	0 - 10	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
Ib	10 - 30	Fill; 10 YR 8/2, very pale brown; mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
II	28 - 48	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; irregular. Glass bottles (one with a pontil scar), ceramics, ceramic gin bottles, plates, bowls, butchered bone, and a possible glass oil lamp fragment, designated **SIHP Site 50-80-14-6901, Feature 4**
III	35 - 160	10 YR 2/1, black; cinders; structureless; loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.

Backhoe Trench 26 (Figure 27) contained a large trash pit feature, designated **SIHP Site 50-80-14-6901, Feature 4**, containing historic household refuse, including bottle glass, porcelain, whiteware and stoneware. A whiteware saucer fragment had a maker's mark that dated the manufacture of the saucer from 1818-1846.

5.2.2 Stratigraphy for Two Trenches with Three Historic Burials, Site 50-80-14-6902

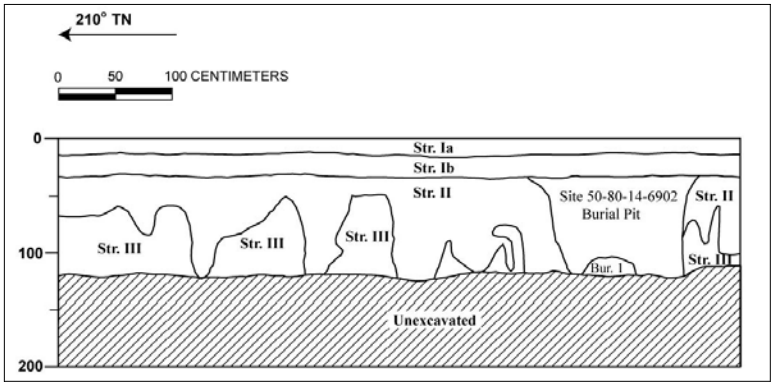


Figure 28. Backhoe Trench 4, West Wall Profile, with Site 50-80-14-6902, Burial 1

BACKHOE TRENCH 4

Str.	Depth (cmbs)	Soil Description
Ia	0 - 15	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
Ib	15 - 33	Fill; 10 YR 8/2, very pale brown; mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
II	33 - 70	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; sticky wet consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; nails and wood from Burial 1# were noted;
Burial Pit, SIHP Site 50-80-14-6902, Burial #1		
	38-120	10 YR 3/2, very dark grayish brown; sandy loam; weak, granular structure; loose dry consistency; non-sticky wet consistency; slightly plastic; no cementation; abrupt smooth lower boundary; SIHP Site 50-80-14-6902, Burial 1 and coffin - nails and wood were recorded;
III	70 - 120	10 YR 2/1, black; volcanic cinders; structureless; loose dry consistency; non-plastic; no cementation; some nails and wood from Burial 1 were present; bottom of excavation.

Backhoe Trench 3 (Figure 28) contained one burial pit, designated Burials 1 of Site 50-80-14-6902. The trench is located in the northeastern quadrant of the project area, along the central eastern edge.

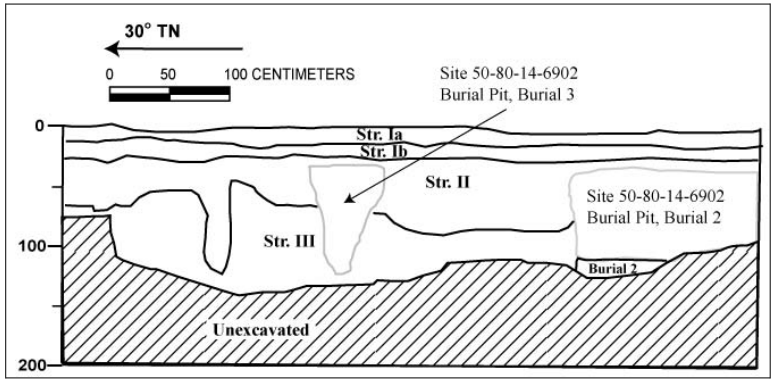


Figure 29. Backhoe Trench 19, North Wall Profile, with Burials 2 and 3 of Site 50-80-14-6902

BACKHOE TRENCH 19

Str.	Depth (cmbs)	Soil Description
Ia	0 - 12	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
Ib	12 - 28	Fill; 10 YR 8/2, very pale brown; mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
II	28-90	10 YR 3/3, dark brown; clay loam; moderate, granular structure; sticky wet consistency; slightly plastic; weak cementation; abrupt wavy lower boundary; no cultural material;
Burial Pits, Site 50-80-14-6902, Burials 2 and 3		
	30-121	10 YR 3/2, very dark grayish brown; sandy clay; weak, granular structure; loose moist consistency; non-sticky wet consistency; non-plastic; no cementation; clear smooth lower boundary; SIHP Site 50-80-14-6902, Burials 2 and 3 and coffin nails were within this stratum, no other cultural material;
III	68 - 138	10 YR 2/1, black; volcanic cinders; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.

Backhoe Trench 19 (Figure 29) contained two burial pits, designated Burials 2 and 3 of Site 50-80-14-6902. Trench 19 is 1 m east and parallel to Trench 4, which contained Burial 1 of Site 50-80-14-6902.

5.3 Analysis of Collected Artifacts

Representative samples of both diagnostic and non-diagnostic artifacts were collected from the four trash pits (Features 1-4). Figure 30 shows a representative sample of the collected ceramics, stoneware and bottles.

Figure 30. Representative sample of artifacts from features 1-4. Scale units are centimeters.

5.3.1 Bottle Glass Analysis

A total of 41 glass bottle fragments were collected from the Alapai Transit Center project area:

- **Site 50-80-14-6901, Feature 1 -** 4 fragments from a trash pit 80 cm (centimeters) below surface in Trench 3;

- **Site 50-80-14-6901, Feature 2 -** 26 bottle fragments from a trash pit (30-240 cmbs) in Trench 18;
- **Site 50-80-14-6901, Feature 3** – 7 bottle fragments from a trash pit (Stratum Ic, 105 cmbs) in Trench 22; and,
- **Site 50-80-14-6901, Feature 4** – 4 bottle fragments from a trash pit (Stratum II, 35-140 cmbs) in Trench 26

Based on the completeness of the bottles, their color, and type, the fragments from Features 1, 2, 3, and 4 represent a minimum of 39 bottles. The analysis of the bottle characteristics is presented in Tables 3 to 6.

All terminology used to describe bottle traits and all bottle dating information was taken from the Bureau of Land Management (U.S. Dept. Interior) "Historic Glass Bottle Identification and Information Website" (http://www.blm.gov/historic_bottles/index.htm).

Two bottles, both from Feature 4, have pontil marks, a distinguishing characteristic of the free-blown bottle (Figure 31). Most bottles after 1865 were blown in molds and do not have pontil marks, thus these two bottles were probably made before 1865. One has a "blow-pipe" (also called a "ring" or a "tubular" pontil), which was formed when a blow-pipe was attached and used to hold the base of the bottle while the lip of the bottle was finished by had. This type of pontil is usually found on bottles made before 1865. The second bottle has a "glass-tipped" pontil (also called an "open" pontil), which formed when a solid-iron rod tipped with molten glass was used to hold the bottle base. Bottles with this type of pontil were also generally made before 1865. The third bottle from Feature 4 that could be dated was blown in a Rickets mold, invented in 1823 and used up to the 1920s.

The remainder of the bottles (base and body fragments) from Features 1, 2, and 3 were blown in molds, generally used after 1850. None of the bottles were manufactured by the Automatic Bottle Machine (ABM) method, which can be recognized by a side seam that extends from the heel of the bottle to and over the lip. The first ABM machine was invented in 1903, and by 1920, most of the American bottle manufacturers had switched to this new technique. Thus the pontilled bottles from Feature 4 could all date before 1865, while the blown-in-mold bottles from Features, 1, 2, and 3 probably date after 1850 and up to 1920.

Some narrowing of this date range can be made on some of the blown-in-mold bottles. Early mold-blown bottles were blown in dip molds, which often extended from the bottle base to the shoulder. Bottles made in this type of mold usually have a horizontal seam around the bottle body or shoulder. Dip molds were generally phased out by 1870. Five black glass beer/whiskey/ale bottles from Feature 2, one olive green beer/whiskey/ale bottle from Feature 3, and one clear beverage (probably mineral water or soda bottle) have a shoulder seam and thus were probably manufactured in a dip mold before 1870. Other collected bottles were made in a cup-mold (mold seam around base and up each side) or in a turn mold (seams are obliterated by firing process); however, the dates of these manufacturing techniques (1850-1920) do not give us any narrower date range for manufacturing.

Table 3. Trench 3, SIHP Site 50-80-14-6901, Feature 1, Trash Pit within Stratum II (80 50-95 cmbs) - Glass Bottles

Acc. No.	Portion	Height (cm)	Base Diam. (cm)	Color	Body/ Base Shape	Seams	Mfg. Technique	Lip Finish	Lip Type	Function	Embossing/ Surface	Mfg. Date
1	Lip & Neck fragment	7.5+	--	Clear	--	No Seams Visible	Unknown	Tooled (1880-1920)		Unknown	None	1880-1920
2	Lip & Neck fragment	5.5+	--	Aqua	--	No Seams Visible	Unknown	Tooled (1880-1920)		Unknown	None	1880-1920
3	Base to shoulder	13.4+	6.5	Olive Green	Round	No Seams Visible	Turn Mold (1850-1920)	--	--	Beer/Ale/ Whiskey	None	1850-1920
4	Base to shoulder	12.5+	6.4	Olive Green	Round	No Seams Visible	Turn Mold (1850-1920)	--	--	Beer/Ale/ Whiskey	None	1850-1920

Table 4. Trench 18, Site 50-80-14-6901, Feature 2, Trash Pit within Strata II and III (30-240 cmbs) - Glass Bottles

Acc. No.	Portion	Height (cm)	Base Diam. (cm)	Color	Body/ Base Shape	Seams	Mfg. Technique	Lip/ Finish	Lip (Type)	Function	Embossing/ Surface	Mfg. Date
5	Complete	22.9	6.6	Black	Round with Kick-up	Seam around shoulder	Dip mold (-1870	Applied (1800-1890)	Brandy (1860-1920)	Beer/Ale/ Whiskey	Hammered surface (ends in 1920); no embossing	1860-1870
6	Base to Neck	21.3+	6.7	Black	Round with Kick-up	Seam around shoulder	Dip mold (-1870	--	--	Beer/Ale/ Whiskey	Hammered surface; no embossing	1850-1870
7	Base/ 1/2 body	15.0+	6.7	Black	Round/ with kick-up	Seam around shoulder	Dip mold (-1870)	--	--	Beer/Ale/ Whiskey	Hammered surface; no embossing	1850-1870
8	Lip & Neck (may fit #7)	8.7+	--	Black	--	--	--	Tooled (1880-1920)	Brandy (1860-1920)	Beer/Ale/ Whiskey	Hammered surface; no embossing	1880-1920

Acc. No.	Portion	Height (cm)	Base Diam. (cm)	Color	Body/ Base Shape	Seams	Mfg. Technique	Lip/ Finish	Lip (Type)	Function	Embossing/ Surface	Mfg. Date
9	Base/ 1/2 body	9.6+	8.6	Black	Round/ kick-up	--	--	--	--	Beer/Ale/ Whiskey	Hammered surface; no embossing	1850-1920
10	Complete	39.6	6.8	Amber	Round with Kick-up	Horizontal indention round body	Dip mold (-1870	Applied (1800-1890)	Champagne (1850-1890 for Applied lips)	Cham-pagne/ Wine	None	1850-1870
11	Base to shoulder	12.2+	6.5	Olive Green	Round/ with kick-up	Horizontal seam around shoulder	Dip mold (-1870)	--	--	Beer/Ale/ Whiskey	None	1850-1870
12	Lip & Neck	12.7+	--	Amber	Round	Vertical seam ends on neck	--	Tooled (1880-1920)	--	Beer/Ale/ Whiskey	None	1880-1920
13	Base/ 1/2 body	10.5+	7.3	Amber	Round	--	3 pc. Mold (1830s-1920)	--	--	Beer/Ale/ Whiskey	None	1830-1920
14	Complete	23.8	6.3	Dk. Brown	Round	No Seams Visible	Turn Mold (1850-1920)	Tooled (1880-1920)		Beer/Ale/ Whiskey	None	1880-1920
15	Complete	24.2	6.3	Dk. Brown	Round	No Seams Visible	Turn Mold (1850-1920)	Tooled (1880-1920)		Beer/Ale/ Whiskey	None	1880-1920
16	Base	12.0+	9.0	Olive Green	Round	No Seams Visible	Turn Mold (1850-1920)	--	--	Beer/Ale/ Whiskey	None	1850-1920
17	Lip & Neck (may fit #16)	11.8+	--	Olive Green	--	No Seams Visible	Turn Mold (1850-1920)	Tooled (1880-1920)		Beer/Ale/ Whiskey	None	1880-1920
18	Base/ 1/2 body	9.4+	6.4	Olive Green	Round	No Seams Visible	Turn Mold (1850-1920)	--	--	Beer/Ale/ Whiskey	None	1850-1920
19	Base/ 1/2 body	11.5+	6.4	Amber	Round	No Seams Visible	Turn Mold (1850-1920)	--	--	Beer/Ale/ Whiskey	None	1850-1920

Acc. No.	Portion	Height (cm)	Base Diam. (cm)	Color	Body/ Base Shape	Seams	Mfg. Technique	Lip/ Finish	Lip (Type)	Function	Embossing/ Surface	Mfg. Date
20	Base fragment	--	--	Olive Green	Round/ with kick-up	--	--	--	---	Beer/Ale/ Whiskey	None	1850-1920
21	Complete	29.7	7.0	Amber	Round	Vertical seam ends on neck	Cup Mold (1850s-present)	Tooled (1880-1920)	Blob Top (1870-1910 for beer bottles)	Beer/Ale	BUFFALO/BREWING Co./ SACRAMENTO/ CAL (on body); M. G. Co. 6 (on base): Dating: Base marking for Modes Glass Co. (1895-1904); brewery in operation from 1890-1942	1895-1904
22	Base to Shoulder	19.0+	7.3	Dr. Emerald Green	Square with beveled corners (1860-1930s)	No Seams Visible	Turn Mold (1850-1920)	--	--	Case Gin	J.T.BEUKERS/ SCHIEDAM.	1860-1930s*
24	Base to Neck	20.1+	5.6	Pale Gr. Aqua	Oval	No Seams Visible	Codd's Marble Stopper (1884-1898 in Hawai'i)	--	--	Soda	HOLLISTER & Co. HONOLULU H.I./ (on body); BARNETT & FOSTER MAKERS LONDON N/ THE NIAGARA BOTTLE RD 65433 (on heel)	ca. 1893
25	Complete	18.8	5.4	Aqua	Round	Vertical seam ends at neck (ends 1890 for Lea and Perrins)	Cup Mold (1850s-present)	Tooled (1870-1920)	Club Sauce	Condiment	WORCESTERSHIRE (around shoulder); LEA & PERRINS (vertical on body); J D S 57 (on base); Dating: company began in 1830s; JDS, for John Duncan and Sons added in 1877 when bottles made in America	1877-1890

Acc. No.	Portion	Height (cm)	Base Diam. (cm)	Color	Body/ Base Shape	Seams	Mfg. Technique	Lip/ Finish	Lip (Type)	Function	Embossing/ Surface	Mfg. Date
26	Base to Neck	8.3+	4.9 x 2.8	Clear	Fluted Oblong	No Seams Visible	Turn Mold (1850-1920)	--	--	Medicinal	None (Bottle has panels for paper labels)	1850-1920
27	Complete	14.5	4.8 x 2.4	Aqua	Oblong Prescrip-tion	Vertical seam ends at lip	Turn Mold (1850-1920)	Applied (1800-1890)	Extract	Medicinal	None (Bottle has panels for paper labels)	1850-1920
28	Complete	9.5	3.6	Clear	Round	Vertical seam ends at top of shoulder	Cup Mold (1850s-present)	Tooled (1870-1920)	Flat/ with glass stopper intact	Perfume	LUBIN/PARFUMEUR, / PARIS	1850-1920
29	Complete	7.6	4.5	Clear	Round	No Seams Visible	Turn Mold (1850-1920)	Applied (1800-1890)	Wide-Mouth Patent	Household (Pomade, Shoe Polish)	295/A (on base)	1850-1920
30	Lip & Neck	3.4+	2.3	Clear	--	--	Unknown	Applied (1800-1890)	--	Unknown	None	1800-1920

Table 5. Trench 22; Stratum Ic, Feature 3 (105 cmbs) - Glass Bottles

Acc. No.	Portion	Height (mm)	Base Diam. (mm)	Color	Body / Base Shape	Seams	Mfg. Technique	Lip Type	Lip Finish	Function	Embossing/ Surface	Mfg. Date
31	Complete	63	23	Olive green	Round with push-up	Seam around shoulder	Dip Mold (1800-1920s)	Applied (1820-1890s)	Mineral (1820-1920s)	Beer/Ale/ Whiskey	None	1820-1890s
32	Body Fragment/ Base	--	60	Light bluish-green	Round with push-up	No seams visible	Turn Mold (1865-1920s)	--	--	Unknown	None	1865-1920s
33	Lip and Neck	--	--	Dark em'rald green	Round	--	--	Applied (1820-1890s)	Wide Patent (1850-1890s)	Unknown	None	1850-1890s
34	Whole	60	23	Dark olive green	Round	No seams visible	Turn Mold (1865-1920s)	Applied (1820-1890s)	Mineral (1820-1920s)	Beer/Ale/ Whiskey	None	1865-1890s

Acc. No.	Portion	Height (mm)	Base Diam. (mm)	Color	Body / Base Shape	Seams	Mfg. Technique	Lip Type	Lip Finish	Function	Embossing/ Surface	Mfg. Date
35	Lip/ Neck/ Body Fragment	--	--	Clear	Round	Seam around shoulder	Dip Mold (1800-1920s)	Applied (1820-1890s);	Tapered/ Rounded Blog Top (1840-1870s)	Beverage	None	1840-1870s
36	Base to Neck	--	63	Dark olive green	Round with push-up	No seams visible	Turn Mold (1865-1920s)	--	--	Beverage	None	1865-1920s
37	Base Fragment	--	--	Clear	Round	--	--	--	--	Ink company founded in 1857	SANFORD'S (on base)	1857-present

Table 6. Trench 26; Stratum II, Feature 4 (35-140 cmbs) – Glass Bottles

Acc. No.	Portion	Height (mm)	Base Diam. (mm)	Color	Body / Base Shape	Seams	Mfg. Technique	Lip Type	Lip Finish	Function	Embossing/ Surface	Mfg. Date
38	Lip and Neck	--		Dark olive green	--		--	Applied (1820-1890s)	Mineral (1820-1920s)	Beer/ Ale/ Whiskey	None	1820-1890s
39	Body Fragment/ Base	--	44	Light bluish-green	Round	No seams visible	Free-Blown; Blow-Pipe Pontil (pre-1865)	--	--	Unknown	None	pre 1865
40	Body Fragment/ Base	--	87	Clear	Round	No seams visible	Free-Blown; Glass-tipped Pontil (pre-1865)	--	--	Unknown	None	pre 1865
41	Body Fragment/ Base		74	Light. green	Oval	No seams visible	Ricketts Mold (1823-1920s)	--	--	Unknown	None	1823-1920s

Figure 31. Two bottle bases from Trench 26, feature 4, showing pontil scars. Accession number 39 at left, 40 at right (refer to Table 6)

When bottles were free-blown or blown in a mold, the lip of the bottle was finished by hand as the last step. Beginning in the 1800s, additional glass was “applied” around the lip as a bead or collar, usually to stabilize the lip or to provide a protuberance for some type of metal closure. Beginning in the 1870s, the technique changed, and the neck and the lip of the bottle were re-fired (without adding additional glass) and molded with a “lipping tool.” These tools were quickly adopted, and by the 1890s applied lips were phased out and lips were finished by lipping tools. Eleven bottle/lip fragments in our collection have applied lips (1800-1890) and nine have tooled lips (1870s-1920). As noted, by 1920, most American manufacturers had switched to the Automatic Bottle Machine, which automatically formed the lip as part of the complete bottle mold.

There are a variety of lip finish types for bottles in the collection, including a “champagne” finish for a wine/champagne bottle, a “brandy” finish for two beer/whiskey/ale bottles, a mineral finish (similar to the brandy finish) for three beer/whiskey/ale bottles, one “blob top” finish for a beer/ale bottle, one blot top for a beverage (probably mineral water or soda), three “flat” (patent) type finishes for a medicinal/extract type bottle and two wide-mouthed jars, one extract finish for a medicinal/extract type bottle, and one club sauce finish for a Lea and Perrins Worcestershire bottle. Some types of finishes can be used to narrow the date ranges for these bottles. The champagne finish for applied lips was used from 1850-1890, the brandy finish was used between 1860-1920; the mineral finish was used between 1820 and the 1920s, the blob top on beer bottles was used from 1870-1910, a tapered or rounded blob top for sodas and mineral water was used from 1840 to the 1870s, and the club sauce finish was used from 1830 to the present.

Additional dating information can be collected from embossing on bottles. Only six of the bottles contain any embossing.

A case gin bottle embossed “J. T. Beuckers/Schiedam” (Figure 32, accession #22) was collected from Trench 18. No information could be found concerning this company, but the style of the case gin (base with beveled corners) was usually made after 1860.

One perfume bottle is embossed “Lubin Parfumeur, Paris” (Figure 33, accession #28). The Lubin perfume house was established in Paris in 1798. In America, it marketed its wares to the “plantation culture of the southern United States” (Now Smell This 2007). These bottles have been found at other archaeological sites on Hawai‘i, such as at Luluku (near Kāne‘ohe), O‘ahu and at the Keanakolu site on Mauna Kea on Hawai‘i Islands (Mills 2007).

There is one amber bottle with a blob top finish, embossed “Buffalo Brewing Co., Sacramento” on the body and “M. G. Co.” on the base. The Buffalo Brewing Co. was open from 1890-1942. The glass bottle was made by the Modes Glass Co. (M. G. Co.), which used this base mark from 1895-1904 (Toulouse 1971:360).

One Codd’s Marble Stopper bottle embossed with “Hollister & Co., Honolulu” was collected (Figure 33, accession # 24). The authors of a book on Hawaiian bottles (Elliott and Gould 1988) show (in their illustrations), that Hawaiian Codd’s Marble Stoppers bottles were filled with water or soda by at least four companies in Hawai‘i between 1884 to 1898. The Codd’s bottle in the Alapai Transit collection is also embossed “The Niagara Bottle” on the heel. Elliott and Gould (1988:26) discovered that Hollister & Co., an early Honolulu drugstore, acquired a Niagara filling machine in the early 1890s and used it until about 1894. They (Elliott and Gould 1988:113) illustrate a Hollister & Co. bottle identical to the Alapai Transit bottle, dated to circa 1893.

One bottle is embossed “Worcestershire Sauce” around the shoulder, “Lea and Perrins” vertically on the body, and “J D S 57” on the base (Figure 33. accession # 25). Lea and Perrins Worcestershire Sauce was invented in the 1830s in England. The bottles were first imported from England, but in 1877, the American agents, John Duncan and Sons began to bottle the sauce in America. At that time they embossed “J D S” on the American-made bottles. The company began to use a semi-automatic bottle machine in the 1890s, so the lips after this date would not be applied or tooled. The Lea and Perrins bottle from Trench 18 has “J D S” embossed on the base and has a tooled lip, and thus was not made by a semi-automatic machine. It therefore dates from 1877 to 1890.

One bottle base fragments is embossed “SANFORD’S”. Sanford’s is an ink manufacturer established in 1857 and still in business today.

In conclusion, 4 bottles from Feature 3 date from pre-1865 to the 1920s, and may all date before 1865. This feature seems to contain older material than the other three trash pits. It is located in the general location of the former Atherton houses and may be refuse from these nineteenth century residents.

The other 35 bottles from the Alapai Transit Site probably date between ca. 1850 and 1920. At least six bottles were made before 1870 (dip mold-shoulder seam), a champagne bottle was made between 1850-1890, one Lea and Perrins bottle was made between 1877-1890, one beer bottle was made between 1895-1904, and one Codd’s Marble Stopper bottle was made ca. 1893.

Figure 32. A variety of wine, beer and gin bottles as well as a stoneware jug. Accession numbers noted above each artifact (refer to Table 4 and Table 10).

Figure 33. From left to right: soda, condiment, medicinal and perfume bottles. Accession numbers noted above each artifact (refer to Table 4).

5.3.2 Other Artifacts

Thirty other artifacts (some fragmented) were collected from Trenches 3, 18 and 26 (**Site 50-80-14-6901, Features 1, 2, and 4**) (Table 7 to Table 9). Most are not useful for dating the age of deposition for the trash pits. They consist of two glass lamp chimneys, two glass vials, a glass object (possibly a candlestick holder), a black glass fragment, a glass bead, 12 whiteware ceramic dinnerware (Figure 34 accession #s 51 & 64), one stoneware crock, one stoneware jug, one porcelain lid (Figure 34 accession # 66), six rusted metal fragments, one corkscrew with a handle made of antler, one golf ball fragment, five cut/sawn mammal bones, one chicken bone, one chert core, and one bone toothbrush handle.

This may indicate that all of the bottles were manufactured in the late nineteenth century to around the turn of the century. This would date the bottles to the time of the Atherton residence and possibly afterwards.

Figure 34. Sample of ceramics from trenches 3 and 26, features 1 and 4 respectively. Accession numbers noted above each artifact (refer to Table 7 and 10)

Table 7. Trench 3, SIHP Site 50-80-14-6901, Feature 1, Trash Pit – Other Artifacts

Acc. No.	Material	Artifact Type	Portion	Length (cm)	Width/ Diam. (cm)	Comments	Function
42	Glass	Unknown	Corner fragment	7.5+	2.4	Black glass fragment from a base or a tray	Unknown
43	Glass	Vial/ Ampoule	End broken	5.5+	0.7	Clear Glass; patent lip	Medicinal
44	Glass	Lantern Chimney	Fragment	3.8+	--	Clear glass	Household
45	Glass	Bead	Complete	--	0.7	Lt. green bead faceted along diameter	Decoration
46	Whiteware	Bowl/ Basin	Base	--	14.5	Possibly a water basin or a chamber pot	Household
47	Whiteware	Cup	Complete cup with broken handle	6.0	6.3	One gold band; possible sake cup	Household
48	Metal	Unknown	5 fragments	--	--	rusted fragments	Unknown
49	Chert	Core	Complete	5.5	5.5	Chert core; one face (20%) has cortex; five rectangular flakes removed	Possible core to make gun flints or lighting flints
50	Bone	Toothbrush	Handle fragment	10.4	1.3 x 0.8	Polished bone handle; biconvex and curved in profile; one end rounded; broken end narrows for connection to brush section (not present); etched on one side "EVERY BRUSH WARRANTED"	Household
51	Whiteware	Lid	Complete	0.8 cm flange	5.1	Whiteware with red, monochrome, geometric decal around rim; conical top	Household, possible teapot lid

Table 8. Trench 18, Site 50-80-14-6901, Feature 2, Trash Pit - Other Artifacts

Acc. No.	Material	Artifact Type	Portion	Length (cm)	Width/ Diam. (cm)	Comments	Function
52	Glass	Lantern Chimney	Complete	21.2	7.2	Has one hole in side	Household
53	Glass	Vial	Complete	4.4	1.2	Clear Glass; rolled lip	Medicinal
54	Whiteware	Plate	Fragment	17.7	--	Serving platter	Household
55	Iron	Horseshoe	Complete	14.0	12.1	Rusted	Transportation
56	Metal	Unknown	Fragment	--	--	Rusted metal fragment	Unknown
57	Metal/ Antler	Corkscrew	Complete	17.5	13.8	Corkscrew made of metal; handle made of antler	Household
58	Rubber	Golf Ball	Fragment	--	4.8	-	Recreation
59	Bone	Butchered Bone	5 fragments	--	--	Chopped and sawn bone mammal bone fragments; probably cow or pig	Household
60	Bone	Bone	Fragment	--	--	Chicken bone	Household

Table 9. Trench 26, Stratum II, Feature 4 (35-140 cmbs) – Other Artifacts

Acc. No.	Material	Artifact Type	Portion	Length/ Height (cm)	Width/ Diam. (cm)	Comments	Function
61	Glass	Candlestick Holder?	Fragment	73	75	Clear, round tiered glass object	Household
62	Stoneware	Crock	Rim Fragment			Tri-color hand painted bands; orange, blue and white, and yellow glaze	Household
63	Whiteware	Bowl	3 fragments			Tri-color; ribbed banding	Household
64	Whiteware	Cup (rice)	5 fragments			Has foot and fluted undersides; brown transfer print; interior and exterior thistle design	Household
65	Whiteware	Small Pitcher (gravy0	5 fragments			Blue transfer print; exterior and interior near rim; Willow pattern	Household
66	Porcelain	Lid (ginger jar)	1 fragment	1.5 cm flange	9.5	Flow blue design; thick porcelain	Household
67	Whiteware	Cup	1 body fragment			Blue decal, possible Willow pattern on exterior; blue decal geometric interior	Household
68	Whiteware	Pitcher	1 body fragment			Blue transfer print; possible Willow pattern; very similar to gravy pitcher, but not from same vessel	Household
69	Whiteware	Saucer	Base fragment			Makers mark on base bottom: Jester holding a sign that reads "E WOOD & SONS"; purple transfer print interior design of Japanese house, stream, boat, and landscape; Makers mark for the pottery company of Enoch Wood and Sons, Burslem, England, who used this mark from 1818-1846	Household
70	Whiteware	Pitcher	Body fragment			Rounded body with missing handle scar	Household
71	Stoneware	Jug with missing handle	3pcs (lip to base but not complete)			Orange glaze; beverage bottle	Household

One saucer base (Figure 35, three views) from Feature 4 has a maker’s mark, showing a jester holding a sign for “E WOOD & SONS.” E. Wood and Sons was a pottery company based in Burslem, England that used this mark from 1818 to 1846 (Stoke-on-Trent 2007).

Figure 35. "E WOOD & SONS" saucer – three views (refer to Table 10)

The chert core is of a dense gray material and may have been used to strike off gunflints or flints for striking sparks. The material is not the type of chert found in Hawai‘i and must have been imported.

The bone toothbrush is etched/stamped “EVERY BRUSH WARRANTED.” The first European-style toothbrush was invented in 1780 in England. It consisted of a handle and brush base made of cattle bone. Pig bristles were placed in drilled holes in the brush portion. The brush portion of the Alapai Transit toothbrush is missing. In the 1920s, a new plastic called celluloid was used to make the handles, and in 1938, nylon replaced the pig bristles; thus, the collected toothbrush dates between 1780 and 1920.

5.3.3 Summary of Historic Artifacts

The four trash pits (**Site 50-80-14-6901, Features 1 to 4**) contained a variety of artifacts typical for nineteenth and early twentieth century household refuse. The most common type of artifacts were bottles or bottle glass fragments. The bottles were for wine/champagne, gin, beer/whiskey/ale, soda/mineral water, beverages, condiments, medicine, and perfume. Most of the bottles date from 1850 to no later than 1920. Three bottles from Feature 4 may have been manufactured at an earlier date than the bottles from Features 1-3. Two bottles were probably manufactured before 1865. This would correlate with another artifact from Feature 4, a whiteware saucer fragment, which had a maker's mark that dated the manufacture of the saucer from 1818-1846.

The artifact assemblage shows strong Euro-American affinities. Identified countries of origin for the artifacts include the United States (accession #s 21 & 25), the Netherlands (accession # 22), France (accession # 28), England (accession # 69) and Hawai‘i circa 1893 (accession # 24). No artifacts of a clearly Asian origin were identified and possibly all of the artifacts were of European, English or American origin (the affinities of the ginger jar lid accession # 66 are uncertain). While mid and late 1800s residents of Honolulu of various ethnicity would use a variety of products from various countries of origin the assemblages are suggestive of relatively affluent European or Euro-American consumption patterns. The pattern of artifacts recovered would be consistent with refuse from the Cooke and Atherton families or their neighbors resident in the immediate area in the indicated timeframe.

Other artifacts from the site include glass household items, ceramic dinnerware, one glass bead, a chert core, a bone toothbrush, a corkscrew, a golf ball, and rusted metal fragments. Although these were not useful in dating the deposition for the trash pits, the variety of objects do support the suggestion that the trash pits contain refuse from individual households.

Section 6 Traditional Cultural Practices

Traditional cultural practices are based on a profound awareness concerning harmony between man and our natural resources. The Hawaiians of old depended on these cultural practices for survival. Based on their familiarity with specific places and through much trial and error, Hawaiians communities were able to devise systems that fostered sustainable use of nature's resources. Many of these cultural practices have been passed down from generation to generation and are still practiced in some of Hawai‘i‘s communities today.

This project seeks to assess traditional cultural practices as well as resources pertaining to the project area within Honolulu Ahupua‘a. This section will convey the different types of traditional practices, cultural resources associated with the vicinity.

6.1 Gathering for Plant Resources

The present project area is understood to have been virtually entirely paved since circa 1938 (see Figure 21). The traditional vegetation of this arid area was probably limited to *pili* and other hardy grasses and shrubs. There certainly have been no gathering practices on these lands in human memory.

6.2 Marine and Freshwater Resources

The present project area is not adjacent to the coast or any bodies of water. The development of this parcel would not appear to have any effect on marine or freshwater resources.

6.3 Historic Properties

During this assessment there were two historic properties identified within the project area: SIHP 50-80-14-6901 consisting of four historic trash pits and SIHP 50-80-14-6902 designating three burials. The trash pits included a variety of European, English and American wares but are not regarded as cultural properties. The burial site is discussed further below.

6.4 Burials

Archaeological reports have documented human burials at a number of locations within greater Kaka‘ako. It now appears clear that at least in some areas of the lands between Kou and Waikīkī disposal of the dead was a pattern in both pre-contact times and in the and mid 1800s. The general pattern appears to have been to give preference to coastal sands for interment of the dead. There is certainly no evidence pertaining to on-going cultural practices relating to burials on the property or in the immediate vicinity.

The inventory survey did, however, identify three burials on the east side of the project area that are collectively considered as constituting SIHP 50-80-14-6902. Based on input from SHPD, there is currently insufficient information to make a burial ethnicity determination for the burials. Accordingly, appropriate burial treatment will be determined by SHPD, per HAR Chapter 13-300-31(h)(4). This site is recommended eligible to the National and Hawai‘i Register under Criteria D and E (Hawaii Register-only— for its potential traditional cultural significance to an

ethnic group). The discovery of the burials was announced in notices in *Ka Wai Ola o OHA* (May 2007) and the *Honolulu Advertiser* (April 11, 12 & 15) (see Appendix C) and at meetings of the O‘ahu Island Burial Council but no one contacted the SHPD to supply information or assert lineal and/or cultural relationship.

6.5 Trails

Trails served to connect the various settlements. Based on nineteenth and twentieth century maps the primary transportation routes correlated closely to existing major roadways. The 19th-century Hawaiian historian John Papa ‘Ī‘ī, himself a member of the *ali‘i* (chiefly class), described the major routes extending east from Honolulu (“Kou”) as primarily running seaward of the present project area: near the coast and along a major artery that became King Street (‘Ī‘ī 1959:93). Of course King Street runs on the seaward side of the present project area. The close proximity of a major pre-contact trail/early post-contact road may have increased use of the project area in pre-contact and early post-contact times. King Street on the makai side and Beretania Street just inland remain as major arteries for vehicular and pedestrian travel.

6.6 Summary of Traditional Cultural Practices

The present project area on the eastern margin of downtown Honolulu is understood to have been virtually entirely paved since circa 1938 (see Figure 21). Other than interment of the dead there is no evidence of traditional Hawaiian use of the project area lands. The discovery of the burials was announced in notices in *Ka Wai Ola o OHA* (May 2007) and the *Honolulu Advertiser* (April 11, 12 & 15) (see Appendix C) and at meetings of the O‘ahu Island Burial Council but no one contacted the SHPD to supply information or assert lineal and/or cultural relationship. Written consultation with the Office of Hawaiian Affairs, Hui Mālama I Nā Kūpuna o Hawai‘i Nei and the O‘ahu Island Burial Council (Appendix D) developed no further information on traditional cultural practices and no expressions of concerns other than over the burials.

Section 7 Summary and Interpretation

Cultural Surveys Hawai‘i Inc. has completed this archaeological inventory survey of an approximately 4.13-acre lot at the request of Group 70 International, Inc. The project area is in the Kewalo/Kulaokahu‘a region of Honolulu and is located at 710 and 752 South King Street, bounded by King Street, Alapa‘i Hotel Street, and Kealamakai Street (TMK 1-2-1-042: 013 and 004).

Background research into Kulaokahu‘a indicated that the area was a “dry, dusty plain” in the pre-contact and early post-contact eras. It was used as a gaming field for *maika* and other sports by Hawaiians, and was traversed by foot trails and later horse paths that connected the two more populous areas of Kou (Honolulu) and Waikīkī. The area was thus not a focus for habitation or agriculture until the late nineteenth century, when people, mainly *haole* (foreign-born residents), began to move into this new suburb of Honolulu.

Māhele records show that Kulaokahu‘a became Crown lands. Much of this area was quickly divided into lots and rented or sold as house lots, mainly to *haole* residents who dug wells in the area to provide much needed water.

Archaeological background research has shown that the Kulaokahu‘a region of Honolulu, especially around the Capitol District, was not a focus for habitation in the pre-contact and early post-contact period. Typically, only historic artifacts have been found in trenches excavated in this district. Food midden, such as marine shells, and traditional Hawaiian artifacts, such as stone flakes and adzes, are very rare; only a handful have been found. Although not densely inhabited, a few burials, probably native Hawaiians, have been found in the area.

Fieldwork was carried out in close consultation with the State historic Preservation Division and primarily consisted in the excavation of twenty-eight approximately 6 m long test trenches. Two sites were identified: SIHP 50-80-14-6901 consisting of four historic trash pits and SIHP 50-80-14-6902 designating three burials.

7.1 SIHP 50-80-14-6901

State Inventory of Historic Properties (SIHP) 50-80-14-6901 consists of four historic trash pits, dating to between A.D. 1820 and 1920. This site is recommended as eligible to the National and Hawai‘i Register under Criterion D (for its information content). The four trash pits (Site 50-80-14-6901, Features 1 to 4) contained a variety of artifacts typical for nineteenth and early twentieth century household refuse. The most common type of artifacts were bottles or bottle glass fragments. The bottles were for wine/champagne, gin, beer/whiskey/ale, soda/mineral water, beverages, condiments, medicine, and perfume. Most of the bottles date from 1850 to no later than 1920. Features 1-3 are believed to most likely post-date 1850 but to date to no later than 1920.Three bottles from Feature 4 may have been manufactured at an earlier date than the bottles from Features 1-3 and suggest mid 1800s deposition. While mid and late 1800s residents of Honolulu of various ethnicity would use a variety of products from various countries of origin the assemblages of SIHP 50-80-14-6901 are suggestive of relatively affluent European or Euro-American consumption patterns. The pattern of artifacts recovered would be consistent with

refuse from the Cooke and Atherton families resident in the immediate area in the indicated timeframe.

7.2 SIHP 50-80-14-6902

A burial was discovered on the 4th trench (located in the first row of parking stalls along Kealamakai Street, halfway between King and Hotel Streets). Working in close consultation with the State Historic Preservation Division an additional five trenches (Trenches 15 to 19) were excavated to delimit the extent of the burials. Two additional burials were encountered in trench 19. Two of these burials were perceived to be in coffins (Burials 1 & 2). In the third case (Burial 3) the presence or absence of a coffin was not determined before all work in the vicinity was halted (as per present norms following the identification of human remains). These three burials are collectively considered as constituting SIHP 50-80-14-6902.

The three burials of SIHP 50-80-14-6902, by definition "previously identified" because they were found during inventory survey investigations (HAR Chapter 13-300-2), were documented. Following the procedures of HRS Chapter 6E-43/HAR Chapter 13-300, SHPD determined the remains were over 50 years old. Based on input from SHPD, there is currently insufficient information to make a burial ethnicity determination for the burials. Accordingly, appropriate burial treatment will be determined by SHPD, per HAR Chapter 13-300-31(h)(4).

As discussed in Section 4, Previous Archaeology, above, there have been prior burial discoveries in the vicinity of the Alapai Transit project area. These include (refer to Figure 22) single burial discoveries at Capitol Place (CSH project still in progress), the King Street Rehabilitation Project (Mann and Hammatt 2002), the Capitol Historic District (Denham and Kennedy 1993), as well as five burials from the Queens Medical Center (Altonn 1971). In relation to the Catholic Cemetery on King Street, there have been burial discoveries outside the current cemetery boundaries (refer to Figure 22), including at least 30 individuals from the One Archer Lane project area (Anderson 1997b) and two individuals from the HECO Dispatch Center (Perzinski et al. 2006).

In a November 29 2007 review letter of the draft of this archaeological inventory survey report, the State Historic Perseveration Division (SHPD) asked, "Is it possible that the burials [SIHP # 50-80-14-6902] identified during the AIS of the subject property [Alapai Transit Center] are a part of the Roman Catholic Cemetery [on King Street]?" (LOG NO: 2007.2522 DOC NO: 0711ED21). Based on CSH's review of the evidence, it appears very unlikely that the burials found within the current project area are part of the historic Catholic Cemetery on the *makai* side of King Street (refer to Figure 22).

There has been ample documentation of the Catholic Cemetery's dimensions (Anderson 1995a) and it is clear from this documentation that the Catholic Cemetery boundaries have changed over time (Anderson 1995a:6; also compare Anderson 1995a historic maps of the cemetery boundaries Figures 4, 5, 6, 7, 9, and 10). Based on Anderson's (1995a:6) research, the Catholic Cemetery was likely started in 1840 or 1841. At this time, King Street, forming the *mauka* boundary of the cemetery, was already established in very near its modern alignment (again refer to Anderson 1995a Figures 4, 5, 6, 7, 9, and 10). Despite the various fluctuations in the cemetery boundaries over the years as documented by Anderson (1995a), the boundaries never extend *mauka* across King Street. It is of course possible, maybe even probable, that some

burials related to the cemetery are located beneath modern day King Street, immediately in front of the cemetery—especially as the Street was widened in the 1900s—however, based on historic maps, it appears very unlikely that burials related to the cemetery would be found *mauka* of King Street. The current Alapai Transit Center is *mauka* of King Street.

It is clearly true that burials associated with the historic Catholic Cemetery have been documented outside the current cemetery boundaries. For example, the two burials found immediately outside the current southern boundary of the cemetery during the HECO Dispatch Center archaeological inventory survey (Perzinski et al. 2006) and the 30 burials found immediately outside the current western cemetery boundary during the construction of the One Archer Lane project (Anderson 1997b) (refer to Figure 22). In each of these cases, the burials found outside the current cemetery boundaries, designated SIHP # 50-80-14-5455, were found in close proximity to the current cemetery boundaries. In the case of the HECO Dispatch Center project, the two burials were found less than 2 meters (six feet) south of the current southern boundary of the cemetery (Perzinski et al. 2006:41). With the 30 burials found at One Archer Lane, the burial found furthest west from the current western cemetery boundary was only 12 meters (40 feet) from the current western cemetery boundary (Anderson 1997b:Figure 3). The three burials in the current Alapai Transit Center project area that make up SIHP # 50-80-14-6902 are approximately 150 meters (500 feet) to the northwest of the westernmost burials known from the Catholic Cemetery—those found in the One Archer Lane project area (Anderson 1997b).

A 1902 letter to the President of the Board of Health from the Honolulu City Sanitary Officer (quoted in Anderson 1995a:6-7) describes the Catholic Cemetery's dimensions as "about 500 feet long on King Street by 400 feet deep." These dimensions are from the time period when the cemetery was in use and reaching capacity—"The ewa half of the cemetery is badly crowded and it is doubtful if a grave could be dug and not find a coffin. The new [Diamond] portion is also pretty well filled and very little space remains." The current dimensions of the Catholic Cemetery, measured off an aerial photograph taken in 2005, are approximately 380 feet (115 meters) along King Street by 360 feet deep (110 meters) perpendicular to King Street. These differences in dimensions between 1902 and 2005 are undoubtedly the reason that burials were discovered during the adjacent One Archer Lane (Anderson 1997b) and HECO Dispatch Center (Perzinski et al. 2006) projects. Clearly burials associated with the Catholic Cemetery can be expected around the outside of the current cemetery boundaries. It is not reasonable to expect burials associated with the Catholic Cemetery approximately 500 feet northwest from the westernmost burials currently known from the cemetery—those from One Archer Lane.

Section 8 Significance and Recommendations

8.1 Significance Assessments

Both cultural resources/historic properties identified within the current project area are recommended eligible to the National/Hawai‘i Register:

1) State Inventory of Historic Properties (SIHP) 50-80-14-6901 consists of four historic trash pits, dating to between A.D. 1820 and 1920and is recommended eligible to the National and Hawai‘i Register under Criterion D (for its information content).

2) SIHP 50-80-14-6902 consists of three burials; Burial 1 and 2 are historic coffin interments, less information is available regarding Burial 3. This site is recommended eligible to the National and Hawai‘i Register under Criteria D and E (Hawaii Register-only— for its potential traditional cultural significance to an ethnic group).

8.2 Project Effect and Mitigation Recommendations

8.2.1 Project Effect

The proposed project will potentially affect two cultural resources/historic properties recommended eligible to the National/Hawai‘i Register. With the understanding that the proposed mitigation measures, described below, are implemented, a federal Section 106 project effect determination of “no adverse effect” is warranted for the proposed transit center development. Under Hawai‘i State historic preservation review legislation (HAR Chapter 13-275), a project effect recommendation of “effect, with proposed mitigation commitments” is warranted.

8.2.2 Mitigation Recommendations

The proposed mitigation for the project area’s two historic properties is two-fold. First, for SIHP 50-80-14-6902, the previously identified burials, a burial treatment plan should be prepared for the consideration of SHPD. The project proponents propose to preserve all three burials in place within a single burial preserve area, which will be appropriately landscaped and restricted from pedestrian access. Second, mitigation should include an archaeological monitoring program to help identify and properly treat any additional archaeological deposits, such as additional historic deposits of SIHP 50-80-14-6901, and/or burials located during the project’s construction.

8.2.3 Disposition of Materials

The materials recovered during the course of the archaeological inventory survey are presently being curated by Cultural Surveys Hawai‘i. This arrangement is anticipated to continue in the near term. With the concurrence of the State Historic Preservation Division all recovered materials will be turned over to the City and County upon their request.

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Appendix A Land Commission Award 8511 to the Oahu Charity School

No. 8511, [Oahu Charity School], F.W. Thompson, Honolulu, 12 February 2, 1848

F.R. 24v3

To the Board of Land Commissioners, &c. Gentlemen, In behalf of the Trustees, Friends and Patrons of the Oahu Charity School, I beg leave to call your attention to their claims to two plots of ground, one on which the schoolhouse stands, and the other on which the dwelling house is situated.

All the documents relating to these plots are in my possession, subject to your orders,

Signed &c. F.W. Thompson, Secretary, Oahu Charity School

F.T. 445-446v3

No. 8511, F.W. Thompson for the Trustees Oahu Charity School, 21 March 1853

John Meek, sworn, says he knows the School house lot and also the house lot. I built the adobie wall round the house lot myself some years ago for the benefit of the charity.

The house lot, I understood, was purchased by the Trustees from Harry Zupplien. Thinks the survey made by Mr. Metcalf is correct as to boundaries.

The School House lot was purchased, I believe, from Kaupena with the consent of the Government, and has remained in possession of the Trustees ever since without dispute. Thinks the survey made by Mr. Metcalf is correct as to the boundaries.

S. Reynolds, sworn, says the dwelling house lot claimed by the Trustees was purchased of Harry Zupplien for $1500. There was a vacant piece of ground between the original lot & the road which was subsequently got from the King. The Trustees have held undisturbed possession of this lot ever since 1836. The adobie wall by which the lot is at present enclosed, is the true boundary.

The school house lot was got from Kaupena in the year 1832, with the consent of the Government. The Trustees paid Kaupena about $500 for her rights. This lot was formerly fenced in, and the foundation of the adobie wall may still be seen. The Trustees have held quiet possession of this lot ever since 1832.

T.C.B. Rooke, sworn, confirms in full the testimony of the former witnesses. The consent of the King was granted to the purchase of these two lots, and the Trustees have held peaceable possession of them since they got them.

During the last year I was a Trustee in 1847, perhaps, Namauu applied to me to exchange a part of the school house lot for a piece of ground adjoining which application I laid before the Trustees. How they settled it I do not know.

[Award 8511; R.P. 1880½; King St. Honolulu Kona; 1 ap.; 1.7 Acs

Appendix B Profiles of Trenches with no Cultural finds

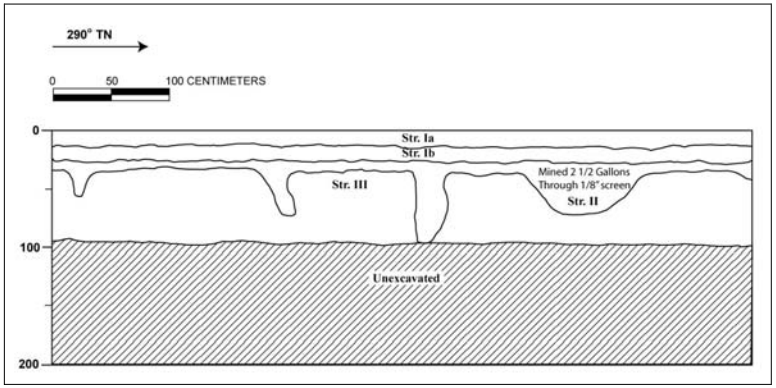

Figure 36. Backhoe Trench 1 south wall profile

BACKHOE TRENCH 1, South Wall Profile

Str.	Depth (cmbs)	Soil Description
Ia	0 - 12	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
Ib	12 - 26	Fill; 10 YR 4/2, dark grayish brown; silt loam; medium, granular structure; slightly hard dry consistency; non-plastic; weak cementation; very abrupt smooth lower boundary;
IIa	26 - 46	10 YR 3/3, dark brown; clay loam; moderate, granular structure; weakly coherent dry consistency; friable moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; no cultural material;
III	46 - 95	10 YR 2/1, black; volcanic cinders; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.

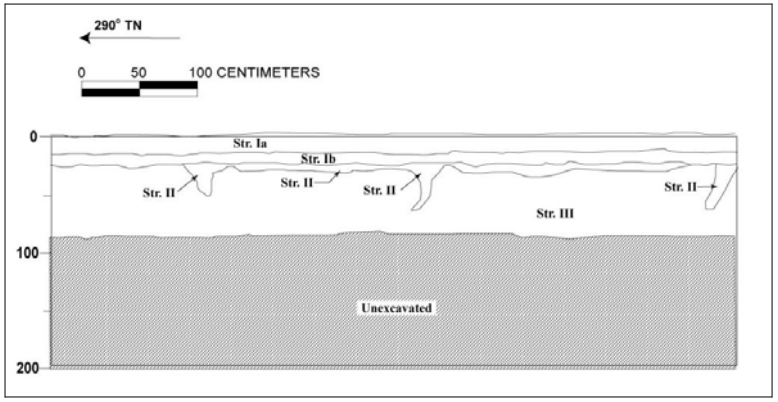

Figure 37. Backhoe Trench 2 north wall profile

BACKHOE TRENCH 2, North Wall Profile

Str.	Depth (cmbs)	Soil Description
Ia	0-25	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
II	25 - 65	B Horizon; 10 YR 3/3, dark brown; clay loam; moderate, granular structure; weakly coherent dry consistency; friable moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; partially disturbed/removed during parking lot installation; no cultural material;
III	25 - 85	10 YR 2/1, black; volcanic cinders; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; intact banding of Strata III is clear indication that this layer has not been previously disturbed; bottom of excavation.

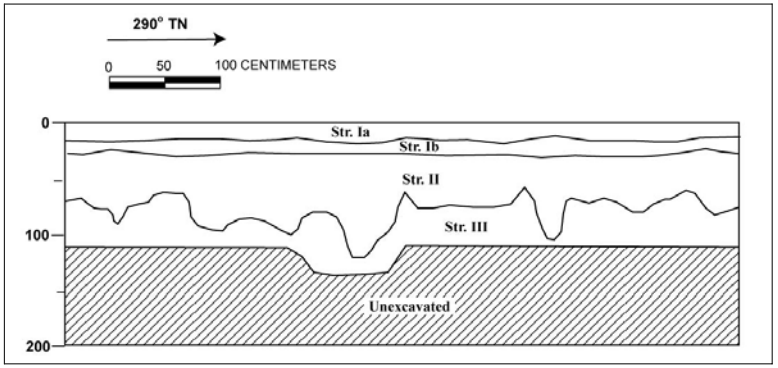

Figure 38. Backhoe Trench 5, South Wall Profile

BACKHOE TRENCH 5, South Wall Profile

Str.	Depth (cmbs)	Soil Description
Ia	0 - 13	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
Ib	13 - 26	Fill; 10 YR 8/2, very pale brown; mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
II	26 - 66	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; sticky wet consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; no cultural material;
III	66 - 133	10 YR 2/1, black; volcanic cinders; structureless; loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.

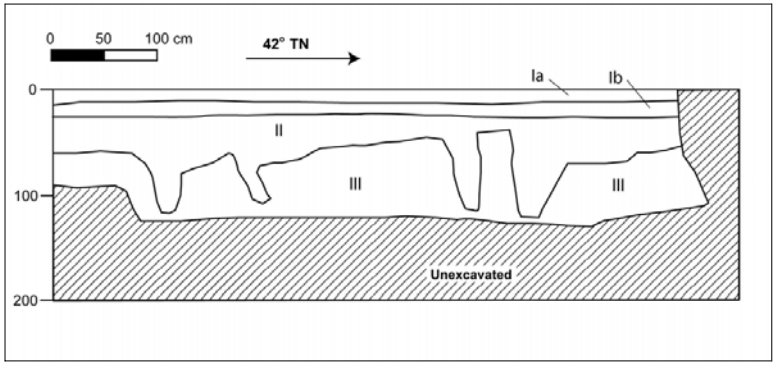

Figure 39. Backhoe Trench 6 west wall profile

BACKHOE TRENCH 6, West Wall Profile

Str.	Depth (cmbs)	Soil Description
Ia	0 - 12	10 YR 2/1, black; asphalt; very abrupt smooth lower boundary;
Ib	12 - 25	Fill; 10 YR 8/2, very pale brown; coral fill; moderate, coarse or thick, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
II	25 - 80	10 YR 3/3, dark brown; clay loam; weak, fine, granular structure; very friable moist consistency; slightly plastic; no cementation; wavy lower boundary; no cultural material;
III	80 - 130	10 YR 2/1, black; volcanic cinders; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.

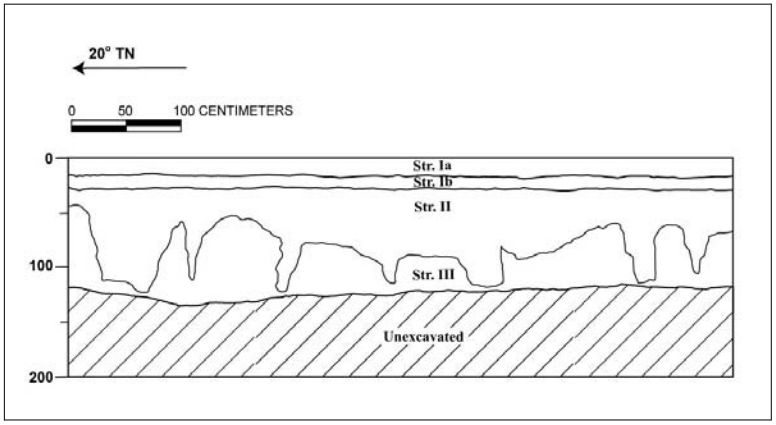

Figure 40. Backhoe Trench 7 east wall profile

BACKHOE TRENCH 7, East Wall Profile

Str.	Depth (cmbs)	Soil Description
Ia	0 - 15	Asphalt; 10 YR 2/1, black; very abrupt lower boundary;
Ib	15 - 18	Fill; 10 YR 8/2, very pale brown; coral fill; moderate, coarse or thick, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
II	18 - 80	10 YR 3/3, dark brown; clay loam; weak, fine, granular structure; loose moist consistency; sticky wet consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; no cultural material;
III	80 - 132	10 YR 2/1, black; volcanic cinders; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.

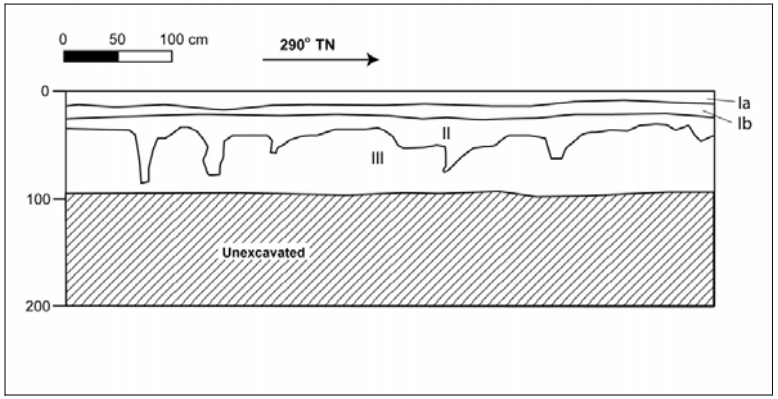

Figure 41. Backhoe Trench 8 south wall profile

BACKHOE TRENCH 8, South Wall Profile

Str.	Depth (cmbs)	Soil Description
I	0-27	Asphalt; 10 YR 2/1, black; very abrupt lower boundary;
II	27 - 49	10 YR 3/3, dark brown; clay loam; weak, fine, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; no cultural material;
III	49 - 93	10 YR 2/1, black; volcanic cinders; structureless, loose dry consistency; non-plastic; no cementation; bottom of excavation.

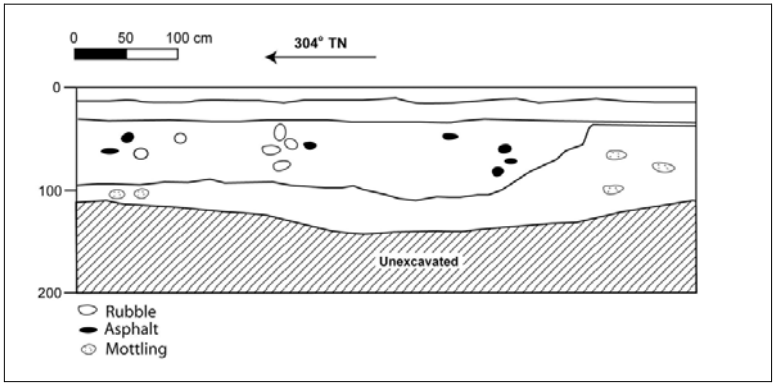

Figure 42. Backhoe Trench 9 north wall profile

BACKHOE TRENCH 9, North Wall Profile

Str.	Depth (cmbs)	Soil Description
Ia	0 –13	Asphalt; 10 YR 2/1, black; very abrupt lower boundary;
Ib	13 – 31	Fill; 10 YR 8/2, very pale brown; coral fill; moderate, coarse or thick, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
II	31-110	10 YR 3/3, dark brown; clay loam; weak, fine, granular structure; loose moist consistency; sticky wet consistency; slightly plastic; no cementation; wavy lower boundary; concrete blocks, pipes, cement, asphalt and other construction rubble is mixed throughout;
III	110-140	10 YR 2/1, black; volcanic cinders; structureless; loose dry consistency; non-plastic; no cementation; bottom of excavation.

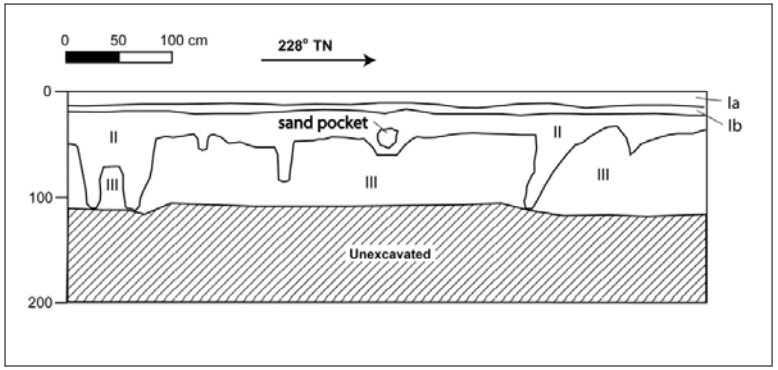

Figure 43. Backhoe Trench 10 east wall profile

BACKHOE TRENCH 10, East Wall Profile

Str.	Depth (cmbs)	Soil Description
Ia	0 - 12	Asphalt; 10 YR 2/1, black; structureless; very abrupt smooth lower boundary;
Ib	10 - 20	Fill; 10 YR 4/2, dark grayish brown; gravel fill; structureless; hard dry consistency; non-plastic; no cementation; abrupt smooth lower boundary;
II	20 - 40	10 YR 3/3, dark brown; clay loam; weak, fine, granular structure; loose moist consistency; non-sticky wet consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; no cultural material
III	40 - 115	10 YR 2/1, black; volcanic cinders; structureless; loose dry consistency; non-plastic; no cementation; bottom of excavation.

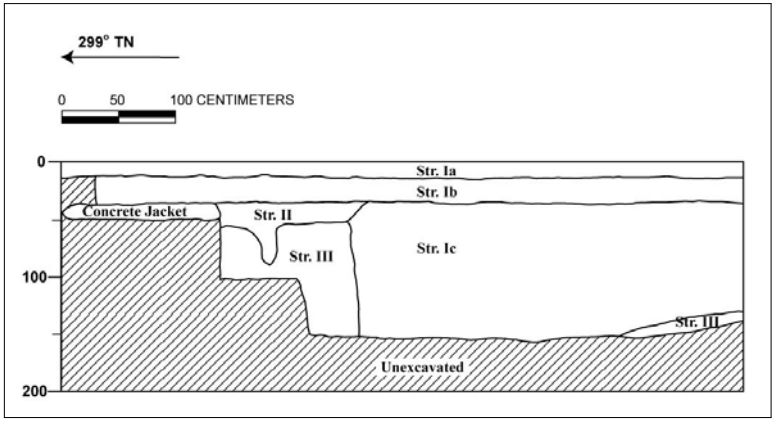

Figure 44. Backhoe Trench 11 north wall profile

BACKHOE TRENCH 11

Str.	Depth (cmbs)	Soil Description
Ia	0 - 12	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
Ib	12 - 36	Fill; 10 YR 4/2, dark grayish brown; gravel; structureless; slightly hard dry consistency; non-plastic; no cementation; clear smooth lower boundary; None
Ic	36 - 152	Fill; 10 YR 3/3, dark brown; clay loam; weak, granular structure; loose moist consistency; non-sticky wet consistency; non-plastic; no cementation; disturbed by the construction of a light pole foundation, and consists of mixed soil, concrete and asphalt fragments, and volcanic cinders
II	36 - 56	10 YR 3/3, dark brown; clay loam; weak, granular structure; loose moist consistency; slightly plastic; no cementation; no cultural material;
III	56 - 115	10 YR 2/1, black; volcanic cinders; structureless, single grain structure; loose dry consistency; non-plastic; no cementation; bottom of excavation.

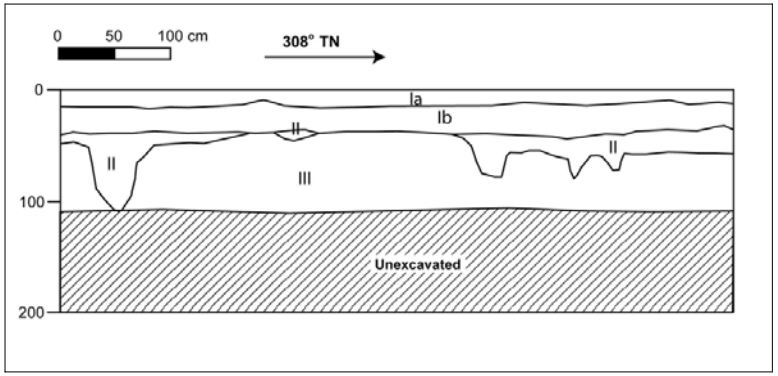

Figure 45. Backhoe Trench 12 east wall profile

BACKHOE TRENCH 12, East Wall Profile

Str.	Depth (cmbs)	Soil Description
Ia	0 - 12	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
Ib	10-35	Fill; 10 YR 3/2, very dark grayish brown; gravelly silt loam; weak, granular structure; slightly hard dry consistency; non-sticky wet consistency; non-plastic; no cementation; clear smooth lower boundary;
II	35 - 50	10 YR 3/3, dark brown; clay loam; weak, granular structure; loose moist consistency; sticky wet consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; no cultural material;
III	50 - 105	10 YR 2/1, black; volcanic cinders; structureless; loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.

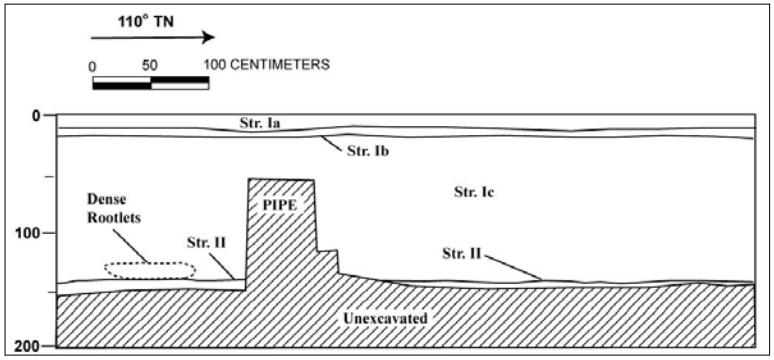

Figure 46. Backhoe Trench 13, north Wall Profile

BACKHOE TRENCH 13

Str.	Depth (cmbs)	Soil Description
Ia	0 - 13	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
Ib	13 - 19	Fill; 5 YR 3/2, Dark reddish brown; gravel; structureless; hard dry consistency; non-plastic; weak cementation; abrupt smooth lower boundary;
Ic	19 - 142	Fill; 10 YR 2/2, very dark brown; gravelly clay loam; weak, granular structure; loose moist consistency; sticky wet consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; no cultural material;
II	142-153	10 YR 2/1, black; volcanic cinders; structureless; weakly coherent, dry consistency; non-plastic; no cementation; bottom of excavation.

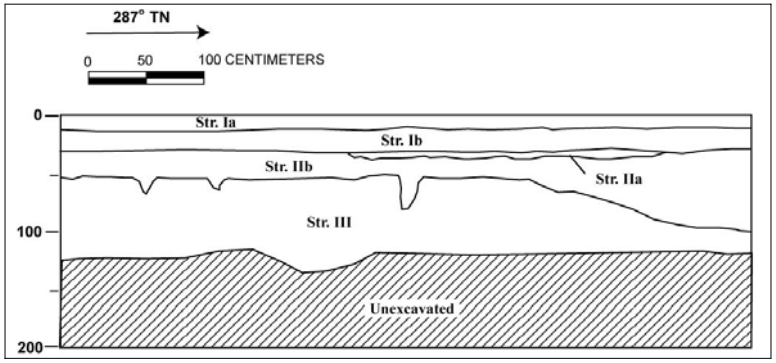

Figure 47. Backhoe Trench 14, South Wall Profile

BACKHOE TRENCH 14

Str.	Depth (cmbs)	Soil Description
Ia	0 - 12	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
Ib	10 - 29	Fill; 10 YR 8/2, very pale brown; coral; structureless; slightly hard dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
Ic	36 - 152	Fill; 10 YR 3/3, dark brown; clay loam; weak, granular structure; loose moist consistency; non-sticky wet consistency; non-plastic; no cementation; disturbed by the construction of a light pole foundation, and consists of mixed soil, concrete and asphalt fragments, and volcanic cinders;
IIa	29 - 42	10 YR 3/1, very dark gray; clay loam; moderate, fine, granular structure; hard dry consistency; non-plastic; strong cementation; clear lower boundary; no cultural material;
IIb	29 - 53	10 YR 3/3, dark brown; clay loam; weak, granular structure; weakly coherent dry consistency; non-sticky wet consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; no cultural material;
III	53 - 130	10 YR 2/1, black; volcanic cinders; structureless; loose dry consistency; non-plastic; no cementation; bottom of excavation.

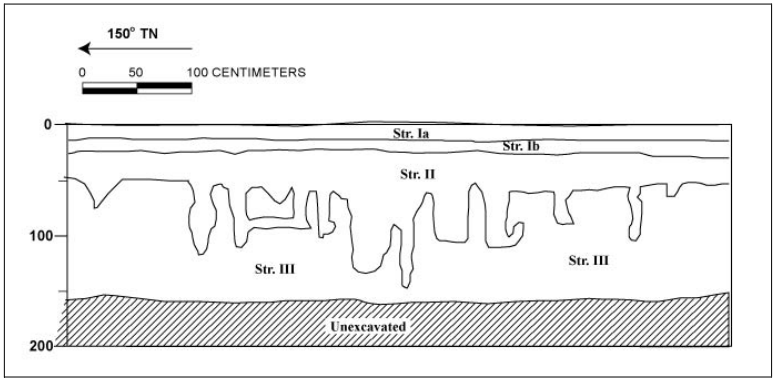

Figure 48. Backhoe Trench 15 west wall profile

BACKHOE TRENCH 15, West Wall Profile

Str.	Depth (cmbs)	Soil Description
Ia	0 – 25	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
II	25 - 150	10 YR 3/3, dark brown; clay; moderate, slightly hard dry consistency; weak cementation; very abrupt wavy lower boundary; no cultural material;
III	50 - 160	10 YR 2/1, black; volcanic cinders; structureless; loose dry consistency; non-plastic; no cementation; bottom of excavation.

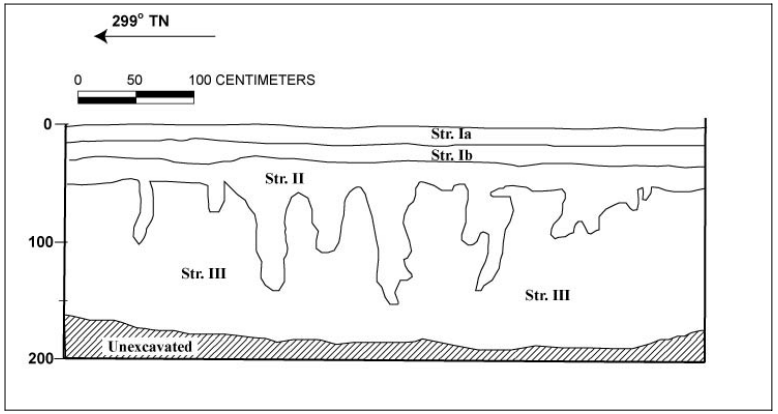

Figure 49. Backhoe Trench 16 east wall profile

BACKHOE TRENCH 16, East Wall Profile

Str.	Depth (cmbs)	Soil Description
Ia	0 – 30	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
II	30 - 155	10 YR 3/2, very dark grayish brown; clay; moderate, slightly hard dry consistency; weak cementation; very abrupt irregular lower boundary; None
III	50 - 185	10 YR 2/1, black; very coarse, sand/cinder; structureless, loose dry consistency; non-plastic; no cementation; bottom of excavation.

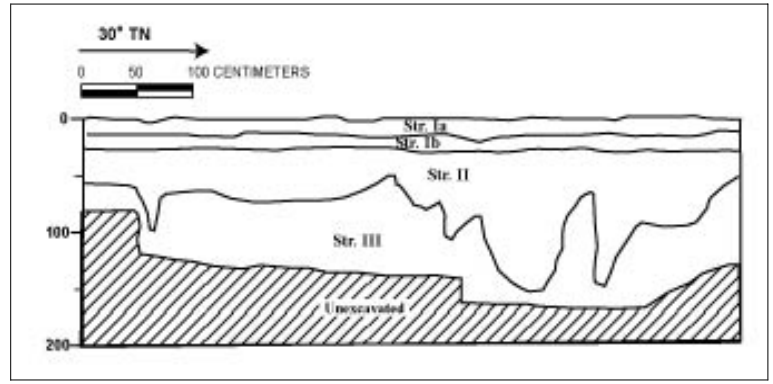

Figure 50. Backhoe Trench 17 west wall profile

BACKHOE TRENCH 17, West Wall Profile

Str.	Depth (cmbs)	Soil Description
I	0-29	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
II	29 - 152	10 YR 3/3, dark brown; clay loam; moderate, granular structure; weakly coherent dry consistency; friable moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; no cultural material;
III	50 - 168	10 YR 2/1, black; volcanic cinders; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.

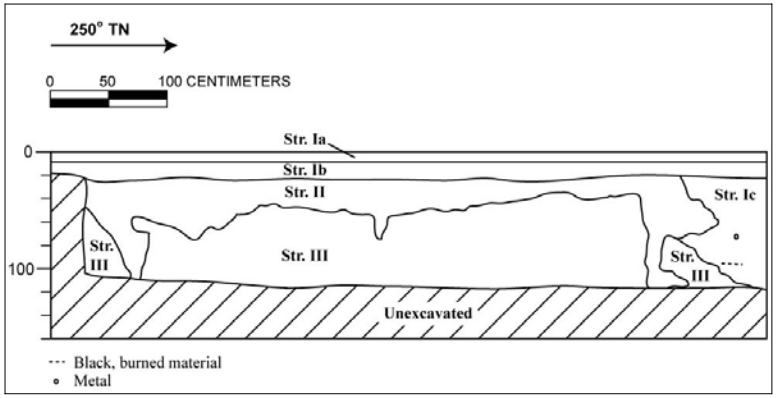

Figure 51. Backhoe Trench 20 south wall profile

BACKHOE TRENCH 20, South Wall Profile

Str.	Depth (cmbs)	Soil Description
Ia	0 - 12	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
Ib	12 - 26	Fill; 10 YR 8/2, very pale brown; mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
Ic	28 - 118	Disturbed Fill; 5 YR 2.5/2, dark reddish brown; clay loam; fine and medium grains; weak structure; granular; moist; very friable; sticky; slightly plastic; no cementation; terrestrial sediments; clear boundary; wavy topography; contains burnt metal, animal bone, rusted metal, glass, pottery, orange and black discolorations, and a piece of base course made of crush coral and shells;
II	28 - 115	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary;
III	38 - 120	10 YR 2/1, black; cinders; structureless; loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.

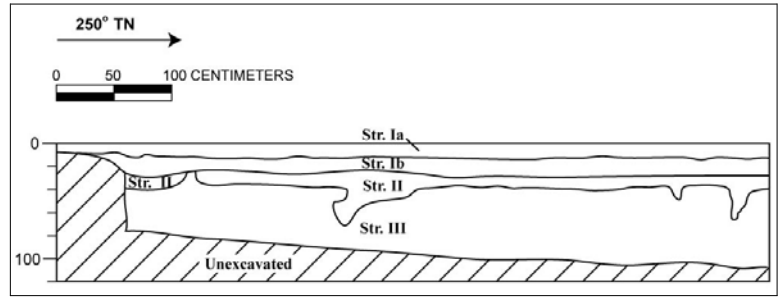

Figure 52. Backhoe Trench 21, northwest section of project area, south wall profile

BACKHOE TRENCH 21, South Wall Profile

Str.	Depth (cmbs)	Soil Description
Ia	0 - 12	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
Ib	12 - 26	Fill; 10 YR 8/2, very pale brown; mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
II	26 - 70	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary;
III	35 - 105	10 YR 2/1, black; cinders; structureless; loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.

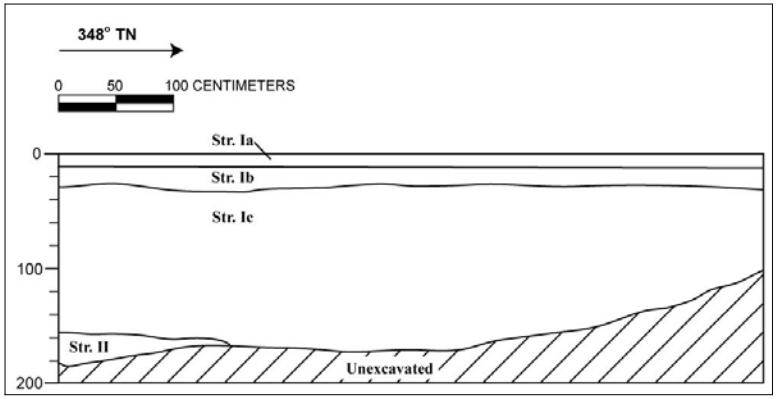

Figure 53. Backhoe Trench 23 west wall profile

BACKHOE TRENCH 23, West Wall Profile

Str.	Depth (cmbs)	Soil Description
Ia	0 - 12	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
Ib	12 - 30	Fill; 10 YR 8/2, very pale brown; mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
Ic	30 - 200	Disturbed Fill; 2.5 YR 2.5/1, reddish black; clay loam; single grain; loose, moist consistency; non-plastic; no cementation; unable to determine boundary distinctness or topography due to safety concerns; mixture of alluvium and Sugarloaf cinder with chunks of concrete, pipe, a keawe stump, glass insulator, and asphalt chunks;
II	155 - 203	10 YR 2/1, black; cinders; structureless; loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation

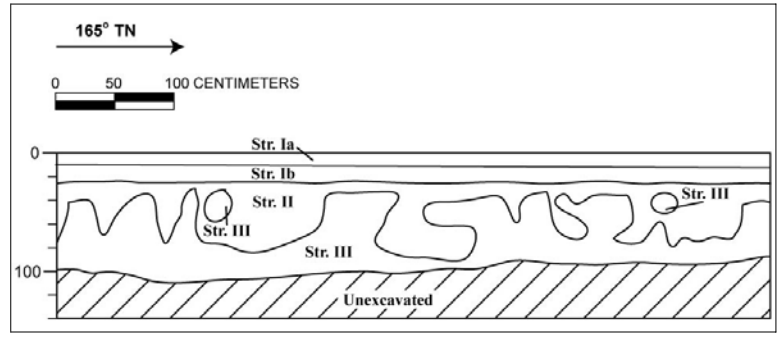

Figure 54. Backhoe Trench 24 east wall profile

BACKHOE TRENCH 24, East Wall Profile

Str.	Depth (cmbs)	Soil Description
Ia	0-12	10 YR 2/1, black; asphalt; very abrupt smooth lower boundary
Ib	10-26	10 YR 8/2, very pale brown; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary; base course
II	26-90	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt irregular lower boundary;
III	30-110	10 YR 2/1, black; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; Sugarloaf-Tantalus cinder

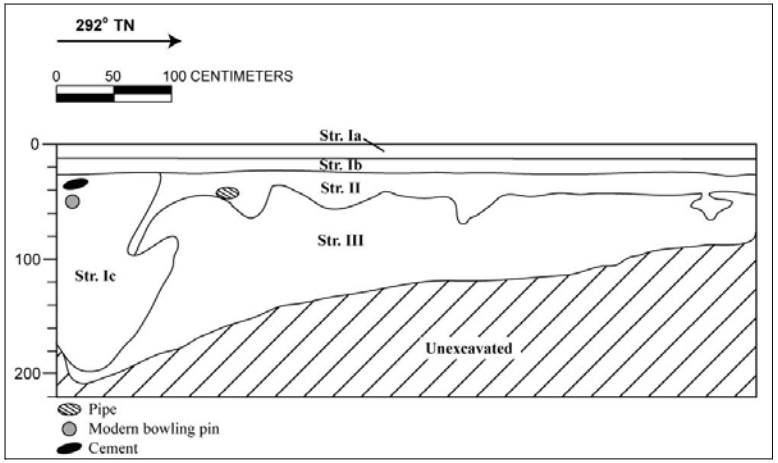

Figure 55. Backhoe Trench 25 south wall profile

BACKHOE TRENCH 25, South Wall Profile

Str.	Depth (cmbs)	Soil Description
Ia	0-12	10 YR 2/1, black; asphalt; very abrupt smooth lower boundary
Ib	10-28	10 YR 8/2, very pale brown; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary; base course
Ic	28-196	2.5 Y 3/2, very dark greyish brown; sandy clay; structureless, fine/ medium, granular structure; loose moist consistency; non-plastic; no cementation; abrupt wavy lower boundary; modern fill deposit; two bowling pins found
II	25-98	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary
III	32-210	10 YR 2/1, black; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; Sugarloaf-Tantalus cinder

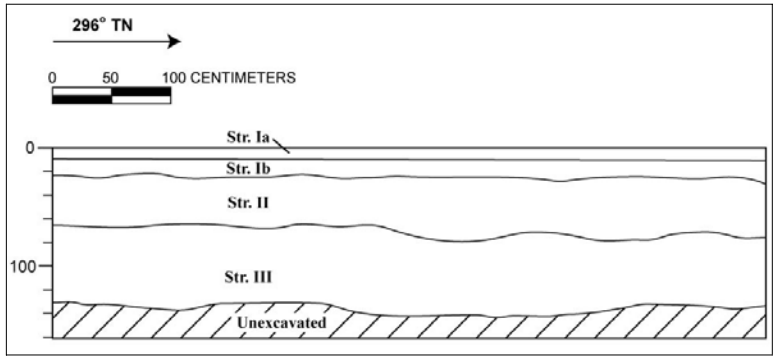

Figure 56. Backhoe Trench 27 south wall profile

BACKHOE TRENCH 27, South Wall Profile

Str.	Depth (cmbs)	Soil Description
Ia	0-10	10 YR 2/1, black; asphalt; very abrupt smooth lower boundary
Ib	10-30	10 YR 8/2, very pale brown; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary; base course
II	22-78	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary;
III	65-140	10 YR 2/1, black; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; Sugarloaf-Tantalus Cinder

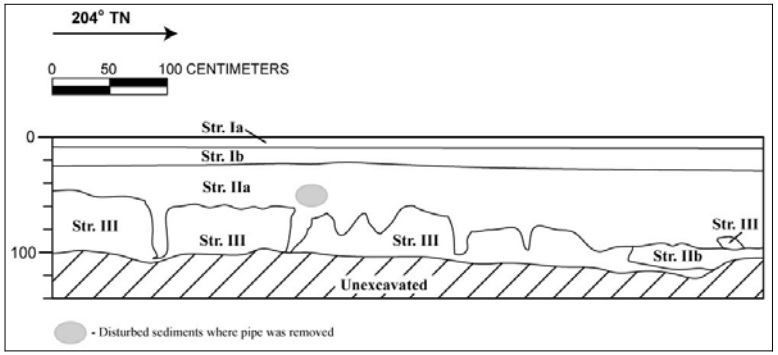

Figure 57. Backhoe Trench 28, northeast quadrant of the project area, east wall profile

BACKHOE TRENCH 28, East Wall Profile

Str.	Depth (cmbs)	Soil Description
Ia	0 - 12	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary;
Ib	12 - 26	Fill; 10 YR 8/2, very pale brown; mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary;
IIa	26 - 108	10 YR 3/3, dark brown; clay loam; moderate, granular; loose moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary;
IIb	90 – 115	5 Y 2.5/2, black; medium sand; clay loam; fine and medium grains; granular; loose moist consistency; slightly plastic, no cementation; clear, diffuse boundary; wavy boundary; mix of alluvium and cinder;
III	48 - 120	10 YR 2/1, black; cinders; structureless; loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.

Appendix C Burial Notices as Published in *The Honolulu Advertiser* and *Ka Wai Ola o OHA*

IN THE MATTER OF

BURIAL NOTICE

BURIAL NOTICE

NOTICE TO INTERESTED PARTIES IS HEREBY GIVEN that unmarked burial sites containing the human skeletal remains of what are believed to be three individuals were discovered by Cultural Surveys Hawai'i, Inc., during archaeological inventory survey excavations related to the development of the 4-acre Alapai Transit Center. The project area is in the ahupua'a of Honolulu, Honolulu District, Island of O'ahu and comprises 710 and 752 South King Street, bounded by King, Alapa'i, Hotel, and Kealamakai Streets (TMK 1-2-1-042: 013 and 004). The project proponent is the City and County of Honolulu. The contact for the project proponent is Ms. Rachel Shaak, Group 70 International, Inc., 925 Bethel Street, 5th Floor, Honolulu, Hawai'i 96813, Tel. (808) 523-5866.

The project area is within Kulaokahu'a, which is described in several early 19th century accounts as a relatively uninhabited, arid plain. There were no kuleana (individual land parcels) Land Commission Awards granted to the common people within the project area. However, the western section of the project area was awarded (LCA #8511) to an institution, the Oahu Charity School, founded in 1837 for the children of Hawaiian mothers and foreign fathers. In the late 19th and early 20th centuries, the project area was developed into several large residences for prominent Hawaiian businessmen, including Joseph Platt Cooke and his brother-in-law, Joseph Ballard Atherton, a partner in the firm of Castle and Cooke.

One State Inventory of Historic Properties (SIHP) number, 50-80-14-6902, has been assigned for these three burial deposits. Burials 1 and 2 were coffin burials, based on their association with faint linear alignments of decomposed coffin wood and coffin nails. Only a small portion of Burial 3 was exposed and no evidence of a coffin was seen. The project proponents propose preservation in place for the three burials.

The State Historic Preservation Division/Department of Land and Natural Resources (SHPD/DLNR) has evaluated the burials and determined that not enough information is currently available to determine ethnicity. The remains were determined to be over 50 years old, and proper treatment shall occur in accordance with Chapter 6E, Hawai'i Revised Statutes, Section 43.5 regarding unmarked burial sites. In consultation with any identified lineal and/or cultural descendant(s). SHPD/DLNR has jurisdiction in this matter, per the requirements of HAR Chapter 13-300-34. The remains' proper treatment shall occur in accordance with HAR Chapter 13-300-39.

The State Historic Preservation Division is requesting persons having any knowledge of the identity or history of these human skeletal remains to immediately contact Ms. Melanie Chinen at SHPD/DLNR, located at 555 Kakuhihewa Building, 601 Kamokila Boulevard, Kapolei, Hawai'i 96707, or telephone (808) 692-8015 or fax (808) 692-8020, to present information regarding appropriate treatment of the unmarked human remains. All interested parties should respond within thirty days of this notice and provide information to SHPD/DLNR adequately demonstrating lineal descent from these specific burials or cultural descent from ancestors buried in the vicinity of this project.

(Hon. Adv.: Apr. 11, 12, 15, 2007) (A-193823)

AFFIDAVIT OF PUBLICATION

STATE OF HAWAII
City and County of Honolulu ss.

Valerie L Yanagihara *being duly sworn deposes and says that she is a clerk, duly authorized to execute this affidavit of THE HONOLULU ADVERTISER, a division of GANNETT PACIFIC CORPORATION, that said newspaper is a newspaper of general circulation in the State of Hawaii, and that the attached notice is a true notice as was published in the aforereferenced newspaper as follows:*

The Honolulu Advertiser: 3 *times(s) on* 04/11/2007, 04/12/2007, 04/15/2007

and that affiant is not a party to or in any way interested in the above entitled matter.

Subscribed and sworn to before me this 15th *day of* April *A. D.* 2007

Elsie A. Maruyama
ELSIE A. MARUYAMA
Notary Public of the First Judicial Circuit
State of Hawaii
My commission expires March 7, 2008

ELSIE A. MARUYAMA NOTARY PUBLIC STATE OF HAWAII

Figure 58. Affidavit of Publication, *The Honolulu Advertiser* April 11, 12 & 15

20 | MEI 2007 LEO 'ELELE • TRUSTEE MESSAGES

What is an OHA trustee?

Walter M. Heen
Trustee, O'ahu

Many people have asked me: "What is an OHA trustee? Is there a difference between an OHA trustee and a trustee of the Bishop Estate or Lili'uokalani Trust?" The answer is yes and no.

A trustee is generally defined as one to whom property is legally committed in trust. The position carries with it a multitude of legal commitments and responsibilities. There is, of course, the sacred obligation to carry out the terms of the trust; do what the founder of the trust wanted to have done. Additionally, a trustee is required to protect the trust corpus, the estate, against depletion and, in fact, to grow the estate through prudent investment practices that produce income exceeding expenditures. Within those and other general charges lie obligations such as the duty to avoid conflicts between the trust's and the trustee's interests and the need to protect the confidentiality of trust affairs. Trustees must work together and cooperate always with the same objective: to preserve the trust and carry out its mission. Trustees must keep uppermost the thought that everything they do must be designed to protect and grow the trust.

The manner in which OHA trustees are "appointed" – by election – places them in a unique, even anomalous, situation. At any time, on any issue, a trustee may ask himself, "How will this decision affect me in the next election?" The answer, of course, is that it doesn't matter how it might affect a trustee's re-election; he is bound, as a trustee, to make the decision that will fully and legally accomplish the obligation to provide for the betterment of Native Hawaiians.

OHA trustees are subject to the same general rules of "righteous" conduct as are other trustees. They are governed by the same legal obligations and limitations mentioned above. In fact, most of those universal rules are set forth generally in Hawai'i Revised Statutes, Chapter 10, which establishes the purpose of the office and the general powers of the trustees. On behalf of the "estate" of OHA, trustees may acquire, manage, sell and dispose of real and personal property and manage the proceeds of any sale. The trustees are specifically charged with formulating policy regarding the affairs of native Hawaiians and Hawaiians. More specifically, and most important, an OHA trustee is required to "[o]therwise act as a trustee as provided by law."

One troublesome area in the management of OHA's affairs has been the lack of a clear and coherent policy and strategy governing the acquisition of real property. Up to now, it has been "catch as catch can." That cannot continue. As much as we and the Hawaiian community may feel the desire and the need to acquire real property for the purpose of adding to the trust corpus or preserving parts of the 'āina that are important to our culture and our heritage, we must be sure that we have or can establish programs that will minimize the danger that the cost of maintaining the particular property will "eat up" the trust assets. For example, the acquisition of Waimea Valley, as important as the ahupua'a is to the preservation of our culture, can become a huge mistake if we cannot develop the means of acquiring funds to maintain the property and establish cultural programs there. I am happy to report that we are working on establishing a policy governing real property acquisition and are already guiding our actions by most of its still preliminary principles.

NO KA ILINA • BURIAL NOTICES

Alapa'i Transit Center

NOTICE TO INTERESTED PARTIES IS HEREBY GIVEN that unmarked burial sites containing the human skeletal remains of what are believed to be three individuals were discovered by Cultural Surveys Hawai'i, Inc., during archaeological inventory survey excavations related to the development of the 4-acre Alapa'i Transit Center. The project area is in the ahupua'a of Honolulu, Honolulu District, Island of O'ahu and comprises 710 and 752 South King Street, bounded by King, Alapa'i, Hotel, and Kealamakai Streets (TMK 1-2-1-042: 013 and 004). The project proponent is the City and County of Honolulu. The contact for the project proponent is Ms. Rachel Shaak, Group 70 International, Inc., 925 Bethel Street, 5th Floor, Honolulu, Hawai'i 96813, Tel. (808) 523-5866.

The project area is within Kulaokahu'a, which is described in several early 19th century accounts as a relatively uninhabited, arid plain. There were no kuleana (individual land parcels) Land Commission Awards granted to the common people within the project area. However, the western section of the project area was awarded (LCA #8511) to an institution, the Oahu Charity School, founded in 1837 for the children of Hawaiian mothers and foreign fathers. In the late 19th and early 20th centuries, the project area was developed into several large residences for prominent Hawaiian businessmen, including Joseph Platt Cooke and his brother-in-law, Joseph Ballard Atherton, a partner in the firm of Castle and Cooke.

One State Inventory of Historic Properties (SIHP) number, 50-80-14-6902, has been assigned for these three burial deposits. Burials 1 and 2 were coffin burials, based on their association with faint linear alignments of decomposed coffin wood and coffin nails. Only a small portion of Burial 3 was exposed and no evidence of a coffin was seen. The project proponents propose preservation in place for the three burials.

The State Historic Preservation Division/Department of Land and Natural Resources (SHPD/DLNR) has evaluated the burials and determined that not enough information is currently available to determine ethnicity. The remains were determined to be over 50 years old, and proper treatment shall occur in accordance with Chapter 6E, Hawai'i Revised Statutes, Section 43.5 regarding unmarked burial sites. In consultation with any identified lineal and/or cultural descendant(s). SHPD/DLNR has jurisdiction in this matter, per the requirements of HAR Chapter 13-300-34. The remains' proper treatment shall occur in accordance with HAR Chapter 13-300-39.

The State Historic Preservation Division is requesting persons having any knowledge of the identity or history of these human skeletal remains to immediately contact Ms. Melanie Chinen at SHPD/DLNR, located at 555 Kakuhihewa Building, 601 Kamokila Boulevard, Kapolei, Hawai'i 96707, or telephone (808) 692-8015 or fax (808) 692-8020, to present information regarding appropriate treatment of the unmarked human remains. All interested parties should respond within thirty days of this notice and provide information to SHPD/DLNR adequately demonstrating lineal descent from these specific burials or cultural descent from ancestors buried in the vicinity of this project.

La'i'opua

All persons having information concerning unmarked burials outside of designated cemeteries in the Villages at La'i'opua project area (formerly the Kealakehe Planned Community Project Area), Kealakehe and Keahuolu Ahupuaʻa, or in Honokōhau Ahupuaʻa, North Kona District, Island of Hawaiʻi (TMK:7-04-08:17,Por.12;7-04-08:var), are hereby requested to contact the following persons: Mrs. Ruby McDonald, Liaison, Office of Hawaiian Affairs (West Hawaiʻi), (808) 327-9525, 75-5706 Hanama Place, Suite 107, Kailua-Kona, HI 96740; Dr. Paul H. Rosendahl, Principal Archaeologist, PHRI, (808) 969-1763, 224 Waiānuenue Ave., Hilo, HI 96720; and/or Mr. Keola Lindsey, Burial Sites Program, DLNR-State Historic Preservation Division, (808) 327-3690 or 327-3691, 74-383 Kealakehe Parkway, Kailua-Kona, HI 96740.

Contact must be made within 30 days of publication of this notice, and informants must provide information adequately demonstrating descent from the Native Hawaiian remains, or descent from ancestors buried in the same ahupua'a or district as the human remains. Land parcels that may be associated with the unmarked burials include Land Grant S-15941; Land Commission Award 9971:9 to W. P. Leleiohoku, Land Commission Award 8452 to Ana Keohokalole; Land Commission Award 11216:36 to M. Kekauonohi; and FP 2041 and FP 2128. It is currently proposed that the remains be preserved in place.

Figure 59. Burial Notice in May 2007 edition of *Ka Wai Ola o OHA*

Appendix D Example of Consultation Letter Sent to OHA (similar letters sent to OIBC and Hui Mālama…)

Cultural Surveys Hawai'i Inc.
Archaeological and Cultural Impact Studies
Hallett H. Hammatt, Ph.D., President

Providing Excellence in Cultural Resource Management

O'ahu P.O. Box 1114 Kailua, HI 96734 Ph.: (808) 262-9972 Fax.: (808) 262-4950
Maui 16 S. Market St., #2N Wailuku, HI 96793 Ph.: (808) 242-9882 Fax.: (808) 244-1994
Kaua'i P.O. Box 498 Lawai, HI 96765 Ph.: (808) 245-4883

14 March 2007

Clyde W. Nāmu'o
Administrator
State of Hawai'i Office of Hawaiian Affairs (OHA)
711 Kapi'olani Boulevard, Suite 500
Honolulu, Hawai'i 96813

Subject: CSH's request for federal Section 106 and state of Hawaii historic preservation cultural consultation and/or comment regarding the cultural resource management investigation associated with the proposed redevelopment of the Alapai Transit Center and Joint Traffic Management Center, Honolulu District, Honolulu Ahupua'a, Island of O'ahu, TMK: (1) 2-1-042:004, 013

CSH Job Code: HONOL 7

Dear Mr. Nāmu'o:

Project Description and Purpose of This Letter
The City and County of Honolulu (County), Department of Transportation Services (DTS), proposes to redevelop the existing 4.13-acre Alapai Transit Center, which is owned by the City and County of Honolulu (County). The existing transit center is bounded by King, Alapai, S. Hotel, and Kealamakai Streets in Downtown Honolulu (refer to the attached Figure 1 aerial photograph of the project area). The proposed redevelopment would replace the existing transit center (refer to Figure 1) with a new Alapai Transit Center (ATC) and a new multi-agency, Joint Traffic Management Center (JTMC) (refer to Figure 2, a plan view of the proposed JTMC). The *makai* portion of the project area will be converted to a bus staging area, passenger loading zone and throughway for buses. On the *mauka* portion of the project area the multi-story JTMC building will be constructed.

Due to at least partial Federal Highway Administration (FHWA) funding, this project is a federal undertaking requiring compliance with Section 106 of the National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA). As a County project on County-owned land, the project requires compliance with state of Hawaii historic preservation (Hawaii Revised Statutes [HAR] Chapter 6E-8 and Hawaii Administrative Rules [HAR] Chapter 13-275] and environmental (HRS Chapter 343) review legislation.

In order to support the project's historic preservation and environmental review compliance, and at the request of the County's environmental consultant, Group 70 International, Inc., Cultural Surveys Hawai'i (CSH) is completing a cultural resource management investigation associated with the proposed

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Figure 60. Request for Consultation Letter to OHA (similar letters sent to OIBC & Hui Mālama…), page 1

Clyde W. Nāmu'o Page 2

14 March 2007

development. This investigation is comprised of an archaeological inventory survey (to fulfill the Hawaii State requirements of HAR Chapter 13-276 and the federal Secretary of the Interior standards on historic property identification) and a cultural impact evaluation (to fulfill the requirements of HRS Chapter 343). In order to fulfill the cultural consultation requirements for this cultural resource management investigation, with this letter CSH is asking for OHA's input regarding the investigation's results to date.

In compliance with applicable Hawai'i state and federal historic preservation legislation, Cultural Surveys Hawai'i, Inc. (CSH) completed fieldwork for a project-related archaeological inventory survey on December 26 and 27, 2006 and January 23 and 24, 2007. Per the Hawai'i state requirements for archaeological inventory surveys [Hawai'i Administrative Rules (HAR) Chapter 13-275-6 and 13-276-5], CSH is providing OHA with a brief summary of the fieldwork findings, the initial significance assessments, and the mitigation recommendations for the two historic properties located within the project area. One of these properties consists of human skeletal remains of undetermined ethnicity. As this property is likely eligible to the Hawai'i Register of Historic Places under Criterion E, for its cultural significance to ethnic groups, CSH is hereby seeking OHA's input regarding the significance and treatment of these historic properties.

Additionally, CSH is seeking OHA's assistance with the identification of any on going traditional cultural practices in the proposed project area. CSH's background research indicates that the project area has been developed for more than 100 years, first with residences and schools, then as a County parking area. Based on CSH's evaluation, there is no potential for ongoing Native Hawaiian traditional cultural practices within the project area, for example there is no evidence of the traditional collection of plant or animal resources, traditional pedestrian access trails, *wahi pana* (storied places), or traditional agricultural activities. Based on CSH's testing results, described below, the human burial issue is the only potential traditional cultural concern within the project area.

Background Research

Background research into the project area's vicinity, known traditionally as Kulaokahu'a, indicated that the area was a "dry, dusty plain" in the pre-contact and early post-contact eras. It was used as a gaming field for *maika* and other sports by Hawaiians, and was transversed by trails and later horse paths that connected the two more populous areas of Kou (Honolulu) and Waikīkī. The primary areas cultivated and habitated by Hawaiians were along the coastline and the lands surrounding Nu'uanu Stream. Thus the area around Punchbowl was not a focus for habitation or agriculture, at least until the late nineteenth century, when people, mainly *haole* (foreign-born residents), began to move this new suburb of Honolulu.

Mahele records show that Kulaokahu'a became Crown lands. Much of this area was quickly divided into lots and rented or sold as house lots, mainly to *haole* residents who dug wells in the area to provide much needed water.

Archaeological background research has shown that the Kulaokahu'a region of Honolulu, especially around the Capitol District, was not a focus for habitation in the pre-contact and early post-contact period. Typically, only historic artifacts have been found in trenches excavated in this district. Food midden, such as marine shells, and traditional Hawaiian artifacts, such as stone flakes and adzes, are very rare; only a

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Figure 61. Request for Consultation Letter to OHA (similar letters sent to OIBC & Hui Mālama…), page 2

Clyde W. Nāmu'o Page 3

14 March 2007

handful have been found. Although not densely inhabited, a few burials, possibly native Hawaiian, have been found in the area.

Inventory Survey Results

As part of its inventory survey field effort, CSH conducted systematic pedestrian inspection of the project area. The entire 4.13-acre project area consists of a flat, paved lot, currently used as a bus transit area and overflow parking lot for municipal vehicles, refer to Figure 1. The only structures on the lot are four bus shelters and wooden benches on a raised concrete island, all less than 50 years old.

With no potential for surface historic properties, the archaeological inventory survey investigation focused on locating any subsurface historic properties through a program of backhoe and hand excavation test trenching. The locations of the nineteen trenches are shown on the attached Figure 1. Stratigraphy within the project area consisted of the modern asphalt parking lot surface underlain by a layer of mixed coral road base. Beneath these strata lie natural sediments, a layer of clay loam alluvium, overlying a layer of sugar loaf volcanic cinder. Backhoe testing, described below, identified two subsurface historic properties.

The clay loam alluvial deposit, found on average 25 cm below the modern asphalt surface, was likely the area's natural land surface prior to development. This deposit contained two historic trash pit features and three burials. The burials, while not immediately adjacent, were in close proximity to one another and appeared to be in primary context. Based on the testing results, the vast majority of the project area had no indications of subsurface cultural deposits. The cultural deposits that were noted were concentrated in the central Diamond Head portion of the project area along Kealamakai Street, refer to Figure 1. Based on the fieldwork results, there are two historic properties within the project area:

1) State Inventory of Historic Properties (SIHP) 50-80-14-6901 consists of two historic trash pits containing fragments of window glass, rusted metal, terra cotta, kitchenware ceramics, mammal bone, chicken bone and bottle glass. Whole bottles and identifiable fragments indicate the site dates between 1850 and 1920. The two trash deposits are located in Trenches 3 and 18, refer to Figure 1. The site is recommended eligible for the Hawai'i and National Register under Criterion D (for its information content).

2) SIHP 50-80-14-6902 consists of three burials; Burial 1 located in trench 4 and Burials 2 and 3 located in trench 19 (refer to Figure 1). All three were found in the alluvial sediment, in intrusive pits dug into the underlying volcanic cinder. Burials 1 and 2 were coffin burials, based on their association with faint linear alignments of decomposed coffin wood and coffin nails. Only a small portion of Burial 3 was exposed and no evidence of a coffin was seen. The site is eligible for the Hawai'i and National Register under Criteria D and E (information content and traditional cultural significance to Native Hawaiians, respectively).

The State Historic Preservation Division (SHPD) was notified of the discovery of the human skeletal remains immediately. In consultation with SHPD, five additional trenches were excavated around the vicinity of the burial finds to better determine the geographic boundaries of these burial deposits. Based on these results, the burials appear to be localized in the immediate vicinity of trenches 4 and 19. These

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Figure 62. Request for Consultation Letter to OHA (similar letters sent to OIBC & Hui Mālama…), page 3

Clyde W. Nāmu'o Page 4

14 March 2007

skeletal remains are to be treated as previously identified human burials, following HAR Chapter 13-300. The remains were covered *in-situ*, and following documentation, the trench was backfilled.

CSH consulted with Mr. Adam Johnson of SHPD regarding the ethnicity of these burials. Mr. Johnson concluded that "[b]ased on the information provided, the limited amount of remains disturbed during excavations, and the background research that indicates that Caucasian, Chinese, and Hawaiian populations had ties to the area in the 19th and 20th centuries, I cannot make a determination of ethnicity at this time" (Letter dated 15 February 2007 from Adam Johnson [SHPD] to Matt McDermott[CSH]). Based on this input from SHPD, there is insufficient information to make a burial ethnicity determination for the three burials that comprise SIHP 50-80-14-6902.

Proposed Mitigation

The proposed mitigation for the project area's two historic properties is two fold. First, for SIHP 50-80-14-6902, the previously identified burials, a burial treatment plan will be prepared for the consideration of SHPD. The project proponents propose to preserve all three burials in place within a single burial preserve area, which will be appropriately landscaped and restricted from pedestrian access. Second, the proposed mitigation will include an archaeological monitoring program to help identify and properly treat any additional archaeological deposits, such as additional historic deposits of SIHP 50-80-14-6901, and/or burials located during the project's construction.

I hope this summary provides the information you require to comment on the inventory survey findings, the proposed historic property significance assessments, the traditional cultural use of the project area, and the proposed historic property mitigation measures. Additionally, any input OHA might have regarding the ethnicity of the SHIP 50-80-14-6902 burials would be greatly appreciated.

Thank you very much for your assistance with this matter. OHA's response to this request will become part of the project's historic preservation administrative record and will help assist the project proponents with their compliance with both Hawai'i state and federal historic preservation legislation. OHA's response will also help ensure that the proposed project's cultural resource management review and mitigation decisions are based on the most accurate cultural information. If you could please comment within 30 days of receipt of this letter it would be greatly appreciated. Please contact me with any questions.

Sincerely,
Cultural Surveys Hawai'i, Inc.

Matt McDermott
Projects Manager
(email: mmcdermott@culturalsurveys.com)

www.culturalsurveys.com info@culturalsurveys.com

Figure 63. Request for Consultation Letter to OHA (similar letters sent to OIBC & Hui Mālama…), page 4

LINDA LINGLE
GOVERNOR OF HAWAII

HONOL 7

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ALLAN A. SMITH
INTERIM DEPUTY DIRECTOR - LAND

KEN C. KAWAHARA
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ENGINEERING
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HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

November 29, 2007

David W. Shideler
Cultural Surveys Hawai'i, Inc.
P.O. BOX 1114
Kailua, Hawai'i 96734

LOG NO: 2007.2522
DOC NO: 0711ED21
Archaeology

Dear Mr. Shideler:

SUBJECT: Chapter 6E-42 Historic Preservation Review – Archaeological Inventory Survey and Cultural Impact Evaluation for the Alapai Transit Center and Joint Traffic Management Center Project Honolulu Ahupua'a, Kona District, Island of O'ahu TMK: (1) 2-1-042:004 and 013

Thank you for the opportunity to comment on the aforementioned report, which we received on August 26, 2007. We apologize for the delay in responding. The aforementioned report documents the results of the archaeological inventory survey conducted between December 2006 and July 2007 for a total of approximately 17 person days. The project's area of potential effect (APE) is the 4.13 acre footprint for the proposed Alapai Transit Center (ATC) and Joint Traffic Management Center (JTMC) development. According to the report, a total of 28 test trenches were excavated. Four historic trash pits, dating between 1820 and 1920, SIHP NO. 50-80-14-6901, and three burials, SIHP No. 50-80-14-6902, were identified. Two of the three burials are historic coffin internments.

Cultural Surveys Hawai'i, Inc. (CSH) has consulted on numerous occasions with SHPD regarding this project. In previous letters dated May 24, 2007 (LOG NO: 2007.1625, DOC NO: 0705amj22) and July 5, 2007 (LOG NO: 2007.2317, DOC NO: 0707MC01), we stated that upon completion of the 9 additional test trenches provided that no significant resources were identified, we will conclude that the fieldwork portion of the project area will be complete. Therefore, given that no significant resources were identified in the nine additional trenches, we conclude that the fieldwork portion of this project is completed.

However, before we can accept this report as meeting the minimum requirements of §13-276-5, Hawai'i Administrative Rules, HAR, please address the following comments:

(1) Please revise Section 4 Previous Archaeological Research to reflect archaeological studies that were conducted in the vicinity of the project area. Only previous archaeological work that occurred northwest of the project area is presented in the report. Please include reports of other archaeological work that was conducted in the vicinity of the project area such as (but not limited to):

Anderson. 1995. *Historical Background Research, The King Street Property*. Rpt No. O-2174

Anderson. 1997. *Monitoring and Archaeological Testing Plan for the Proposed KITV 4 Underground Storage Tank Placement at One Archer Lane*. Rpt No. O-1712. According to the, report one burial was identified on the property.

Perzinski *et al*. 2006. *Archaeological Inventory Survey of the Kewalo HECO Dispatch Center*. Rpt No. O-2438. According to the report, two historic coffin burials were identified during the survey.

(2) In an interim monitoring report dated September 30, 1996 from Lisa Anderson to Kai Markell (SHPD Burial Sites Program), it states that 30 historic period burials were identified at the One Archer Lane property. It is our understanding that an archaeological monitoring report for the One Archer Lane project has not been submitted to our office. It is of our assumption that the Roman Catholic Cemetery located southeast of the project area extended west beyond its delineated boundaries. According to a letter Dated November 30, 2007 from you to Nathan Napoka, it states that the Archer Lane Burials appeared to have been an extension of the cemetery. Is it possible that the burials identified during the AIS of the subject property are a part of Roman Catholic Cemetery? Please provide information regarding the Roman Catholic Cemetery and reasoning as to whether you believe that the burials identified during the AIS may, or may not be, a part of the cemetery.

We look forward to receiving a revised archaeological inventory survey report.

Please contact Teresa Davan at (808) 692-8015 if you have any questions or concerns regarding this letter.

Aloha,

Melanie Chinen, Administrator
State Historic Preservation Division

ED:oap

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
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LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
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KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
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CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

December 7, 2007

Matt McDermott
Cultural Surveys Hawai'i, Inc.
P.O. BOX 1114
Kailua, Hawai'i 96734

LOG NO: 2007.3993
DOC NO: 0712ED04
Archaeology

Dear Mr. McDermott:

SUBJECT: Chapter 6E-8 Historic Preservation Review –
Revised Archaeological Inventory Survey and Cultural Impact Evaluation for the Alapai Transit Center and Joint Traffic Management Center Project
Honolulu Ahupua'a, Kona District, Island of O'ahu
TMK: (1) 2-1-042:004 and 013

Thank you for submitting the revised aforementioned report by O'Hare *et al* (November 2007), which we received via hand delivery on November 30, 2007. The aforementioned report documents the results of the archaeological inventory survey conducted between December 2006 and July 2007 for a total of approximately 17 person days.

In previous letters dated May 24, 2007 (LOG NO: 2007.1625, DOC NO: 0705amj22) and July 5, 2007 (LOG NO: 2007.2317, DOC NO: 0707MC01), we stated that upon completion of the 9 additional test trenches provided that no significant resources were identified, we will conclude that the fieldwork portion of the project area will be complete. Therefore, given that no significant resources were identified in the nine additional trenches, we conclude that the fieldwork portion of this project is completed.

In our previous letter dated November 20, 2007 (LOG NO: 2007.2522, DOC NO: 0711ED21), we requested two revisions to the archaeological inventory survey report. Both revisions have been made to our satisfaction; and thus, we accept this report as meeting the requirements of §13-276-5, Hawai'i Administrative Rules (HAR).

We concur with your recommendation for archaeological monitoring. We request that an archaeological monitor be present during all ground disturbing activities.

Finally, we believe that although a good faith effort was made to determine the ethnicity of the three burials identified during the archaeological survey, no ethnicity could be determined. There is no archaeological evidence or oral or written evidence available to determine the ethnicity of the burials beyond reasonable belief. Additionally, as per §13-300-31(h), where a previously identified burial site is proposed to be preserved in place, no osteological or disturbing archaeological investigations shall occur; and thus, it is unknown whether burial goods or other indicators of burial treatment indicative of a native Hawaiian burial is present. Therefore, as per §13-300-31(h)(4), Hawai'i Administrative Rules (HAR), where existing evidence fails to clarify ethnicity beyond reasonable belief, appropriate treatment of the human skeletal remains shall be determined by the department. We concur with your proposal for preservation in place of the three burials identified during the archaeological inventory survey.

We look forward to receiving an archaeological monitoring plan and a burial treatment plan for review and approval.

Please contact Teresa Davan at (808) 692-8015 if you have any questions or concerns regarding this letter.

Aloha,

Melanie Chinen, Administrator
State Historic Preservation Division

ED

APPENDIX B. AIR QUALITY ANALYSIS

Draft

AIR QUALITY STUDY

FOR THE PROPOSED

ALAPAI TRANSIT CENTER AND

JOINT TRAFFIC MANAGEMENT CENTER PROJECT

HONOLULU, OAHU, HAWAII

Prepared for:

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December 2006

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1.0 SUMMARY

The City and County of Honolulu and the State of Hawaii are proposing to develop the Alapai Transit Center and Joint Traffic Management Center Project near downtown Honolulu on Oahu. The proposed project will include a bus terminal, a multi-level office building with a parking structure, and other associated facilities on approximately 4.1 acres of land near South King Street and Alapai Street. Development of the project is expected to be completed and fully occupied by 2012. This study examines the potential short- and long-term air quality impacts that could occur as a result of construction and use of the proposed facilities and suggests mitigative measures to reduce any potential air quality impacts where possible and appropriate.

Both federal and state standards have been established to maintain ambient air quality. At the present time, seven parameters are regulated including: particulate matter, sulfur dioxide, hydrogen sulfide, nitrogen dioxide, carbon monoxide, ozone and lead. Hawaii air quality standards are comparable to the national standards except those for nitrogen dioxide and carbon monoxide which are more stringent than the national standards.

Regional and local climate together with the amount and type of human activity generally dictate the air quality of a given location. Winds are predominantly trade winds from the east or northeast. During winter, occasional storms may generate strong winds from the south (kona winds) for brief periods. When the trade winds or kona winds are weak or absent, landbreeze-seabreeze circulations may develop. Temperatures in the Oahu area leeward of the Koolaus are generally very moderate with average daily temperatures ranging from about 70°F to 84°F.

Extreme temperatures range from about 53°F to about 95°F. Rainfall is relatively low with an average of about 22 inches per year.

The present air quality of the project area appears to be reasonably good based on nearby monitoring data. Air quality data from the nearest monitoring stations operated by the Hawaii Department of Health suggest that all state and national air quality standards are currently being met, although occasional exceedances of the more stringent state standards for carbon monoxide may occur near congested roadway intersections.

If the proposed project is given the necessary approvals to proceed, it may be inevitable that some short- and/or long-term impacts on air quality will occur either directly or indirectly as a consequence of project construction and use. Short-term impacts from fugitive dust will likely occur during the project construction phase. To a lesser extent, exhaust emissions from stationary and mobile construction equipment, from the disruption of traffic, and from workers' vehicles may also affect air quality during the period of construction. State air pollution control regulations require that there be no visible fugitive dust emissions at the property line. Hence, an effective dust control plan must be implemented to ensure compliance with state regulations. Fugitive dust emissions can be controlled to a large extent by watering of active work areas, using wind screens, keeping adjacent paved roads clean, and by covering of open-bodied trucks. Other dust control measures could include limiting the area that can be disturbed at any given time and/or mulching or chemically stabilizing inactive areas that have been worked. Paving and landscaping of project areas early in the construction schedule will also reduce dust emissions. Monitoring dust at the project boundary during the period of construction could be considered as

a means to evaluate the effectiveness of the project dust control program. Exhaust emissions can be mitigated by moving construction equipment and workers to and from the project site during off-peak traffic hours.

After construction, motor vehicles coming to and from the proposed development will result in a long-term increase in air pollution emissions in the project area. To assess the impact of emissions from these vehicles, an air quality modeling study was undertaken to estimate current ambient concentrations of carbon monoxide at intersections in the project vicinity and to predict future levels both with and without the proposed project. During worst-case conditions, model results indicated that present 1-hour and 8-hour carbon monoxide concentrations are within both the state and the national ambient air quality standards. In the year 2012 without the project, carbon monoxide concentrations were predicted to decrease by about 10 to 15 percent in the project area. With the project in the year 2012, carbon monoxide concentrations were estimated to remain nearly unchanged compared to the without-project scenario, indicating that the project would have essentially no impact on air quality. Implementing mitigation measures for project traffic-related air quality impacts is probably unnecessary and unwarranted.

2.0 INTRODUCTION

The City and County of Honolulu and the State of Hawaii are proposing to develop the Alapai Transit Center and the Joint Traffic Management Center on an approximately 4.1-acre site near downtown Honolulu (see Figure 1 for project location). The project site is located adjacent to South King Street between Alapai Street and Kealamakai Street. Currently, the project site consists of a surface parking lot that serves as a bus transfer

and staging area as well as an overflow parking lot for municipal vehicles. The Alapai Transit Center will be a one-story multi-function bus terminal (approximately 3,000 square feet) that includes amenities such as public restrooms, passenger shelters and drop-off area, bus driver lounge area, ticket sales, and bus schedule display boards. The Joint Traffic Management Center will be an approximately 100,000 square-foot office building with four levels of parking. The project is expected to be completed and fully occupied by the year 2012.

The purpose of this study is to describe existing air quality in the project area and to assess the potential short- and long-term direct and indirect air quality impacts that could result from construction and use of the proposed facilities as planned. Measures to mitigate project impacts are suggested where possible and appropriate.

3.0 AMBIENT AIR QUALITY STANDARDS

Ambient concentrations of air pollution are regulated by both national and state ambient air quality standards (AAQS). National AAQS are specified in Section 40, Part 50 of the Code of Federal Regulations (CFR), while State of Hawaii AAQS are defined in Chapter 11-59 of the Hawaii Administrative Rules. Table 1 summarizes both the national and the state AAQS that are specified in the cited documents. As indicated in the table, national and state AAQS have been established for particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone and lead. The state has also set a standard for hydrogen sulfide. National AAQS are stated in terms of both primary and secondary standards for most of the regulated air pollutants. National primary standards are designed to protect the public health with an "adequate margin of safety". National secondary standards, on

the other hand, define levels of air quality necessary to protect the public welfare from "any known or anticipated adverse effects of a pollutant". Secondary public welfare impacts may include such effects as decreased visibility, diminished comfort levels, or other potential injury to the natural or man-made environment, e.g., soiling of materials, damage to vegetation or other economic damage. In contrast to the national AAQS, Hawaii State AAQS are given in terms of a single standard that is designed "to protect public health and welfare and to prevent the significant deterioration of air quality".

Each of the regulated air pollutants has the potential to create or exacerbate some form of adverse health effect or to produce environmental degradation when present in sufficiently high concentration for prolonged periods of time. The AAQS specify a maximum allowable concentration for a given air pollutant for one or more averaging times to prevent harmful effects. Averaging times vary from one hour to one year depending on the pollutant and type of exposure necessary to cause adverse effects. In the case of the short-term (i.e., 1- to 24-hour) AAQS, both national and state standards allow a specified number of exceedances each year.

The Hawaii AAQS are in some cases considerably more stringent than the comparable national AAQS. In particular, the Hawaii 1-hour AAQS for carbon monoxide is four times more stringent than the comparable national limit. The U.S. Environmental Protection Agency (EPA) is currently working on a plan to phase out the national 1-hour ozone standard in favor of the new (and more stringent) 8-hour standard.

The Hawaii AAQS for sulfur dioxide were relaxed in 1986 to make the state standards essentially the same as the national limits. In 1993, the state also revised its particulate standards to follow those set by the federal government. During 1997, the federal government again revised its standards for particulate, but the new standards were challenged in federal court. A Supreme Court ruling was issued during February 2001, and as a result, the new standards for particulate were implemented during 2005. To date, the Hawaii Department of Health has not updated the state particulate standards. In September 2001, the state vacated the state 1-hour standard for ozone and an 8-hour standard was adopted.

4.0 REGIONAL AND LOCAL CLIMATOLOGY

Regional and local climatology significantly affects the air quality of a given location. Wind, temperature, atmospheric turbulence, mixing height and rainfall all influence air quality. Although the climate of Hawaii is relatively moderate throughout most of the state, significant differences in these parameters may occur from one location to another. Most differences in regional and local climates within the state are caused by the mountainous topography.

Hawaii lies well within the belt of northeasterly trade winds generated by the semi-permanent Pacific high pressure cell to the north and east. On the island of Oahu, the Koolau and Waianae Mountain Ranges are oriented almost perpendicular to the trade winds, which accounts for much of the variation in the local climatology of the island. The site of the proposed project is a highly urbanized district within the City of Honolulu. It is located in a coastal area leeward of the Koolau Mountains. Although large urban areas may create their own microclimates to some extent, long-term weather data available from the Honolulu

International Airport, located about 4 miles to the northwest, is at least semi-representative of the project site.

Wind frequency data given in Table 2 for Honolulu International Airport show that the annual prevailing wind direction for this area of Oahu is east northeast. On an annual basis, 34.7 percent of the time the wind is from this direction, and nearly 75 percent of the time the wind is in the northeast quadrant. Winds from the south are infrequent occurring only a few days during the year and mostly in association with winter storms. Wind speeds average about 11 mph (10 knots) and mostly vary between about 4 and 18 mph (5 and 15 knots). Surface winds in the project area are similar to those recorded at the airport but are undoubtedly deviated and channeled at some locations by the many high-rise buildings.

Air pollution emissions from motor vehicles, the formation of photochemical smog and smoke plume rise all depend in part on air temperature. Colder temperatures tend to result in higher emissions of contaminants from automobiles but lower concentrations of photochemical smog and ground-level concentrations of air pollution from elevated plumes. In Hawaii, the annual and daily variation of temperature depends to a large degree on elevation above sea level, distance inland and exposure to the trade winds. Average temperatures at locations near sea level generally are warmer than those at higher elevations. Areas exposed to the trade wind tend to have the least temperature variation, while inland and leeward areas often have the most. The project site's coastal, leeward location results in a relatively moderate temperature profile compared to some other locations around Oahu and the state. At the airport, average annual daily minimum and maximum temperatures are 70°F and 84°F, respectively [1]. The extreme minimum temperature was 53°F during January 1998, and the extreme maximum was 95°F during September

1994. Temperatures in the project area may be slightly higher compared to the airport due to urban effects.

Small scale, random motions in the atmosphere (turbulence) cause air pollutants to be dispersed as a function of distance or time from the point of emission. Turbulence is caused by both mechanical and thermal forces in the atmosphere. It is often measured and described in terms of Pasquill-Gifford stability class. Stability class 1 is the most turbulent and class 6 the least. Thus, air pollution dissipates the best during stability class 1 conditions and the worst when stability class 6 prevails. In urbanized areas, stability class 4 is generally the highest stability class that occurs, developing during the nighttime and/or during cloudy daytime conditions.

Mixing height is defined as the height above the surface through which relatively vigorous vertical mixing occurs. Low mixing heights can result in high ground-level air pollution concentrations because contaminants emitted from or near the surface can become trapped within the mixing layer. In Hawaii, minimum mixing heights tend to be high because of mechanical mixing caused by the trade winds and because of the temperature moderating effect of the surrounding ocean. Low mixing heights may sometimes occur, however, at inland locations and even at times along coastal areas early in the morning following a clear, cool, windless night. Coastal areas also may experience low mixing levels during sea breeze conditions when cooler ocean air rushes in over warmer land. Mixing heights in the state typically are above 3000 feet (1000 meters). Low mixing heights in the project area will tend to be inhibited by urban effects but may occur on occasion.

Rainfall can have a beneficial affect on the air quality of an area in that it helps to suppress fugitive dust emissions, and it also may "washout" gaseous contaminants that are water soluble. Rainfall in Hawaii is highly variable depending on elevation and on location with respect to the trade wind. The downtown Honolulu area being a leeward location and near sea level experiences a relatively dry climate. Average annual rainfall amounts to about 22 inches with summer months being the driest. Monthly rainfall may vary from as little as a trace to more than 20 inches.

5.0 PRESENT AIR QUALITY

Present air quality in the project area is mostly affected by air pollutants from vehicular and industrial sources and to a lesser extent by distant natural and/or agricultural sources. Table 3 presents an air pollutant emission summary for the island of Oahu for calendar year 1993. The emission rates shown in the table pertain to manmade emissions only, i.e., emissions from natural sources are not included. As suggested in the table, much of the particulate emissions on Oahu originate from area sources, such as the mineral products industry and agriculture. Sulfur oxides are emitted almost exclusively by point sources, such as power plants and refineries. Nitrogen oxides emissions emanate predominantly from industrial point sources, although area sources (mostly motor vehicle traffic) also contribute a significant share. The majority of carbon monoxide emissions occur from area sources (motor vehicle traffic), while hydrocarbons are emitted mainly from point sources. Based on previous emission inventories that have been reported for Oahu, it appears that emissions of particulate and nitrogen oxides have increased during the past ten years, while emissions of sulfur oxides, carbon monoxide and hydrocarbons have declined.

Roadways bordering the project site, including South King Street and Alapai Street, often carry heavy volumes of motor vehicle traffic. Emissions from motor vehicles using these roadways, primarily nitrogen oxides and carbon monoxide, may affect air quality.

The nearest large industrial source of air pollution is the Honolulu Power Plant situated about 1 mile to the southwest. Emissions from Honolulu Power Plant consist primarily of sulfur dioxide and nitrogen oxides from oil-burning generator units. Due to the prevailing wind pattern in the area, it is unlikely that emissions from Honolulu Power Plant significantly impact air quality in the project area.

Natural sources of air pollution emissions that also could affect the project area but cannot be quantified very accurately include the ocean (sea spray), plants (aero-allergens), wind blown dust, and perhaps distant volcanoes on the island of Hawaii.

The State Department of Health operates a network of air quality monitoring stations at various locations on Oahu. Each station, however, typically does not monitor the full complement of air quality parameters. Table 4 shows annual summaries of air quality measurements that were made nearest to the project site for each of the regulated air pollutants for the period 2001 through 2005. These are the most recent data that are currently available.

During the 2001-2005 period, sulfur dioxide was monitored by the State Department of Health at an air quality station located at downtown Honolulu. Concentrations monitored were consistently low compared to the standards. Annual second-highest 3-hour

concentrations (which are most relevant to the air quality standards) ranged from 27 to 57 $\mu g/m^3$, while the annual second-highest 24-hour concentrations ranged from 8 to 20 $\mu g/m^3$. Annual average concentrations were only about 1 to 3 $\mu g/m^3$. There were no exceedances of the state/national 3-hour or 24-hour AAQS for sulfur dioxide during the 5-year period.

Particulate matter less than 10 microns in diameter (PM-10) is also measured at the downtown Honolulu monitoring station. Annual second-highest 24-hour PM-10 concentrations ranged from 10 to 33 $\mu g/m^3$ between 2001 and 2005. Average annual concentrations ranged from 4 to 16 $\mu g/m^3$. All values reported were within the state and national AAQS.

Carbon monoxide measurements were also made at the downtown Honolulu monitoring station. The annual second-highest 1-hour concentrations ranged from 2.6 to 4.4 mg/m^3. The annual second-highest 8-hour concentrations ranged from 1.4 to 1.6 mg/m^3. No exceedances of the state or national 1-hour or 8-hour AAQS were reported.

The nearest station for measuring nitrogen dioxide is at Kapolei, which is several miles to the west of the project area. Annual average concentrations of this pollutant ranged from 8 to 9 $\mu g/m^3$, safely inside the state and national AAQS.

The nearest available ozone measurements were obtained at Sand Island (about 1.5 miles southwest of the project area). The second-highest 8-hour concentrations for the period 2002 through

2005 ranged between 77 and 108 $\mu g/m^3$, which is well inside the state and federal standards. The 8-hour standard for ozone did not exist prior to 2002. Prior to 2002, the now obsolete state 1-hour standard was typically exceeded several times each year.

Although not shown in the table, the nearest and most recent measurements of ambient lead concentrations that have been reported were made at the downtown Honolulu monitoring station between 1996 and 1997. Average quarterly concentrations were near or below the detection limit, and no exceedances of the state AAQS were recorded. Monitoring for this parameter was discontinued during 1997.

Based on the data and discussion presented above, it appears likely that the State of Hawaii AAQS for sulfur dioxide, nitrogen dioxide, particulate matter, ozone and lead are currently being met at the project site. While carbon monoxide measurements at the downtown Honolulu monitoring station suggest that concentrations are within the state and national standards, local "hot spots" may exist near traffic-congested intersections. The potential for this within the project area is examined later in this report.

6.0 SHORT-TERM IMPACTS OF PROJECT

Short-term direct and indirect impacts on air quality could potentially occur due to project construction. For a project of this nature, there are two potential types of air pollution emissions that could directly result in short-term air quality impacts during project construction: (1) fugitive dust from vehicle movement and soil excavation; and (2) exhaust emissions from on-site construction equipment. Indirectly, there also

could be short-term impacts from slow-moving construction equipment traveling to and from the project site, from a temporary increase in local traffic caused by commuting construction workers, and from the disruption of normal traffic flow caused by lane closures of adjacent roadways.

Fugitive dust emissions may arise from the grading and dirt-moving activities associated with site clearing and preparation work. The emission rate for fugitive dust emissions from construction activities is difficult to estimate accurately. This is because of its elusive nature of emission and because the potential for its generation varies greatly depending upon the type of soil at the construction site, the amount and type of dirt-disturbing activity taking place, the moisture content of exposed soil in work areas, and the wind speed. The EPA [2] has provided a rough estimate for uncontrolled fugitive dust emissions from construction activity of 1.2 tons per acre per month under conditions of "medium" activity, moderate soil silt content (30%), and precipitation/evaporation (P/E) index of 50. Uncontrolled fugitive dust emissions at the project site would likely be somewhere near that level, depending on the amount of rainfall that occurs. In any case, State of Hawaii Air Pollution Control Regulations [3] prohibit visible emissions of fugitive dust from construction activities at the property line. Thus, an effective dust control plan for the project construction phase is essential.

Adequate fugitive dust control can usually be accomplished by the establishment of a frequent watering program to keep bare-dirt surfaces in construction areas from becoming significant sources of dust. In dust-prone or dust-sensitive areas, other control measures such as limiting the area that can be disturbed at any given time, applying chemical soil stabilizers, mulching and/or using wind screens may be necessary. Control regulations further

stipulate that open-bodied trucks be covered at all times when in motion if they are transporting materials that could be blown away. Haul trucks tracking dirt onto paved streets from unpaved areas is often a significant source of dust in construction areas. Some means to alleviate this problem, such as road cleaning or tire washing, may be appropriate. Paving of parking areas and/or establishment of landscaping as early in the construction schedule as possible can also lower the potential for fugitive dust emissions. Monitoring dust at the project property line could be considered to quantify and document the effectiveness of dust control measures.

On-site mobile and stationary construction equipment also will emit air pollutants from engine exhausts. The largest of this equipment is usually diesel-powered. Nitrogen oxides emissions from diesel engines can be relatively high compared to gasoline-powered equipment, but the standard for nitrogen dioxide is set on an annual basis and is not likely to be violated by short-term construction equipment emissions. Carbon monoxide emissions from diesel engines, on the other hand, are low and should be relatively insignificant compared to vehicular emissions on nearby roadways.

Project construction activities will also likely obstruct the normal flow of traffic at times to such an extent that overall vehicular emissions in the project area will temporarily increase. The only means to alleviate this problem will be to attempt to keep roadways open during peak traffic hours and to move heavy construction equipment and workers to and from construction areas during periods of low traffic volume. Thus, most potential short-term air quality impacts from project construction can be mitigated.

7.0 LONG-TERM IMPACTS OF PROJECT

After construction is completed, use of the proposed facilities will result in increased motor vehicle traffic in the project area, potentially causing long-term impacts on ambient air quality. Motor vehicles with gasoline-powered engines are significant sources of carbon monoxide. They also emit nitrogen oxides and other contaminates.

Federal air pollution control regulations require that new motor vehicles be equipped with emission control devices that reduce emissions significantly compared to a few years ago. In 1990, the President signed into law the Clean Air Act Amendments. This legislation requires further emission reductions, which have been phased in since 1994. More recently, additional restrictions were signed into law during the Clinton administration, which will begin to take effect during the next decade. The added restrictions on emissions from new motor vehicles will lower average emissions each year as more and more older vehicles leave the state's roadways. It is estimated that carbon monoxide emissions, for example, will go down by an average of about 30 to 40 percent per vehicle during the next 10 years due to the replacement of older vehicles with newer models.

To evaluate the potential long-term indirect ambient air quality impact of increased roadway traffic associated with a project such as this, computerized emission and atmospheric dispersion models can be used to estimate ambient carbon monoxide concentrations along roadways leading to and from the project. Carbon monoxide is selected for modeling because it is both the most stable and the most abundant of the pollutants generated by motor vehicles. Furthermore, carbon monoxide air pollution is generally considered

to be a microscale problem that can be addressed locally to some extent, whereas nitrogen oxides air pollution most often is a regional issue that cannot be addressed by a single new development.

For this project, three scenarios were selected for the carbon monoxide modeling study: (1) year 2006 with present conditions, (2) year 2012 without the project, and (3) year 2012 with the project. To begin the modeling study of the three scenarios, critical receptor areas in the vicinity of the project were identified for analysis. Generally speaking, roadway intersections are the primary concern because of traffic congestion and because of the increase in vehicular emissions associated with traffic queuing. For this study, several of the key intersections identified in the traffic study were also selected for air quality analysis. These included the following intersections:

- South King Street at Alapai Street
- South King Street at Kealamakai Street
- South Beretania Street at Alapai Street
- South Beretania Street at Hale Makai Street

The traffic impact report for the project [4] describes the projected future traffic conditions and laneage configurations of these intersections in detail. In performing the air quality impact analysis, it was assumed that any recommended traffic mitigation measures would be implemented.

The main objective of the modeling study was to estimate maximum 1-hour average carbon monoxide concentrations for each of the three scenarios studied. To evaluate the significance of the

estimated concentrations, a comparison of the predicted values for each scenario can be made. Comparison of the estimated values to the national and state AAQS was also used to provide another measure of significance.

Maximum carbon monoxide concentrations typically coincide with peak traffic periods. The traffic impact assessment report evaluated morning and afternoon peak traffic periods. These same periods were evaluated in the air quality impact assessment.

The EPA computer model MOBILE6 [5] was used to calculate vehicular carbon monoxide emissions for each year studied. One of the key inputs to MOBILE6 is vehicle mix. Unless very detailed information is available, national average values are typically assumed, which is what was used for the present study. Based on national average vehicle mix figures, the present vehicle mix in the project area was estimated to be 40.9% light-duty gasoline-powered automobiles, 46.2% light-duty gasoline-powered trucks and vans, 3.6% heavy-duty gasoline-powered vehicles, 0.2% light-duty diesel-powered vehicles, 8.5% heavy-duty diesel-powered trucks and buses, and 0.6% motorcycles. For the future scenarios studied, the vehicle mix was estimated to change slightly with fewer light-duty gasoline-powered automobiles and more light-duty gasoline-powered trucks and vans.

Ambient temperatures of 59 and 68 degrees F were used for morning and afternoon peak-hour emission computations, respectively. These are conservative assumptions since morning/afternoon ambient temperatures will generally be warmer than this, and emission estimates given by MOBILE6 generally have an inverse relationship to the ambient temperature.

After computing vehicular carbon monoxide emissions through the use of MOBILE6, these data were then input to an atmospheric dispersion model. EPA air quality modeling guidelines [6] currently recommend that the computer model CAL3QHC [7] be used to assess carbon monoxide concentrations at roadway intersections, or in areas where its use has previously been established, CALINE4 [8] may be used. Until a few years ago, CALINE4 was used extensively in Hawaii to assess air quality impacts at roadway intersections. In December 1997, the California Department of Transportation recommended that the intersection mode of CALINE4 no longer be used because it was thought the model has become outdated. Studies have shown that CALINE4 may tend to over-predict maximum concentrations in some situations. Therefore, CAL3QHC was used for the subject analysis.

CAL3QHC was developed for the U.S. EPA to simulate vehicular movement, vehicle queuing and atmospheric dispersion of vehicular emissions near roadway intersections. It is designed to predict 1-hour average pollutant concentrations near roadway intersections based on input traffic and emission data, roadway/receptor geometry and meteorological conditions.

Although CAL3QHC is intended primarily for use in assessing atmospheric dispersion near signalized roadway intersections, it can also be used to evaluate unsignalized intersections. This is accomplished by manually estimating queue lengths and then applying the same techniques used by the model for signalized intersections. Currently, one of the study intersections is unsignalized, South King Street at Kealamakai Street. For the future with- and without-project scenarios, in accordance with

the traffic report, this intersection was assumed to remain unsignalized.

Input peak-hour traffic data were obtained from the traffic study cited previously. This included vehicle approach volumes, saturation capacity estimates, intersection laneage and signal timings (where applicable). All emission factors that were input to CAL3QHC for free-flow traffic on roadways were obtained from MOBILE6 based on assumed free-flow vehicle speeds corresponding to the posted speed limits (25 to 30 mph depending on location).

Model roadways were set up to reflect roadway geometry, physical dimensions and operating characteristics. Concentrations predicted by air quality models generally are not considered valid within the roadway-mixing zone. The roadway-mixing zone is usually taken to include 3 meters on either side of the traveled portion of the roadway and the turbulent area within 10 meters of a cross street. Model receptor sites were thus located at the edges of the mixing zones near all intersections that were studied for all three scenarios. This implies that pedestrian sidewalks either already exist or are assumed to exist in the future. All receptor heights were placed at 1.8 meters above ground to simulate levels within the normal human breathing zone.

Input meteorological conditions for this study were defined to provide "worst-case" results. One of the key meteorological inputs is atmospheric stability category. For these analyses, atmospheric stability category 4 was assumed for both the morning and the afternoon cases. This is the most conservative stability category that is generally used for estimating worst-case pollutant dispersion within urban areas for these periods. A surface roughness length of 100 cm and a mixing height of 1000

meters were used in all cases. Worst-case wind conditions were defined as a wind speed of 1 meter per second with a wind direction resulting in the highest predicted concentration. Concentration estimates were calculated at wind directions of every 5 degrees.

Existing background concentrations of carbon monoxide in the project vicinity are believed to be at moderate to low levels. Thus, background contributions of carbon monoxide from sources or roadways not directly considered in the analysis were accounted for by adding a background concentration of 1.0 ppm to all predicted concentrations for 2006. Although increased traffic is expected to occur within the project area during the next several years with or without the project, background carbon monoxide concentrations may not change significantly since individual emissions from motor vehicles are forecast to decrease with time. Hence, a background value of 1.0 ppm was assumed to persist for the future scenarios studied.

Predicted Worst-Case 1-Hour Concentrations

Table 5 summarizes the final results of the modeling study in the form of the estimated worst-case 1-hour morning and afternoon ambient carbon monoxide concentrations. These results can be compared directly to the state and the national AAQS. Estimated worst-case carbon monoxide concentrations are presented in the table for three scenarios: year 2006 with existing traffic, year 2012 without the project and year 2012 with the project. The locations of these estimated worst-case 1-hour concentrations all occurred at or very near the indicated intersections.

As indicated in the table, the highest estimated 1-hour concentration within the project vicinity for the present (2006) case was 7.1 mg/m^3. This was projected to occur during the morning peak traffic hour near the intersection of South Beretania Street and Alapai Street. The next highest concentration, 6.9 mg/m^3, occurred during the afternoon peak traffic period at the intersection of South King Street and Alapai Street. Concentrations at other locations and times studied were 6.4 mg/m^3 or lower. All predicted worst-case 1-hour concentrations for the 2006 scenario were within both the national AAQS of 40 mg/m^3 and the state standard of 10 mg/m^3.

In the year 2012 without the proposed project, the highest worst-case 1-hour concentration was again predicted to occur during the morning at the intersection of South Beretania Street and Alapai Street. A value of 6.3 mg/m^3 was predicted to occur at this location and time. Peak-hour worst-case values at the other locations and times studied for the 2012 without project scenario ranged between 3.3 and 6.0 mg/m^3. Compared to the existing case, concentrations decreased by about 10 to 15 percent. All projected worst-case concentrations for this scenario remained within the state and national standards.

In the year 2012 with the proposed project, the predicted highest worst-case 1-hour concentration continued to occur during the morning at the intersection of South Beretania Street and Alapai Street. Concentrations at the intersections studied remained nearly unchanged compared to the without-project scenario except for a very slight increase along South Beretania Street. All values remained within the state and federal standards.

Predicted Worst-Case 8-Hour Concentrations

Worst-case 8-hour carbon monoxide concentrations were estimated by multiplying the worst-case 1-hour values by a persistence factor of 0.5. This accounts for two factors: (1) traffic volumes averaged over eight hours are lower than peak 1-hour values, and (2) meteorological conditions are more variable (and hence more favorable for dispersion) over an 8-hour period than they are for a single hour. Based on monitoring data, 1-hour to 8-hour persistence factors for most locations generally vary from 0.4 to 0.8 with 0.6 being the most typical. One study based on modeling [9] concluded that 1-hour to 8-hour persistence factors could typically be expected to range from 0.4 to 0.5. EPA guidelines [10] recommend using a value of 0.7 unless a locally derived persistence factor is available. Recent monitoring data for locations on Oahu reported by the Department of Health [11] suggest that this factor may range between about 0.2 and 0.6 depending on location and traffic variability. Considering the location of the project and the traffic pattern for the area, a 1-hour to 8-hour persistence factor of 0.5 will likely yield reasonable estimates of worst-case 8-hour concentrations.

The resulting estimated worst-case 8-hour concentrations are indicated in Table 6. For the 2006 scenario, the estimated worst-case 8-hour carbon monoxide concentrations for the four locations studied ranged from 2.2 mg/m^3 at the South King Street/Kealamakai Street intersection to 3.6 mg/m^3 at the South Beretania Street/Alapai Street intersection. The estimated worst-case concentrations for the existing case were within both the state standard of 5 mg/m^3 and the national limit of 10 mg/m^3.

For the year 2012 without project scenario, worst-case concentrations ranged between 2.0 and 3.2 mg/m^3, with the highest

concentration occurring at South Beretania Street and Alapai Street. All predicted concentrations remained within the standards.

For the 2012 with project scenario, worst-case concentrations remained nearly unchanged compared to the without project case. All predicted 8-hour concentrations for this scenario were within both the national and the state AAQS.

Conservativeness of Estimates

The results of this study reflect several assumptions that were made concerning both traffic movement and worst-case meteorological conditions. One such assumption concerning worst-case meteorological conditions is that a wind speed of 1 meter per second with a steady direction for 1 hour will occur. A steady wind of 1 meter per second blowing from a single direction for an hour is extremely unlikely and may occur only once a year or less. With wind speeds of 2 meters per second, for example, computed carbon monoxide concentrations would be only about half the values given above. The 8-hour estimates are also conservative in that it is unlikely that anyone would occupy the assumed receptor sites (within 3 m of the roadways) for a period of 8 hours.

8.0 CONCLUSIONS AND RECOMMENDATIONS

The major potential short-term air quality impact of the project will occur from the emission of fugitive dust during construction. Uncontrolled fugitive dust emissions from construction activities are estimated to amount to about 1.2 tons per acre per month, depending on rainfall. To control dust, active work areas and any temporary unpaved work roads should be watered at least twice

daily on days without rainfall. Use of wind screens and/or limiting the area that is disturbed at any given time will also help to contain fugitive dust emissions. Wind erosion of inactive areas of the site that have been disturbed could be controlled by mulching or by the use of chemical soil stabilizers. Dirt-hauling trucks should be covered when traveling on roadways to prevent windage. A routine road cleaning and/or tire washing program will also help to reduce fugitive dust emissions that may occur as a result of trucks tracking dirt onto paved roadways in the project area. Paving of parking areas and establishment of landscaping early in the construction schedule will also help to control dust. Monitoring dust at the project boundary during the period of construction could be considered as a means to evaluate the effectiveness of the project dust control program and to adjust the program if necessary.

During construction phases, emissions from engine exhausts (primarily consisting of carbon monoxide and nitrogen oxides) will also occur both from on-site construction equipment and from vehicles used by construction workers and from trucks traveling to and from the project. Increased vehicular emissions due to disruption of traffic by construction equipment and/or commuting construction workers can be alleviated by moving equipment and personnel to the site during off-peak traffic hours.

After construction of the proposed project is completed and it is fully occupied, carbon monoxide concentrations in the project area should remain nearly unchanged compared to the without project case and will likely decrease by about 10 to 15 percent compared to the existing case. Worst-case concentrations should remain within both the state and the national ambient air quality standards. Implementing any air quality mitigation measures for

long-term traffic-related impacts is probably unnecessary and unwarranted.

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1. "Climatic Summary of the United States, Supplement for 1951 through 1960, Hawaii and Pacific", U.S. Department of Commerce, Weather Bureau, Washington, D.C., 1965.

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3. State of Hawaii. Hawaii Administrative Rules, Chapter 11-60, Air Pollution Control.

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5. User's Guide to MOBILE6.0, Mobile Source Emission Factor Model, U.S. Environmental Protection Agency, Office of Transportation and Air Quality, Assessment and Standards Division, Ann Arbor, Michigan, January 2002.

6. Guideline on Air Quality Models (Revised), Including Supplements A and B, EPA-450/2-78-027R, U.S. Environmental Protection Agency, Research Triangle Park, NC, July 1986.

7. User's Guide to CAL3QHC Version 2.0: A Modeling Methodology for Predicting Pollutant Concentrations Near Roadway Intersections, U.S. Environmental Protection Agency, November 1992.

8. CALINE4 - A Dispersion Model for Predicting Air Pollutant Concentrations Near Roadways, FHWA/CA/TL-84/15, California State Department of Transportation, November 1984 with June 1989 Revisions.

9. "Persistence Factors for Mobile Source (Roadway) Carbon Monoxide Modeling", C. David Cooper, Journal of the Air & Waste Management Association, Volume 39, Number 5, May 1989.

10. Guideline for Modeling Carbon Monoxide from Roadway Intersections, U.S. Environmental Protection Agency, EPA-454/R-92-005, November 1992.

11. Annual Summaries, Hawaii Air Quality Data, 2001-2005, State of Hawaii Department of Health.

Figure 1 - Project Location

Table 1

SUMMARY OF STATE OF HAWAII AND NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Units	Averaging Time	Maximum Allowable Concentration		
			National Primary	National Secondary	State of Hawaii
Particulate Matter (<10 microns)	$\mu g/m^3$	Annual 24 Hours	50[a] 150[b]	50[a] 150[b]	50 150[c]
Particulate Matter (<2.5 microns)	$\mu g/m^3$	Annual 24 Hours	15[a] 65[d]	15[a] 65[d]	- -
Sulfur Dioxide	$\mu g/m^3$	Annual 24 Hours 3 Hours	80 365[c] -	- - 1300[c]	80 365[c] 1300[c]
Nitrogen Dioxide	$\mu g/m^3$	Annual	100	100	70
Carbon Monoxide	mg/m^3	8 Hours 1 Hour	10[c] 40[c]	- -	5[c] 10[c]
Ozone	$\mu g/m^3$	8 Hours 1 Hour	157[e] 235[f]	157[e] 235[f]	157[e] -
Lead	$\mu g/m^3$	Calendar Quarter	1.5	1.5	1.5
Hydrogen Sulfide	$\mu g/m^3$	1 Hour	-	-	35[c]

[a] Three-year average of annual arithmetic mean.

[b] 99th percentile value averaged over three years.

[c] Not to be exceeded more than once per year.

[d] 98th percentile value averaged over three years.

[e] Three-year average of fourth-highest daily 8-hour maximum.

[f] Standard is attained when the expected number of exceedances is less than or equal to 1.

Table 2

ANNUAL WIND FREQUENCY FOR HONOLULU INTERNATIONAL AIRPORT (%)

Wind Direction	Wind Speed (knots)									Total
	0-3	4-6	7-10	11-16	17-21	22-27	28-33	34-40	>40	
N	0.5	2.5	1.3	0.5	0.0	0.0	0.0	0.0	0.0	4.8
NNE	0.3	1.2	1.6	1.5	0.2	0.0	0.0	0.0	0.0	4.7
NE	0.3	2.1	6.1	11.0	3.2	0.3	0.0	0.0	0.0	23.0
ENE	0.2	2.5	10.9	16.6	4.1	0.3	0.0	0.0	0.0	34.7
E	0.1	1.0	2.5	2.8	0.5	0.0	0.0	0.0	0.0	7.0
ESE	0.0	0.3	0.4	0.3	0.0	0.0	0.0	0.0	0.0	1.1
SE	0.0	0.3	0.8	1.0	0.1	0.0	0.0	0.0	0.0	2.2
SSE	0.1	0.4	1.2	0.7	0.1	0.0	0.0	0.0	0.0	2.4
S	0.1	0.5	1.4	0.6	0.1	0.0	0.0	0.0	0.0	2.7
SSW	0.0	0.3	0.8	0.3	0.0	0.0	0.0	0.0	0.0	1.5
SW	0.0	0.2	0.8	0.4	0.0	0.0	0.0	0.0	0.0	1.5
WSW	0.0	0.3	0.5	0.4	0.0	0.0	0.0	0.0	0.0	1.2
W	0.1	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.1
WNW	0.2	1.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	2.0
NW	0.4	2.3	0.8	0.1	0.0	0.0	0.0	0.0	0.0	3.8
NNW	0.5	2.3	0.8	0.2	0.0	0.0	0.0	0.0	0.0	3.8
Calm	2.5									2.5
Total	5.4	18.3	30.6	36.5	8.5	0.7	0.0	0.0	0.0	100.0

Source: Climatography of the United States No. 90 (1965-1974), Airport Climatological Summary, Honolulu International Airport, Honolulu, Hawaii, U.S. Department of Commerce, National Climatic Center, Asheville, NC, August 1978.

Table 3

AIR POLLUTION EMISSIONS INVENTORY FOR ISLAND OF OAHU, 1993

Air Pollutant	Point Sources (tons/year)	Area Sources (tons/year)	Total (tons/year)
Particulate	25,891	49,374	75,265
Sulfur Oxides	39,230	nil	39,230
Nitrogen Oxides	92,436	31,141	123,577
Carbon Monoxide	28,757	121,802	150,559
Hydrocarbons	4,160	421	4,581

Source: Final Report, "Review, Revise and Update of the Hawaii Emissions Inventory Systems for the State of Hawaii", prepared for Hawaii Department of Health by J.L. Shoemaker & Associates, Inc., 1996

Table 4

ANNUAL SUMMARIES OF AIR QUALITY MEASUREMENTS FOR MONITORING STATIONS NEAREST ALAPAI TRANSIT CENTER AND JOINT TRANSPORTATION CENTER PROJECT

Parameter / Location	2001	2002	2003	2004	2005
Sulfur Dioxide / Downtown Honolulu					
3-Hour Averaging Period:					
No. of Samples	2767	2830	2612	2889	1483
Highest Concentration ($\mu g/m^3$)	45	30	67	56	75
2nd Highest Concentration ($\mu g/m^3$)	44	27	50	46	57
No. of State AAQS Exceedances	0	0	0	0	0
24-Hour Averaging Period:					
No. of Samples	347	363	330	364	187
Highest Concentration ($\mu g/m^3$)	25	9	17	25	23
2nd Highest Concentration ($\mu g/m^3$)	20	8	16	13	18
No. of State AAQS Exceedances	0	0	0	0	0
Annual Average Concentration ($\mu g/m^3$)	2	3	1	1	1
Particulate (PM-10) / Downtown Honolulu					
24-Hour Averaging Period:					
No. of Samples	365	348	359	352	173
Highest Concentration ($\mu g/m^3$)	63	53	20	10	64
2nd Highest Concentration ($\mu g/m^3$)	33	28	10	10	28
No. of State AAQS Exceedances	0	0	0	0	0
Annual Average Concentration ($\mu g/m^3$)	16	4	4	4	15
Carbon Monoxide / Downtown Honolulu					
1-Hour Averaging Period:					
No. of Samples	8665	8628	7820	8673	4197
Highest Concentration (mg/m^3)	5.2	4.0	2.8	2.7	3.9
2nd Highest Concentration (mg/m^3)	4.4	3.5	2.6	2.7	3.1
No. of State AAQS Exceedances	0	0	0	0	0
8-Hour Averaging Period:					
No. of Samples	n/a	n/a	7821	8684	4180
Highest Concentration (mg/m^3)	2.2	1.6	1.5	1.5	1.6
2nd Highest Concentration (mg/m^3)	1.4	1.5	1.5	1.5	1.6
No. of State AAQS Exceedances	0	0	0	0	0
Nitrogen Dioxide / Kapolei					
Annual Average Concentration ($\mu g/m^3$)	8	9	9	9	9
Ozone / Sand Island					
8-Hour Averaging Period:					
No. of Samples	-	8549	8641	8474	8670
Highest Concentration (mg/m^3)	-	89	79	110	92
2nd Highest Concentration (mg/m^3)	-	88	77	108	92
No. of State AAQS Exceedances	-	0	0	0	0

Source: State of Hawaii Department of Health, "Annual Summaries, Hawaii Air Quality Data, 2001 - 2005"

Table 5

ESTIMATED WORST-CASE 1-HOUR CARBON MONOXIDE CONCENTRATIONS ALONG ROADWAYS NEAR ALAPAI TRANSIT CENTER AND JOINT TRAFFIC MANAGEMENT CENTER PROJECT (milligrams per cubic meter)

Roadway Intersection	Year/Scenario					
	2006/Present		2012/Without Project		2012/With Project	
	AM	PM	AM	PM	AM	PM
South King Street at Alapai Street	6.1	6.9	5.2	6.0	5.2	6.0
South King Street at Kealamakai Street	3.7	4.4	3.3	4.0	3.3	4.0
South Beretania Street at Alapai Street	7.1	6.3	6.3	5.4	6.3	5.5
South Beretania Street at Hale Makai Street	6.4	5.6	5.6	4.8	5.8	5.0

Hawaii State AAQS: 10
National AAQS: 40

Table 6

ESTIMATED WORST-CASE 8-HOUR CARBON MONOXIDE CONCENTRATIONS ALONG ROADWAYS NEAR ALAPAI TRANSIT CENTER AND JOINT TRAFFIC MANAGEMENT CENTER PROJECT (milligrams per cubic meter)

Roadway Intersection	Year/Scenario		
	2006/Present	2012/Without Project	2012/With Project
South King Street at Alapai Street	3.4	3.0	3.0
South King Street at Kealamakai Street	2.2	2.0	2.0
South Beretania Street at Alapai Street	3.6	3.2	3.2
South Beretania Street at Hale Makai Street	3.2	2.8	2.9

Hawaii State AAQS: 5
National AAQS: 10

APPENDIX C. AIR QUALITY ANALYSIS SUPPLEMENTAL LETTER

B.D. NEAL & ASSOCIATES

Applied Meteorology • Air Quality • Computer Science

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March 14, 2007

Ms. Rachel Shaak
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813

RECEIVED
MAR 21 2007
GROUP 70 INT'L

Subject: Alapai Transit Center and Joint Traffic Management Center Project Supplemental Air Quality Analysis

Dear Ms. Shaak:

In accordance with your request, I have reviewed the changes in the traffic study for the subject project related to increasing the office space from 100,000 square feet to 160,000 square feet. Based on the letter from Ms. Cathy Leong of Wilson Okamoto Corporation dated March 6, 2007 to Mr. Pepito Galvez of Group 70 International, it appears that this will result in only very minor increases in project traffic volumes. I have reviewed this in the context of the air quality study for the project and conclude that this would result in only very minor increases in the estimated carbon monoxides concentrations. The conclusions in the air quality study would not change. With or without the increased office space, air quality standards should be met in the project area with or without the project through the year 2012.

Please contact me if you have any questions or require further information.

Very truly yours,

Barry D. Neal

Barry D. Neal
Certified Consulting
Meteorologist

APPENDIX D. ACOUSTIC STUDY FOR THE JOINT ALAPAI TRANSIT CENTER AND JOINT TRAFFIC MANAGEMENT CENTER

ACOUSTIC STUDY FOR THE ALAPAI TRANSIT CENTER AND JOINT TRAFFIC MANAGEMENT CENTER HONOLULU, HAWAII

Prepared for:

GROUP 70 INTERNATIONAL, INC.

Prepared by:

Y. EBISU & ASSOCIATES
1126 12th Avenue, Room 305
Honolulu, Hawaii 96816

APRIL 2007

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CHAPTER I. SUMMARY

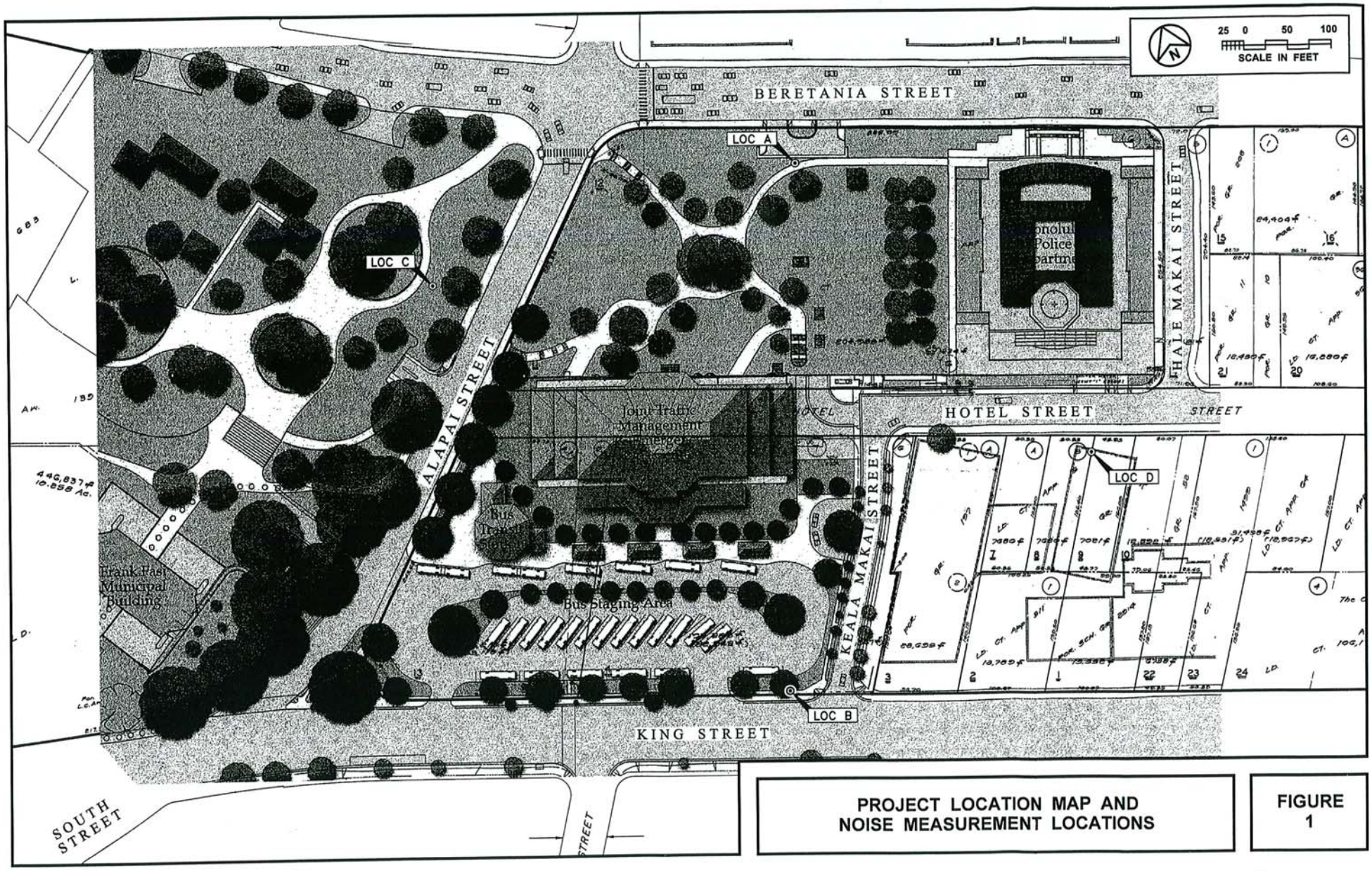
The existing and future traffic noise levels in the vicinity of the proposed Alapai Transit Center and Joint Traffic Management Center Project in Honolulu (see Figure 1) were evaluated for their potential noise impacts and their relationship to current FHA/HUD (Federal Housing Administration/Housing and Urban Development) noise standards. The traffic noise level increases along the major access roadways to and from the project site were calculated. No significant increases in traffic noise are predicted to occur along streets servicing the project site as a result of project traffic following project build-out by CY 2012. Traffic noise from South King Street, Alapai Street, South Street, and South Beretania Street will continue to control background ambient noise levels in the project environs, with traffic noise levels exceeding 65 DNL (Day-Night Average Sound Level) at the Rights-of-Way along these roadways.

Project traffic will add less than 0.0 to 0.2 DNL units of noise along the high noise roadways such as South King Street, Alapai Street, South Street, and South Beretania Street. The increases in future traffic noise levels resulting from project generated traffic are not considered to be significant, and risks of adverse noise impacts from project traffic are considered to be low.

Larger increases in traffic noise levels of 0.6 to 0.7 DNL are predicted to occur along South King Street, Alapai Street, South Street, and South Beretania Street as a result of the increases in non-project traffic by CY 2012. These increases are expected to occur with or without the proposed project, are not considered to be significant, and will be difficult to perceive between 2006 and 2012.

The largest increases in traffic noise levels of 1.0 to 1.6 DNL are predicted to occur along Kealamakai Street, Hotel Street, and Hale Makai Street, and primarily as a result of project traffic. However, since existing traffic noise levels along these roadways are relatively low, these increases should not cause future traffic noise levels to exceed noise impact criteria.

Unavoidable, but temporary, noise impacts may occur during the construction activities within the project area, and particularly during the excavation activities on the project site. Because construction activities are predicted to be audible within the project site and at adjoining properties, the quality of the acoustic environment may be degraded to unacceptable levels during periods of construction. Mitigation measures to reduce construction noise to inaudible levels will not be practical in all cases, but the use of quiet equipment is recommended as a standard mitigation measure. The implementation of Hawaii State Department of Health permit procedures and curfew periods for construction activities is also expected for this project.



PROJECT LOCATION MAP AND NOISE MEASUREMENT LOCATIONS

FIGURE 1

CHAPTER II. PURPOSE

The primary objective of this study was to describe the existing and future noise environment in the environs of the proposed Alapai Transit Center and Joint Traffic Management Center Project in Honolulu on the island of Oahu. Traffic noise level increases and impacts associated with the proposed development were to be determined along the public roadways which are expected to service the project related traffic. A specific objective was to determine future traffic noise level increases associated with both project and non-project traffic, and the potential noise impacts associated with these increases.

Potential noise impacts from the activities associated with the new Joint Traffic Management & Emergency Ops Center building were also evaluated. Potential noise impacts associated with future traffic noise levels at the new building were also evaluated. Assessments of possible future impacts from short term construction noise at the project site were also included as noise study objectives. Recommendations for minimizing identified noise impacts were also to be provided as required.

CHAPTER III. NOISE DESCRIPTORS AND THEIR RELATIONSHIP TO LAND USE COMPATIBILITY

The noise descriptor currently used by federal agencies (such as FHA/HUD) to assess environmental noise is the Day-Night Average Sound Level (Ldn or DNL). This descriptor incorporates a 24-hour average of instantaneous A-Weighted Sound Levels as read on a standard Sound Level Meter. By definition, the minimum averaging period for the DNL descriptor is 24 hours. Additionally, sound levels which occur during the nighttime hours of 10:00 PM to 7:00 AM are increased by 10 decibels (dB) prior to computing the 24-hour average by the DNL descriptor. A more complete list of noise descriptors is provided in Appendix B to this report.

Table 1, derived from Reference 1, presents current federal noise standards and acceptability criteria for residential land uses. Land use compatibility guidelines for various levels of environmental noise as measured by the DNL descriptor system are shown in Figure 2. As a general rule, noise levels of 55 DNL or less occur in rural areas, or in areas which are removed from high volume roadways. In urbanized areas which are shielded from high volume streets, DNL levels generally range from 55 to 65 DNL, and are usually controlled by motor vehicle traffic noise. Residences which front major roadways are generally exposed to levels of 65 DNL, and as high as 75 DNL when the roadway is a high speed freeway.

In the project area, traffic noise levels associated with South King Street, Alapai Street, South Street, and South Beretania Street are greater than 65 DNL along their Rights-of-Way due to the large volumes of traffic and heavy vehicles (trucks and buses) on those major thoroughfares. Adding to the traffic noise from the roadways are the noise levels of bus movements at the Alapai Transit Center.

For purposes of determining noise acceptability for funding assistance from federal agencies [FHA/HUD and VA (Veterans Administration)], an exterior noise level of 65 DNL or less is considered acceptable for residences. This standard is applied nationally (Reference 2), including Hawaii. Because of our open-living conditions, the predominant use of naturally ventilated dwellings, and the relatively low exterior-to-interior sound attenuation afforded by these naturally ventilated structures, an exterior noise level of 65 DNL does not eliminate all risks of noise impacts. Because of these factors, and as recommended in Reference 3, a lower level of 55 DNL is considered as the "Unconditionally Acceptable" (or "Near-Zero Risk") level of exterior noise. However, after considering the cost and feasibility of applying the lower level of 55 DNL, government agencies such as FHA/HUD and VA have selected 65 DNL as a more appropriate regulatory standard.

For commercial, industrial, and other non-noise sensitive land uses, exterior noise levels as high as 75 DNL are generally considered acceptable. Exceptions to this

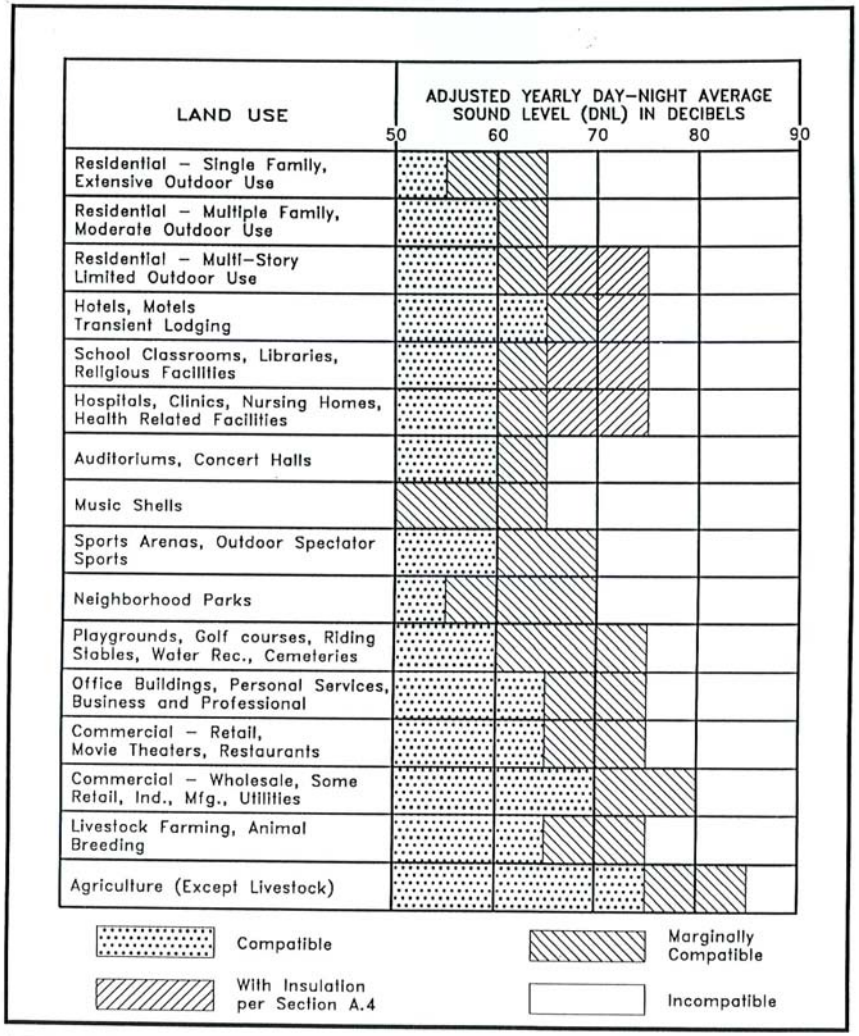
TABLE 1

EXTERIOR NOISE EXPOSURE CLASSIFICATION (RESIDENTIAL LAND USE)

NOISE EXPOSURE CLASS	DAY–NIGHT SOUND LEVEL	EQUIVALENT SOUND LEVEL	FEDERAL (1) STANDARD
Minimal Exposure	Not Exceeding 55 DNL	Not Exceeding 55 Leq	Unconditionally Acceptable
Moderate Exposure	Above 55 DNL But Not Above 65 DNL	Above 55 Leq But Not Above 65 Leq	Acceptable(2)
Significant Exposure	Above 65 DNL But Not Above 75 DNL	Above 65 Leq But Not Above 75 Leq	Normally Unacceptable
Severe Exposure	Above 75 DNL	Above 75 Leq	Unacceptable

Notes: (1) Federal Housing Administration, Veterans Administration, Department of Defense, and Department of Transportation.

(2) FHWA uses the Leq instead of the Ldn descriptor. For planning purposes, both are equivalent if: (a) heavy trucks do not exceed 10 percent of total traffic flow in vehicles per 24 hours, and (b) traffic between 10:00 PM and 7:00 AM does not exceed 15 percent of average daily traffic flow in vehicles per 24 hours. The noise mitigation threshold used by FHWA for residences is 67 Leq.



LAND USE COMPATIBILITY WITH YEARLY AVERAGE DAY–NIGHT AVERAGE SOUND LEVEL (DNL) AT A SITE FOR BUILDINGS AS COMMONLY CONSTRUCTED.
(Source: American National Standards Institute S12.9–1998/Part 5)

FIGURE 2

occur when naturally ventilated office and other commercial establishments are exposed to exterior levels which exceed 65 DNL.

On the island of Oahu, the State Department of Health (DOH) regulates noise from fixed mechanical equipment and construction activities. State DOH noise regulations are expressed in maximum allowable noise limits rather than DNL (see Reference 4). Although they are not directly comparable to noise criteria expressed in DNL, State DOH noise limits for single family residential lands equate to approximately 55 DNL. For multifamily residential, commercial, and resort lands, the State DOH noise limits equate to approximately 60 DNL. For light and heavy industrial lands, the State DOH noise limits equate to approximately 76 DNL, respectively. Construction activities, which are typically noisier than the State DOH noise limits, are regulated through the issuance of permits for allowing excessive construction noise during limited time periods.

CHAPTER IV. GENERAL STUDY METHODOLOGY

Existing traffic and background ambient noise levels were measured in the project environs during November 2006 to provide a basis for describing the existing noise environment in the project environs. Traffic noise measurements along South Beretania Street and South King Street were obtained at Locations A and B, respectively, as shown in Table 2. The locations of these measurement sites are shown in Figure 1. Location A was on the elevated landscaped area above the Honolulu Police Department Parking Garage, and Location B was at ground level near the bus entrance driveway of the Alapai Transit Center. Traffic noise measurements along Alapai Street were obtained at Location C, which was on the elevated landscaped area above the Municipal Parking Garage. Traffic noise measurements along Hotel Street were obtained at Location D, which was at ground level next to an existing 3-story apartment building.

Traffic noise calculations for the existing conditions as well as noise predictions for CY 2012 were performed using the Federal Highway Administration (FHWA) Traffic Noise Model Version 2.5 (Reference 5). Traffic data entered into the noise prediction model were: roadway and receiver locations; hourly traffic volumes, average vehicle speeds; estimates of traffic mix; and "Pavement" propagation loss factor. The traffic data and forecasts for the project (Reference 6) were the primary sources of data inputs to the model. Appendix C summarizes the AM and PM peak hour traffic volumes for CY 2006 and 2012 which were used to model existing and future traffic noise along the streets surrounding the project site. For existing and future traffic along the streets surrounding the project site, it was assumed that the average noise levels, or Leq(h), during the peak traffic hour were approximately equal to the 24-hour DNL along those roadways. This assumption was based on the traffic counts from References 7 and 8 as well as the traffic noise predictions along South King Street and South Beretania Street shown in Figures 3 and 4.

Traffic noise calculations for both the existing and future conditions in the project environs were developed for ground level and elevated receptors. Traffic noise levels were also calculated for future conditions with (Build Alternative) and without (No Build Alternative) the proposed project. The forecasted changes in traffic noise levels over existing levels were calculated with and without the project, and noise impact risks evaluated. The relative contributions of non-project and project traffic to the total noise levels were also calculated, and an evaluation of possible traffic noise impacts was made.

Calculations of average exterior and interior noise levels from construction activities were performed for typical naturally ventilated and air conditioned buildings. Predicted noise levels were compared with existing background ambient noise levels, and the potential for noise impacts was assessed. Potential noise impacts from construction operations were also discussed, and mitigation measures recommended.

TABLE 2

TRAFFIC NOISE MEASUREMENT RESULTS

LOCATION	Time of Day (HRS)	Ave. Speed (MPH)	Hourly Traffic Volume AUTO	M.TRUCK	H.TRUCK	Measured Leq (dB)	Predicted Leq (dB)
A. 78 FT from the center-line of South Beretania Street (11/16/06)	0700 TO 0800	30	3,231	23	34	66.3	66.4
B. 50 FT from the center-line of South King Street (11/20/06)	1600 TO 1700	35	2,745	15	69	70.7	70.7
C. 75 FT from the center-line of Alapai Street (11/15/06)	1600 TO 1700	36	1,414	5	95	67.2	67.2
D. 44 FT from the center-line of Hotel Street (11/20/06)	0700 TO 0800	35	380	3	0	62.7*	60.3

Notes:

* Background noise level contribution of 59 dB added to Hotel Street traffic noise.

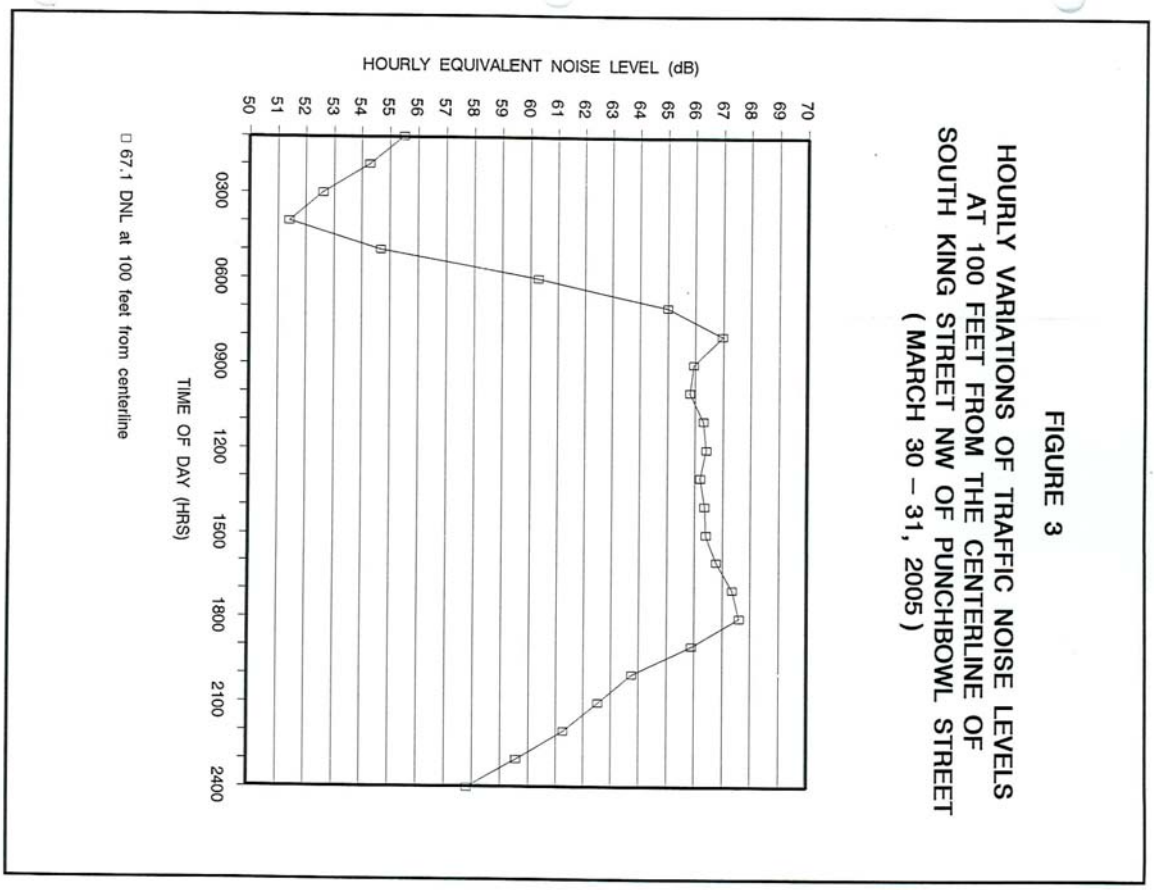
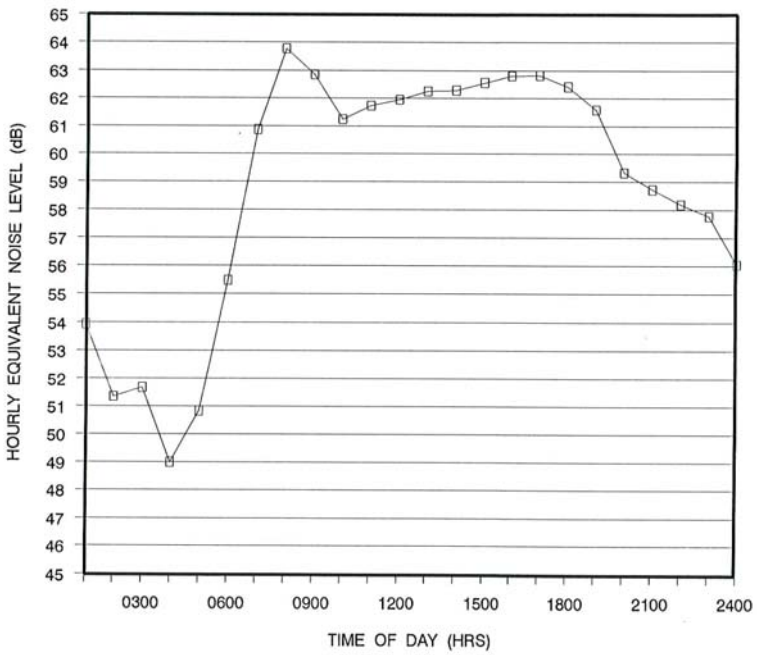


FIGURE 4

HOURLY VARIATIONS OF TRAFFIC NOISE LEVELS AT 100 FEET FROM THE CENTERLINE OF SOUTH BERETANIA STREET SE OF ALAPAI STREET (JANUARY 7 – 8, 1993)



□ 63.7 DNL at 100 feet from centerline

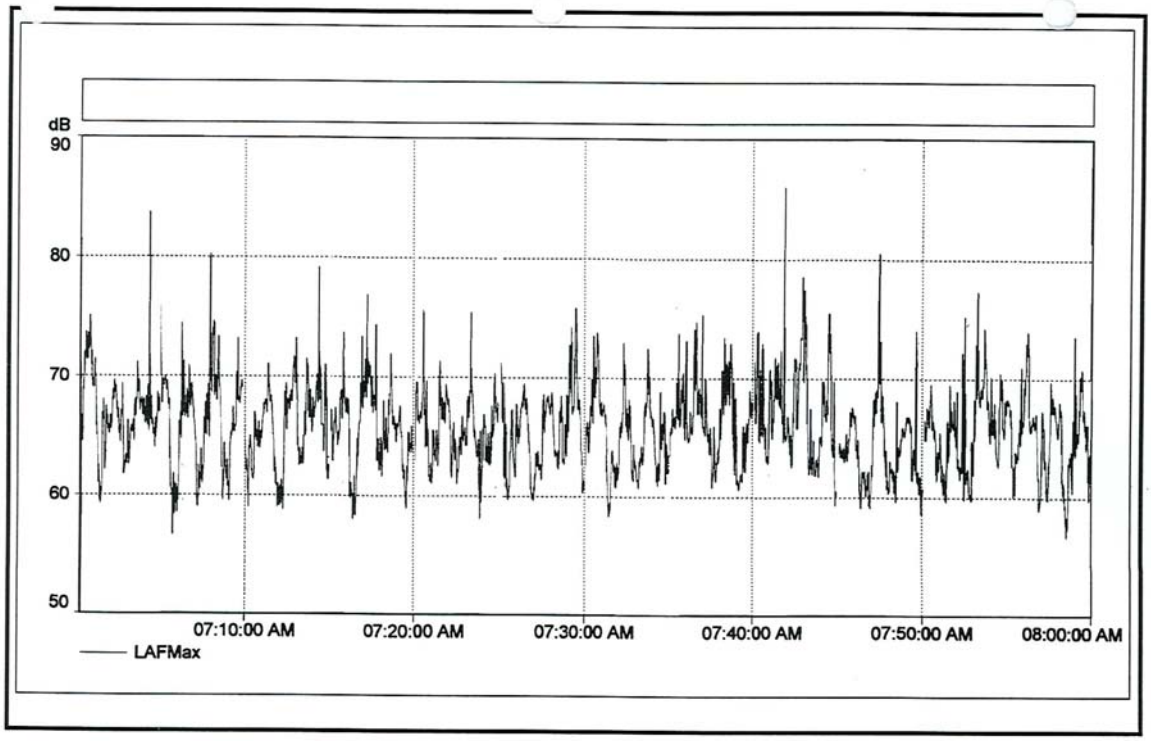
V. EXISTING ACOUSTICAL ENVIRONMENT

Major contributors to the existing background ambient noise levels within the project area are: traffic along South King Street, South Beretania Street, Alapai Street, and South Street; and buses which are idling or positioning within the Alapai Transit Center. Sample strip charts of the typical noise events which were recorded at the noise measurement locations are shown in Figures 5 through 8.

The typical hourly variations in noise levels within the project environs are controlled by motor vehicle traffic along the high volume roadways such as South King Street, South Beretania Street, Alapai Street, and South Street. Traffic noise levels tend to be lowest during the early morning hours between 3:00 and 5:00 AM, and tend to be highest during the AM and PM commuting hours.

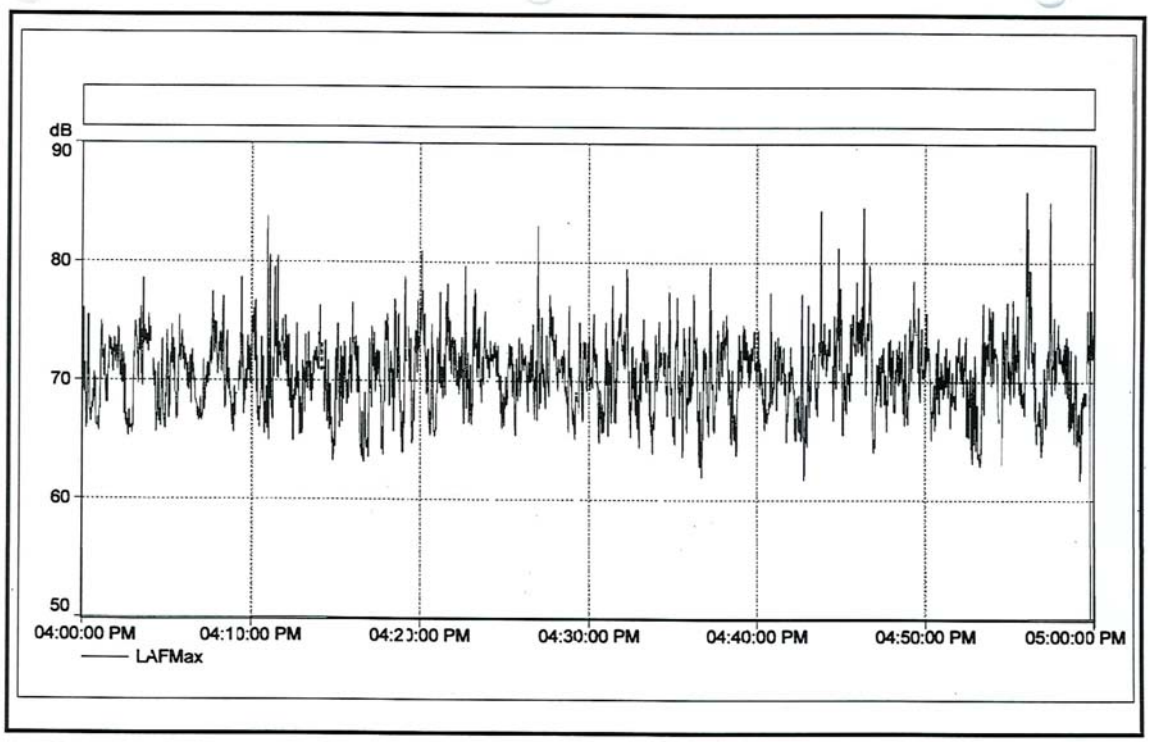
The existing traffic volumes and their noise contributions at 50, 100, and 200 feet setback distances from the centerlines of the roadways servicing the project are shown in Table 3. The corresponding setback distances from the roadways' centerlines to their corresponding 65, 70, and 75 DNL traffic noise contours for ground level receptors are shown in Table 4. Based on the results shown in Tables 3 and 4, as well as the measured sound levels at the various locations (see Table 2 and Figures 5 through 8), it was concluded that existing background noise levels in the project environs currently exceed 65 DNL along the Rights-of-Way of South King Street, South Beretania Street, Alapai Street, and South Street. In addition, at the residential condominium buildings (King Manor and One Archer Lane) located on South King Street east of the project site, existing traffic noise levels currently exceed 65 DNL. Traffic noise levels at a 3-story apartment building on the makai side of Hotel Street (at Location D near Hale Makai Street) are currently less than 65 DNL. For those high-rise receptor locations with visual line of sight to South King Street, background ambient noise levels can be expected to exceed 65 DNL due to the extremely large setback distances from the center of South King Street to its 65 DNL noise level contour.

At receptor locations which are shielded from roadway noise, existing background ambient noise levels are lower due to the noise shielding effects of surrounding buildings. Noise reductions of 5 to 20 dBA can be expected from these noise shielding effects. Background ambient noise levels at these locations can range from 55 to 65 DNL, and are controlled by nearby mechanical equipment or nearby human activities rather than by traffic noise. At receptor locations which are more elevated above ground level, the noise shielding effects from surrounding buildings can diminish as the visual field of views to nearby roadways (and resulting noise levels) increase with increasing elevations. Under these conditions with unobstructed field of views, the traffic noise level contributions and setback distances will tend to approach those for the ground level receptors shown in Tables 3 and 4.



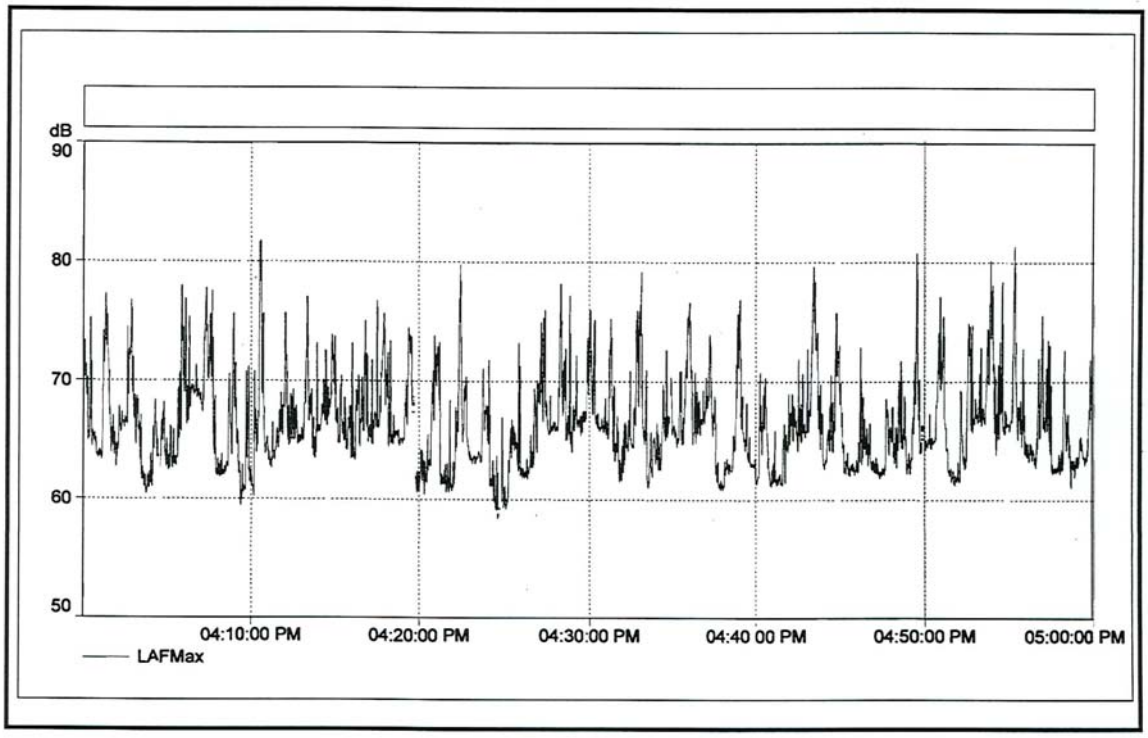
MAXIMUM SOUND LEVEL VS. TIME MEASURED AT LOCATION "A" (11/16/06)

FIGURE 5



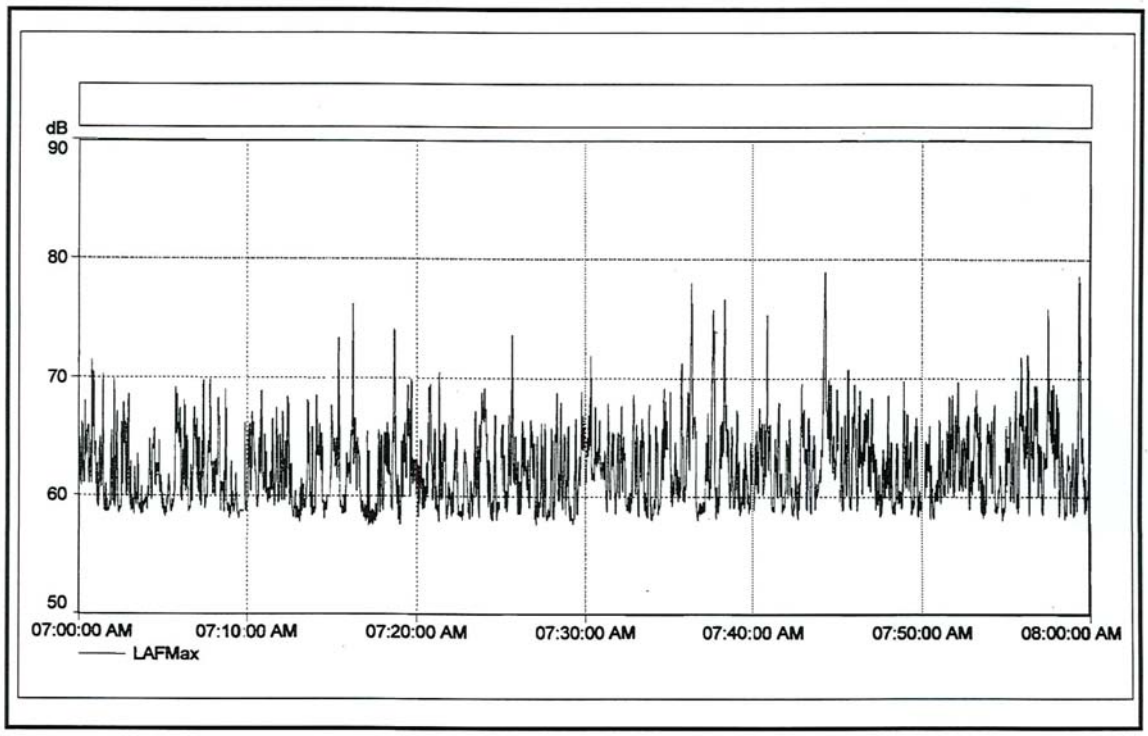
MAXIMUM SOUND LEVEL VS. TIME MEASURED AT LOCATION "B" (11/20/06)

FIGURE 6



MAXIMUM SOUND LEVEL VS. TIME MEASURED AT LOCATION "C" (11/15/06)

FIGURE 7



MAXIMUM SOUND LEVEL VS. TIME MEASURED AT LOCATION "D" (11/20/06)

FIGURE 8

TABLE 3

EXISTING (CY 2006) TRAFFIC VOLUMES AND NOISE LEVELS ALONG ROADWAYS IN PROJECT AREA (AM AND PM PEAK HOURS)

LOCATION	SPEED (MPH)	TOTAL VPH	******* VOLUMES (VPH) ********* AUTOS	M TRUCKS	H TRUCKS	50' Leq	100' Leq	200' Leq
AM Peak Hour:								
South Beretania Street - West of Alapai St.	30	4,258	4,136	30	92	70.2	67.0	63.9
South Beretania Street - East of Alapai St.	30	3,288	3,231	23	34	68.6	65.3	62.1
South Beretania Street - East of Hale Makai	30	3,163	3,108	22	33	68.5	65.1	61.9
Kealamakai Street	35	421	418	3	0	60.3	57.3	54.2
Hotel Street - West of Hale Makai Street	35	364	361	3	0	59.7	56.7	53.6
Hotel Street - East of Hale Makai Street	35	433	430	3	0	60.4	57.5	54.3
PM Peak Hour:								
South King Street. - West of Alapai Street	35	1,838	1,754	15	69	69.5	65.8	62.5
South King Street. - East of Alapai Street	35	2,829	2,745	15	69	70.7	67.1	63.8
South King Street. - East of Kealamakai St.	35	3,252	3,207	15	30	70.4	66.8	63.6
South Street - South of S. King Street	36	2,244	2,213	10	21	68.9	65.5	62.3
Alapai Street - North of S. King Street	36	1,514	1,414	5	95	69.2	66.0	62.8
Hale Makai Street	35	265	263	2	0	58.3	55.3	52.2

Notes:

1. Traffic noise levels calculated for ground level receptors.
2. Hard ground and unobstructed field-of-view conditions assumed.

TABLE 4

EXISTING AND CY 2012 DISTANCES TO 65, 70, AND 75 DNL CONTOURS

STREET SECTION	65 DNL SETBACK (FT) EXISTING	65 DNL SETBACK (FT) CY 2012	70 DNL SETBACK (FT) EXISTING	70 DNL SETBACK (FT) CY 2012	75 DNL SETBACK (FT) EXISTING	75 DNL SETBACK (FT) CY 2012
South Beretania Street - West of Alapai St.	156	179	52	61	< 30	< 30
South Beretania Street - East of Alapai St.	107	122	37	43	< 30	< 30
South Beretania Street - East of Hale Makai	102	122	37	43	< 30	< 30
Kealamakai Street	17	21	< 12	< 12	< 12	< 12
Hotel Street - West of Hale Makai Street	15	21	< 12	< 12	< 12	< 12
Hotel Street - East of Hale Makai Street	17	17	< 12	< 12	< 12	< 12
South King Street. - West of Alapai Street	118	137	46	51	< 30	< 30
South King Street. - East of Alapai Street	155	176	57	65	< 30	< 30
South King Street. - East of Kealamakai St.	148	173	54	63	< 30	< 30
South Street - South of S. King Street	111	129	40	45	< 20	< 20
Alapai Street - North of S. King Street	124	141	42	48	< 20	< 20
Hale Makai Street	< 12	15	< 12	< 12	< 12	< 12

Notes:

(1) All setback distances are from the roadways' centerlines.
(2) See Tables 3 and 5 for traffic volume, speed, and mix assumptions.
(3) Setback distances are for ground level receptors with unobstructed fields-of-view.
(4) "Pavement" or hard ground conditions assumed along all roadways.

CHAPTER VI. FUTURE NOISE ENVIRONMENT

Predictions of future traffic noise levels were made using the traffic volume assignments of Reference 6 for CY 2012 with and without the proposed project. The future projections of non-project and project traffic volumes for the No Build and Build Alternatives are shown in Appendix C.

Table 5 contains the CY 2012 traffic volumes and noise levels at 50, 100, and 200 feet from the roadways' centerlines for the Build Alternative. Table 4 contains the setback distances to the 65, 70, and 75 DNL contours for CY 2012. Future average vehicle speeds and mixes along all roadways were assumed to be identical to those used for CY 2006 (see Table 3).

In CY 2012, the dominant traffic noise sources in the project area will continue to be traffic along South King Street, South Beretania Street, Alapai Street, and South Street; and buses which are idling or positioning within the Alapai Transit Center. Future traffic noise levels are expected to increase by approximately 0.0 to 0.7 dB (or DNL) along the major roadways in the project area by CY 2012 due to non-project traffic (see Table 6). Project traffic will add 0.0 to 0.2 dB to the noise levels along South King Street, South Beretania Street, and South Street, and will not contribute to traffic noise levels along Alapai Street. The predicted increases in future traffic noise levels along the major streets and attributable to project traffic are considered to be minimal, and will be difficult to measure or perceive, with or without the project.

By CY 2012, the largest increases in traffic noise levels are expected to occur along the low volume streets east of the project site: Kealamakai Street; Hotel Street; and Hale Makai Street. Project related traffic are predicted to increase existing and future (non-project) traffic noise levels by 1.0 to 1.6 dB along these low volume streets. Because existing traffic noise levels associated with these three streets are currently low (approximately 60 DNL at 50 feet setback from their centerlines), the project related traffic should not cause future traffic noise levels from these three streets to exceed 65 DNL at 50 feet setback from their centerlines.

By CY 2012, traffic noise levels will continue to exceed 65 DNL along the Rights-of-Way of South King Street, South Beretania Street, Alapai Street, and South Street, with or without the project. The general routes of city buses to and from the Alapai Transit Center are not expected to change from current routes, so additional noise impacts associated with city bus traffic are not anticipated. The typical land uses in the area surrounding the project site are not noise sensitive uses, and primarily consist of government, business, and commercial establishments. High rise residential condominium units exist along South King Street east of the project site, and a mid rise residential apartment unit is located on Hotel Street between Hale Makai Street and Kealamakai Street. Existing traffic noise levels at the high rise residential condominium units currently exceed 65 DNL, and future project related traffic should not cause

TABLE 5

FUTURE (CY 2012) TRAFFIC VOLUMES AND NOISE LEVELS ALONG ROADWAYS IN PROJECT AREA (AM AND PM PEAK HOURS, BUILD)

LOCATION	SPEED (MPH)	TOTAL VPH	****** VOLUMES (VPH) ******** AUTOS	M TRUCKS	H TRUCKS	50' Leq	100' Leq	200' Leq
AM Peak Hour:								
South Beretania Street - West of Alapai St.	30	4,954	4,812	35	107	70.9	67.7	64.5
South Beretania Street - East of Alapai St.	30	3,811	3,745	27	39	69.3	65.9	62.7
South Beretania Street - East of Hale Makai	30	3,812	3,746	27	39	69.3	65.9	62.7
Kealamakai Street	35	527	523	4	0	61.3	58.3	55.1
Hotel Street - West of Hale Makai Street	35	531	527	4	0	61.3	58.4	55.2
Hotel Street - East of Hale Makai Street	35	433	430	3	0	60.4	57.5	54.3
PM Peak Hour:								
South King Street. - West of Alapai Street	35	2,148	2,049	18	81	70.1	66.5	63.2
South King Street. - East of Alapai Street	35	3,301	3,203	17	81	71.4	67.7	64.4
South King Street. - East of Kealamakai St.	35	3,849	3,796	18	35	71.2	67.6	64.3
South Street - South of S. King Street	36	2,611	2,575	12	24	69.5	66.2	62.9
Alapai Street - North of S. King Street	36	1,741	1,626	6	109	69.8	66.6	63.4
Hale Makai Street	35	382	379	3	0	59.9	56.9	53.8

Notes:

1. Traffic noise levels calculated for ground level receptors.
2. Hard ground and unobstructed field-of-view conditions assumed.

TABLE 6
CALCULATIONS OF PROJECT AND NON-PROJECT TRAFFIC NOISE CONTRIBUTIONS (DNL, CY 2012)

STREET SECTION	NOISE LEVEL INCREASE DUE TO: NON-PROJECT TRAFFIC	PROJECT TRAFFIC
South Beretania Street - West of Alapai St.	0.6	0.1
South Beretania Street - East of Alapai St.	0.7	0.0
South Beretania Street - East of Hale Makai	0.6	0.2
Kealamakai Street	0.0	1.0
Hotel Street - West of Hale Makai Street	0.0	1.6
Hotel Street - East of Hale Makai Street	0.0	0.0
South King Street. - West of Alapai Street	0.6	0.0
South King Street. - East of Alapai Street	0.6	0.1
South King Street. - East of Kealamakai St.	0.6	0.2
South Street - South of S. King Street	0.6	0.0
Alapai Street - North of S. King Street	0.6	0.0
Hale Makai Street	0.0	1.6

measurable increases in traffic noise levels at these high rise residences. Existing traffic noise levels at the mid rise apartment unit on Hotel Street are less than 65 DNL, and should remain as such with or without the project.

Future traffic noise levels outside the proposed Joint Traffic Management & Emergency Ops Center building are predicted to range from 60 to 70 DNL, with closure and air conditioning expected to mitigate potential traffic noise impacts within the future tenant spaces. Adverse traffic noise impacts are not expected at this proposed building.

CHAPTER VII. DISCUSSION OF PROJECT-RELATED NOISE IMPACTS AND POSSIBLE MITIGATION MEASURES

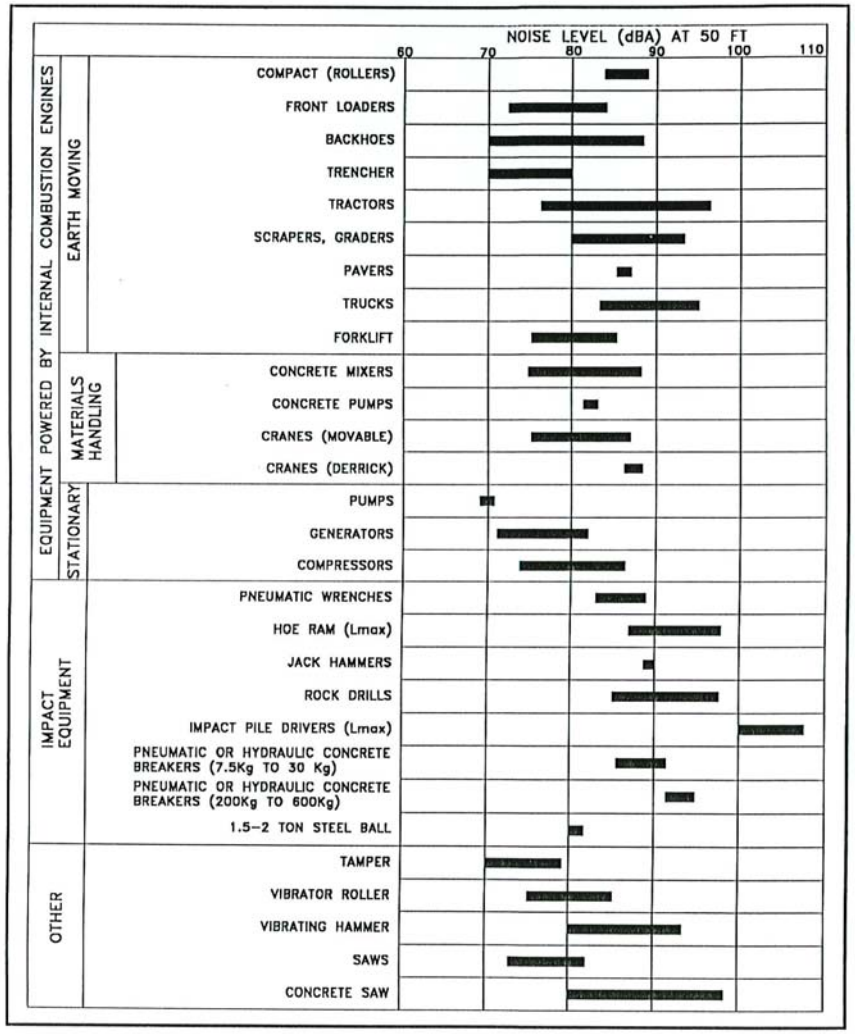
Traffic Noise. Noise impacts from project related traffic along the roadways which are expected to service the project traffic are not expected due to the relatively low levels of project related traffic noise when compared to the noise levels of non-project related traffic. East of the project site, where project related traffic noise level increases are expected to be greatest, existing traffic noise levels are relatively low and future traffic noise levels should be less than 65 DNL at existing noise sensitive receptors.

For those new tenant spaces in the proposed Joint Traffic Management & Emergency Ops Center building, noise mitigation measures such as closure and air conditioning of the occupied spaces is an effective noise mitigation measure which will applied.

General Construction Noise. Audible construction noise will probably be unavoidable during the entire project construction period. The total time period for demolition and construction is not known. It is anticipated that actual construction work will be moving from one location on the project site to another during that period. Actual length of exposure to construction noise at any receptor location will probably be less than the total construction period for the entire project. Figure 9 depicts the range of noise levels of various types of construction equipment when measured at 50 FT distance from the equipment. Typical levels of exterior noise from construction activity (excluding pile driving activity) at various distances from the job sites are shown in Figure 10. The impulsive noise levels of impact pile drivers are approximately 15 dB higher than the levels shown in Figure 10, while the intermittent noise levels of vibratory pile drivers are at the upper end of the noise level ranges depicted in the figure.

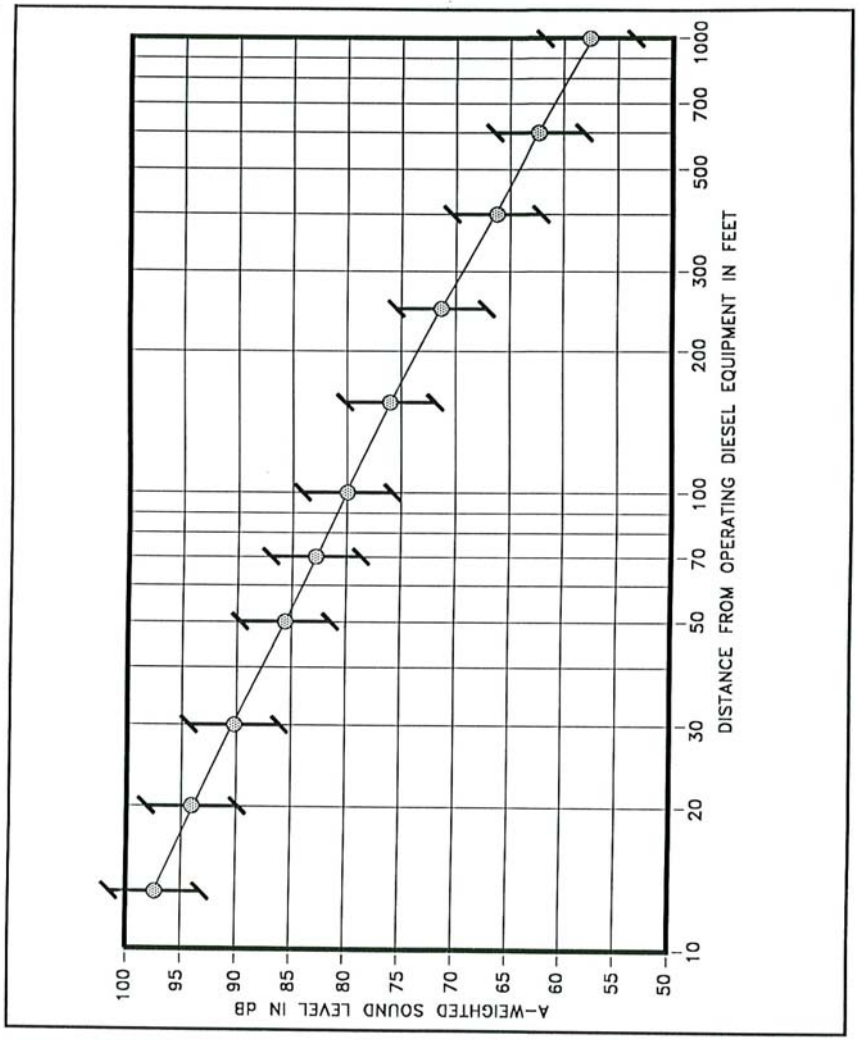
Figure 10 is useful for predicting exterior noise levels at short distances (within 200 FT) from the work when visual line of sight exists between the construction equipment and the receptor. Direct line-of-sight distances from the construction equipment to existing government and commercial buildings will range from 50 FT to 200+ FT, with corresponding average noise levels of 86 to 72 dBA (plus or minus 5 dBA). For receptors along a cross-street, the construction noise level vs. distance curve of Figure 10 should be reduced by approximately 8 dBA when the work is occurring at the intersection with the cross street, and should be reduced by 15 dBA when work is occurring at least 100 FT from the intersection (and the visual line-of-sight is blocked by intervening buildings). Typical levels of construction noise inside naturally ventilated and air conditioned structures are approximately 10 and 20 dB less, respectively, than the levels shown in Figure 10.

The existing commercial buildings along Kealamakai Street, which are adjacent to the east end of the project site are predicted to experience the highest noise levels during construction activities due to their close proximity to the construction sites. Adverse impacts from construction noise are not expected to be in the "public health



RANGES OF CONSTRUCTION EQUIPMENT NOISE LEVELS

FIGURE 9



ANTICIPATED RANGE OF CONSTRUCTION NOISE LEVELS VS. DISTANCE

FIGURE 10

and welfare" category due to the temporary nature of the work, the availability of closure and air conditioning for noise mitigation at the majority of the government and commercial units in the project area, and due to the administrative controls available for regulation of construction noise. Instead, these impacts will probably be limited to the temporary degradation of the quality of the acoustic environment in the immediate vicinity of the project site.

Mitigation of construction noise to inaudible levels will not be practical in all cases due to the intensity of construction noise sources (80 to 90+ dB at 50 FT distance), and due to the exterior nature of the work (demolition, excavation, grading, trenching, concrete pouring, hammering, etc.). The use of properly muffled construction equipment should be required on the job site.

Severe noise impacts are not expected to occur inside air conditioned structures which are beyond 70 to 450 FT of the project construction sites. Inside naturally ventilated structures, interior noise levels (with windows or doors opened) are estimated to range between 73 to 55 dBA at 70 FT to 450 FT distances from the construction site. Closure of all doors and windows facing the construction site would generally reduce interior noise levels by an additional 5 to 10 dBA.

The incorporation of State Department of Health construction noise limits and curfew times, which are applicable throughout the State of Hawaii (Reference 4), is another noise mitigation measure which is normally applied to construction activities. Figure 11 depicts the normally permitted hours of construction. Noisy construction activities are not allowed on Sundays and holidays, during the early morning, and during the late evening and nighttime periods under the DOH permit procedures.

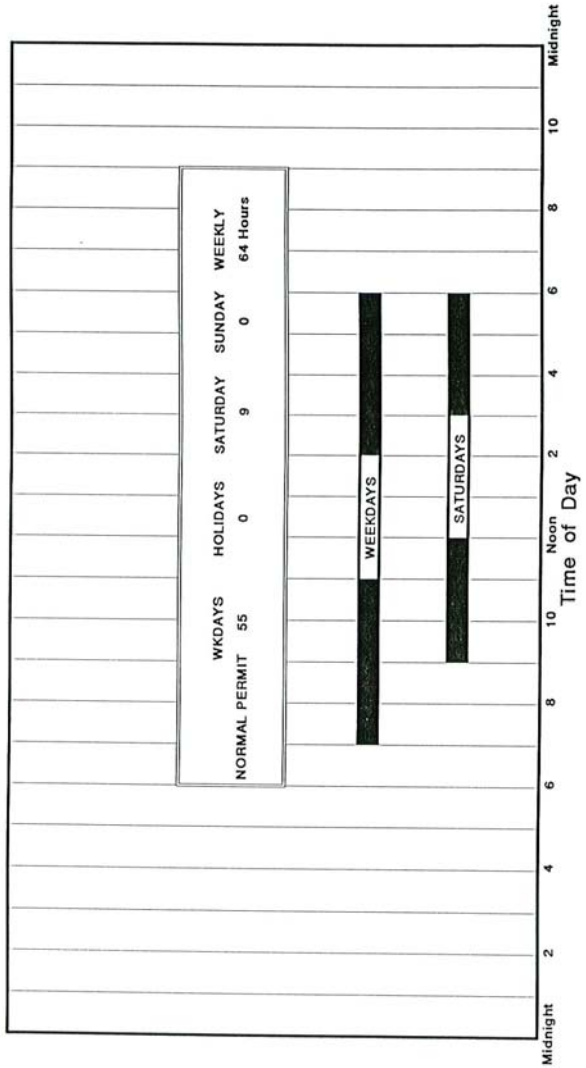


FIGURE 11

AVAILABLE WORK HOURS UNDER DOH PERMIT PROCEDURES FOR CONSTRUCTION NOISE

APPENDIX A. REFERENCES

(1) "Guidelines for Considering Noise in Land Use Planning and Control;" Federal Interagency Committee on Urban Noise; June 1980.

(2) "Environmental Criteria and Standards, Noise Abatement and Control, 24 CFR, Part 51, Subpart B;" U.S. Department of Housing and Urban Development; July 12, I979.

(3) "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety;" Environmental Protection Agency (EPA 550/9-74-004); March 1974.

(4) "Title 11, Administrative Rules, Chapter 46, Community Noise Control;" Hawaii State Department of Health; September 23, 1996.

(5) "FHWA Traffic Noise Model User's Guide;" FHWA-PD-96-009, DOT-VNTSC-FHWA-98-1, Federal Highway Administration; Washington, D.C.; January 1998 and Version 2.5 Upgrade (April 14, 2004).

(6) "Draft Traffic Impact Report - Alapai Transit Center and Joint Traffic Management Center;" Wilson Okamoto Corporation; November 2006 Including Supplemental Assessment Dated March 6, 2007.

(7) Hourly traffic counts at Meter #774, King Street NW of Punchbowl Street; City and County of Honolulu Department of Transportation Services; March 30-31, 2005.

(8) Hourly traffic counts at Meter #228, Beretania Street SE of Alapai Street; City and County of Honolulu Department of Transportation Services; January 1-7, 1993.

APPENDIX B

EXCERPTS FROM EPA'S ACOUSTIC TERMINOLOGY GUIDE

Descriptor Symbol Usage

The recommended symbols for the commonly used acoustic descriptors based on A-weighting are contained in Table I. As most acoustic criteria and standards used by EPA are derived from the A-weighted sound level, almost all descriptor symbol usage guidance is contained in Table I.

Since acoustic nomenclature includes weighting networks other than "A" and measurements other than pressure, an expansion of Table I was developed (Table II). The group adopted the ANSI descriptor-symbol scheme which is structured into three stages. The first stage indicates that the descriptor is a level (i.e., based upon the logarithm of a ratio), the second stage indicates the type of quantity (power, pressure, or sound exposure), and the third stage indicates the weighting network (A, B, C, D, E.....). If no weighting network is specified, "A" weighting is understood. Exceptions are the A-weighted sound level and the A-weighted peak sound level which require that the "A" be specified. For convenience in those situations in which an A-weighted descriptor is being compared to that of another weighting, the alternative column in Table II permits the inclusion of the "A". For example, a report on blast noise might wish to contrast the LCdn with the LAdn.

Although not included in the tables, it is also recommended that "Lpn" and "LepN" be used as symbols for perceived noise levels and effective perceived noise levels, respectively.

It is recommended that in their initial use within a report, such terms be written in full, rather than abbreviated. An example of preferred usage is as follows:

The A-weighted sound level (LA) was measured before and after the installation of acoustical treatment. The measured LA values were 85 and 75 dB respectively.

Descriptor Nomenclature

With regard to energy averaging over time, the term "average" should be discouraged in favor of the term "equivalent". Hence, Leq, is designated the "equivalent sound level". For Ld, Ln, and Ldn, "equivalent" need not be stated since the concept of day, night, or day-night averaging is by definition understood. Therefore, the designations are "day sound level", "night sound level", and "day-night sound level", respectively.

The peak sound level is the logarithmic ratio of peak sound pressure to a reference pressure and not the maximum root mean square pressure. While the latter is the maximum sound pressure level, it is often incorrectly labelled peak. In that sound level meters have "peak" settings, this distinction is most important.

"Background ambient" should be used in lieu of "background", "ambient", "residual", or "indigenous" to describe the level characteristics of the general background noise due to the contribution of many unidentifiable noise sources near and far.

With regard to units, it is recommended that the unit decibel (abbreviated dB) be used without modification. Hence, DBA, PNdB, and EPNdB are not to be used. Examples of this preferred usage are: the Perceived Noise Level (Lpn was found to be 75 dB. Lpn = 75 dB). This decision was based upon the recommendation of the National Bureau of Standards, and the policies of ANSI and the Acoustical Society of America, all of which disallow any modification of bel except for prefixes indicating its multiples or submultiples (e.g., deci).

Noise Impact

In discussing noise impact, it is recommended that "Level Weighted Population" (LWP) replace "Equivalent Noise Impact" (ENI). The term "Relative Change of Impact" (RCI) shall be used for comparing the relative differences in LWP between two alternatives.

Further, when appropriate, "Noise Impact Index" (NII) and "Population Weighed Loss of Hearing" (PHL) shall be used consistent with CHABA Working Group 69 Report Guidelines for Preparing Environmental Impact Statements (1977).

APPENDIX B (CONTINUED)

TABLE I

A-WEIGHTED RECOMMENDED DESCRIPTOR LIST

TERM	SYMBOL
1. A-Weighted Sound Level	L_A
2. A-Weighted Sound Power Level	L_{WA}
3. Maximum A-Weighted Sound Level	L_{max}
4. Peak A-Weighted Sound Level	L_{Apk}
5. Level Exceeded x% of the Time	L_x
6. Equivalent Sound Level	L_{eq}
7. Equivalent Sound Level over Time (T) (1)	$L_{eq(T)}$
8. Day Sound Level	L_d
9. Night Sound Level	L_n
10. Day-Night Sound Level	L_{dn}
11. Yearly Day-Night Sound Level	$L_{dn(Y)}$
12. Sound Exposure Level	L_{SE}

(1) Unless otherwise specified, time is in hours (e.g. the hourly equivalent level is $L_{eq(1)}$). Time may be specified in non-quantitative terms (e.g., could be specified a $L_{eq(WASH)}$ to mean the washing cycle noise for a washing machine).

SOURCE: EPA ACOUSTIC TERMINOLOGY GUIDE, BNA 8-14-78,

APPENDIX B (CONTINUED)

TABLE II

RECOMMENDED DESCRIPTOR LIST

TERM	A-WEIGHTING	ALTERNATIVE[1] A-WEIGHTING	OTHER[2] WEIGHTING	UNWEIGHTED
1. Sound (Pressure)[3] Level	L_A	L_{pA}	L_B, L_{pB}	L_p
2. Sound Power Level	L_{WA}		L_{WB}	L_W
3. Max. Sound Level	L_{max}	L_{Amax}	L_{Bmax}	L_{pmax}
4. Peak Sound (Pressure) Level	L_{Apk}		L_{Bpk}	L_{pk}
5. Level Exceeded x% of the Time	L_x	L_{Ax}	L_{Bx}	L_{px}
6. Equivalent Sound Level	L_{eq}	L_{Aeq}	L_{Beq}	L_{peq}
7. Equivalent Sound Level[4] Over Time(T)	$L_{eq(T)}$	$L_{Aeq(T)}$	$L_{Beq(T)}$	$L_{peq(T)}$
8. Day Sound Level	L_d	L_{Ad}	L_{Bd}	L_{pd}
9. Night Sound Level	L_n	L_{An}	L_{Bn}	L_{pn}
10. Day-Night Sound Level	L_{dn}	L_{Adn}	L_{Bdn}	L_{pdn}
11. Yearly Day-Night Sound Level	$L_{dn(Y)}$	$L_{Adn(Y)}$	$L_{Bdn(Y)}$	$L_{pdn(Y)}$
12. Sound Exposure Level	L_S	L_{SA}	L_{SB}	L_{Sp}
13. Energy Average Value Over (Non-Time Domain) Set of Observations	$L_{eq(e)}$	$L_{Aeq(e)}$	$L_{Beq(e)}$	$L_{peq(e)}$
14. Level Exceeded x% of the Total Set of (Non-Time Domain) Observations	$L_{x(e)}$	$L_{Ax(e)}$	$L_{Bx(e)}$	$L_{px(e)}$
15. Average L_x Value	L_x	L_{Ax}	L_{Bx}	L_{px}

(1) "Alternative" symbols may be used to assure clarity or consistency.

(2) Only B-weighting shown. Applies also to C,D,E,.....weighting.

(3) The term "pressure" is used only for the unweighted level.

(4) Unless otherwise specified, time is in hours (e.g., the hourly equivalent level is Leq(1). Time may be specified in non-quantitative terms (e.g., could be specified as Leq(WASH) to mean the washing cycle noise for a washing machine.

APPENDIX C

SUMMARY OF BASE YEAR AND CY 2012 TRAFFIC VOLUMES IN PROJECT ENVIRONS

ROADWAY LANES	**** CY 2006 ***** AM VPH	PM VPH	CY 2012 (NO BUILD) AM VPH	PM VPH	CY 2012 (BUILD) AM VPH	PM VPH
South King Street. - West of Alapai Street	1,513	1,838	1,755	2,132	1,828	2,148
One-Way (EB)	1,513	1,838	1,755	2,132	1,828	2,148
South King Street. - East of Alapai Street	1,862	2,829	2,145	3,277	2,238	3,301
One-Way (EB)	1,862	2,829	2,145	3,277	2,238	3,301
South King Street. - East of Kealamakai St.	2,141	3,252	2,445	3,732	2,458	3,849
One-Way (EB)	2,141	3,252	2,445	3,732	2,458	3,849
Kealamakai Street - North Bound	181	58	181	58	274	82
Kealamakai Street - South Bound	240	250	240	250	253	367
Two-Way	421	308	421	308	527	449
South Street - South of S. King Street	1,542	2,244	1,788	2,603	1,808	2,611
One-Way (NB)	1,542	2,244	1,788	2,603	1,808	2,611
Alapai Street - North of S. King Street	1,303	1,514	1,503	1,741	1,503	1,741
One-Way (NB)	1,303	1,514	1,503	1,741	1,503	1,741
South Beretania Street - West of Alapai St.	4,258	3,587	4,935	4,157	4,954	4,251
One-Way (WB)	4,258	3,587	4,935	4,157	4,954	4,251
South Beretania Street - East of Alapai St.	3,288	2,425	3,791	2,789	3,811	2,886
One-Way (WB)	3,288	2,425	3,791	2,789	3,811	2,886
South Beretania Street - East of Hale Makai	3,163	2,377	3,665	2,750	3,812	2,770
One-Way (WB)	3,163	2,377	3,665	2,750	3,812	2,770
Hale Makai Street - North Bound	138	212	138	212	158	309
Hale Makai Street - South Bound	32	54	32	54	179	74
Two-Way	170	265	170	265	337	382
Hotel Street W. of Hale Makai - West Bound	249	203	249	203	396	223
Hotel Street W. of Hale Makai - East Bound	115	127	115	127	135	224
Two-Way	364	330	364	330	531	447
Hotel Street E. of Hale Makai - West Bound	336	281	336	281	336	281
Hotel Street E. of Hale Makai - East Bound	97	67	97	67	97	67
Two-Way	433	348	433	348	433	348

APPENDIX E. TRAFFIC IMPACT REPORT

Traffic Impact Report

Alapai Transit Center and Joint Traffic Management Center

Prepared for:
Group 70 International, Inc.

Prepared by:
Wilson Okamoto Corporation

November 2006

TRAFFIC IMPACT REPORT

FOR THE

ALAPAI TRANSIT CENTER

AND

JOINT TRAFFIC MANAGEMENT CENTER

Prepared for:
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
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Prepared by:

Wilson Okamoto Corporation
1907 S. South Beretania Street, Suite 400
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November 2006

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I. INTRODUCTION

A. Purpose of Study

The purpose of this study is to identify and assess the traffic impacts resulting from the development of the Alapai Transit Center and Joint Traffic Management Center in Honolulu on the island of Oahu. The project entails the construction of a bus terminal building and parking lot, passenger shelters and drop-off area, and an office building.

B. Scope of Study

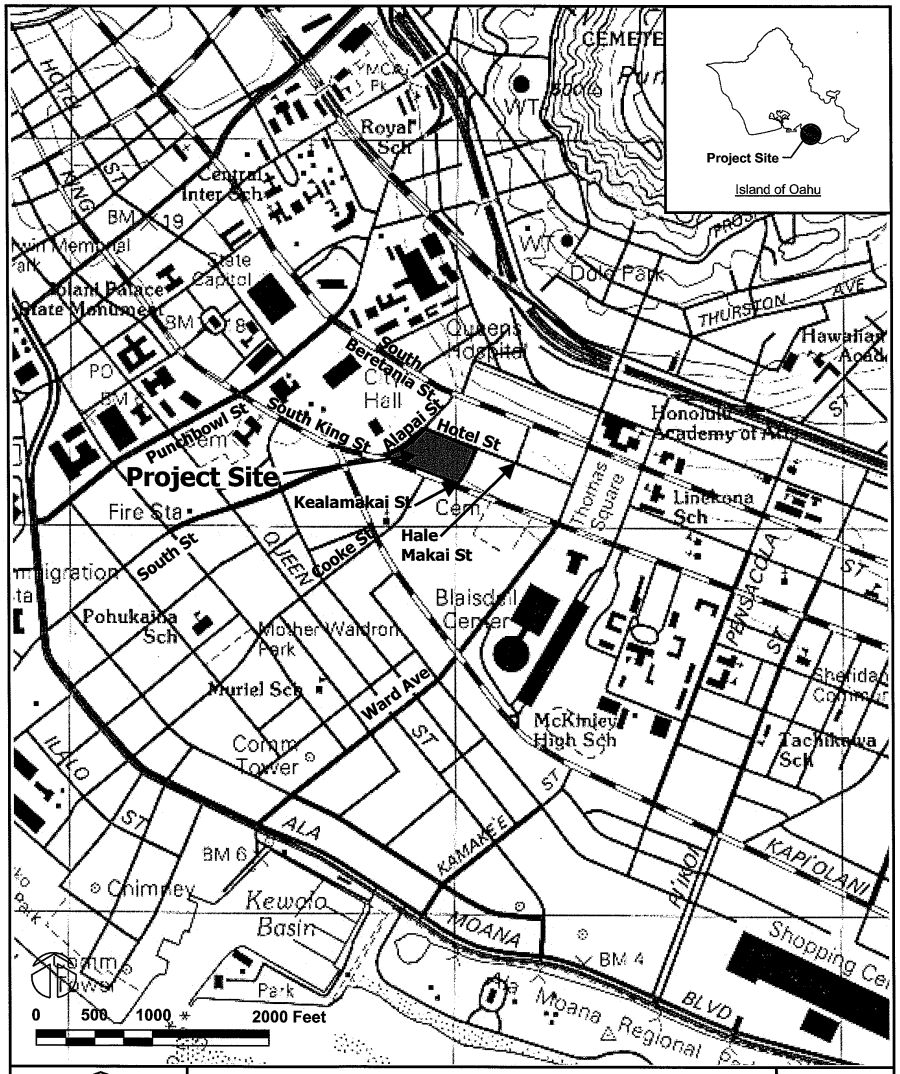
This report presents the findings and conclusions of the traffic study, the scope of which includes:

1. Description of the proposed project.
2. Evaluation of existing roadway and traffic operations in the vicinity.
3. Analysis of future roadway and traffic conditions without the proposed project.
4. Analysis and development of trip generation characteristics for the proposed project.
5. Superimposing site-generated traffic over future traffic conditions.
6. The identification and analysis of traffic impacts resulting from the proposed project.
7. Recommendations of improvements, if appropriate, that would mitigate the traffic impacts resulting from the proposed project.

II. PROJECT DESCRIPTION

A. Location

The proposed project will be located adjacent to South King Street between Alapai Street and Kealamakai Street in Honolulu on the island of Oahu (see Figure 1). The project site includes two parcels further identified as Tax Map Keys: 2-1-042: 013 and 004, and a portion of Hotel Street. In the project vicinity, Hotel Street only extends between Ward Avenue and Kealamakai Street. However, there is an existing easement adjacent to parcels 013 and 004 that is designated for the extension of this roadway to Alapai Street. This easement comprises the portion of Hotel Street that is



WILSON OKAMOTO CORPORATION ENGINEERS - PLANNERS	ALAPAI TRANSIT CENTER AND JOINT TRAFFIC MANAGEMENT CENTER LOCATION MAP	FIGURE 1

included in the project site. Access to the proposed project will be provided via driveways off Alapai Street, South King Street, and Kealamakai Street.

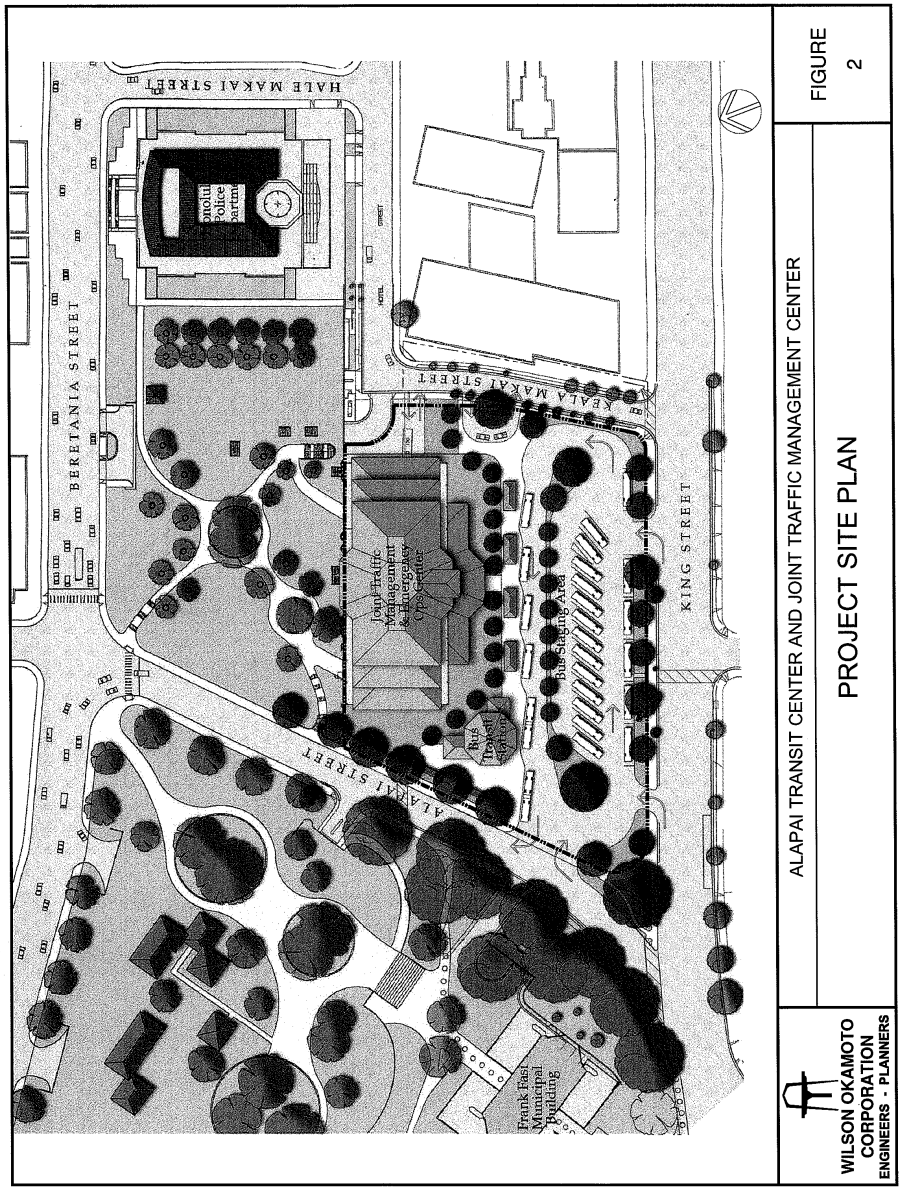
B. Project Characteristics

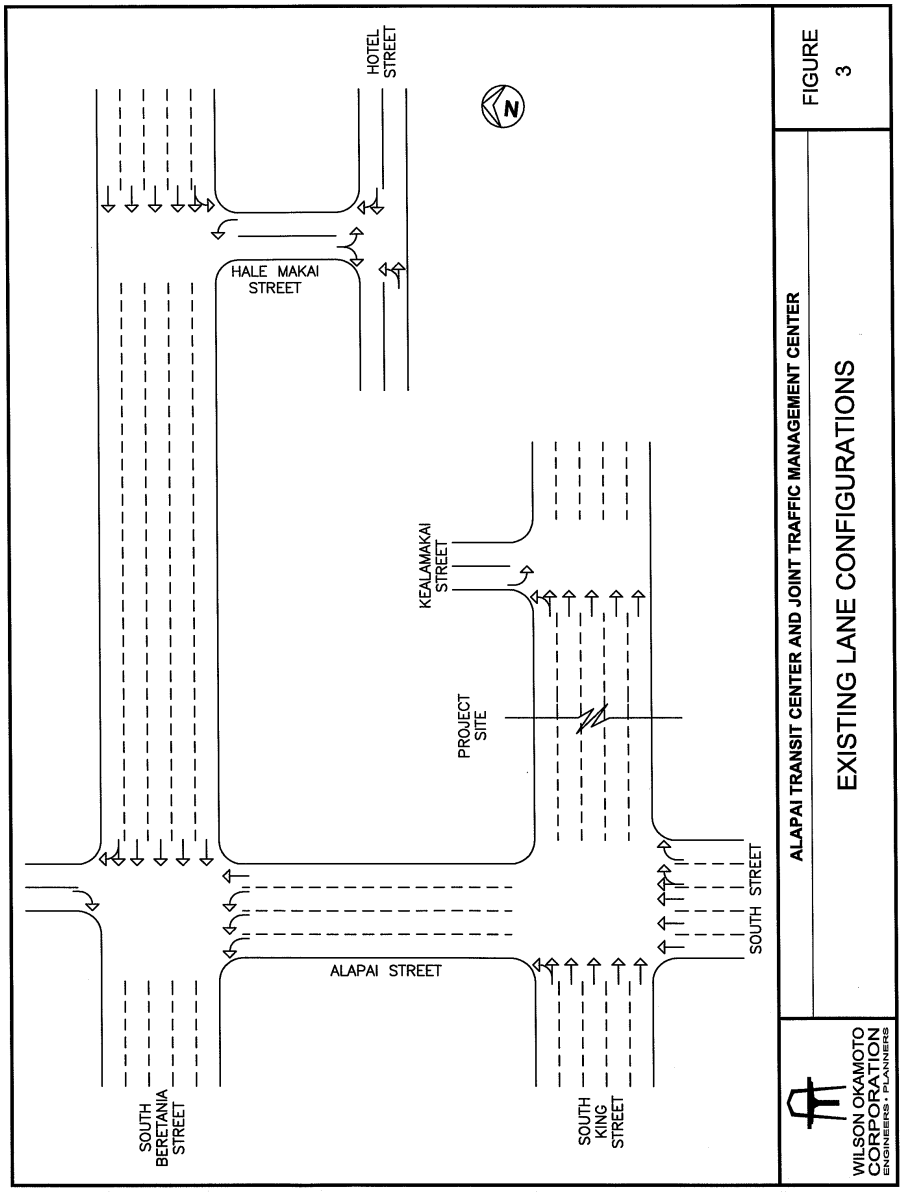
The proposed Alapai Transit Center and Joint Traffic Management Center are expected to be completed and occupied by the Year 2012 and will be located on an approximately 4.13-acre site adjacent to South King Street. The project site currently consists of a surface parking lot that serves as a bus transfer and staging area, as well as, an overflow parking lot for municipal vehicles. The Alapai Transit Center (ATC) will be a one-story multi-function bus terminal (approximately 3,000 square feet) that includes amenities such as public restrooms, bus driver lounge area, ticket sales, and some Intelligent Transportation Systems (ITS) features such as bus schedule display boards. The Joint Traffic Management Center (JTMC) will include a maximum of 100,000 square feet of office space for City and County of Honolulu and State of Hawaii transportation and emergency service agencies, and four levels of parking, one below and three above grade. Bus access to the ATC will be provided via three driveways, one off Alapai Street and two off South King Street, while pedestrian traffic will continue to be accommodated by existing crosswalks at the intersections of South King Street with Alapai Street/South Street, Cooke Street, and Kealamakai Street, an existing mid-block crosswalk along Alapai Street, and new walkways and passenger shelters within the project site. Access to the JTMC parking areas will be provided via a driveway off Kealamakai Street. Figure 2 shows the proposed site plan.

III. EXISTING TRAFFIC CONDITIONS

A. General

The proposed project will be located adjacent to South King Street between Alapai Street and Kealamakai Street. South King Street is a one-way (eastbound) City and County of Honolulu roadway generally oriented in the east-west direction that, with South Beretania Street, forms a couplet system that provides access through Honolulu between downtown Honolulu and Kapahulu (see Figure 3 for existing lane configurations).





B. Area Roadway System

In the project vicinity, South King Street is predominantly a five-lane, one-way (eastbound) roadway. At the southwest corner of the project site, South King Street intersects Alapai Street and South Street. At this signalized intersection, the South King Street approach has five lanes that serve left-turn and through traffic movements. Alapai Street is a City and County of Honolulu roadway generally oriented in the north-south direction that originates at South King Street as a four-lane, one-way (northbound) roadway and transitions to a two-lane, two-way roadway north of South Beretania Street. The northbound approach of the intersection is comprised of South Street, a City and County of Honolulu roadway generally oriented in the north-south direction that originates at Ala Moana Boulevard as a four-lane, two-way roadway and transitions to a predominantly four-lane, one-way (northbound) roadway north of Pohukaina Street. At the intersection with South King Street and Alapai Street, the South Street approach has three through lanes, a shared through and right-turn lane, and an exclusive right-turn lane.

East of the intersection with Alapai Street, South King Street intersects Kealamakai Street. At this unsignalized T-intersection, South King Street has five lanes that serve left-turn and through traffic movements. However, since parking is allowed on the north side of South King Street, the shared left-turn and through lane effectively operates as a left-turn pocket at all times except during the PM peak period when parking is prohibited. Kealamakai Street is a two-lane, two-way, City and County of Honolulu roadway generally oriented in the north-south direction between South King Street and Hotel Street. At the intersection with South King Street, the Kealamakai Street approach has one lane that serves only left-turn traffic movements.

North of the South King Street intersection, Alapai Street intersects South Beretania Street. At this signalized intersection, the northbound approach of Alapai Street has three exclusive left-turn lanes and one through lane, while the southbound approach has one exclusive right-turn lane. South Beretania Street has five lanes at this intersection that serve through and right-turn traffic movements.

East of the intersection with Alapai Street, South Beretania Street intersects Hale Makai Street. At this signalized intersection, South Beretania Street has five lanes that serve left-turn and through traffic movements. Hale Makai Street is a two lane, two-way City and County of Honolulu roadway generally oriented in the north-south direction between South Beretania Street and Hotel Street. At the intersection with Beretania Street, the Hale Makai Street approach has one lane that serves only left-turn traffic movements.

South of the intersection with South Beretania Street, Hale Makai Street intersects Hotel Street. At this unsignalized T-intersection, the Hale Makai Street approach has one lane that serves left-turn and right-turn traffic movements. In the vicinity of the project, Hotel Street is a two lane, two-way City and County of Honolulu roadway generally oriented in the east-west direction. At the intersection with Hale Makai Street, the eastbound approach of Hotel Street has one lane that serves left-turn and through traffic movements while the westbound approach has one lane that serves through and right-turn traffic movements.

C. Traffic Volumes and Conditions

1. General

a. Field Investigation

Field investigations were conducted on September 6-7 & 14, 2006. The investigations consisted of assessments of existing site conditions (i.e., traffic flow and queuing) and manual turning movement count surveys between the morning peak hours of 6:30 AM and 8:30 AM, and the afternoon peak hours of 3:00 PM and 6:00 PM at the following intersections:

- South King Street, Alapai Street, and South Street
- South King Street and Kealamakai Street
- South Beretania Street and Alapai Street
- South Beretania Street and Hale Makai Street
- Hale Makai Street and Hotel Street

Appendix A includes the existing traffic count data.

b. Capacity Analysis Methodology

The highway capacity analysis performed in this study is based upon procedures presented in the "Highway Capacity Manual", Transportation Research Board, 2000, and the "Highway Capacity Software", developed by the Federal Highway Administration. The analysis is based on the concept of Level of Service (LOS) to identify the traffic impacts associated with traffic demands during the peak hours of traffic.

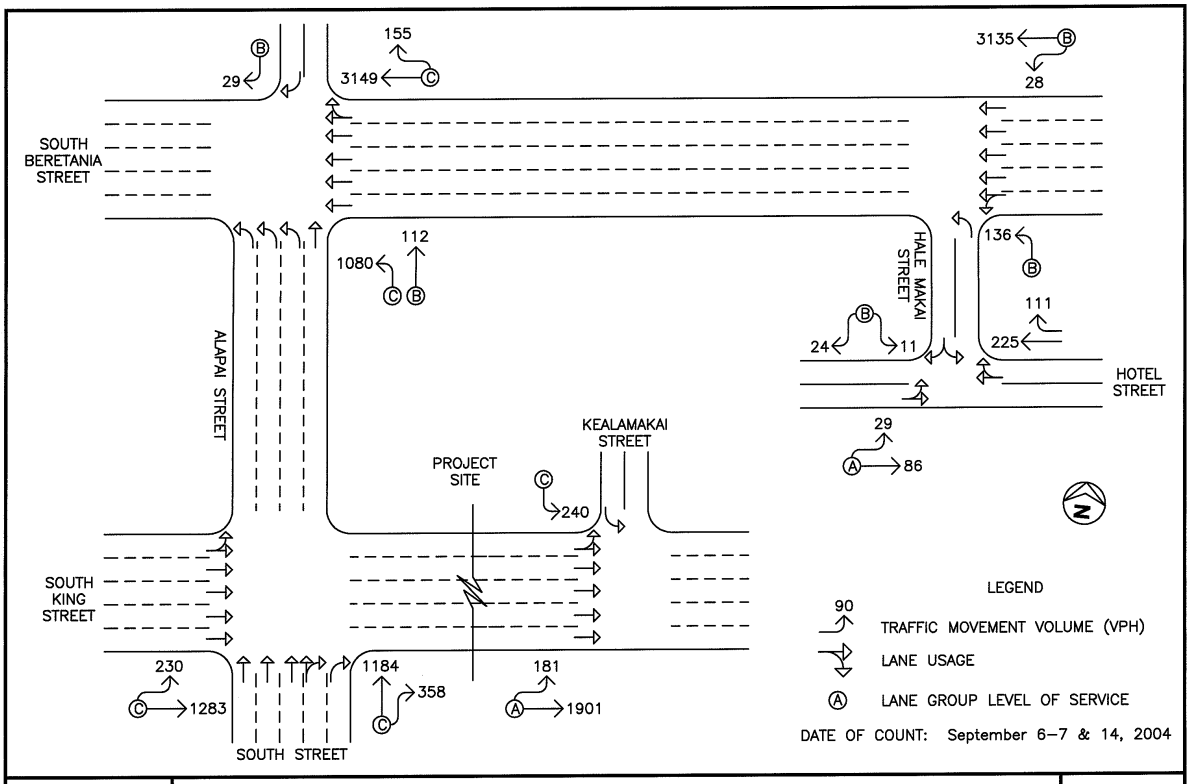
LOS is a quantitative and qualitative assessment of traffic operations. Levels of Service are defined by LOS "A" through "F"; LOS "A" representing ideal or free-flow traffic operating conditions and LOS "F" unacceptable or potentially congested traffic operating conditions.

"Volume-to-Capacity" (v/c) ratio is another measure indicating the relative traffic demand to the road carrying capacity. A v/c ratio of one (1.00) indicates that the roadway is operating at or near capacity. A v/c ratio of greater than 1.00 indicates that the traffic demand exceeds the road's carrying capacity. The LOS definitions are included in Appendix B.

2. Existing Peak Hour Traffic

a. General

Figures 4 and 5 show the existing AM and PM peak hour traffic volumes and operating traffic conditions. The AM peak hour of traffic generally occurs between 7:15 AM and 8:15 AM in the vicinity of the proposed project. In the afternoon, the PM peak hour of traffic generally occurs between the hours of 4:30 PM and 5:30 PM. The analysis is based on these peak hour time periods for each intersection to identify the traffic impacts resulting from the proposed project. LOS calculations are included in Appendix C.



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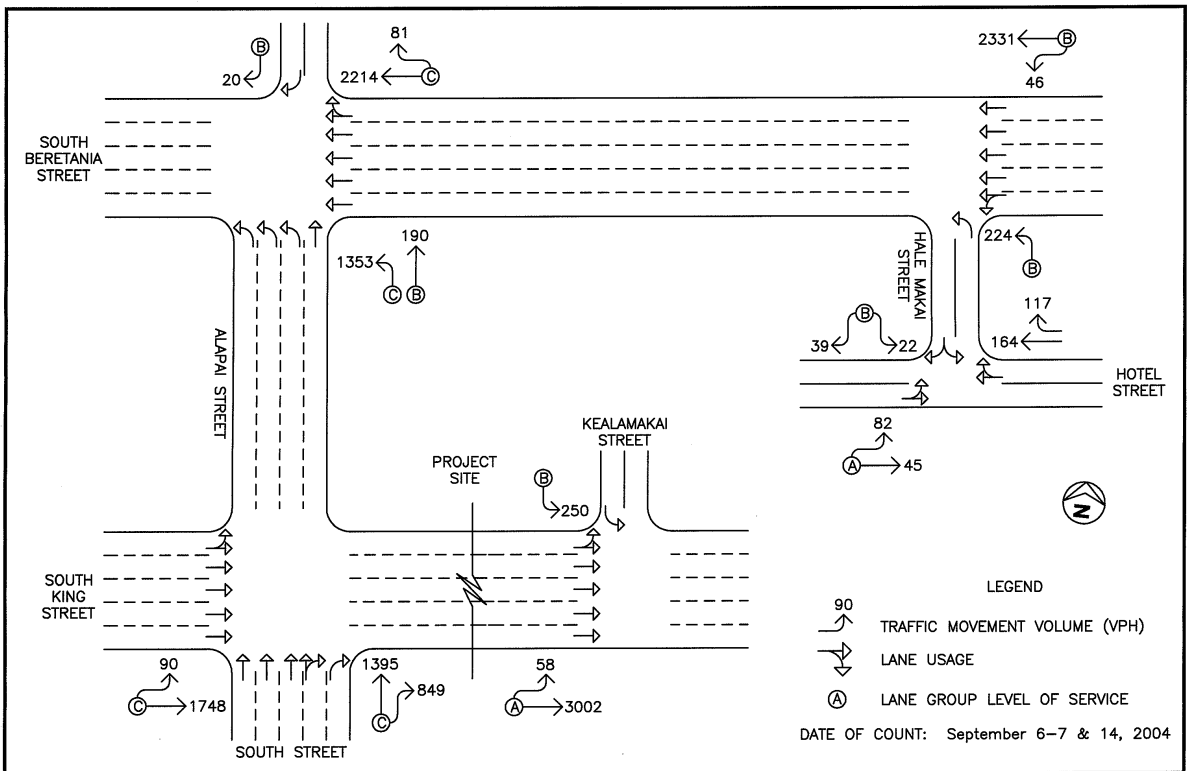
EXISTING AM PEAK HOUR OF TRAFFIC

FIGURE 4



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EXISTING PM PEAK HOUR OF TRAFFIC

FIGURE 5

b. South King Street, Alapai Street, and South Street

At the intersection with Alapai Street and South Street, South King Street carries 1,513 vehicles eastbound during the AM peak hour traffic. During the PM peak hour of traffic the traffic volume is higher with 1,838 vehicles traveling eastbound. This approach operates at LOS "C" during both peak periods. Traffic queues periodically formed on the South King Street approach with the most significant queuing occurring during the PM peak period. Average queue lengths of 20-25 vehicles per lane were observed during this peak period. Most of these queues cleared after each traffic signal cycle change. However, occasionally vehicles had to wait for more than one traffic signal cycle length.

The South Street approach of the intersection carries 1,542 vehicles northbound during the AM peak hour of traffic. During the PM peak hour of traffic, the traffic volume is higher with 2,244 vehicles traveling northbound. This approach operates at LOS "C" during both peak periods. Traffic queues periodically formed on the South Street approach of the intersection with the most significant queuing occurring during the PM peak period. Average queue lengths of 5-10 vehicles were observed during this peak period with most of these queues clearing the intersection after each traffic signal cycle change. However, occasionally vehicles had to wait for more than one traffic signal cycle length due to downstream queues extending from the intersection of South Beretania Street with Alapai Street.

c. South King Street and Kealamakai Street

At the intersection with Kealamakai Street, South King Street carries 2,082 vehicles eastbound during the AM peak hour of traffic. During the PM peak hour of traffic, the traffic volume is higher with 3,060 vehicles traveling eastbound. The South King Street approach operates at LOS "A" during both peak periods.

The Kealamakai Street approach carries 240 vehicles southbound during the AM peak hour traffic. During the PM peak hour of traffic, the traffic volume is approximately the same with 250 vehicles traveling southbound. This approach operates at LOS "C" and LOS "B" during the AM and PM peak periods, respectively. Traffic queues periodically formed on the Kealamakai Street approach with average queue lengths of 2-3 vehicles observed during both peak periods.

d. South Beretania Street and Alapai Street

At the intersection with Alapai Street, South Beretania Street carries 3,304 vehicles westbound during the AM peak hour of traffic. During the PM peak hour, the traffic volume is less with 2,295 vehicles traveling westbound. The South Beretania Street approach operates at LOS "C" during both peak periods. Traffic queues periodically formed on this approach with average queue lengths of 5-7 vehicles observed during this period with these queues occasionally extending through the upstream intersection with Hale Makai Street. Vehicles periodically had to wait for more than one traffic signal cycle length to clear the intersection due to downstream queues extending from the intersection with Punchbowl Street.

The Alapai Street approach carries 1,192 vehicles northbound and 29 vehicles southbound during the AM peak hour of traffic. During the PM peak hour of traffic, the total traffic volume is higher with 1,543 vehicles traveling northbound and 20 vehicles traveling southbound. The northbound left-turn and through traffic movements operate at LOS "C" and LOS "B," respectively, during both peak periods, while the southbound approach operates at LOS "B" during both peak periods. Traffic queues periodically formed on the Alapai Street approach with the most significant queuing occurring on the northbound approach during the PM peak period. Average queue

lengths of 10-12 vehicles were observed in the left-turn lanes during this peak period with these queues occasionally extending to the intersection with South King Street. Vehicles periodically had to wait for more than one traffic signal cycle length to clear the intersection due to downstream queues extending from the intersection of South Beretania Street and Punchbowl Street.

e. South Beretania Street and Hale Makai Street

At the intersection with Hale Makai Street, South Beretania Street carries 3,163 vehicles westbound during the AM peak hour of traffic. During the PM peak hour of traffic, the traffic volume is less with 2,377 vehicles traveling westbound. This approach operates at LOS "B" during both peak periods. Traffic queues periodically formed on the South Beretania Street approach with the most significant queuing occurring during the PM peak period. Average queuing lengths of 5-10 vehicles were observed during this period with these queues occasionally extending to the intersection with Ward Avenue. Vehicles occasionally had to wait for more than one traffic signal cycle length to clear the intersection due to downstream queues extending from the intersections of South Beretania Street with Punchbowl Street and Alapai Street.

The Hale Makai Street approach carries 136 vehicles northbound during the AM peak hour traffic. During the PM peak hour traffic, the traffic volume is higher with 224 vehicles traveling northbound. This approach operates at LOS "B" during both peak periods. Traffic queues periodically formed on the Hale Makai Street approach with the most significant queuing occurring during the PM peak period. Average queue lengths of 3-5 vehicles were observed during this period with these queues occasionally extending to the intersection with Hotel Street. Vehicles occasionally had to wait for more than one traffic signal cycle length to clear the intersection due to

downstream queues extending from the intersections of South Beretania Street with Punchbowl Street and Alapai Street.

f. Hale Makai and Street Hotel Street

At the intersection with Hotel Street, Hale Makai Street carries 35 vehicles southbound. During the PM peak hour traffic, the traffic volume is higher with 61 vehicles traveling southbound. The Hale Makai approach operates at LOS "B" during both peak periods. Traffic queues occasionally formed on this approach with average queue lengths of 1-2 vehicles observed during both peak periods.

The Hotel Street approaches of the intersection carry 115 vehicles eastbound and 336 vehicles westbound during the AM peak hour of traffic. During the PM peak hour of traffic, the total traffic volume is less with 127 vehicles traveling eastbound and 281 vehicles traveling westbound. The critical traffic movement on the Hotel Street approaches is the eastbound left-turn and through movement which operates at LOS "A" during both peak periods.

IV. PROJECTED TRAFFIC CONDITIONS

A. Site-Generated Traffic

1. Trip Generation Methodology

a. Alapai Transit Center

The trip methodology used for the Alapai Transit Center is based upon the published route schedule for the bus and supplemented by field observations of bus operations in the project vicinity. With the development of the Alapai Transit Center, bus routes in the project vicinity are not anticipated to change significantly. The only anticipated change is the diversion of these existing buses through the proposed Alapai Transit Center facility for passenger pick-up and drop-off. As such, the site-generated trips associated with the Alapai Transit Center are assumed to be encompassed under existing

conditions. The following routes are anticipated to stop at the proposed ATC:

- 11
- 15
- 42
- 53
- 54
- 62
- 80
- 80B
- 82
- 83
- 84
- 84A
- 85A
- 88
- 89
- 90
- 91
- 92
- 93
- 96
- 97
- 98
- 101
- 102
- 103
- A
- C

Approximately 74 buses and 100 buses along these routes are scheduled to stop along Alapai Street during the AM and PM peak periods, respectively.

b. Joint Traffic Management Center

The trip generation methodology used for the Joint Traffic Management Center is based upon generally accepted techniques developed by the Institute of Transportation Engineers (ITE) and published in "Trip Generation, 7th Edition," 2003. The ITE trip generation rates are developed empirically by correlating the vehicle trip generation data with various land use characteristics such as the number of vehicle trips generated per 1,000 square feet of development. These rates were verified utilizing the anticipated JTMC staffing and shifts provided by the various City and County of Honolulu and State of Hawaii agencies that will be located at the facility. Table 1 summarizes the trip generation characteristics related to the Joint Traffic Management Center applied to the AM and PM peak hours of traffic.

Table 1: JTMC Peak Hour Trip Generation

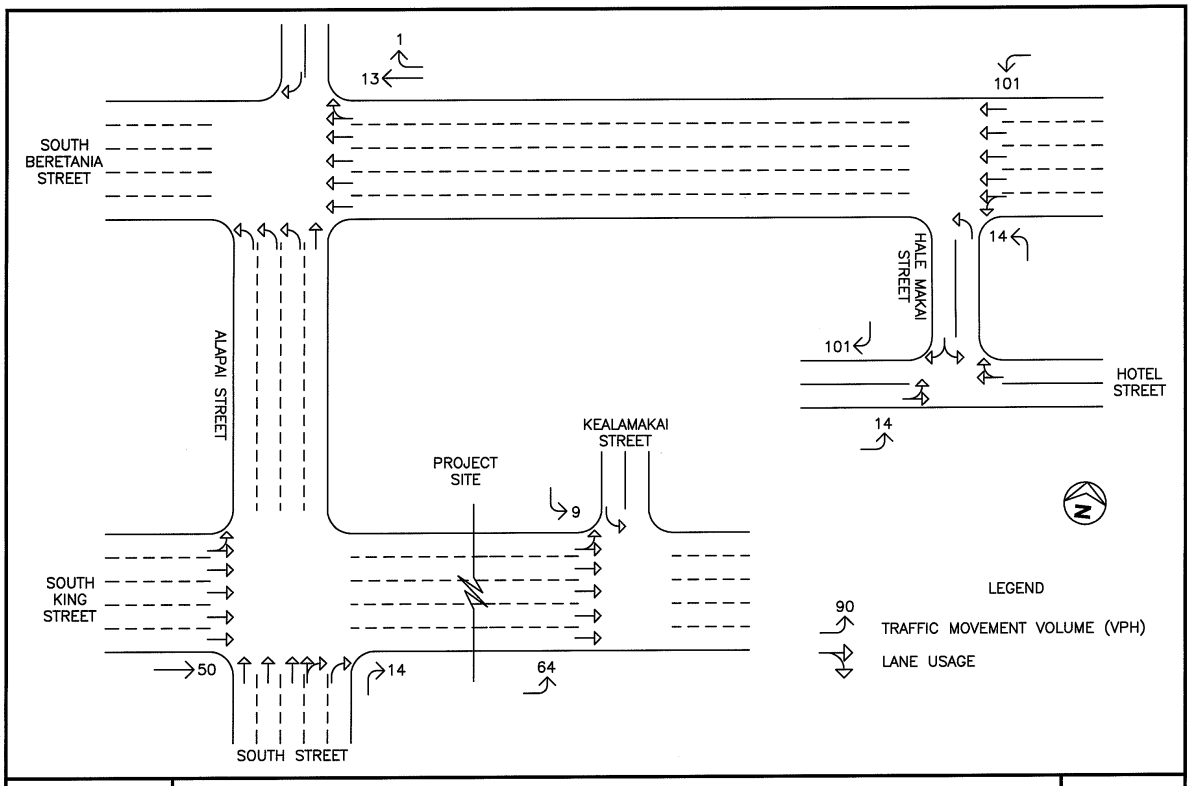
GENERAL OFFICE BUILDING		
INDEPENDENT VARIABLE: 1,000 sf of Development = 100		
		PROJECTED TRIP ENDS
AM PEAK	ENTER	165
	EXIT	23
	TOTAL	188
PM PEAK	ENTER	32
	EXIT	159
	TOTAL	191

2. Trip Distribution

Figures 6 and 7 show the distribution of site-generated vehicular trips at the study intersections during the AM and PM peak hours of traffic. The directional distribution of vehicles related to the Joint Traffic Management Center was based upon the relative distribution of traffic between South Beretania Street and South King Street. As such, 38.9% of the vehicles were assumed to be traveling eastbound and 61.1% were assumed to be traveling westbound during the AM peak period. During the PM peak period, 54.5% were assumed to be traveling eastbound and 45.5% were assumed to be traveling westbound. Access to the Joint Traffic Management Center will be provided via a driveway off Kealamakai Street. Eastbound site-generated vehicles were assumed to utilize South King Street to access the driveway while westbound vehicles were assumed to utilize South Beretania Street, Hale Makai Street, and Hotel Street to access the driveway. The directional distribution of traffic at the study intersections along Alapai Street was assumed to remain similar to existing conditions.

B. Through Traffic Forecasting Methodology

The travel forecast is based upon historical traffic count data obtained from the State DOT, Highways Division at a survey stations located in the project vicinity. The historical data were analyzed by linear regression techniques to obtain an average annual traffic growth rate of approximately 2.5% in the project vicinity. As such, using 2006 as the Base Year, a growth rate factor of 1.16 was applied to the existing



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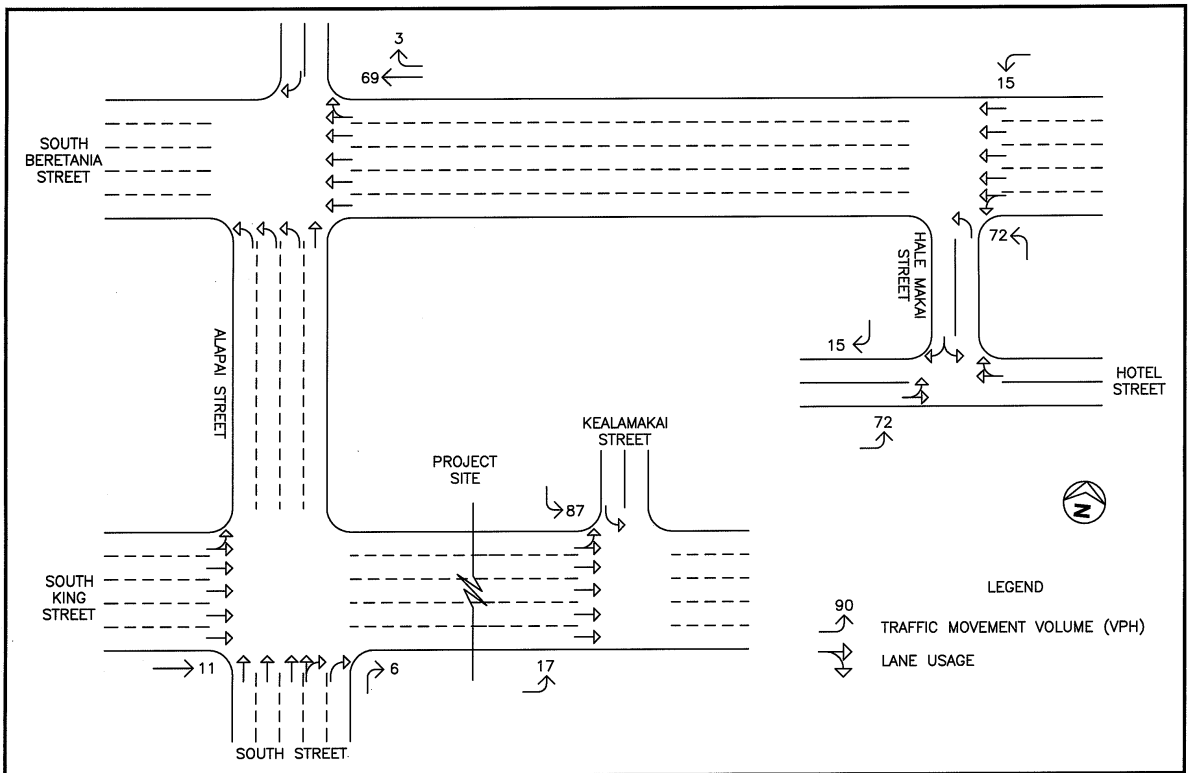
DISTRIBUTION OF SITE-GENERATED VEHICLES
AM PEAK PERIOD OF TRAFFIC

FIGURE 6



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DISTRIBUTION OF SITE-GENERATED VEHICLES
PM PEAK PERIOD OF TRAFFIC

FIGURE 7

traffic demands along South King Street, South Beretania Street, and Alapai Street to simulate projected Year 2012 traffic demands at those intersections.

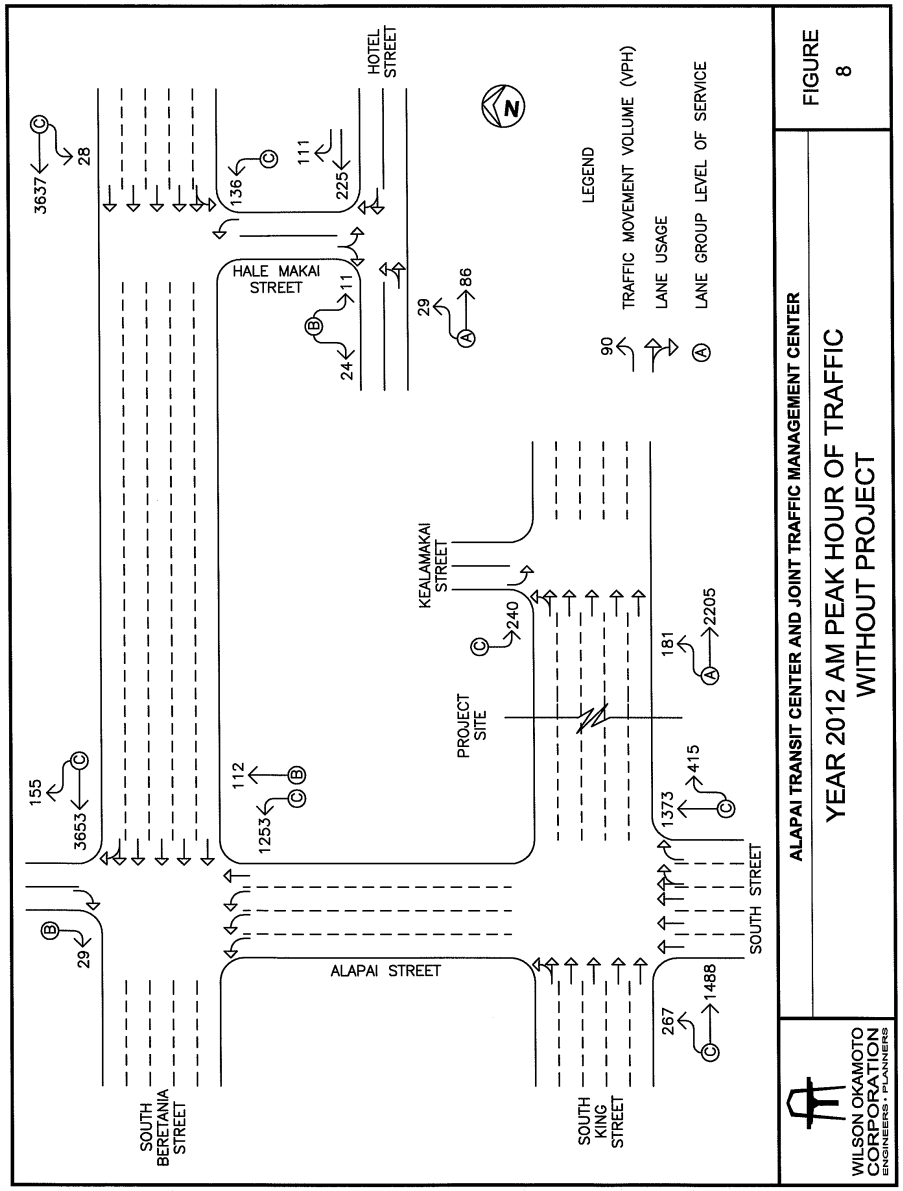
C. Total Traffic Volumes Without Project

The projected Year 2012 AM peak hour and PM peak hour traffic volumes and operating conditions in the project vicinity without the proposed Alapai Transit Center and Joint Traffic Management Center are shown on Figures 8 and 9 and summarized in Table 2. The existing levels of service are included for comparison purposes. LOS calculations are included in Appendix D.

Table 2: Existing and Projected (Without Project) LOS Traffic Operating Conditions

Intersection	Critical Traffic Movement		AM		PM	
			Exist	Year 2012 w/out Proj	Exist	Year 2012 w/out Proj
South King St/ Alapai St	Eastbound	LT-TH	C	C	C	C
	Northbound	TH-RT	C	C	C	C
South King St/ Kealamakai St	Eastbound	LT-TH	A	A	A	A
	Southbound	LT	C	C	B	C
South Beretania St/Alapai St	Westbound	TH-RT	C	C	C	C
	Northbound	LT	C	C	C	C
		TH	B	B	B	B
	Southbound	RT	B	B	B	B
South Beretania St/Hale Makai St	Westbound	LT-TH	B	C	B	B
	Northbound	LT	B	C	B	B
Hale Makai St/ Hotel St	Eastbound	LT-TH	A	A	A	A
	Southbound	LT-RT	B	B	B	B

Under Year 2012 without project conditions, traffic operations in the project vicinity are expected to deteriorate slightly from existing conditions. At the intersection of South Beretania Street with Hale Makai Street, the westbound approach and the northbound left-turn traffic movement are anticipated to deteriorate from LOS "B" to LOS "C" during the AM peak period. Similarly, the southbound



left-turn traffic movement at the intersection of South King Street with Kealamakai Street is anticipated to deteriorate from LOS "B" to LOS "C" during the PM peak period. The other critical movements at these intersections, as well as, the remaining study intersections are anticipated to continue operating at levels of service similar to existing conditions.

D. Total Traffic Volumes With Project

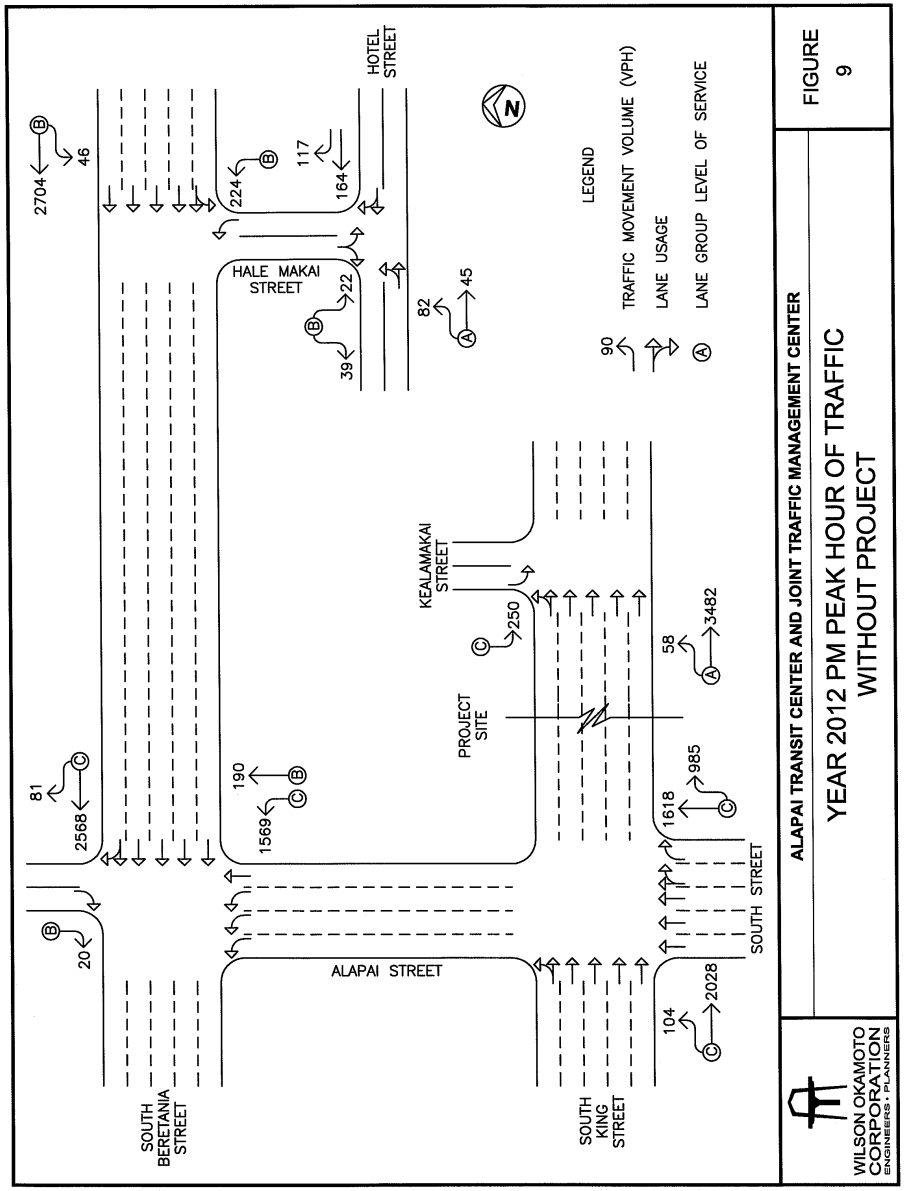
Figures 10 and 11 show the cumulative AM and PM peak hour traffic conditions resulting from the projected external traffic and the development of the proposed Alapai Transit Center and Joint Traffic Management Center. The cumulative volumes consist of site-generated traffic superimposed over Year 2012 projected traffic demands. The traffic impacts resulting from the proposed project are addressed in the following section.

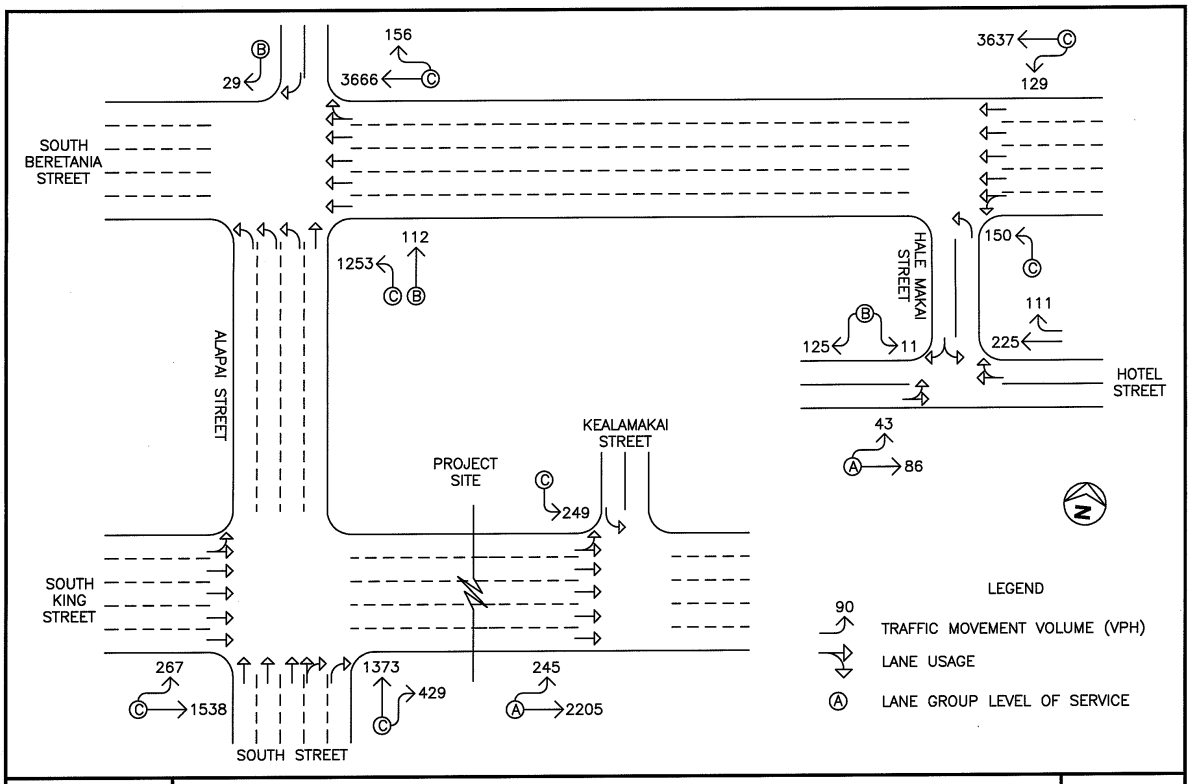
V. TRAFFIC IMPACT ANALYSIS

The Year 2012 cumulative AM and PM peak hour traffic conditions with the development of the Alapai Transit Center and Join Management Center are summarized in Table 3. The existing and projected Year 2012 operating conditions without the proposed project are provided for comparison purposes. LOS calculations are included in Appendix E.

Table 3: Existing and Projected (With and Without Project) Traffic Operating Conditions

Intersection	Critical Traffic Movement		AM			PM		
			Exist	Year 2012		Exist	Year 2012	
				w/out Proj	w/ Proj		w/out Proj	w/ Proj
South King St/ Alapai St	Eastbound	LT-TH	C	C	C	C	C	C
	Northbound	TH-RT	C	C	C	C	C	C
South King St/ Kealamakai St	Eastbound	LT-TH	A	A	A	A	A	A
	Southbound	LT	C	C	C	B	C	C
South Beretania St/Alapai St	Westbound	TH-RT	C	C	C	C	C	C
	Northbound	LT	C	C	C	C	C	C
		TH	B	B	B	B	B	B
	Southbound	RT	B	B	B	B	B	B





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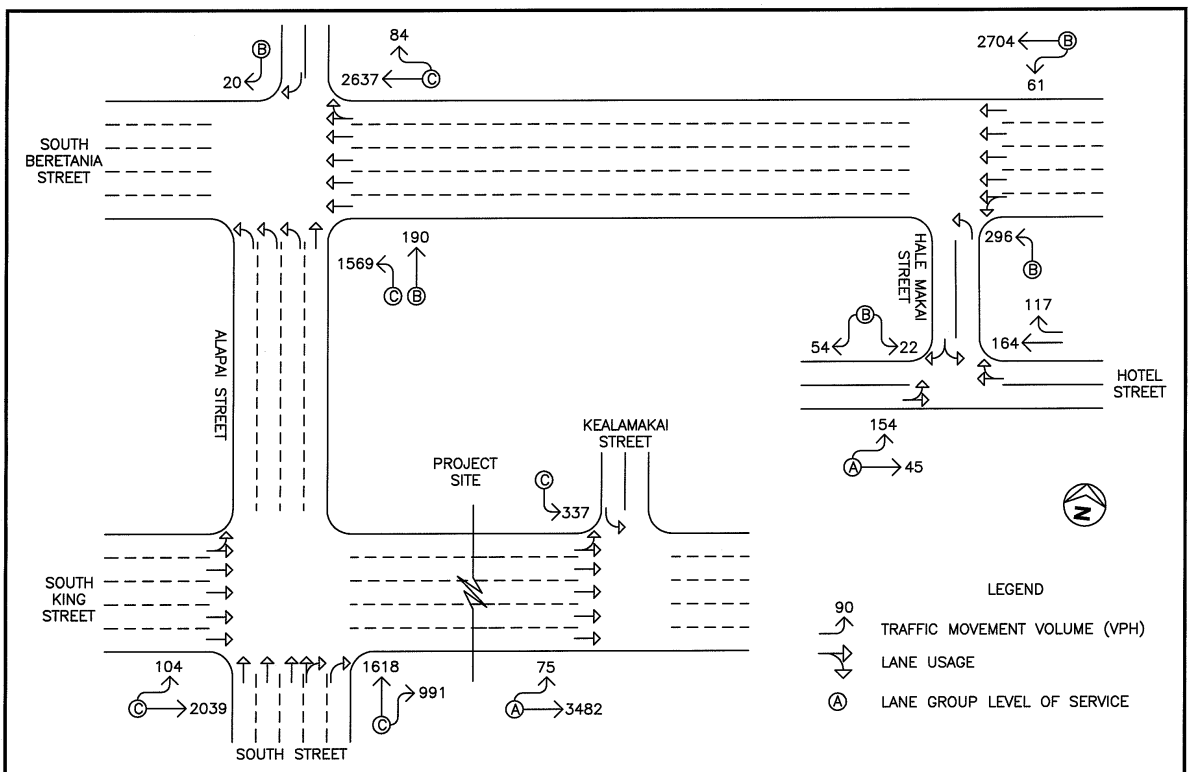
ENGINEERS • PLANNERS

ALAPAI TRANSIT CENTER AND JOINT TRAFFIC MANAGEMENT CENTER

YEAR 2012 AM PEAK HOUR OF TRAFFIC
WITH PROJECT

FIGURE 10



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ALAPAI TRANSIT CENTER AND JOINT TRAFFIC MANAGEMENT CENTER

YEAR 2012 PM PEAK HOUR OF TRAFFIC
WITH PROJECT

FIGURE 11

Table 3: Existing and Projected (With and Without Project) Traffic Operating Conditions (Cont'd)

Intersection	Critical Traffic Movement		AM			PM		
			Exist	Year 2012		Exist	Year 2012	
				w/out Proj	w/ Proj		w/out Proj	w/ Proj
South Beretania St/Hale Makai St	Westbound	LT-TH	B	C	C	B	B	B
	Northbound	LT	B	C	C	B	B	B
Hale Makai St/ Hotel St	Eastbound	LT-TH	A	A	A	A	A	A
	Southbound	LT-RT	B	B	B	B	B	B

Traffic operations in the vicinity of the project are generally expected to remain similar to Year 2012 without project traffic conditions during both peak hours of traffic despite the increase in traffic along the surrounding roadways due to the development of the Alapai Transit Center and Joint Traffic Management Center. The critical traffic movements at the study intersections along South King Street and South Beretania Street are anticipated to continue operating at LOS "C" or better during both peak periods while those at the intersections of Hale Makai Street with Hotel Street are anticipated to continue operating at LOS "B" or better during both peak periods.

VI. RECOMMENDATIONS

Based on the analysis of the traffic data, the following are the recommendations of this study associated with the project implementation:

1. Provide sufficient driveway width to accommodate safe vehicle ingress and egress.
2. Provide adequate turning radii at all project driveways to avoid or minimize vehicle encroachments to oncoming traffic lanes.
3. Maintain adequate sight distances for motorists to safely enter and exit all project driveways.
4. Provide adequate on-site loading and off-loading service areas and prohibit off-site loading operations.
5. Provide adequate turn-around area for delivery and refuse vehicles to maneuver on the project site to avoid vehicle reversing maneuvers onto City and County of Honolulu roadways.

VII. CONCLUSION

With the implementation of the aforementioned recommendations, the proposed Alapai Transit Center and Joint Traffic Management Center are not expected to have a significant impact on traffic operations in the project vicinity. The total traffic volumes entering the study intersections along South King Street and South Beretania Street are expected to increase by approximately 1-3% during both peak hours of traffic with the proposed project. These increases in the total traffic volumes are in the range of daily volume fluctuations along those roadways and represent a minimal increase in the overall traffic volumes. The increase in the total traffic volume entering the intersection of Hale Makai Street with Hotel Street is higher during both peak periods, but traffic operations at this intersection are expected to continue operating at acceptable levels of service despite the projected increase in traffic.

APPENDIX A

EXISTING TRAFFIC COUNT DATA

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counter:D1-0526, D1-0528
Counted:GHK, TD
Weather:Clear

File Name : BerAla AM
Site Code : 00000000
Start Date : 9/6/2006
Page No : 1

Groups Printed- Unshifted

	Alapai St Southbound				S. Beretania St Westbound				Alapai St Northbound				Eastbound	
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
06:30 AM	0	0	6	6	0	463	21	484	139	10	0	149	0	639
06:45 AM	0	0	9	9	0	655	34	689	196	24	0	220	0	918
Total	0	0	15	15	0	1118	55	1173	335	34	0	369	0	1557
07:00 AM	0	0	10	10	0	667	33	700	244	25	0	269	0	979
07:15 AM	0	0	7	7	0	764	26	790	257	19	0	276	0	1073
07:30 AM	0	0	6	6	0	808	39	847	291	36	0	327	0	1180
07:45 AM	0	0	6	6	0	781	42	823	270	36	0	306	0	1135
Total	0	0	29	29	0	3020	140	3160	1062	116	0	1178	0	4367
08:00 AM	0	0	10	10	0	796	48	844	262	21	0	283	0	1137
08:15 AM	0	0	9	9	0	741	35	776	204	25	0	229	0	1014
Grand Total	0	0	63	63	0	5675	278	5953	1863	196	0	2059	0	8075
Apprch %	0	0	100		0	95.3	4.7		90.5	9.5	0			
Total %	0	0	0.8	0.8	0	70.3	3.4	73.7	23.1	2.4	0	25.5	0	

	Alapai St Southbound				S. Beretania St Westbound				Alapai St Northbound				Eastbound	
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:15 AM														
07:15 AM	0	0	7	7	0	764	26	790	257	19	0	276	0	1073
07:30 AM	0	0	6	6	0	**808**	39	**847**	**291**	**36**	0	**327**	0	**1180**
07:45 AM	0	0	6	6	0	781	42	823	270	36	0	306	0	1135
08:00 AM	0	0	**10**	**10**	0	796	**48**	844	262	21	0	283	0	1137
Total Volume	0	0	29	29	0	3149	155	3304	1080	112	0	1192	0	4525
% App. Total	0	0	100		0	95.3	4.7		90.6	9.4	0			
PHF	.000	.000	.725	.725	.000	.974	.807	.975	.928	.778	.000	.911	.000	.959

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counter:D1-0768, D1-0769
Counted:TO, GMT
Weather:Clear

File Name : BerAla PM
Site Code : 00000001
Start Date : 9/14/2006
Page No : 1

Groups Printed- Unshifted

	Alapai St Southbound				S. Beretania St Westbound				Alapai St Northbound				Eastbound	
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
03:00 PM	0	0	7	7	0	571	26	597	312	33	0	345	0	949
03:15 PM	0	0	7	7	0	632	20	652	300	43	0	343	0	1002
03:30 PM	0	0	3	3	0	633	21	654	367	24	0	391	0	1048
03:45 PM	0	0	3	3	0	636	37	673	350	32	0	382	0	1058
Total	0	0	20	20	0	2472	104	2576	1329	132	0	1461	0	4057
04:00 PM	0	0	4	4	0	596	20	616	351	31	0	382	0	1002
04:15 PM	0	0	6	6	0	586	17	603	346	41	0	387	0	996
04:30 PM	0	0	5	5	0	624	21	645	335	41	0	376	0	1026
04:45 PM	0	0	2	2	0	605	22	627	350	47	0	397	0	1026
Total	0	0	17	17	0	2411	80	2491	1382	160	0	1542	0	4050
05:00 PM	0	0	7	7	0	492	20	512	335	56	0	391	0	910
05:15 PM	0	0	6	6	0	493	18	511	333	46	0	379	0	896
05:30 PM	0	0	5	5	0	402	21	423	311	47	0	358	0	786
05:45 PM	0	0	3	3	0	415	17	432	228	31	0	259	0	694
Total	0	0	21	21	0	1802	76	1878	1207	180	0	1387	0	3286
Grand Total	0	0	58	58	0	6685	260	6945	3918	472	0	4390	0	11393
Apprch %	0	0	100		0	96.3	3.7		89.2	10.8	0			
Total %	0	0	0.5	0.5	0	58.7	2.3	61	34.4	4.1	0	38.5	0	

	Alapai St Southbound				S. Beretania St Westbound				Alapai St Northbound				Eastbound	
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 03:15 PM														
03:15 PM	0	0	**7**	**7**	0	632	20	652	300	**43**	0	343	0	1002
03:30 PM	0	0	3	3	0	633	21	654	**367**	24	0	**391**	0	1048
03:45 PM	0	0	3	3	0	**636**	**37**	**673**	350	32	0	382	0	**1058**
04:00 PM	0	0	4	4	0	596	20	616	351	31	0	382	0	1002
Total Volume	0	0	17	17	0	2497	98	2595	1368	130	0	1498	0	4110
% App. Total	0	0	100		0	96.2	3.8		91.3	8.7	0			
PHF	.000	.000	.607	.607	.000	.982	.662	.964	.932	.756	.000	.958	.000	.971

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counter: D1-0526/D1-0528
Counted:GHK/TD
Weather:Clear

File Name : alabera-bus
Site Code : 00000000
Start Date : 9/6/2006
Page No : 1

These are comments that appear BEFORE the data.

Groups Printed- Class 1

	Southbound	Bus Turning Movement - Beretania St Westbound				Bus Turning Movement - Alapai St Northbound				Eastbound	
Start Time	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	App. Total	Int. Total
06:30 AM	0	0	4	0	4	13	3	0	16	0	20
06:45 AM	0	0	5	0	5	17	1	0	18	0	23
Total	0	0	9	0	9	30	4	0	34	0	43
07:00 AM	0	0	4	0	4	11	2	0	13	0	17
07:15 AM	0	0	5	0	5	14	2	0	16	0	21
07:30 AM	0	0	7	0	7	15	1	0	16	0	23
07:45 AM	0	0	3	0	3	9	2	0	11	0	14
Total	0	0	19	0	19	49	7	0	56	0	75
08:00 AM	0	0	7	0	7	12	3	0	15	0	22
08:15 AM	0	0	0	0	0	14	1	0	15	0	15
Grand Total	0	0	35	0	35	105	15	0	120	0	155
Apprch %		0	100	0		87.5	12.5	0			
Total %	0	0	22.6	0	22.6	67.7	9.7	0	77.4	0	

These are comments that appear AFTER THE TOTALS.

	Southbound	Bus Turning Movement - Beretania St Westbound				Bus Turning Movement - Alapai St Northbound				Eastbound	
Start Time	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 06:45 AM											
06:45 AM	0	0	5	0	5	**17**	1	0	**18**	0	**23**
07:00 AM	0	0	4	0	4	11	**2**	0	13	0	17
07:15 AM	0	0	5	0	5	14	2	0	16	0	21
07:30 AM	0	0	**7**	0	**7**	15	1	0	16	0	23
Total Volume	0	0	21	0	21	57	6	0	63	0	84
% App. Total		0	100	0		90.5	9.5	0			
PHF	.000	.000	.750	.000	.750	.838	.750	.000	.875	.000	.913

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counter: D1-0768/D1-0769
Counted:GMT/TO
Weather:Clear

File Name : alaberp-bus
Site Code : 00000000
Start Date : 9/14/2006
Page No : 1

These are comments that appear BEFORE the data.

Groups Printed- Class 1

	Southbound	Bus Turning Movement - Beretania St Westbound				Bus Turning Movement - Alapai St Northbound				Eastbound	
Start Time	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	App. Total	Int. Total
03:00 PM	0	0	7	0	7	15	1	0	16	0	23
03:15 PM	0	0	5	0	5	11	2	0	13	0	18
03:30 PM	0	0	6	0	6	14	2	0	16	0	22
03:45 PM	0	0	3	0	3	13	1	0	14	0	17
Total	0	0	21	0	21	53	6	0	59	0	80
04:00 PM	0	0	6	0	6	21	1	0	22	0	28
04:15 PM	0	0	6	0	6	18	3	0	21	0	27
04:30 PM	0	0	5	0	5	22	3	0	25	0	30
04:45 PM	0	0	6	0	6	24	2	0	26	0	32
Total	0	0	23	0	23	85	9	0	94	0	117
05:00 PM	0	0	1	0	1	15	2	0	17	0	18
05:15 PM	0	0	7	0	7	20	2	0	22	0	29
05:30 PM	0	0	4	0	4	9	2	0	11	0	15
05:45 PM	0	0	6	0	6	10	1	0	11	0	17
Total	0	0	18	0	18	54	7	0	61	0	79
Grand Total	0	0	62	0	62	192	22	0	214	0	276
Apprch %		0	100	0		89.7	10.3	0			
Total %	0	0	22.5	0	22.5	69.6	8	0	77.5	0	

These are comments that appear AFTER THE TOTALS.

	Southbound	Bus Turning Movement - Beretania St Westbound				Bus Turning Movement - Alapai St Northbound				Eastbound	
Start Time	App. Total	Left	Thru	Rght	App. Total	Left	Thru	Rght	App. Total	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 04:00 PM											
04:00 PM	0	0	**6**	0	**6**	21	1	0	22	0	28
04:15 PM	0	0	6	0	6	18	**3**	0	21	0	27
04:30 PM	0	0	5	0	5	22	3	0	25	0	30
04:45 PM	0	0	6	0	6	**24**	2	0	**26**	0	**32**
Total Volume	0	0	23	0	23	85	9	0	94	0	117
% App. Total		0	100	0		90.4	9.6	0			
PHF	.000	.000	.958	.000	.958	.885	.750	.000	.904	.000	.914

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counter:D1-0769
Counted:ZW
Weather:Clear

File Name : Alapai St AM
Site Code : 00000213
Start Date : 9/6/2006
Page No : 1

Groups Printed- Unshifted

	Southbound	**Vehicles Exiting Police Pkg Lot Westbound**				**Northbound**	**Eastbound**	
Start Time	App. Total	Left	Thru	Right	App. Total	App. Total	App. Total	Int. Total
06:30 AM	0	0	0	4	4	0	0	4
06:45 AM	0	0	0	4	4	0	0	4
Total	0	0	0	8	8	0	0	8
07:00 AM	0	0	0	2	2	0	0	2
07:15 AM	0	0	0	3	3	0	0	3
07:30 AM	0	0	0	2	2	0	0	2
07:45 AM	0	0	0	5	5	0	0	5
Total	0	0	0	12	12	0	0	12
08:00 AM	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0
Grand Total	0	0	0	20	20	0	0	20
Apprch %		0	0	100				
Total %	0	0	0	100	100	0	0	

	Southbound	**Vehicles Exiting Police Pkg Lot Westbound**				**Northbound**	**Eastbound**	
Start Time	App. Total	Left	Thru	Right	App. Total	App. Total	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 06:30 AM								
06:30 AM	0	0	0	**4**	**4**	0	0	**4**
06:45 AM	0	0	0	4	4	0	0	4
07:00 AM	0	0	0	2	2	0	0	2
07:15 AM	0	0	0	3	3	0	0	3
Total Volume	0	0	0	13	13	0	0	13
% App. Total		0	0	100				
PHF	.000	.000	.000	.813	.813	.000	.000	.813

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counter:D1-0769
Counted:ZW
Weather:Rain

File Name : Alapai St PM
Site Code : 00000214
Start Date : 9/6/2006
Page No : 1

Groups Printed- Unshifted

	Southbound	Vehicles Exiting Police Pkg Lot Westbound				Northbound	Eastbound	
Start Time	App. Total	Left	Thru	Right	App. Total	App. Total	App. Total	Int. Total
03:00 PM	0	0	0	7	7	0	0	7
03:15 PM	0	0	0	2	2	0	0	2
03:30 PM	0	0	0	6	6	0	0	6
03:45 PM	0	0	0	1	1	0	0	1
Total	0	0	0	16	16	0	0	16
04:00 PM	0	0	0	2	2	0	0	2
04:15 PM	0	0	0	4	4	0	0	4
04:30 PM	0	0	0	4	4	0	0	4
04:45 PM	0	0	0	4	4	0	0	4
Total	0	0	0	14	14	0	0	14
05:00 PM	0	0	0	3	3	0	0	3
05:15 PM	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	3	3	0	0	3
05:45 PM	0	0	0	4	4	0	0	4
Total	0	0	0	10	10	0	0	10
Grand Total	0	0	0	40	40	0	0	40
Apprch %		0	0	100				
Total %	0	0	0	100	100	0	0	

	Southbound	Vehicles Exiting Police Pkg Lot Westbound				Northbound	Eastbound	
Start Time	App. Total	Left	Thru	Right	App. Total	App. Total	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 03:00 PM								
03:00 PM	0	0	0	**7**	**7**	0	0	**7**
03:15 PM	0	0	0	2	2	0	0	2
03:30 PM	0	0	0	6	6	0	0	6
03:45 PM	0	0	0	1	1	0	0	1
Total Volume	0	0	0	16	16	0	0	16
% App. Total		0	0	100				
PHF	.000	.000	.000	.571	.571	.000	.000	.571

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counter:D1-0768
Counted:WH
Weather:Clear

File Name : AlaKin AM
Site Code : 00000006
Start Date : 9/7/2006
Page No : 1

Groups Printed- Unshifted

	Bus Turning Movement - Alapai St. NB Southbound				Bus Turning Movement - King St. EB Westbound				Alapai St Northbound				S. King St Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30 AM	0	7	0	7	10	9	0	19	0	151	46	197	39	275	0	314	537
06:45 AM	0	8	3	11	12	11	0	23	0	192	65	257	50	325	0	375	666
Total	0	15	3	18	22	20	0	42	0	343	111	454	89	600	0	689	1203
07:00 AM	0	10	0	10	3	4	0	7	0	278	68	346	30	307	0	337	700
07:15 AM	0	11	2	13	6	9	0	15	0	282	93	375	67	333	0	400	803
07:30 AM	0	12	0	12	8	9	0	17	0	329	89	418	63	334	0	397	844
07:45 AM	0	8	0	8	1	6	0	7	0	299	85	384	46	321	0	367	766
Total	0	41	2	43	18	28	0	46	0	1188	335	1523	206	1295	0	1501	3113
08:00 AM	0	10	0	10	7	10	0	17	0	274	91	365	54	295	0	349	741
08:15 AM	0	14	0	14	8	6	0	14	0	254	89	343	41	297	0	338	709
Grand Total	0	80	5	85	55	64	0	119	0	2059	626	2685	390	2487	0	2877	5766
Apprch %	0	94.1	5.9		46.2	53.8	0		0	76.7	23.3		13.6	86.4	0		
Total %	0	1.4	0.1	1.5	1	1.1	0	2.1	0	35.7	10.9	46.6	6.8	43.1	0	49.9	

	Southbound	Westbound	Alapai St Northbound				S. King St Eastbound				
Start Time	App. Total	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 07:15 AM											
07:15 AM	0	0	0	282	**93**	375	**67**	333	0	**400**	775
07:30 AM	0	0	0	**329**	89	**418**	63	**334**	0	397	**815**
07:45 AM	0	0	0	299	85	384	46	321	0	367	751
08:00 AM	0	0	0	274	91	365	54	295	0	349	714
Total Volume	0	0	0	1184	358	1542	230	1283	0	1513	3055
% App. Total			0	76.8	23.2		15.2	84.8	0		
PHF	.000	.000	.000	.900	.962	.922	.858	.960	.000	.946	.937

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
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Counter:D1-0527
Counted:TO
Weather:Clear

File Name : AlaKin PM
Site Code : 00000003
Start Date : 9/7/2006
Page No : 1

Groups Printed- Unshifted

	Bus Turning Movement - Alapai St. NB Southbound				Bus Turning Movement - King St. EB Westbound				Alapai St Northbound				S. King St Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	0	8	0	8	3	10	0	13	0	320	103	423	26	355	0	381	825
03:15 PM	0	7	1	8	6	16	0	22	0	379	149	528	35	344	0	379	937
03:30 PM	0	12	0	12	5	15	0	20	0	401	132	533	25	361	0	386	951
03:45 PM	0	7	0	7	4	22	0	26	0	347	173	520	25	436	0	461	1014
Total	0	34	1	35	18	63	0	81	0	1447	557	2004	111	1496	0	1607	3727
04:00 PM	0	7	1	8	6	9	0	15	0	350	176	526	19	393	0	412	961
04:15 PM	0	13	0	13	3	13	0	16	0	342	197	539	20	412	0	432	1000
04:30 PM	0	8	0	8	10	14	0	24	0	378	198	576	13	410	0	423	1031
04:45 PM	0	9	1	10	2	14	0	16	0	314	232	546	32	448	0	480	1052
Total	0	37	2	39	21	50	0	71	0	1384	803	2187	84	1663	0	1747	4044
05:00 PM	0	5	0	5	2	16	0	18	0	370	223	593	29	460	0	489	1105
05:15 PM	0	12	0	12	3	10	0	13	0	333	196	529	16	430	0	446	1000
05:30 PM	0	6	0	6	7	9	0	16	0	306	160	466	11	516	0	527	1015
05:45 PM	0	4	1	5	2	7	0	9	0	266	153	419	11	467	0	478	911
Total	0	27	1	28	14	42	0	56	0	1275	732	2007	67	1873	0	1940	4031
Grand Total	0	98	4	102	53	155	0	208	0	4106	2092	6198	262	5032	0	5294	11802
Apprch %	0	96.1	3.9		25.5	74.5	0		0	66.2	33.8		4.9	95.1	0		
Total %	0	0.8	0	0.9	0.4	1.3	0	1.8	0	34.8	17.7	52.5	2.2	42.6	0	44.9	

	Southbound	Westbound	Alapai St Northbound				S. King St Eastbound				
Start Time	App. Total	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 04:30 PM											
04:30 PM	0	0	0	**378**	198	576	13	410	0	423	999
04:45 PM	0	0	0	314	**232**	546	**32**	448	0	480	1026
05:00 PM	0	0	0	370	223	**593**	29	**460**	0	**489**	**1082**
05:15 PM	0	0	0	333	196	529	16	430	0	446	975
Total Volume	0	0	0	1395	849	2244	90	1748	0	1838	4082
% App. Total			0	62.2	37.8		4.9	95.1	0		
PHF	.000	.000	.000	.923	.915	.946	.703	.950	.000	.940	.943

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Counter:D1-0525
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Weather:Clear

File Name : KeaKin AM
Site Code : 00000006
Start Date : 9/7/2006
Page No : 1

Groups Printed- Unshifted

	Keala Maka'i St Southbound				Bus Turning Movement - King St. Westbound				Northbound	King St Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30 AM	65	0	0	65	0	4	0	4	0	34	376	0	410	479
06:45 AM	47	0	0	47	0	13	0	13	0	36	406	0	442	502
Total	112	0	0	112	0	17	0	17	0	70	782	0	852	981
07:00 AM	52	0	0	52	0	9	0	9	0	33	487	0	520	581
07:15 AM	53	0	0	53	0	11	0	11	0	45	458	0	503	567
07:30 AM	51	0	0	51	0	9	0	9	0	53	490	0	543	603
07:45 AM	63	0	0	63	0	4	0	4	0	42	465	0	507	574
Total	219	0	0	219	0	33	0	33	0	173	1900	0	2073	2325
08:00 AM	73	0	0	73	0	11	0	11	0	41	488	0	529	613
08:15 AM	62	0	0	62	0	7	0	7	0	42	442	0	484	553
Grand Total	466	0	0	466	0	68	0	68	0	326	3612	0	3938	4472
Apprch %	100	0	0		0	100	0			8.3	91.7	0		
Total %	10.4	0	0	10.4	0	1.5	0	1.5	0	7.3	80.8	0	88.1	

	Keala Maka'i St Southbound				Westbound	Northbound	King St Eastbound				
Start Time	Left	Thru	Right	App. Total	App. Total	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 07:15 AM											
07:15 AM	53	0	0	53	0	0	45	458	0	503	556
07:30 AM	51	0	0	51	0	0	**53**	**490**	0	**543**	594
07:45 AM	63	0	0	63	0	0	42	465	0	507	570
08:00 AM	**73**	0	0	**73**	0	0	41	488	0	529	**602**
Total Volume	240	0	0	240	0	0	181	1901	0	2082	2322
% App. Total	100	0	0				8.7	91.3	0		
PHF	.822	.000	.000	.822	.000	.000	.854	.970	.000	.959	.964

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Counter:D1-0525
Counted:GMT
Weather:Clear

File Name : KeaKin PM
Site Code : 00000006
Start Date : 9/7/2006
Page No : 1

Groups Printed- Unshifted

	Keala Maka'i St Southbound				Bus Turning Movement - King St. EB Westbound				Northbound	King St Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	80	0	0	80	0	6	0	6	0	19	524	0	543	629
03:15 PM	70	0	0	70	0	7	0	7	0	30	545	0	575	652
03:30 PM	72	0	0	72	0	7	0	7	0	19	552	0	571	650
03:45 PM	78	0	0	78	0	8	0	8	0	29	642	0	671	757
Total	300	0	0	300	0	28	0	28	0	97	2263	0	2360	2688
04:00 PM	57	0	0	57	0	8	0	8	0	24	660	0	684	749
04:15 PM	53	0	0	53	0	7	0	7	0	24	672	0	696	756
04:30 PM	82	0	0	82	0	4	0	4	0	11	684	0	695	781
04:45 PM	64	0	0	64	0	8	0	8	0	16	735	0	751	823
Total	256	0	0	256	0	27	0	27	0	75	2751	0	2826	3109
05:00 PM	61	0	0	61	0	6	0	6	0	16	795	0	811	878
05:15 PM	43	0	0	43	0	9	0	9	0	15	788	0	803	855
05:30 PM	39	0	0	39	0	4	0	4	0	14	793	0	807	850
05:45 PM	36	0	0	36	0	7	0	7	0	11	715	0	726	769
Total	179	0	0	179	0	26	0	26	0	56	3091	0	3147	3352
Grand Total	735	0	0	735	0	81	0	81	0	228	8105	0	8333	9149
Apprch %	100	0	0		0	100	0			2.7	97.3	0		
Total %	8	0	0	8	0	0.9	0	0.9	0	2.5	88.6	0	91.1	

	Keala Maka'i St Southbound				Westbound	Northbound	King St Eastbound				
Start Time	Left	Thru	Right	App. Total	App. Total	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 04:45 PM											
04:45 PM	**64**	0	0	**64**	0	0	**16**	735	0	751	815
05:00 PM	61	0	0	61	0	0	16	**795**	0	**811**	**872**
05:15 PM	43	0	0	43	0	0	15	788	0	803	846
05:30 PM	39	0	0	39	0	0	14	793	0	807	846
Total Volume	207	0	0	207	0	0	61	3111	0	3172	3379
% App. Total	100	0	0				1.9	98.1	0		
PHF	.809	.000	.000	.809	.000	.000	.953	.978	.000	.978	.969

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Counter:D1-0527
Counted:TO
Weather:Clear

File Name : BerHal AM
Site Code : 00000001
Start Date : 9/6/2006
Page No : 1

Groups Printed- Unshifted

	Southbound	Beretania St Westbound				Hale Maka'i St Northbound				Bus Turning Movement - S. Beretania St. WB Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30 AM	0	10	474	0	484	13	0	0	13	0	4	0	4	501
06:45 AM	0	11	654	0	665	25	0	0	25	0	5	0	5	695
Total	0	21	1128	0	1149	38	0	0	38	0	9	0	9	1196
07:00 AM	0	10	676	0	686	23	0	0	23	0	5	0	5	714
07:15 AM	0	3	757	0	760	34	0	0	34	0	5	0	5	799
07:30 AM	0	9	817	0	826	42	0	0	42	0	9	0	9	877
07:45 AM	0	7	778	0	785	30	0	0	30	0	3	0	3	818
Total	0	29	3028	0	3057	129	0	0	129	0	22	0	22	3208
08:00 AM	0	9	783	0	792	30	0	0	30	0	7	0	7	829
08:15 AM	0	12	719	0	731	33	0	0	33	0	8	0	8	772
Grand Total	0	71	5658	0	5729	230	0	0	230	0	46	0	46	6005
Apprch %		1.2	98.8	0		100	0	0		0	100	0		
Total %	0	1.2	94.2	0	95.4	3.8	0	0	3.8	0	0.8	0	0.8	

	Southbound	Beretania St Westbound				Hale Maka'i St Northbound				Eastbound	
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 07:15 AM											
07:15 AM	0	3	757	0	760	34	0	0	34	0	794
07:30 AM	0	**9**	**817**	0	**826**	**42**	0	0	**42**	0	**868**
07:45 AM	0	7	778	0	785	30	0	0	30	0	815
08:00 AM	0	9	783	0	792	30	0	0	30	0	822
Total Volume	0	28	3135	0	3163	136	0	0	136	0	3299
% App. Total		0.9	99.1	0		100	0	0			
PHF	.000	.778	.959	.000	.957	.810	.000	.000	.810	.000	.950

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
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Counter:D1-0527
Counted:TO
Weather:Rain

File Name : BerHal PM
Site Code : 00000002
Start Date : 9/6/2006
Page No : 1

Groups Printed- Unshifted

	Southbound	S. Beretania St Westbound				Hale Maka'i St Northbound				Bus Turning Movement - S. Beretania St. WB Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	0	14	500	0	514	65	0	0	65	0	6	0	6	585
03:15 PM	0	19	504	0	523	53	0	0	53	0	8	0	8	584
03:30 PM	0	18	558	0	576	51	0	0	51	0	4	0	4	631
03:45 PM	0	18	553	0	571	43	0	0	43	0	6	0	6	620
Total	0	69	2115	0	2184	212	0	0	212	0	24	0	24	2420
04:00 PM	0	11	567	0	578	63	0	0	63	0	7	0	7	648
04:15 PM	0	13	556	0	569	45	0	0	45	0	5	0	5	619
04:30 PM	0	18	605	0	623	80	0	0	80	0	5	0	5	708
04:45 PM	0	15	570	0	585	41	0	0	41	0	7	0	7	633
Total	0	57	2298	0	2355	229	0	0	229	0	24	0	24	2608
05:00 PM	0	10	508	0	518	65	0	0	65	0	3	0	3	586
05:15 PM	0	3	648	0	651	38	0	0	38	0	4	0	4	693
05:30 PM	0	7	623	0	630	31	0	0	31	0	2	0	2	663
05:45 PM	0	9	550	0	559	28	0	0	28	0	8	0	8	595
Total	0	29	2329	0	2358	162	0	0	162	0	17	0	17	2537
Grand Total	0	155	6742	0	6897	603	0	0	603	0	65	0	65	7565
Apprch %		2.2	97.8	0		100	0	0		0	100	0		
Total %	0	2	89.1	0	91.2	8	0	0	8	0	0.9	0	0.9	

	Southbound	S. Beretania St Westbound				Hale Maka'i St Northbound				Eastbound	
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 04:30 PM											
04:30 PM	0	**18**	605	0	623	**80**	0	0	**80**	0	**703**
04:45 PM	0	15	570	0	585	41	0	0	41	0	626
05:00 PM	0	10	508	0	518	65	0	0	65	0	583
05:15 PM	0	3	**648**	0	**651**	38	0	0	38	0	689
Total Volume	0	46	2331	0	2377	224	0	0	224	0	2601
% App. Total		1.9	98.1	0		100	0	0			
PHF	.000	.639	.899	.000	.913	.700	.000	.000	.700	.000	.925

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Counter:D1-0525
Counted:GMT
Weather:Clear

File Name : HotHal AM
Site Code : 00000003
Start Date : 9/6/2006
Page No : 1

Groups Printed- Unshifted

	Hale Maka'i St Southbound				Hotel St Westbound				Driveway Northbound				Hotel St Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30 AM	3	0	8	11	0	56	9	65	0	0	0	0	1	10	0	11	87
06:45 AM	2	0	9	11	1	44	19	64	0	1	0	1	6	6	2	14	90
Total	5	0	17	22	1	100	28	129	0	1	0	1	7	16	2	25	177
07:00 AM	4	0	8	12	2	47	13	62	0	1	0	1	8	22	2	32	107
07:15 AM	1	0	2	3	6	45	29	80	0	2	0	2	5	26	0	31	116
07:30 AM	3	0	9	12	5	55	31	91	0	2	0	2	10	19	1	30	135
07:45 AM	5	0	5	10	1	63	25	89	0	2	0	2	6	17	0	23	124
Total	13	0	24	37	14	210	98	322	0	7	0	7	29	84	3	116	482
08:00 AM	2	0	8	10	1	62	26	89	1	0	0	1	8	24	2	34	134
08:15 AM	2	0	9	11	7	61	30	98	0	1	1	2	5	13	0	18	129
Grand Total	22	0	58	80	23	433	182	638	1	9	1	11	49	137	7	193	922
Apprch %	27.5	0	72.5		3.6	67.9	28.5		9.1	81.8	9.1		25.4	71	3.6		
Total %	2.4	0	6.3	8.7	2.5	47	19.7	69.2	0.1	1	0.1	1.2	5.3	14.9	0.8	20.9	

	Hale Maka'i St Southbound				Hotel St Westbound				Driveway Northbound				Hotel St Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	3	0	**9**	**12**	5	55	**31**	91	0	**2**	0	**2**	**10**	19	1	30	**135**
07:45 AM	**5**	0	5	10	1	**63**	25	89	0	2	0	2	6	17	0	23	124
08:00 AM	2	0	8	10	1	62	26	89	**1**	0	0	1	8	**24**	**2**	**34**	134
08:15 AM	2	0	9	11	**7**	61	30	**98**	0	1	**1**	2	5	13	0	18	129
Total Volume	12	0	31	43	14	241	112	367	1	5	1	7	29	73	3	105	522
% App. Total	27.9	0	72.1		3.8	65.7	30.5		14.3	71.4	14.3		27.6	69.5	2.9		
PHF	.600	.000	.861	.896	.500	.956	.903	.936	.250	.625	.250	.875	.725	.760	.375	.772	.967

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Counter:D1-0525
Counted:GMT
Weather:Rain

File Name : HotHal PM
Site Code : 00000003
Start Date : 9/6/2006
Page No : 1

Groups Printed- Unshifted

	Hale Maka'i St Southbound				Hotel St Westbound				Driveway Northbound				Hotel St Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	1	0	13	14	0	44	46	90	2	2	0	4	14	20	0	34	142
03:15 PM	2	0	15	17	2	46	39	87	0	0	0	0	14	18	0	32	136
03:30 PM	9	0	9	18	1	55	32	88	1	2	2	5	14	12	0	26	137
03:45 PM	5	0	14	19	1	49	28	78	1	0	0	1	11	14	0	25	123
Total	17	0	51	68	4	194	145	343	4	4	2	10	53	64	0	117	538
04:00 PM	2	0	13	15	1	42	48	91	1	1	2	4	19	11	0	30	140
04:15 PM	3	0	10	13	1	40	31	72	0	2	2	4	13	15	0	28	117
04:30 PM	5	0	15	20	0	44	42	86	1	1	2	4	36	14	0	50	160
04:45 PM	4	0	8	12	0	40	26	66	0	1	0	1	9	13	0	22	101
Total	14	0	46	60	2	166	147	315	2	5	6	13	77	53	0	130	518
05:00 PM	10	0	10	20	0	34	24	58	0	0	0	0	23	7	0	30	108
05:15 PM	3	0	6	9	0	46	25	71	0	0	1	1	14	11	0	25	106
05:30 PM	1	0	16	17	0	38	21	59	0	1	0	1	11	7	0	18	95
05:45 PM	1	0	10	11	3	29	16	48	0	1	0	1	10	2	0	12	72
Total	15	0	42	57	3	147	86	236	0	2	1	3	58	27	0	85	381
Grand Total	46	0	139	185	9	507	378	894	6	11	9	26	188	144	0	332	1437
Apprch %	24.9	0	75.1		1	56.7	42.3		23.1	42.3	34.6		56.6	43.4	0		
Total %	3.2	0	9.7	12.9	0.6	35.3	26.3	62.2	0.4	0.8	0.6	1.8	13.1	10	0	23.1	

	Hale Maka'i St Southbound				Hotel St Westbound				Driveway Northbound				Hotel St Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:45 PM																	
03:45 PM	**5**	0	14	19	**1**	**49**	28	78	**1**	0	0	1	11	14	0	25	123
04:00 PM	2	0	13	15	1	42	**48**	**91**	1	1	**2**	**4**	19	11	0	30	140
04:15 PM	3	0	10	13	1	40	31	72	0	**2**	2	4	13	**15**	0	28	117
04:30 PM	5	0	**15**	**20**	0	44	42	86	1	1	2	4	**36**	14	0	**50**	**160**
Total Volume	15	0	52	67	3	175	149	327	3	4	6	13	79	54	0	133	540
% App. Total	22.4	0	77.6		0.9	53.5	45.6		23.1	30.8	46.2		59.4	40.6	0		
PHF	.750	.000	.867	.838	.750	.893	.776	.898	.750	.500	.750	.813	.549	.900	.000	.665	.844

APPENDIX B

LEVEL OF SERVICE DEFINITIONS

LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Level of Service (LOS) for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. Specifically, level-of-service (LOS) criteria are stated in terms of the average control delay per vehicle, typically a 15-min analysis period. The criteria are given in the following table.

Table 1: Level-of-Service Criteria for Signalized Intersections

Level of Service	Control Delay per Vehicle (sec/veh)
A	≤10.0
B	>10.0 and ≤20.0
C	>20.0 and ≤35.0
D	>35.0 and ≤55.0
E	>55.0 and ≤80.0
F	>80.0

Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group.

Level of Service A describes operations with low control delay, up to 10 sec per vehicle. This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.

Level of Service B describes operations with control delay greater than 10 and up to 20 sec per vehicle. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.

Level of Service C describes operations with control delay greater than 20 and up to 35 sec per vehicle. These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.

Level of Service D describes operations with control delay greater than 35 and up to 55 sec per vehicle. At level of service D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

"Highway Capacity Manual," Transportation Research Board, 2000.

Level of Service E describes operation with control delay greater than 55 and up to 80 sec per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.

Level of Service F describes operations with control delay in excess of 80 sec per vehicle. This level, considered to be unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

"Highway Capacity Manual," Transportation Research Board, 2000.

LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Level of Service (LOS) criteria are given in Table 1. As used here, control delay is defined as the total elapsed time from the time a vehicle stops at the end of the queue to the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position, including deceleration of vehicles from free-flow speed to the speed of vehicles in the queue.

The average total delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation. If the degree of saturation is greater than about 0.9, average control delay is significantly affected by the length of the analysis period.

Table 1: Level-of-Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay (Sec/Veh)
A	≤10.0
B	>10.0 and ≤15.0
C	>15.0 and ≤25.0
D	>25.0 and ≤35.0
E	>35.0 and ≤50.0
F	>50.0

"Highway Capacity Manual," Transportation Research Board, 2000.

APPENDIX C

CAPACITY ANALYSIS CALCULATIONS
EXISTING PEAK HOUR TRAFFIC ANALYSIS

HCS+: Signalized Intersections Release 5.2

Analyst: CL
Agency:
Date: 09/15/06
Period: AM Peak
Project ID:
E/W St: King St

Inter.:
Area Type: All other areas
Jurisd:
Year : Existing

N/S St: Alapai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	5	0	0	0	0	0	4	1	0	0	0
LGConfig		LT						TR	R			
Volume	230	1283						1184	358			
Lane Width		12.0						12.0	12.0			
RTOR Vol									36			

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left			
Thru	A				Thru A			
Right					Right A			
Peds					Peds			
WB Left					SB Left			
Thru					Thru			
Right					Right			
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	55.0				55.0			
Yellow	4.0				4.0			
All Red	1.0				1.0			

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	3710	8095	0.43	0.46	22.0	C	22.0	C
Westbound								
Northbound								
TR	2993	6531	0.45	0.46	22.3	C	22.2	C
R	726	1583	0.39	0.46	21.7	C		
Southbound								

Intersection Delay = 22.1 (sec/veh) Intersection LOS = C

HCS+: Signalized Intersections Release 5.2

Analyst: CL
Agency:
Date: 09/15/06
Period: PM Peak
Project ID:
E/W St: King St

Inter.:
Area Type: All other areas
Jurisd:
Year : Existing

N/S St: Alapai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	5	0	0	0	0	0	4	1	0	0	0
LGConfig		LT						TR	R			
Volume	90	1748						1395	849			
Lane Width		12.0						12.0	12.0			
RTOR Vol									85			

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left			
Thru	A				Thru A			
Right					Right A			
Peds					Peds			
WB Left					SB Left			
Thru					Thru			
Right					Right			
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	53.5				56.5			
Yellow	4.0				4.0			
All Red	1.0				1.0			

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	3628	8138	0.54	0.45	24.4	C	24.4	C
Westbound								
Northbound								
TR	3013	6400	0.62	0.47	24.1	C	24.0	C
R	745	1583	0.54	0.47	23.3	C		
Southbound								

Intersection Delay = 24.2 (sec/veh) Intersection LOS = C

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: CL
Agency/Co.:
Date Performed: 09/15/06
Analysis Time Period: AM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Existing
Project ID:
East/West Street: King St
North/South Street: Kealamakai St
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	181	951				
Peak-Hour Factor, PHF	0.96	0.96				
Hourly Flow Rate, HFR	188	990				
Percent Heavy Vehicles	5	--	--		--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	1	2				
Configuration	L	T				
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume				240		
Peak Hour Factor, PHF				0.82		
Hourly Flow Rate, HFR				292		
Percent Heavy Vehicles				2		
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/			/
Lanes				1		
Configuration				L		

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	L					L		
v (vph)	188					292		
C(m) (vph)	1604					614		
v/c	0.12					0.48		
95% queue length	0.40					2.68		
Control Delay	7.5					16.2		
LOS	A					C		
Approach Delay							16.2	
Approach LOS							C	

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: CL
Agency/Co.:
Date Performed: 09/15/06
Analysis Time Period: PM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Existing
Project ID:
East/West Street: King St
North/South Street: Kealamakai St
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	58	1201				
Peak-Hour Factor, PHF	0.94	0.94				
Hourly Flow Rate, HFR	61	1277				
Percent Heavy Vehicles	5	--	--		--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	0	2				
Configuration	LT	T				
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume				250		
Peak Hour Factor, PHF				0.76		
Hourly Flow Rate, HFR				328		
Percent Heavy Vehicles				2		
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/			/
Lanes				1		
Configuration				L		

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	LT					L		
v (vph)	61					328		
C(m) (vph)	1604					743		
v/c	0.04					0.44		
95% queue length	0.12					2.34		
Control Delay	7.3					13.7		
LOS	A					B		
Approach Delay							13.7	
Approach LOS							B	

HCS+: Signalized Intersections Release 5.2

Analyst: CL
Agency:
Date: 09/15/06
Period: AM Peak
Project ID:
E/W St: Beretania St

Inter.:
Area Type: All other areas
Jurisd:
Year : Existing

N/S St: Alapai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	5	0	3	1	0	0	0	1
LGConfig					TR		L	T				R
Volume					3149	155	1080	112				29
Lane Width					12.0		12.0	12.0				12.0
RTOR Vol						16						3

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left	A		
Thru					Thru	A		
Right					Right			
Peds					Peds			
WB Left					SB Left			
Thru		A			Thru			
Right		A			Right	A		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green		43.5				36.5		
Yellow		4.0				4.0		
All Red		1.0				1.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
TR	4061	8403	0.83	0.48	21.5	C	21.5	C
Northbound								
L	1899	4683	0.63	0.41	22.0	C		
T	734	1810	0.17	0.41	17.2	B	21.5	C
Southbound								
							16.3	B
R	653	1611	0.06	0.41	16.3	B		

Intersection Delay = 21.5 (sec/veh) Intersection LOS = C

HCS+: Signalized Intersections Release 5.2

Analyst: CL
Agency:
Date: 09/15/06
Period: PM Peak
Project ID:
E/W St: Beretania St

Inter.:
Area Type: All other areas
Jurisd:
Year : Existing

N/S St: Alapai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	5	0	3	1	0	0	0	1
LGConfig					TR		L	T				R
Volume					2214	81	1353	190				20
Lane Width					12.0		12.0	12.0				12.0
RTOR Vol						8						2

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left	A		
Thru					Thru	A		
Right					Right			
Peds					Peds			
WB Left					SB Left			
Thru		A			Thru			
Right		A			Right	A		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green		40.0				40.0		
Yellow		4.0				4.0		
All Red		1.0				1.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
TR	3740	8416	0.69	0.44	20.5	C	20.5	C
Northbound								
L	2081	4683	0.67	0.44	20.6	C		
T	804	1810	0.24	0.44	15.7	B	20.0+	C
Southbound								
							14.1	B
R	716	1611	0.03	0.44	14.1	B		

Intersection Delay = 20.3 (sec/veh) Intersection LOS = C

HCS+: Signalized Intersections Release 5.2

Analyst: CL
Agency:
Date: 09/15/06
Period: AM Peak
Project ID:
E/W St: Beretania St

Inter.:
Area Type: All other areas
Jurisd:
Year : Existing

N/S St: Hale Makai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	5	0	1	0	0	0	0	0
LGConfig					LT		L					
Volume				28	3135		136					
Lane Width					12.0		12.0					
RTOR Vol												

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left					NB	Left	A			
Thru						Thru				
Right						Right				
Peds						Peds				
WB Left		A			SB	Left				
Thru		A				Thru				
Right						Right				
Peds						Peds				
NB Right					EB	Right				
SB Right					WB	Right				
Green		45.0					35.0			
Yellow		4.0					4.0			
All Red		1.0					1.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LT	4227	8453	0.78	0.50	19.4	B	19.4	B
Northbound								
L	688	1770	0.24	0.39	18.8	B	18.8	B
Southbound								

Intersection Delay = 19.4 (sec/veh) Intersection LOS = B

HCS+: Signalized Intersections Release 5.2

Analyst: CL
Agency:
Date: 09/15/06
Period: PM Peak
Project ID:
E/W St: Beretania St

Inter.:
Area Type: All other areas
Jurisd:
Year : Existing

N/S St: Hale Makai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	5	0	1	0	0	0	0	0
LGConfig					LT		L					
Volume				46	2331		224					
Lane Width					12.0		12.0					
RTOR Vol												

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left					NB	Left	A			
Thru						Thru				
Right						Right				
Peds						Peds				
WB Left		A			SB	Left				
Thru		A				Thru				
Right						Right				
Peds						Peds				
NB Right					EB	Right				
SB Right					WB	Right				
Green		42.0					38.0			
Yellow		4.0					4.0			
All Red		1.0					1.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LT	3943	8449	0.66	0.47	19.0	B	19.0	B
Northbound								
L	747	1770	0.43	0.42	18.7	B	18.7	B
Southbound								

Intersection Delay = 18.9 (sec/veh) Intersection LOS = B

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: CL
Agency/Co.:
Date Performed: 09/15/06
Analysis Time Period: AM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Existing
Project ID:
East/West Street: Hotel St
North/South Street: Hale Makai St
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	29	86			225	111
Peak-Hour Factor, PHF	0.85	0.85			0.92	0.92
Hourly Flow Rate, HFR	34	101			244	120
Percent Heavy Vehicles	2	--	--		--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	0	1			1	0
Configuration		LT				TR
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume				11		24
Peak Hour Factor, PHF				0.73		0.73
Hourly Flow Rate, HFR				15		32
Percent Heavy Vehicles				2		2
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/		No	/
Lanes				0	0	
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	LT						LR	
v (vph)	34						47	
C(m) (vph)	1195						657	
v/c	0.03						0.07	
95% queue length	0.09						0.23	
Control Delay	8.1						10.9	
LOS	A						B	
Approach Delay							10.9	
Approach LOS							B	

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: CL
Agency/Co.:
Date Performed: 09/15/06
Analysis Time Period: PM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Existing
Project ID:
East/West Street: Hotel St
North/South Street: Hale Makai St
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	82	45			164	117
Peak-Hour Factor, PHF	0.63	0.63			0.82	0.82
Hourly Flow Rate, HFR	130	71			200	142
Percent Heavy Vehicles	2	--	--		--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	0	1			1	0
Configuration		LT				TR
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume				22		39
Peak Hour Factor, PHF				0.76		0.76
Hourly Flow Rate, HFR				28		51
Percent Heavy Vehicles				2		2
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/		No	/
Lanes				0	0	
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	LT						LR	
v (vph)	130						79	
C(m) (vph)	1217						589	
v/c	0.11						0.13	
95% queue length	0.36						0.46	
Control Delay	8.3						12.1	
LOS	A						B	
Approach Delay							12.1	
Approach LOS							B	

APPENDIX D

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2012 PEAK HOUR TRAFFIC
ANALYSIS WITHOUT PROJECT

HCS+: Signalized Intersections Release 5.2

Analyst: CL
Agency:
Date: 09/15/06
Period: AM Peak
Project ID:
E/W St: King St

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2012 w/out project

N/S St: Alapai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	5	0	0	0	0	0	4	1	0	0	0
LGConfig		LT						TR	R			
Volume	267	1488						1373	415			
Lane Width		12.0						12.0	12.0			
RTOR Vol									42			

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left				
Thru	A				Thru	A			
Right					Right	A			
Peds					Peds				
WB Left					SB Left				
Thru					Thru				
Right					Right				
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	55.0					55.0			
Yellow	4.0					4.0			
All Red	1.0					1.0			

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	3710	8095	0.50	0.46	22.9	C	22.9	C
Westbound								
Northbound								
TR	2993	6531	0.53	0.46	23.4	C	23.2	C
R	726	1583	0.45	0.46	22.6	C		
Southbound								

Intersection Delay = 23.1 (sec/veh) Intersection LOS = C

HCS+: Signalized Intersections Release 5.2

Analyst: CL
Agency:
Date: 09/15/06
Period: PM Peak
Project ID:
E/W St: King St

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2012 w/out project

N/S St: Alapai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	5	0	0	0	0	0	4	1	0	0	0
LGConfig		LT						TR	R			
Volume	104	2028						1618	985			
Lane Width		12.0						12.0	12.0			
RTOR Vol									99			

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left				
Thru	A				Thru	A			
Right					Right	A			
Peds					Peds				
WB Left					SB Left				
Thru					Thru				
Right					Right				
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	53.0					57.0			
Yellow	4.0					4.0			
All Red	1.0					1.0			

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	3594	8138	0.63	0.44	26.3	C	26.3	C
Westbound								
Northbound								
TR	3040	6399	0.71	0.47	25.8	C	25.7	C
R	752	1583	0.62	0.47	25.1	C		
Southbound								

Intersection Delay = 26.0 (sec/veh) Intersection LOS = C

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst:
Agency/Co.:
Date Performed: 09/15/06
Analysis Time Period: AM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Year 2012 w/out project
Project ID:
East/West Street: King St
North/South Street: Kealamakai St
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	181	1103				
Peak-Hour Factor, PHF	0.96	0.96				
Hourly Flow Rate, HFR	188	1148				
Percent Heavy Vehicles	5	--	--		--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes	1	2				
Configuration	L	T				
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume				240		
Peak Hour Factor, PHF				0.82		
Hourly Flow Rate, HFR				292		
Percent Heavy Vehicles				2		
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/			/
Lanes				1		
Configuration				L		

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	L					L		
v (vph)	188					292		
C(m) (vph)	1604					571		
v/c	0.12					0.51		
95% queue length	0.40					3.07		
Control Delay	7.5					17.9		
LOS	A					C		
Approach Delay							17.9	
Approach LOS							C	

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: CL
Agency/Co.:
Date Performed: 09/15/06
Analysis Time Period: PM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Year 2012 w/out project
Project ID:
East/West Street: King St
North/South Street: Kealamakai St
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	58	1393				
Peak-Hour Factor, PHF	0.94	0.94				
Hourly Flow Rate, HFR	61	1481				
Percent Heavy Vehicles	5	--	--		--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes	0	2				
Configuration	LT	T				
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume				250		
Peak Hour Factor, PHF				0.76		
Hourly Flow Rate, HFR				328		
Percent Heavy Vehicles				2		
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/			/
Lanes				1		
Configuration				L		

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	LT					L		
v (vph)	61					328		
C(m) (vph)	1604					675		
v/c	0.04					0.49		
95% queue length	0.12					2.79		
Control Delay	7.3					15.3		
LOS	A					C		
Approach Delay							15.3	
Approach LOS							C	

HCS+: Signalized Intersections Release 5.2

Analyst: CL Inter.:
Agency: Area Type: All other areas
Date: 09/15/06 Jurisd:
Period: AM Peak Year : Year 2012 w/out project
Project ID:
E/W St: Beretania St N/S St: Alapai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	5	0	3	1	0	0	0	1
LGConfig					TR		L	T				R
Volume					3653	155	1253	112				29
Lane Width					12.0		12.0	12.0				12.0
RTOR Vol						16						3

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left					NB	Left	A			
Thru						Thru	A			
Right						Right				
Peds						Peds				
WB Left					SB	Left				
Thru		A				Thru				
Right		A				Right	A			
Peds						Peds				
NB Right					EB	Right				
SB Right					WB	Right				
Green		45.0					35.0			
Yellow		4.0					4.0			
All Red		1.0					1.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
TR	4205	8410	0.92	0.50	25.0	C	25.0	C
Northbound								
L	1821	4683	0.76	0.39	25.7	C		
T	704	1810	0.17	0.39	18.1	B	25.1	C
Southbound								
							17.2	B
R	627	1611	0.06	0.39	17.2	B		

Intersection Delay = 25.0 (sec/veh) Intersection LOS = C

HCS+: Signalized Intersections Release 5.2

Analyst: CL
Agency:
Date: 09/15/06
Period: PM Peak
Project ID:
E/W St: Beretania St

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2012 w/out project

N/S St: Alapai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	5	0	3	1	0	0	0	1
LGConfig					TR		L	T				R
Volume				2568	81		1569	190				20
Lane Width				12.0			12.0	12.0				12.0
RTOR Vol					8							2

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left					NB Left	A			
Thru					Thru	A			
Right					Right				
Peds					Peds				
WB Left					SB Left				
Thru	A				Thru				
Right	A				Right	A			
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	40.0					40.0			
Yellow	4.0					4.0			
All Red	1.0					1.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
TR	3743	8422	0.79	0.44	22.7	C	22.7	C
Northbound								
L	2081	4683	0.78	0.44	23.2	C		
T	804	1810	0.24	0.44	15.7	B	22.4	C
Southbound								
							14.1	B
R	716	1611	0.03	0.44	14.1	B		

Intersection Delay = 22.5 (sec/veh) Intersection LOS = C

HCS+: Signalized Intersections Release 5.2

Analyst: CL
Agency:
Date: 09/15/06
Period: AM Peak
Project ID:
E/W St: Beretania St

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2012 w/out project

N/S St: Hale Makai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	5	0	1	0	0	0	0	0
LGConfig					LT		L					
Volume				28	3637		136					
Lane Width					12.0		12.0					
RTOR Vol												

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left					NB Left	A			
Thru					Thru				
Right					Right				
Peds					Peds				
WB Left	A				SB Left				
Thru	A				Thru				
Right					Right				
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	47.0					33.0			
Yellow	4.0					4.0			
All Red	1.0					1.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LT	4415	8454	0.86	0.52	20.8	C	20.8	C
Northbound								
L	649	1770	0.26	0.37	20.2	C		
							20.2	C
Southbound								

Intersection Delay = 20.7 (sec/veh) Intersection LOS = C

HCS+: Signalized Intersections Release 5.2

Analyst: CL
Agency:
Date: 09/15/06
Period: PM Peak
Project ID:
E/W St: Beretania St

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2010 w/out project

N/S St: Hale Makai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	5	0	1	0	0	0	0	0
LGConfig					LT		L					
Volume				46	2704		224					
Lane Width					12.0		12.0					
RTOR Vol												

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left					NB	Left	A			
Thru						Thru				
Right						Right				
Peds						Peds				
WB Left		A			SB	Left				
Thru		A				Thru				
Right						Right				
Peds						Peds				
NB Right					EB	Right				
SB Right					WB	Right				
Green		43.0					37.0			
Yellow		4.0					4.0			
All Red		1.0					1.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LT	4037	8450	0.75	0.48	19.9	B	19.9	B
Northbound								
L	728	1770	0.44	0.41	19.5	B	19.5	B
Southbound								

Intersection Delay = 19.9 (sec/veh) Intersection LOS = B

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst:
Agency/Co.:
Date Performed: 09/15/06
Analysis Time Period: AM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Year 2012 w/out project
Project ID:
East/West Street: Hotel St
North/South Street: Hale Makai St
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	29	86			225	111
Peak-Hour Factor, PHF	0.85	0.85			0.92	0.92
Hourly Flow Rate, HFR	34	101			244	120
Percent Heavy Vehicles	2	--	--		--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes	0	1			1	0
Configuration		LT				TR
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume				11		24
Peak Hour Factor, PHF				0.73		0.73
Hourly Flow Rate, HFR				15		32
Percent Heavy Vehicles				2		2
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage				/		No /
Lanes				0		0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	LT						LR	
v (vph)	34						47	
C(m) (vph)	1195						657	
v/c	0.03						0.07	
95% queue length	0.09						0.23	
Control Delay	8.1						10.9	
LOS	A						B	
Approach Delay							10.9	
Approach LOS							B	

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst:
Agency/Co.:
Date Performed: 09/15/06
Analysis Time Period: PM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Year 2012 w/out project
Project ID:
East/West Street: Hotel St
North/South Street: Hale Makai St
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	82	45			164	117
Peak-Hour Factor, PHF	0.63	0.63			0.82	0.82
Hourly Flow Rate, HFR	130	71			200	142
Percent Heavy Vehicles	2	--	--		--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	0	1			1	0
Configuration		LT				TR
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume				22		39
Peak Hour Factor, PHF				0.76		0.76
Hourly Flow Rate, HFR				28		51
Percent Heavy Vehicles				2		2
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/		No	/
Lanes				0	0	
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	LT						LR	
v (vph)	130						79	
C(m) (vph)	1217						589	
v/c	0.11						0.13	
95% queue length	0.36						0.46	
Control Delay	8.3						12.1	
LOS	A						B	
Approach Delay							12.1	
Approach LOS							B	

APPENDIX E

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2012 PEAK HOUR TRAFFIC
ANALYSIS WITH PROJECT

HCS+: Signalized Intersections Release 5.2

Analyst: CL
Agency:
Date: 09/15/06
Period: AM Peak
Project ID:
E/W St: King St

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2012 w/ project

N/S St: Alapai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	5	0	0	0	0	0	4	1	0	0	0
LGConfig		LT						TR	R			
Volume	267	1538						1373	429			
Lane Width		12.0						12.0	12.0			
RTOR Vol									43			

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left				
Thru	A				Thru	A			
Right					Right	A			
Peds					Peds				
WB Left					SB Left				
Thru					Thru				
Right					Right				
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	55.0					55.0			
Yellow	4.0					4.0			
All Red	1.0					1.0			

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	3712	8098	0.51	0.46	23.1	C	23.1	C
Westbound								
Northbound								
TR	2993	6530	0.53	0.46	23.4	C	23.3	C
R	726	1583	0.46	0.46	22.8	C		
Southbound								

Intersection Delay = 23.2 (sec/veh) Intersection LOS = C

HCS+: Signalized Intersections Release 5.2

Analyst: CL
Agency:
Date: 09/15/06
Period: PM Peak
Project ID:
E/W St: King St

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2012 w/ project

N/S St: Alapai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	5	0	0	0	0	0	4	1	0	0	0
LGConfig		LT						TR	R			
Volume	104	2039						1618	991			
Lane Width		12.0						12.0	12.0			
RTOR Vol									99			

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left				
Thru	A				Thru	A			
Right					Right	A			
Peds					Peds				
WB Left					SB Left				
Thru					Thru				
Right					Right				
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	53.5					56.5			
Yellow	4.0					4.0			
All Red	1.0					1.0			

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	3629	8139	0.63	0.45	25.9	C	25.9	C
Westbound								
Northbound								
TR	3013	6399	0.72	0.47	26.3	C	26.2	C
R	745	1583	0.63	0.47	25.6	C		
Southbound								

Intersection Delay = 26.1 (sec/veh) Intersection LOS = C

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: CL
Agency/Co.:
Date Performed: 09/15/06
Analysis Time Period: AM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Year 2012 w/ project
Project ID:
East/West Street: King St
North/South Street: Kealamakai St
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	245	1103				
Peak-Hour Factor, PHF	0.96	0.96				
Hourly Flow Rate, HFR	255	1148				
Percent Heavy Vehicles	5	--	--		--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	1	2				
Configuration	L	T				
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume				249		
Peak Hour Factor, PHF				0.82		
Hourly Flow Rate, HFR				303		
Percent Heavy Vehicles				2		
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/			/
Lanes				1		
Configuration				L		

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	L					L		
v (vph)	255					303		
C(m) (vph)	1604					495		
v/c	0.16					0.61		
95% queue length	0.57					4.52		
Control Delay	7.7					23.6		
LOS	A					C		
Approach Delay							23.6	
Approach LOS							C	

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: CL
Agency/Co.:
Date Performed: 09/15/06
Analysis Time Period: PM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Year 2012 w/ project
Project ID:
East/West Street: King St
North/South Street: Kealamakai St
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	75	1393				
Peak-Hour Factor, PHF	0.94	0.94				
Hourly Flow Rate, HFR	79	1481				
Percent Heavy Vehicles	5	--	--		--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	0	2				
Configuration	LT	T				
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume				337		
Peak Hour Factor, PHF				0.76		
Hourly Flow Rate, HFR				443		
Percent Heavy Vehicles				2		
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/			/
Lanes				1		
Configuration				L		

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	LT					L		
v (vph)	79					443		
C(m) (vph)	1604					646		
v/c	0.05					0.69		
95% queue length	0.16					6.17		
Control Delay	7.4					22.5		
LOS	A					C		
Approach Delay							22.5	
Approach LOS							C	

HCS+: Signalized Intersections Release 5.2

Analyst: CL
Agency:
Date: 09/15/06
Period: AM Peak
Project ID:
E/W St: Beretania St

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2012 w/ project

N/S St: Alapai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	5	0	3	1	0	0	0	1
LGConfig					TR		L	T				R
Volume				3666		156	1253	112				29
Lane Width				12.0			12.0	12.0				12.0
RTOR Vol						16						3

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left					NB	Left	A			
Thru						Thru	A			
Right						Right				
Peds						Peds				
WB Left					SB	Left				
Thru		A				Thru				
Right		A				Right	A			
Peds						Peds				
NB Right					EB	Right				
SB Right					WB	Right				
Green		45.0					35.0			
Yellow		4.0					4.0			
All Red		1.0					1.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
TR	4205	8410	0.92	0.50	25.3	C	25.3	C
Northbound								
L	1821	4683	0.76	0.39	25.7	C		
T	704	1810	0.17	0.39	18.1	B	25.1	C
Southbound								
							17.2	B
R	627	1611	0.06	0.39	17.2	B		

Intersection Delay = 25.2 (sec/veh) Intersection LOS = C

HCS+: Signalized Intersections Release 5.2

Analyst: CL
Agency:
Date: 09/15/06
Period: PM Peak
Project ID:
E/W St: Beretania St

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2012 w/ project

N/S St: Alapai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	5	0	3	1	0	0	0	1
LGConfig					TR		L	T				R
Volume				2637		84	1569	190				20
Lane Width				12.0			12.0	12.0				12.0
RTOR Vol						8						2

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left					NB	Left	A			
Thru						Thru	A			
Right						Right				
Peds						Peds				
WB Left					SB	Left				
Thru		A				Thru				
Right		A				Right	A			
Peds						Peds				
NB Right					EB	Right				
SB Right					WB	Right				
Green		40.0					40.0			
Yellow		4.0					4.0			
All Red		1.0					1.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
TR	3743	8421	0.81	0.44	23.3	C	23.3	C
Northbound								
L	2081	4683	0.78	0.44	23.2	C		
T	804	1810	0.24	0.44	15.7	B	22.4	C
Southbound								
							14.1	B
R	716	1611	0.03	0.44	14.1	B		

Intersection Delay = 22.9 (sec/veh) Intersection LOS = C

HCS+: Signalized Intersections Release 5.2

Analyst: CL
Agency:
Date: 09/15/06
Period: AM Peak
Project ID:
E/W St: Beretania St

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2012 w/ project

N/S St: Hale Makai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	5	0	1	0	0	0	0	0
LGConfig					LT		L					
Volume				129	3637		136					
Lane Width					12.0		12.0					
RTOR Vol												

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left					NB	Left	A			
Thru						Thru				
Right						Right				
Peds						Peds				
WB Left		A			SB	Left				
Thru		A				Thru				
Right						Right				
Peds						Peds				
NB Right					EB	Right				
SB Right					WB	Right				
Green		47.0					33.0			
Yellow		4.0					4.0			
All Red		1.0					1.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LT	4409	8442	0.89	0.52	21.9	C	21.9	C
Northbound								
L	649	1770	0.26	0.37	20.2	C		
							20.2	C
Southbound								

Intersection Delay = 21.8 (sec/veh) Intersection LOS = C

HCS+: Signalized Intersections Release 5.2

Analyst: CL
Agency:
Date: 09/15/06
Period: PM Peak
Project ID:
E/W St: Beretania St

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2012 w/ project

N/S St: Hale Makai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	5	0	1	0	0	0	0	0
LGConfig					LT		L					
Volume				61	2704		224					
Lane Width					12.0		12.0					
RTOR Vol												

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left					NB	Left	A			
Thru						Thru				
Right						Right				
Peds						Peds				
WB Left		A			SB	Left				
Thru		A				Thru				
Right						Right				
Peds						Peds				
NB Right					EB	Right				
SB Right					WB	Right				
Green		43.0					37.0			
Yellow		4.0					4.0			
All Red		1.0					1.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LT	4036	8448	0.75	0.48	20.0-	B	20.0-	B
Northbound								
L	728	1770	0.44	0.41	19.5	B		
							19.5	B
Southbound								

Intersection Delay = 19.9 (sec/veh) Intersection LOS = B

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: CL
Agency/Co.:
Date Performed: 09/15/06
Analysis Time Period: AM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Year 2012 w/ project
Project ID:
East/West Street: Hotel St
North/South Street: Hale Makai St
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	43	86			225	111
Peak-Hour Factor, PHF	0.85	0.85			0.92	0.92
Hourly Flow Rate, HFR	50	101			244	120
Percent Heavy Vehicles	2	--	--		--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	0	1			1	0
Configuration	LT				TR	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume				11		125
Peak Hour Factor, PHF				0.73		0.73
Hourly Flow Rate, HFR				15		171
Percent Heavy Vehicles				2		2
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/		No	/
Lanes				0	0	
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	LT						LR	
v (vph)	50						186	
C(m) (vph)	1195						710	
v/c	0.04						0.26	
95% queue length	0.13						1.06	
Control Delay	8.1						11.9	
LOS	A						B	
Approach Delay							11.9	
Approach LOS							B	

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: CL
Agency/Co.:
Date Performed: 09/15/06
Analysis Time Period: PM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Year 2012 w/ project
Project ID:
East/West Street: Hotel St
North/South Street: Hale Makai St
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	154	45			164	117
Peak-Hour Factor, PHF	0.63	0.63			0.82	0.82
Hourly Flow Rate, HFR	244	71			200	142
Percent Heavy Vehicles	2	--	--		--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	0	1			1	0
Configuration	LT				TR	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume				22		54
Peak Hour Factor, PHF				0.76		0.76
Hourly Flow Rate, HFR				28		71
Percent Heavy Vehicles				2		2
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/		No	/
Lanes				0	0	
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	LT						LR	
v (vph)	244						99	
C(m) (vph)	1217						507	
v/c	0.20						0.20	
95% queue length	0.75						0.73	
Control Delay	8.7						13.8	
LOS	A						B	
Approach Delay							13.8	
Approach LOS							B	

APPENDIX F. SUPPLEMENTAL ASSESSMENT TO THE TRAFFIC IMPACT REPORT

WILSON
OKAMOTO
CORPORATION
ENGINEERS
PLANNERS
1907 S. BERETANIA ST.
SUITE 400
HONOLULU, HI 96826
PH. (808)946-2277
FAX: (808)946-2253

7404-01
March 6, 2007

Mr. Pepito Galvez
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, HI 96813

Subject: Alapai Transit Center

Dear Mr. Galvez:

As requested, we are submitting a supplemental assessment for the "Traffic Impact Report for the Alapai Transit Center and Joint Traffic Management Center" to address the proposed floor area increase. The original TIAR dated November 2006 was based upon an approximately 100,000 square feet of office space for the Joint Traffic Management Center (JTMC). Since then, the JTMC floor area has been increased to 160,000 square feet. The following is a summary of our assessment and conclusions.

JTMC Trip Generation

The trip generation methodology used for the Joint Traffic Management Center is based upon generally accepted techniques developed by the Institute of Transportation Engineers (ITE) and published in "Trip Generation, 7th Edition," 2003. The ITE trip generation rates are developed empirically by correlating the vehicle trip generation data with various land use characteristics such as the number of vehicle trips generated per 1,000 square feet of development. Table 1 summarizes the updated trip generation characteristics related to the Joint Traffic Management Center applied to the AM and PM peak hours of traffic.

Table 1: Updated JTMC Peak Hour Trip Generation

GENERAL OFFICE BUILDING		
INDEPENDENT VARIABLE: 1,000 sf of Development = 160		
		PROJECTED TRIP ENDS
AM PEAK	ENTER	240
	EXIT	33
	TOTAL	273
PM PEAK	ENTER	44
	EXIT	214
	TOTAL	258

Figures 1 and 2 show the updated distribution of site-generated vehicular trips at the study intersections during the AM and PM peak hours of traffic.

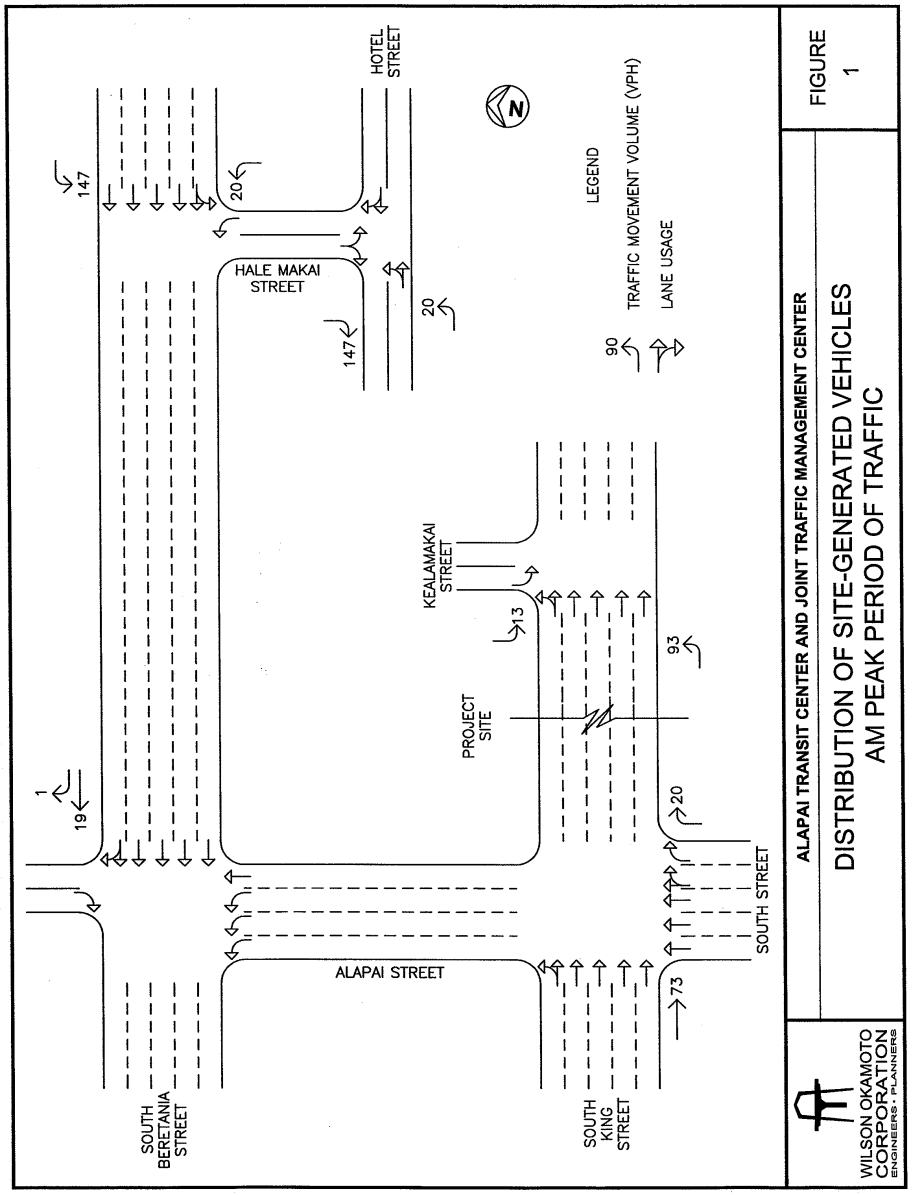
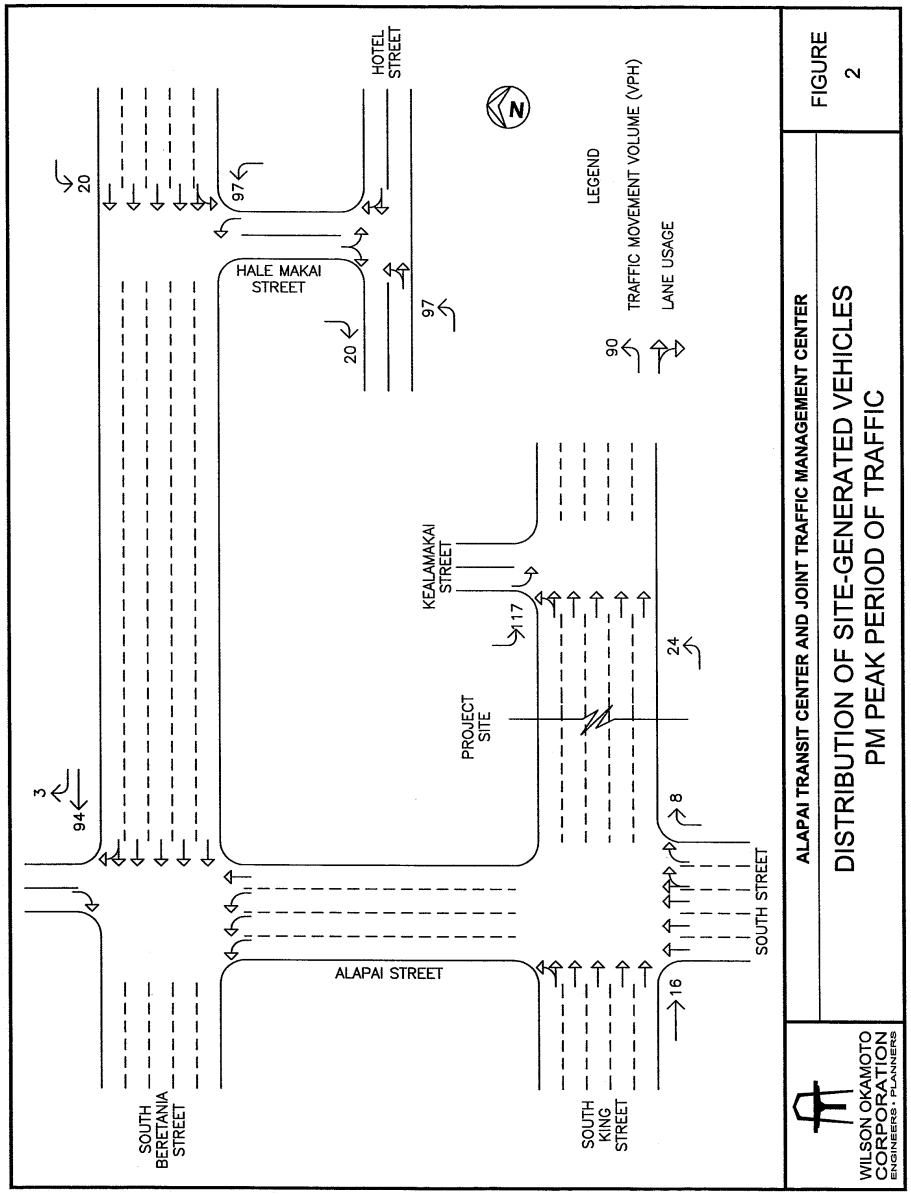


FIGURE 1

ALAPAI TRANSIT CENTER AND JOINT TRAFFIC MANAGEMENT CENTER

DISTRIBUTION OF SITE-GENERATED VEHICLES
AM PEAK PERIOD OF TRAFFIC

WILSON OKAMOTO CORPORATION
ENGINEERS • PLANNERS



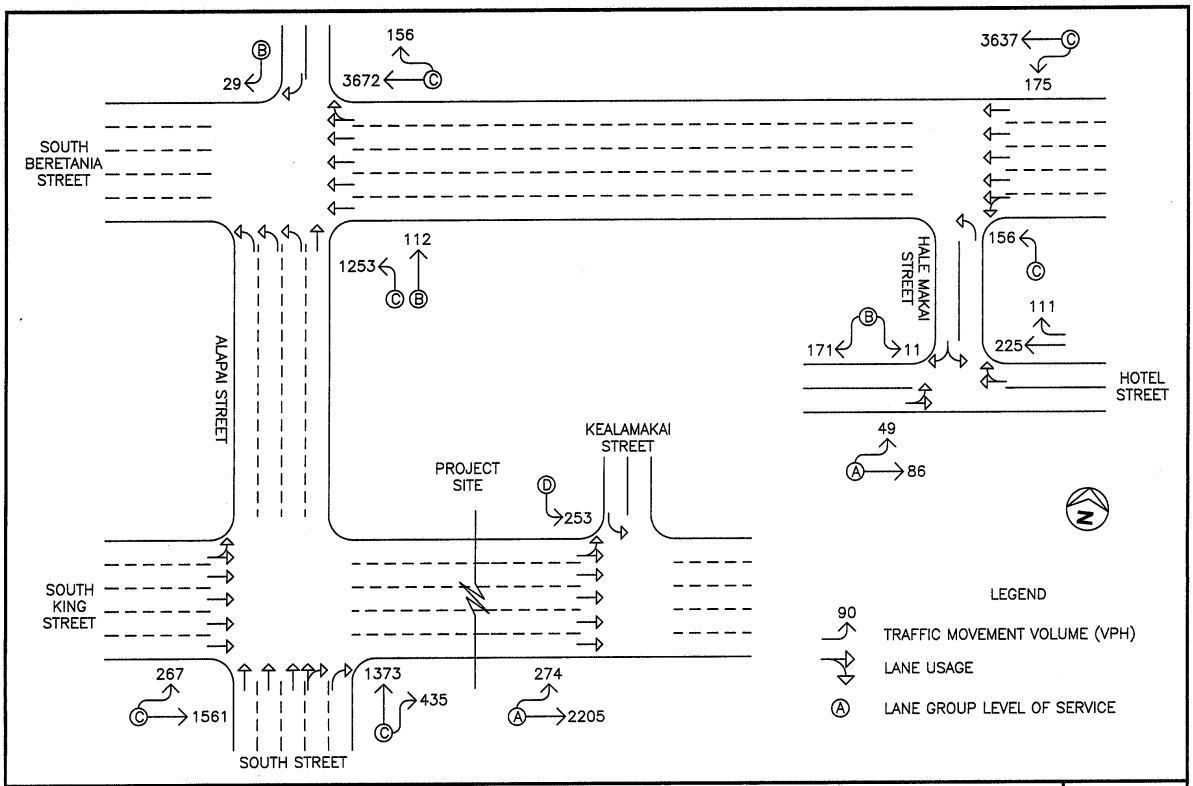
Traffic Impact Analysis

The updated Year 2012 cumulative AM and PM peak hour traffic conditions with the development of the Alapai Transit Center and Join Management Center are shown in Figures 3 and 4, and summarized in Table 2. The cumulative volumes consist of site-generated traffic superimposed over Year 2012 projected traffic demands. The existing and projected Year 2012 operating conditions without the proposed project are provided for comparison purposes. LOS calculations are included in Appendix A.

Table 2: Existing and Projected (With and Without Project) Traffic Operating Conditions

Intersection	Critical Traffic Movement		AM			PM		
			Exist	Year 2012		Exist	Year 2012	
				w/out Proj	w/ Proj		w/out Proj	w/ Proj
South King St/ Alapai St	Eastbound	LT-TH	C	C	C	C	C	C
	Northbound	TH-RT	C	C	C	C	C	C
South King St/ Kealamakai St	Eastbound	LT-TH	A	A	A	A	A	A
	Southbound	LT	C	C	D	B	C	D
South Beretania St/ Alapai St	Westbound	TH-RT	C	C	C	C	C	C
	Northbound	LT	C	C	C	C	C	C
		TH	B	B	B	B	B	B
	Southbound	RT	B	B	B	B	B	B
South Beretania St/ Hale Makai St	Westbound	LT-TH	B	C	C	B	B	C
	Northbound	LT	B	C	C	B	B	C
Hale Makai St/ Hotel St	Eastbound	LT-TH	A	A	A	A	A	A
	Southbound	LT-RT	B	B	B	B	B	B

Traffic operations in the vicinity of the project are generally expected to remain similar to Year 2012 without project traffic conditions during both peak hours of traffic despite the increase in traffic along the surrounding roadways due to the development of the Alapai Transit Center and Joint Traffic Management Center. The southbound approach of the intersection of South King Street with Kealamakai Street is expected to operate at a slightly lower level of service during



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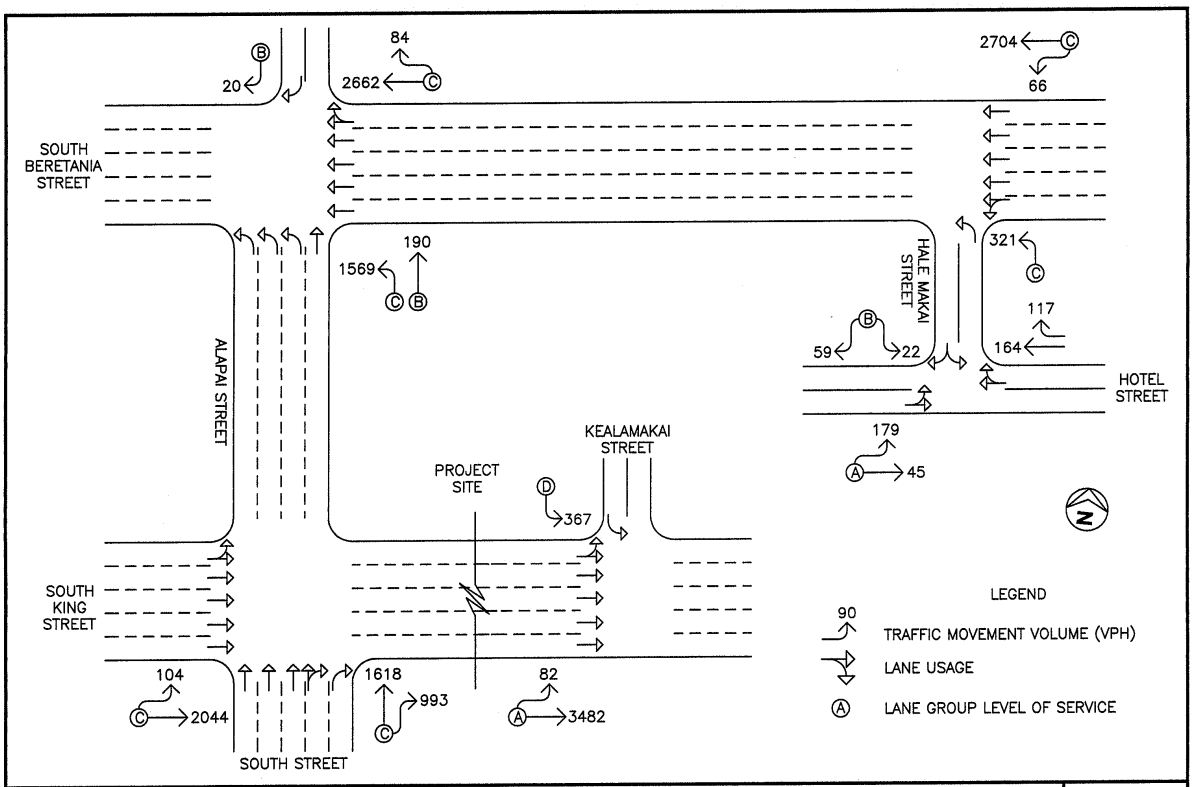
ALAPAI TRANSIT CENTER AND JOINT TRAFFIC MANAGEMENT CENTER

YEAR 2012 AM PEAK HOUR OF TRAFFIC
WITH PROJECT

FIGURE 3



WILSON OKAMOTO CORPORATION
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ALAPAI TRANSIT CENTER AND JOINT TRAFFIC MANAGEMENT CENTER

YEAR 2012 PM PEAK HOUR OF TRAFFIC
WITH PROJECT

FIGURE 4

both peak periods while the critical movements at the intersection of South Beretania Street with Hale Makai Street are expected to operate at slightly lower levels of service during the PM peak period. The remaining critical traffic movements at these intersections, as well as, the remaining study intersection are anticipated to continue operating at levels of service similar to Year 2012 without project conditions.

Recommendations and Conclusion

Based on the updated analysis of the traffic data, the recommendations for the proposed project are the same as detailed in the original TIAR. The total traffic volumes entering the study intersections along Alapai Street are expected to increase by approximately 1-3% during both peak periods with the proposed project while those at the intersections of South Beretania Street with Hale Makai Street and South King Street with Kealamakai Street are expected to increase by approximately 3-5% during both peak periods. At the intersection of Hale Makai Street with Hotel Street, the increases are expected to be higher with the total traffic volumes entering the intersection expected to increase by approximately 25% during the AM peak period and approximately 35% during the PM peak period.

Should you have any questions or require additional information, please contact Mr. Pete Pascua or myself at 946-2277.

Sincerely,

Cathy Leong, P.E.

APPENDIX A

CAPACITY ANALYSIS CALCULATIONS
YEAR 2012 PEAK HOUR TRAFFIC ANALYSIS
WITH PROJECT

HCS+: Signalized Intersections Release 5.21

Analyst: CL
Agency:
Date: 09/15/06
Period: AM Peak
Project ID:
E/W St: Beretania St

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2012 w/ project

N/S St: Alapai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	5	0	3	1	0	0	0	1
LGConfig					TR		L	T				R
Volume					3672	156	1253	112				29
Lane Width					12.0		12.0	12.0				12.0
RTOR Vol						16						3

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left					NB Left	A			
Thru					Thru	A			
Right					Right				
Peds					Peds				
WB Left					SB Left				
Thru	A				Thru				
Right	A				Right	A			
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	45.0					35.0			
Yellow	4.0					4.0			
All Red	1.0					1.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
TR	4205	8410	0.93	0.50	25.4	C	25.4	C
Northbound								
L	1821	4683	0.76	0.39	25.7	C		
T	704	1810	0.17	0.39	18.1	B	25.1	C
Southbound								
							17.2	B
R	627	1611	0.06	0.39	17.2	B		

Intersection Delay = 25.3 (sec/veh) Intersection LOS = C

HCS+: Signalized Intersections Release 5.21

Analyst: CL
Agency:
Date: 09/15/06
Period: PM Peak
Project ID:
E/W St: Beretania St

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2012 w/ project

N/S St: Alapai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	5	0	3	1	0	0	0	1
LGConfig					TR		L	T				R
Volume					2662	84	1569	190				20
Lane Width					12.0		12.0	12.0				12.0
RTOR Vol						8						2

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left					NB Left	A			
Thru					Thru	A			
Right					Right				
Peds					Peds				
WB Left					SB Left				
Thru	A				Thru				
Right	A				Right	A			
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	40.0					40.0			
Yellow	4.0					4.0			
All Red	1.0					1.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
TR	3743	8422	0.82	0.44	23.5	C	23.5	C
Northbound								
L	2081	4683	0.78	0.44	23.2	C		
T	804	1810	0.24	0.44	15.7	B	22.4	C
Southbound								
							14.1	B
R	716	1611	0.03	0.44	14.1	B		

Intersection Delay = 23.0 (sec/veh) Intersection LOS = C

HCS+: Signalized Intersections Release 5.21

Analyst: CL
Agency:
Date: 09/15/06
Period: AM Peak
Project ID:
E/W St: Beretania St

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2012 w/ project
N/S St: Hale Makai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	5	0	1	0	0	0	0	0
LGConfig					LT		L					
Volume				175	3637		156					
Lane Width					12.0		12.0					
RTOR Vol												

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left					NB Left	A			
Thru					Thru				
Right					Right				
Peds					Peds				
WB Left	A				SB Left				
Thru	A				Thru				
Right					Right				
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	47.0					33.0			
Yellow	4.0					4.0			
All Red	1.0					1.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LT	4407	8438	0.90	0.52	22.5	C	22.5	C
Northbound								
L	649	1770	0.30	0.37	20.5	C	20.5	C
Southbound								

Intersection Delay = 22.4 (sec/veh) Intersection LOS = C

HCS+: Signalized Intersections Release 5.21

Analyst: CL
Agency:
Date: 09/15/06
Period: PM Peak
Project ID:
E/W St: Beretania St

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2012 w/ project
N/S St: Hale Makai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	5	0	1	0	0	0	0	0
LGConfig					LT		L					
Volume				66	2704		321					
Lane Width					12.0		12.0					
RTOR Vol												

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left					NB Left	A			
Thru					Thru				
Right					Right				
Peds					Peds				
WB Left	A				SB Left				
Thru	A				Thru				
Right					Right				
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	43.0					37.0			
Yellow	4.0					4.0			
All Red	1.0					1.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LT	4036	8447	0.75	0.48	20.0+	C	20.0+	C
Northbound								
L	728	1770	0.63	0.41	22.8	C	22.8	C
Southbound								

Intersection Delay = 20.4 (sec/veh) Intersection LOS = C

HCS+: Unsignalized Intersections Release 5.21

TWO-WAY STOP CONTROL SUMMARY

Analyst: CL
Agency/Co.:
Date Performed: 09/15/06
Analysis Time Period: AM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year:
Project ID:
East/West Street: Hotel St
North/South Street: Hale Makai St
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	49	86			225	111
Peak-Hour Factor, PHF	0.85	0.85			0.92	0.92
Hourly Flow Rate, HFR	57	101			244	120
Percent Heavy Vehicles	2	--	--		--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes	0	1			1	0
Configuration	LT				TR	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume				11		171
Peak Hour Factor, PHF				0.73		0.73
Hourly Flow Rate, HFR				15		234
Percent Heavy Vehicles				2		2
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/		No	/
Lanes				0	0	
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	LT						LR	
v (vph)	57						249	
C(m) (vph)	1195						715	
v/c	0.05						0.35	
95% queue length	0.15						1.59	
Control Delay	8.2						12.7	
LOS	A						B	
Approach Delay							12.7	
Approach LOS							B	

HCS+: Unsignalized Intersections Release 5.21

TWO-WAY STOP CONTROL SUMMARY

Analyst: CL
Agency/Co.:
Date Performed: 09/15/06
Analysis Time Period: PM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year:
Project ID:
East/West Street: Hotel St
North/South Street: Hale Makai St
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	179	45			164	117
Peak-Hour Factor, PHF	0.63	0.63			0.82	0.82
Hourly Flow Rate, HFR	284	71			200	142
Percent Heavy Vehicles	2	--	--		--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes	0	1			1	0
Configuration	LT				TR	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume				22		59
Peak Hour Factor, PHF				0.76		0.76
Hourly Flow Rate, HFR				28		77
Percent Heavy Vehicles				2		2
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/		No	/
Lanes				0	0	
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	LT						LR	
v (vph)	284						105	
C(m) (vph)	1217						477	
v/c	0.23						0.22	
95% queue length	0.91						0.84	
Control Delay	8.9						14.7	
LOS	A						B	
Approach Delay							14.7	
Approach LOS							B	

HCS+: Signalized Intersections Release 5.21

Analyst: CL
Agency:
Date: 09/15/06
Period: AM Peak
Project ID:
E/W St: King St

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2012 w/ project

N/S St: Alapai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	5	0	0	0	0	0	4	1	0	0	0
LGConfig		LT						TR	R			
Volume	267	1562						1373	435			
Lane Width		12.0						12.0	12.0			
RTOR Vol									43			

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left				
Thru	A				Thru	A			
Right					Right	A			
Peds					Peds				
WB Left					SB Left				
Thru					Thru				
Right					Right				
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	55.0					55.0			
Yellow	4.0					4.0			
All Red	1.0					1.0			

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	3712	8099	0.52	0.46	23.2	C	23.2	C
Westbound								
Northbound								
TR	2992	6529	0.53	0.46	23.4	C	23.3	C
R	726	1583	0.47	0.46	22.9	C		
Southbound								

Intersection Delay = 23.3 (sec/veh) Intersection LOS = C

HCS+: Signalized Intersections Release 5.21

Analyst: CL
Agency:
Date: 09/15/06
Period: PM Peak
Project ID:
E/W St: King St

Inter.:
Area Type: All other areas
Jurisd:
Year : Year 2012 w/ project

N/S St: Alapai St

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	5	0	0	0	0	0	4	1	0	0	0
LGConfig		LT						TR	R			
Volume	104	2044						1618	993			
Lane Width		12.0						12.0	12.0			
RTOR Vol									99			

Duration 1.00 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left				
Thru	A				Thru	A			
Right					Right	A			
Peds					Peds				
WB Left					SB Left				
Thru					Thru				
Right					Right				
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	53.5					56.5			
Yellow	4.0					4.0			
All Red	1.0					1.0			

Cycle Length: 120.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	3629	8139	0.63	0.45	26.0	C	26.0	C
Westbound								
Northbound								
TR	3012	6398	0.72	0.47	26.3	C	26.2	C
R	745	1583	0.63	0.47	25.7	C		
Southbound								

Intersection Delay = 26.1 (sec/veh) Intersection LOS = C

HCS+: Unsignalized Intersections Release 5.21

TWO-WAY STOP CONTROL SUMMARY

Analyst: CL
Agency/Co.:
Date Performed: 09/15/06
Analysis Time Period: AM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Year 2012 w/ project
Project ID:
East/West Street: King St
North/South Street: Kealamakai St
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	274	1103				
Peak-Hour Factor, PHF	0.96	0.96				
Hourly Flow Rate, HFR	285	1148				
Percent Heavy Vehicles	5	--	--		--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes	1	2				
Configuration	L	T				
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume				253		
Peak Hour Factor, PHF				0.82		
Hourly Flow Rate, HFR				308		
Percent Heavy Vehicles				2		
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/			/
Lanes				1		
Configuration				L		

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	L					L		
v (vph)	285					308		
C(m) (vph)	1604					457		
v/c	0.18					0.67		
95% queue length	0.65					5.76		
Control Delay	7.7					28.7		
LOS	A					D		
Approach Delay							28.7	
Approach LOS							D	

HCS+: Unsignalized Intersections Release 5.21

TWO-WAY STOP CONTROL SUMMARY

Analyst: CL
Agency/Co.:
Date Performed: 09/15/06
Analysis Time Period: PM Peak
Intersection:
Jurisdiction:
Units: U. S. Customary
Analysis Year: Year 2012 w/ project
Project ID:
East/West Street: King St
North/South Street: Kealamakai St
Intersection Orientation: EW Study period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	82	1393				
Peak-Hour Factor, PHF	0.94	0.94				
Hourly Flow Rate, HFR	87	1481				
Percent Heavy Vehicles	5	--	--		--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes	0	2				
Configuration	LT	T				
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume				367		
Peak Hour Factor, PHF				0.76		
Hourly Flow Rate, HFR				482		
Percent Heavy Vehicles				2		
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/			/
Lanes				1		
Configuration				L		

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	LT					L		
v (vph)	87					482		
C(m) (vph)	1604					633		
v/c	0.05					0.76		
95% queue length	0.17					8.60		
Control Delay	7.4					28.1		
LOS	A					D		
Approach Delay							28.1	
Approach LOS							D	

APPENDIX G. CIVIL BASIS OF DESIGN

Alapai Transit Center and Joint Traffic Management Center

Honolulu, Oahu, Hawaii

TMKs: (1) 2-1-042: 04, 013

HOA JOB NO. 05-1957

Prepared for:

Group 70 International
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Prepared by:

HIDA, OKAMOTO and ASSOCIATES, INC.
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June 2007

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FIGURES AND EXHIBITS

A. INTRODUCTION

This report is based on Alapai Transit Center and Joint Traffic Management Center Conceptual Site Development Plan dated 8/16/06, prepared by Group 70 International and site visits conducted on 5/25/2006 and 5/26/2006. See Figure 1 for the Alapai Transit Center and Joint Traffic Management Center site plan. The design and construction will commence in two (2) phases, the first phase will be the Transit Center and the second phase will be the Joint Traffic Management Center.

The project site consists of asphalt concrete (AC) pavement used for bus storage and vehicle parking. In the center of the paved area (bordered by a chain link fence and an AC curb) is a passenger waiting area consisting of four (4) covered benches (See attached Figure 2 Existing Condition Plan).

The proposed development shall consist of a new Transit Center building and a new Joint Traffic Management Center (JTMC) building. The Transit Center shall be adjacent to a paved area to allow buses servicing various bus routes to dock and pickup or drop off passengers. The Transit Center shall act as a transfer point between various bus routes. The new JTMC facility will house various City and State traffic and incident management agencies. The 10-story JTMC building will include 4 levels of parking and 6 floors for agency offices. (See attached Figure 3 Proposed Condition Plan).

The purpose of this report is to examine and address the grading and the drainage, wastewater and water systems as follows:

- Description of the existing conditions/infrastructure
- Proposed site/system requirements
  - Proposed grade and cut and fill quantities
  - Flow and demand projections
  - Proposed infrastructure improvements
- Required permits, approvals, probable impacts and mitigation measures
  - Impacts to existing infrastructure and surrounding properties
  - Need for additional investigative and analysis prior to design
  - Contractor responsibilities during construction

B. GRADING

B.1 Existing Conditions

The site slopes at 1.6% from Hotel Street (Mauka) toward King Street (Makai). Elevations range from 15.4' to 8.9' (See attached Figure 2 Existing Condition Plan).

B.2 Proposed Conditions

Grading is expected to encompass approximately 2.14 acres and will be concentrated on the mauka portion of the site. See attached Figure 4 for Limits of Grading and Subsurface Excavation. The grading work to be done will emulate existing conditions and result in similar slopes.

Approximately 1,365 cubic yards of fill and less then 100 cubic yards of excavation will be required for the landscape and walkways outside the building structure limits. The excavation and fill required for the buildings will be determined by the geotechnical engineer and structural engineering during the design phase of this project.

Temporary erosion control measures will be implemented as outlined in the City and County of Honolulu Soil Erosion Standards and Guideline, April 1999.

B.3 Permits, Approvals, Probable Impacts and Mitigation Measures

The project is estimated to have an excess of 50 cubic yards of grading. Therefore, a grading permit from the City and County of Honolulu Department of Planning and Permitting will be required for the project. NPDES permits will also be required.

Grading will emulate existing conditions in order to minimize impacts on surrounding properties, the public roadways adjacent to the proposed development, and the existing drainage systems owned by the City and County of Honolulu outside the limits of the property.

No significant grading impacts are expected.

C. DRAINAGE

C.1 Existing Conditions

From the field investigations dated 5/25/06 and 5/26/06, there are no onsite drainage structures (i.e. drain inlets, catch basins, etc.) to pickup the onsite storm water flow. Storm water sheet flows towards two (2) catch basins located on the north side of King Street (see attached Figure 2 and Exhibit 1 Inlets Design Worksheet). The total storm water from the project site is approximately 16.15 cubic feet per second. Approximately 11.55 cubic feet per second of rain water flows towards the catch basin located at the corner of King Street and Alapai Street. The remaining 4.60 cubic feet per second flows towards the catch basin located at the center of the property across from Cooke Street.

C.2 Proposed Conditions

The proposed development will have more landscaped areas than existing site conditions, therefore it is expected that the surface runoff from the proposed development to the City and County drainage system will be equivalent to or less than the existing surface runoff from the project site (See attached Exhibit 1, Inlets Design Worksheet). The project will provide a new on-site drainage system with drain inlets. The drainage system will be designed to capture runoff as it enters the underground parking structure of the JTMC via the access ramp in order to prevent flooding.

C.3 Permits, Approvals, Probable Impacts and Mitigation Measures

A Drainage Study and Construction Drawings showing the proposed drainage system will be submitted to the Department of Planning and Permitting, Civil Engineering Branch for review and approval. A Drain Connection License request will also be submitted to the Department of Planning and Permitting, Civil Engineering Branch to connect the proposed drainage system to the City's drainage system.

Since the limits of grading are more than 1 acre, a National Pollutant Discharge Elimination System (NPDES) Permit for Discharge of Storm Water Associated with Construction Activity will be required and will be submitted to the State of Hawaii Department of Health Clean Water Branch for review and approval.

The property is located within Flood Zone X which indicates that the area is determined to be outside the 500 year flood plain and will not be subjected to "No Rise" provisions.

As previously stated, the proposed development will have a greater landscape area compared to the current site condition as well as an on-site drainage system, therefore it is expected that the surface runoff from the proposed development to the City and County drainage system will be equivalent to or less than the existing surface runoff from the project site.

No significant storm drainage impacts are anticipated.

D. WASTEWATER

D.1 Existing Conditions

From research conducted at the Wastewater Branch at the City and County of Honolulu, it was determined that the site was once serviced by several sewer laterals. The sewer laterals are now capped at the property line. Five (5) sewer laterals connect to the 18 inch sewer main in King Street and two (2) sewer laterals connect to the 18 inch sewer main in Alapai Street. See attached Figure 2, Existing Condition Plan. On-site uses currently do not generate wastewater.

D.2 Proposed Conditions

Approximately 400 people will be using the Transit Center daily and approximately 500 employees will occupy the JTMC. The average daily wastewater generated is estimated at 5 gallons per day (gpd) per person. The wastewater flows generated from the Transit Center and the JTMC are then assumed to be 2,000 gpd and 2,530 gpd, respectively, totaling 4,530 gpd. The Transit Center estimate is conservative, as it will likely generate less than 5 gpd per person.

TC: 400 people x 5 gallons per day/person = 2,000 gallons per day
JTMC: 506 people x 5 gallons per day/person = 2,530 gallons per day
TOTAL: The total wastewater generated shall be 4,530 gallons per day.

The new wastewater collection system will require connecting to an existing sewer manhole located at the intersection of Cooke Street and South King Street. (See attached Figure 3, Proposed Condition Plan). The proposed connection will require trenching within the City and County of Honolulu Right-of-Way. The sewer discharge from the proposed connection will flow down an 18" diameter relief sewer main within Cooke Street. No other connection to the existing City and County of Honolulu sewer will be permitted.

D.3 Permits, Approvals, Probable Impacts and Mitigation Measures

A sewer connection application has been filed with the Wastewater Branch, Department of Planning and Permitting, City and County of Honolulu and has been accepted with conditions (See attached Exhibit 5 Sewer Connection Application). Construction plans will be submitted to the Wastewater Branch, Department of Planning and Permitting for review and approval.

The proposed development will increase the wastewater flow to the existing City and County of Honolulu sewer system; however, per the attached Sewer Connection Application the sewer connection is acceptable with the City and County of Honolulu as long as the connection is made to the existing sewer manhole located at the intersection of Cooke Street and South King Street. (See attached Figure 3, Proposed Condition Plan). The connection to the existing manhole will require trenching within the City and County of Honolulu Right-of-Way which will impact the traffic traveling Eastbound along South King Street, as well as, several adjoining streets which fed into South King Street prior to the trenching work within the Right-of-Way. It is recommended to phase the trenching work by closing one traffic lane at a time to minimize the impact to traffic.

No significant wastewater impacts are anticipated.

E. WATER SYSTEM

E.1 Existing Conditions

There is one existing 1 1/2-inch domestic water meter located on Alapai Street near the corner of South King Street and Alapai Street. The existing water meter monitors irrigation to the planter area at that corner. A 20-inch transmission main is located within Hotel Street, a 12-inch water main is located within King Street and 8-inch water mains are located within Alapai St, Kealamakai Street and Hotel Street. Four (4) fire hydrants are located around the property on King Street and Kealamakai Street and at the corners of Alapai and Hotel Street and Alapai and King Street. See attached Figure 2, Existing Condition Plan.

E.2 Proposed Conditions

Based on the preliminary fixture count provided from Group 70 International, the Transit Center and the JTMC will require an average domestic water demand of approximately 35 gallons per minute and 105 gallons per minute, respectively. The total domestic water demand shall be 140 gallons per minute. The minimum

size of water meters for the Transit Center and the JTMC shall be 1-inch and 2-inch, respectively. It may be possible to utilize the existing 1 1/2-inch meter to service the proposed Transit Center. A mechanical engineer will specify the appropriate size and demand of the domestic water system for the buildings during the design phase of this project. A new fire protection system will be provided where all appurtenances, hydrant spacing and fire flow requirements will conform to Board of Water Supply (BWS) standards. A booster pump may also be required to avoid loss of pressure on the upper floors. A mechanical engineer will specify the appropriate size and demand of the fire protection system for the buildings during the design phase of this project.

E.3 Permits, Approvals, Probable Impacts and Mitigation Measures
A letter was submitted to BWS to determine if the existing BWS system is adequate to accommodate the proposed Transit Center and JTMC. A letter submitted by BWS in response to the above mentioned letter stated the existing BWS system is adequate to accommodate the proposed development (see Exhibit 4 BWS Availability Response Letter).

Plans will be submitted to the Board of Water Supply for review and approval of the domestic water system. Plans will also be submitted to the Honolulu Fire Department for review and approval of the fire water system.

Low flow fixtures will be considered during the design phase of the project. This would lessen water demands and system operating pressures as well. A more comprehensive hydraulic analysis of the proposed system will be done by a mechanical engineer during the design phase of this project.

F. ON-SITE SYSTEMS (HOTEL STREET PARCEL)

F.1 Existing Conditions
The section of Hotel Street that is adjacent to the proposed development was once a 52' right-of-way under the jurisdiction of the City and County of Honolulu and is now considered abandoned as a roadway. Currently, Hotel Street is used as a parking area for police vehicles. As part of the project development strategies, Hotel Street will be subdivided and made a part of the overall project site.

The existing utilities within and above Hotel Street are as follows:

- 20-inch diameter water transmission main
- 8-inch diameter water main
- Fire Hydrant No. 757
- 6-inch gas main
- 2-inch gas line. This gas line services the Honolulu Police Department from an underground storage tank and is located on the proposed development (See attached Figure 2 Existing Condition Plan)
- 6-inch sewer main
- 18-inch storm drain system

- Underground and aboveground electrical utilities which include HECo, Hawaiian Telecom and Oceanic. An electrical engineer will verify the type of existing electrical utilities.

Existing utilities are shown in Figure 2, Existing Condition Plan.

F.2 Proposed Conditions
The JTMC building will be situated partially within Hotel Street and will require the diversion of existing utilities within Hotel Street around the footprint of the building. Utilities affected by the diversion include potable water, natural gas, sewer, storm drainage and various electrical utilities such as HECo, Hawaiian Telecom, and Oceanic.

Potable Water

- Rerouting the 20-inch water transmission main and the 8 inch water main around the proposed building within the property.

Gas Line
The 6-inch gas main will be rerouted around the proposed building. The 2-inch gas line and on-site underground gas tank may pose a conflict with the propose building. If the underground gas tank falls within the limits of excavation, the proposed design will require the relocation of the gas tank.

Sewer and Storm Drainage
The 6-inch sewer main and the 18-inch storm drain line in Hotel Street service the Honolulu Police Department property. With the subdivision of the Hotel Street parcel and planned siting of the JTMC building, these utilities will need to be modified and relocated. The 6-inch sewer line will be rerouted around the building. The 18-inch drain line which currently collects runoff from the HPD green space will be redesigned as part of a new drainage system that will tie in the HPD drains with the JTMC. A mechanical engineer will be utilized to design the new drainage system during the building design process.

Electrical and Communication Utilities
An electrical engineer will verify the type of electrical utilities which will require diversion and the method the electrical utilities will be diverted.

F.3 Permits, Approvals, Probable Impacts and Mitigation Measures
The diversion of all the utilities around the JTMC building will require utility easements.

The diversion of the water, sewer, drain, gas and electrical utilities will disrupt several customers serviced by these utilities during the course of the construction work.

G. REFERENCES:

"Hawaii Administrative Rules, Title 11 , Department of Health, Chapter 62, Wastewater systems", State of Hawaii.

"Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaiian". United States Department of Agriculture Soil Conservation Service.

"Individual Wastewater System Standards for the City and County of Honolulu parks", Department of Design and Construction City and County of Honolulu State of Hawaii

"Rules Relating to Storm Drainage Standards", Department of Planning and Permitting, City and County of Honolulu, Honolulu, Hawaii

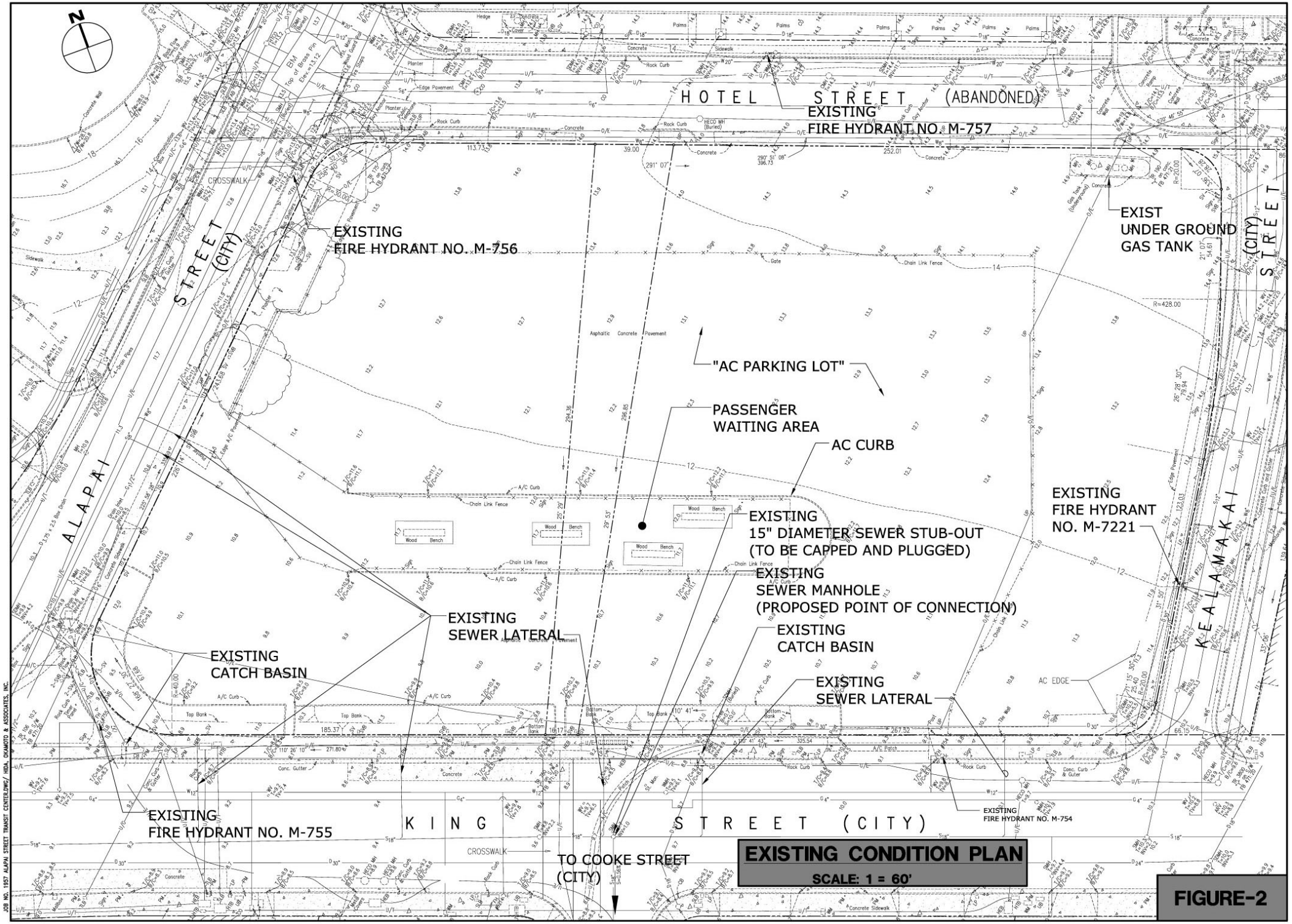
"Rules Relating to Soil Erosion Standards and Guidelines", Department of Planning and Permitting, City and County of Honolulu, Honolulu, Hawaii

Conceptual Site Development Plan - prepared by Group 70 International

Site visits conducted on 5/25/2006 and 5/26/2006

Figures and Exhibits

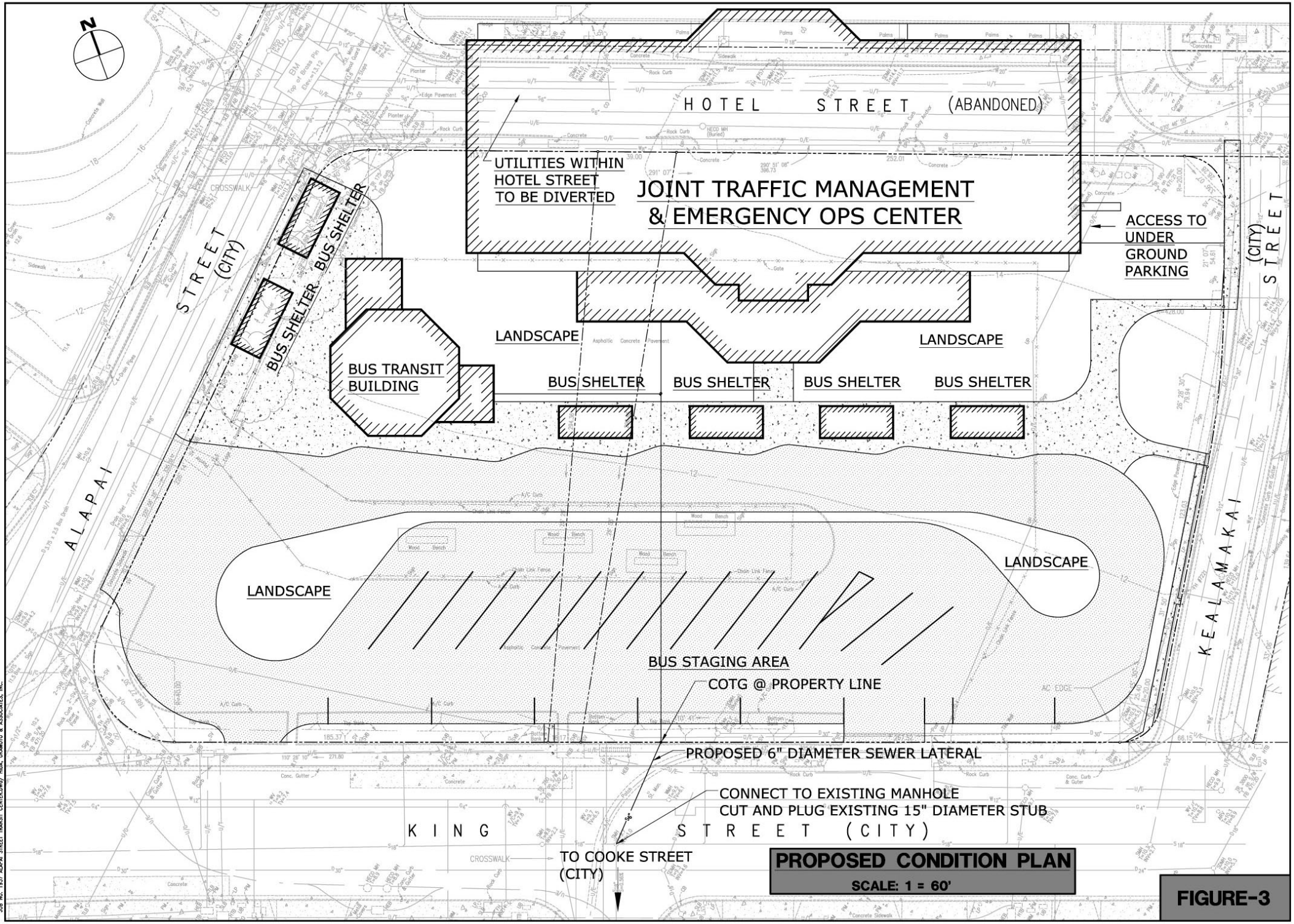
BERETANIA STREET
HALE MAKAI STREET
Honolulu Police Department
ALAPAI STREET
Joint Traffic Management Center
HOTEL STREET
KEALA MAKAI STREET
Bus Transit Bldg
Frank Fasi Municipal Building
Bus Staging Area
KING STREET



EXISTING CONDITION PLAN

SCALE: 1 = 60'

FIGURE-2

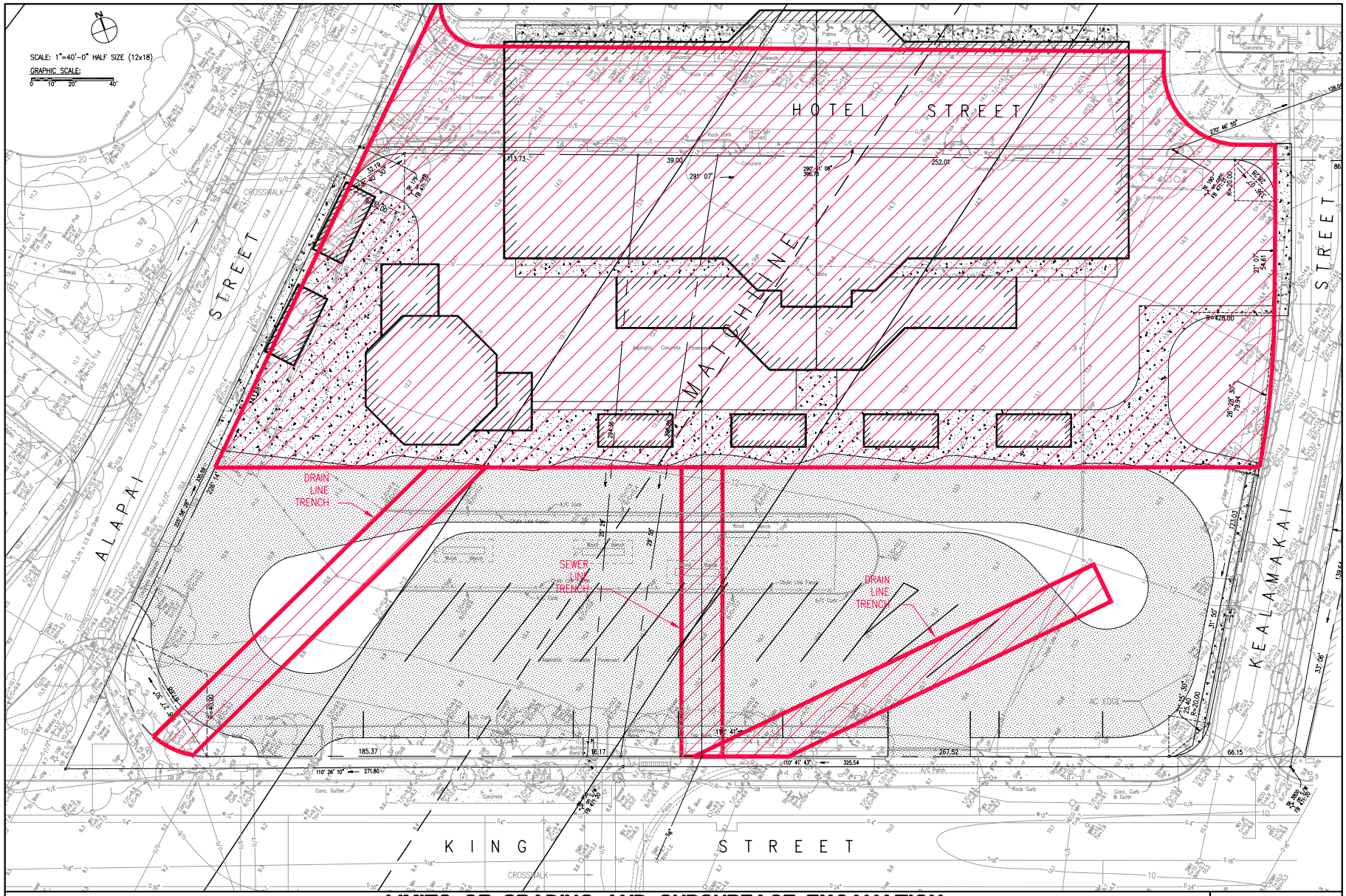


PROPOSED CONDITION PLAN

SCALE: 1 = 60'

FIGURE-3

JOB No. 1537 ALAPAI STREET TRANSIT CENTER/DWY RIGA, SHIMIZU & ASSOCIATES, INC.



LIMITS OF GRADING AND SUBSURFACE EXCAVATION

SCALE: 1 = 40'

FIGURE-4

INLETS DESIGN WORKSHEET										
Tm =	10	YEARS				ONE-HOUR RAINFALL =		1.95	INCHES	Q=RCIA
		OVERLANDE FLOW TIME				R	C	I	A	Q
AREA	INLET	GROUND CHAR.		LENGTH (FEET)	SLOPE (FT/FT)	Tc (MIN)	CORR. FACTOR		(ACRES)	(CFS)
EXSITING CONDTIONS										
AREA A	OFFSITE (CATCH BASIN @ CORNER)	PAVE		300.0	0.015	6.3	2.60	0.95	1.95	1.87	9.00
AREA B	OFFSITE (CATCH BASIN @ CORNER)	PAVE		300.0	0.015	6.3	2.60	0.95	1.95	0.53	2.54
AREA C	OFFSITE (CATCH BASIN @ CENTER)	PAVE		300.0	0.015	6.3	2.60	0.95	1.95	0.96	4.60
											16.15
PROPOSED CONDITIONS										
AREA A	OFFSITE (CATCH BASIN @ CORNER)	PAVE/ROOF/GRASS		150.0	0.020	6.3	2.60	0.82	1.95	1.66	6.93
AREA B	OFFSITE (CATCH BASIN @ CORNER)	PAVE/GRASS		140.0	0.020	6.2	2.61	0.85	1.95	0.85	3.64
AREA C	OFFSITE (CATCH BASIN @ CENTER)	PAVE/GRASS		140.0	0.020	6.2	2.61	0.85	1.95	0.85	3.64
											14.21
HIDA, OKAMOTO & ASSOCIATES, INC.								Consulting Engineers		
JOB NO.:	05-1957			BY:	GBL	DATE:	2007-05-18		CHECK:	
SUBJECT:	Alapai Transit Center & Traffic Management Center								SHEET:	EX-1

Q = flow rate in cubic feet per second
C = runoff coefficient
I = rainfall intensity in inches per hour for a duration equal to the time of concentration
A = drainage area in acres
Tc = time of concentration
R = Correction factor (based on the time of concentration)

INLETS DESIGN WORKSHEET | **EXHIBIT 1**

1957

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843

MUFI HANNEMANN, Mayor

RANDALL Y. S. CHUNG, Chairman
HERBERT S. K. KAOPUA, SR.
SAMUEL T. HATA
ALLY J. PARK

RODNEY K. HARAGA, Ex-Officio
LAVERNE T. HIGA, Ex-Officio

CLIFFORD P. LUM
Manager and Chief Engineer

DONNA FAY K. KIYOSAKI
Deputy Manager and Chief Engineer

June 8, 2006

Mr. Kyle H. Kaneshiro
Hida, Okamoto & Associates, Inc.
Pacific Guardian Life Tower
1440 Kapiolani Boulevard, Suite 1120
Honolulu, Hawaii 96814

Dear Mr. Kaneshiro:

Subject: Your Letter Dated May 30, 2006 Requesting Flow and Pressure Data for the Alapai Transit and Traffic Management Center on South King Street

We have suspended fire flow tests on fire hydrants as a water conservation measure. However, you may use the following calculated flow data for fire hydrant no. M-755 on South King Street:

Static Pressure..... 72 psi
Residual Pressure..... 20 psi
Flow.....4000 gpm

The data are based on the existing water system, and the static pressure represents the theoretical pressure at the point of calculation with the reservoir full and no demands on the water system. The static pressure is not indicative of the actual pressure in the field. Therefore, in order to determine the flows that are available to the site, you will have to determine the actual field pressure by taking on-site pressure readings at various times of the day and correlating that field data with the above hydraulic design data.

Attached is a map showing the location of the fire hydrant.

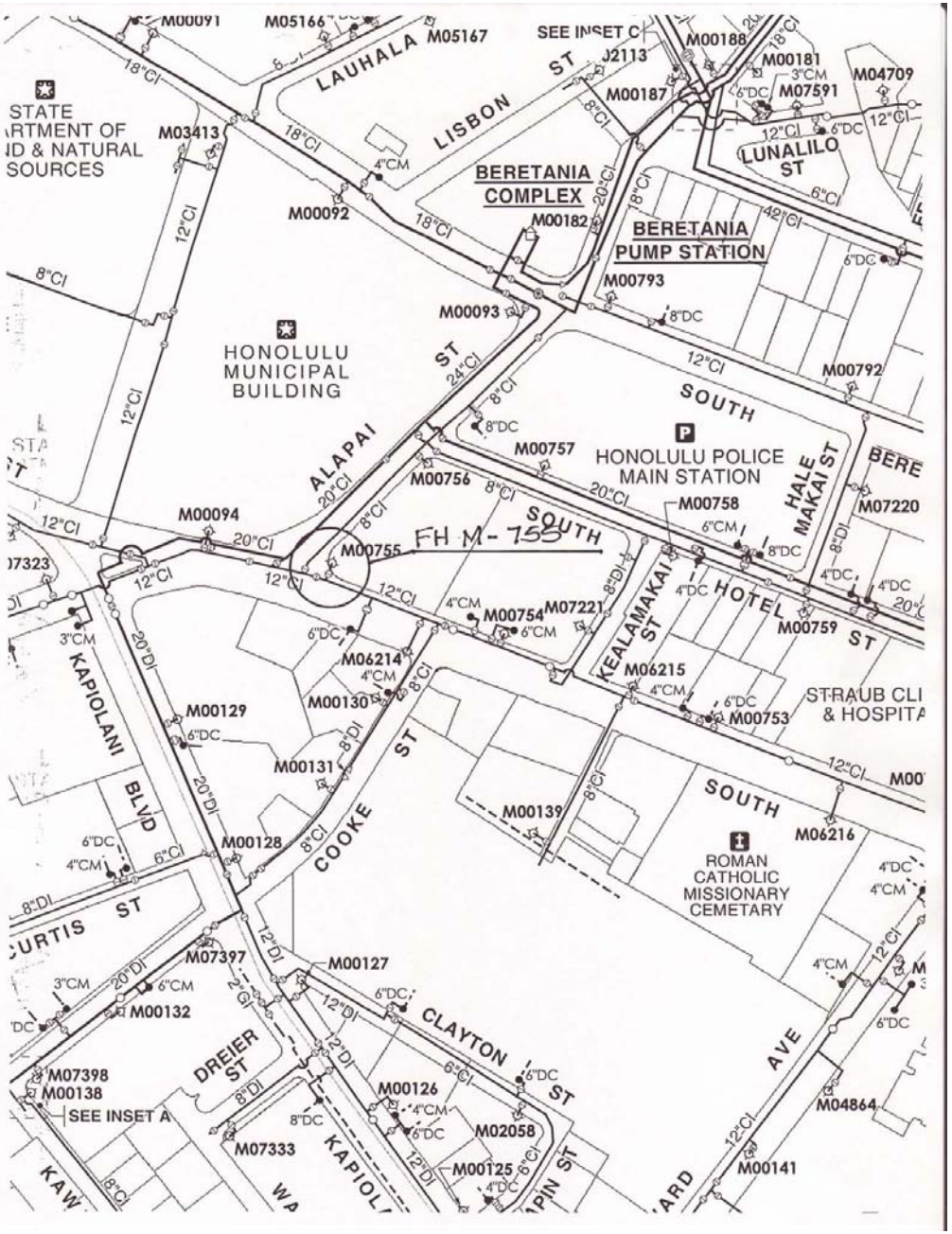
If you have any questions, please contact me at 748-5443.

Very truly yours,

Robert Chun

Robert Chun
Project Review Section

Attachment



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ROBERT K. CUNDIFF

LAVERNE T. HIGA, Ex-Officio
BARRY FUKUNAGA, Ex-Officio

CLIFFORD P. LUM
Manager and Chief Engineer

DEAN A. NAKANO
Deputy Manager and Chief Engineer

March 12, 2007

RECEIVED
MAR 16 2007

Mr. Greg B. Lukec
Hida, Okamoto & Associates, Inc.
Pacific Guardian Life Tower
1440 Kapiolani Boulevard, Suite 1120
Honolulu, Hawaii 96814

Dear Mr. Lukec:

Subject: Your Letter Dated March 8, 2007 Requesting the Availability of Water to the Proposed Alapai Transit Center and Joint Traffic Management Center, TMK: 2-1-42:4,13

Thank you for your letter on the proposed Transit and Traffic Management Center.

The existing water system is presently adequate to accommodate the proposed transit facility. However, please be advised that this information is based upon current data and, therefore, the Board of Water Supply reserves the right to change any position or information stated herein up until the final approval of your building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

If you have any questions, please contact Robert Chun at 748-5443.

Very truly yours,

K. Shida

KEITH S. SHIDA
Principal Executive
Customer Care Division

Water for Life . . . Ka Wai Ola

1957

DEPARTMENT OF LAND PERMITTING

CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET * HONOLULU, HAWAII 96813
Phone: (808) 527-5827 * Fax: (808) 523-4210

SEWER CONNECTION APPLICATION

APPLICATION NO.: **2006/SCA-0411** STATUS: **Approved with conditions**

DATE RECEIVED: **06/20/2006** IWDP APP. NO.:

PROJECT NAME: **Alapai Transit Center and Joint Traffic Management Center / Office Building**

$73,612.00
Estimated Wastewater System Facility Charge*

LOCATION:

Zone	Section	Plat	Parcel		
2	1	042	004	752 S KING ST	98,289 Sq. Ft.
2	1	042	013	710 S KING ST	63,210 Sq. Ft.

SPECIFIC LOCATION: **710/752 S King St**

APPLICANT: **Hida, Okamoto & Associates, Inc., Kyle Kaneshiro**
1440 Kapiolani Blvd., Suite 1120
Honolulu, HI 96814

DEVELOPMENT TYPE: **Office Building** SEWER CONNECTION WORK DESIRED: **New**

OTHER USES: **506 employees; Transit Center-400 people**

NON-RESIDENTIAL AREA: s.f. APPROXIMATE DATE OF CONNECTION: **07/21/2007**

PROPOSED UNITS	EXISTING UNITS	UNITS TO BE DEMOLISHED
No. of New Units:	No. of Existing Units:	No. of Units to be Demolished:
Studios:	Studios:	Studios:
1-Bedroom:	1-Bedroom:	1-Bedroom:
2-Bedroom:	2-Bedroom:	2-Bedroom:
3-Bedroom:	3-Bedroom:	3-Bedroom:
4-Bedroom:	4-Bedroom:	4-Bedroom:
5-Bedroom:	5-Bedroom:	5-Bedroom:
6-Bedroom:	6-Bedroom:	6-Bedroom:

REMARKS **Approval is conditioned that connection for this project shall be made to the existing 18-inch sewer line on South King Street between Cooke Street and Keala-Makai Street. Submit construction plans for review and approval. Existing service laterals may be tributary to an inadequate sewer system.**

APPROVAL DATE: **06/28/2006**

EXPIRATION DATE: **06/27/2008**

Valid 2-years after approval date. Construction plans shall be completed and approved within this 2-year period. Construction shall commence within 1-year after approval of plans.
** Applicable WSFC shall be collected at the prevailing rate in accordance with ROH 1990, Chapter 14, Sections 14-10.3, 14-10.4, 14-10.5 and Appendix 14-D.*

REVIEWED BY: ***Arturo Saavedra Jr.***

A. Saavedra Jr.
Site Development Division, Wastewater Branch

ExternalID: **024486513-001** JobId: **24486513**

Initial Print Date: Wednesday June 28, 2006 1:37 pm

APPENDIX H. PHASE I ENVIRONMENTAL SITE ASSESSMENT

PHASE I
ENVIRONMENTAL SITE ASSESSMENT
Alapai Transit Center
and
Joint Traffic Management Center
710 S. King Street, Honolulu, Hawaii
TMK (1) 2-1-42: Parcels 4 and 13

Prepared For:
GROUP 70 INTERNATIONAL, INC.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Prepared By:
ENVIROSERVICES & TRAINING CENTER, LLC
2850 Paa Street, Suite 150
Honolulu, Hawaii 96819
Tel: (808) 839-7222

ETC Project No. 06-1005

August 2006

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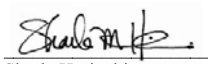
1.0 CERTIFICATIONS AND LIMITATIONS

EnviroServices & Training Center (ETC), LLC has completed this Phase I Environmental Site Assessment (ESA) for the Subject Property. ETC's findings and conclusions contained herein are professional opinions based solely upon visual observations, interviews, and interpretation of the historical information and documents available to ETC at the time this Phase I ESA was conducted. Opinions stated in this report do not apply to changes that may have occurred after the services were performed.

ETC has performed specified services for this project with the degree of care, skill and diligence ordinarily exercised by professional consultants performing the same or similar services. No other warranty, guarantee, or representation, expressed or implied, is included or intended; unless otherwise specifically agreed to in writing by both ETC and ETC's Client.

This report is intended for the sole use of ETC's Client, exclusively for the project site indicated. ETC's Client may use and release this report, including making and retaining copies, provided such use is limited to the particular site and project for which this report is provided. However, the services performed may not be appropriate for satisfying the needs of other users. Release of this report to third-parties will be at the sole risk of Client and/or said user, and ETC shall not be liable for any claims or damages resulting from or connected with such release or any third party's use or reuse of this report.

Prepared By: 

Sharla Horiuchi
Environmental Scientist
EnviroServices & Training Center, LLC

Date: August 30, 2006

2.0 EXECUTIVE SUMMARY

This report presents the results of a Phase I Environmental Site Assessment (ESA), performed by EnviroServices & Training Center, LLC (ETC) in conformance with the scope and limitations of the American Society for Testing and Materials (ASTM) Practice E-1527-00. This Phase I ESA was completed for Group 70 International, Inc. for the Subject Property identified as Tax Map Key (TMK) identification number (1) 2-1-42: Parcel 4 and Parcel 13. Review of tax records revealed that the Subject Property is currently owned by the City and County of Honolulu.

The following summarizes the conclusions that represent ETC's independent and best professional judgment based on available information and data reviewed by ETC. All information and data provided to ETC have been assumed to be correct and complete. The conclusions presented herein are based on the conditions that existed at the time of the assessment.

The Subject Property consists of approximately 161,499 square feet of land and is located in Honolulu, Hawaii, on the southern portion of the island of Oahu (Figure 1). The Subject Property is currently used as a bus depot and parking lot, and is managed by the City & County of Honolulu – Department of Transportation Services. Visual observation for the use and/or storage of hazardous materials and hazardous waste was performed on July 28, 2006. No hazardous materials or wastes were observed on the Subject Property. Additionally, there was no visual or olfactory evidence to suggest significant chemical contamination.

The Subject Property was not listed on any of the available state and federal databases reviewed by ETC. However, the contracted database search identified one (1) RCRA CORRACTS site, six (6) RCRA SQG sites, forty-six (46) State-Equivalent CERCLIS and NPL sites, one SWF/LF site, fifty-three (53) LUST sites, seven (7) UST sites, and thirty-nine (39) Orphan/Unmappable sites within specified radii. Based on these findings, ETC reviewed fifteen (15) facility files from the Hawaii Department of Health (DOH) Solid and Hazardous Waste Branch (SHWB) and DOH Hazard Evaluation and Emergency Response (HEER) Office.

Of the fifteen (15) facility files reviewed, only the *MTL Bus Facility (9-100150)* and the *Honolulu Police Department (9-100815)* facilities located on the north adjacent property (across Hotel Street) were considered a significant concern.

File review of the *MTL Bus Facility* file indicated that the facility was issued a "no further action" letter, however, review of investigative reports indicated that a limited amount of contaminated soil and groundwater was left onsite. In addition, file review further indicated that the contaminant plume may have migrated under Hotel Street, toward the Subject Property.

File review of the *Honolulu Police Department* facility file indicated there are currently four in-use USTs at the facility. A UST field inspection report dated March 2006 indicated that the facility was issues a field citation for UST monitoring record violations. In addition, facility maps indicated that the four currently in-use USTs are located on, or in close proximity to the northeast portion of the Subject Property. Based on the location of these USTs coupled with the current citation status of the facility, ETC cannot dismiss the possibility that contaminant migration from these USTs may impact the Subject Property.

Aerial photographs, historical real property tax records, building permit records, and Sanborn maps were requested for review to assess past and prior use history of the Subject Property. No evidence of recognized environmental conditions in connection with the Subject Property was found during ETC's review of the available historical records.

In summary, ETC has performed this Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-00. This assessment has revealed no evidence of recognized environmental conditions in connection with the Subject Property, except for the following:

- The potential offsite contaminant migration from the *MTL Bus Facility* and *Honolulu Police Department* facility may affect the Subject Property.

3.0 INTRODUCTION

EnviroServices & Training Center, LLC (ETC) was contracted by Group 70 International, Inc. to complete a Phase I Environmental Site Assessment (ESA) for the Subject Property identified as Tax Map Key (TMK) identification number (1) 2-1-42: Parcel 4 and Parcel 13.

The purpose of this report is limited to providing Group 70 International, Inc. (Group 70) with an assessment concerning environmental conditions (identified in this report). This assessment was conducted based on the evaluation of the information gathered and the visual site inspection, as it appeared at the time using generally accepted Phase I industry protocol as described in the ASTM E-1527-00 standard.

The goal of the Phase I ESA process established by the ASTM E-1527-00 standard is to identify recognized environmental conditions (RECs). The term REC is defined as the presence or likely presence of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be subject of an enforcement action if brought to the attention of the appropriate government agencies. Conditions determined to be *de minimis* are not RECs.

The scope of work included an evaluation of the following:

- Site background;
- Physical characteristics of the site;
- Historical site conditions; and
- Current site conditions (as applicable) including compliance with appropriate regulations as they pertain to the presence of facility storage tanks, drums, and containers; and transformers and other electrical equipment potentially containing PCBs.

Additionally, this ESA included the following:

- An evaluation of information contained in programs such as the National Priority List, Comprehensive Environmental Response Compensation and Liability Information System, Emergency Response Notification System, Resource Conservation and Recovery Information System, and other governmental information systems within a specific radius of the subject property to identify any properties that would have the potential to impact the integrity of the subject property; and
- Visual observations of the adjacent properties to identify high-risk neighbors and the potential for a chemical to migrate onto the property.

ETC also reviewed available federal, state, and local records to identify properties of known or suspected hazardous waste activity located at or near the site which could have an adverse impact on the Subject Property. In an attempt to determine whether historical uses of the property and adjacent properties have had an environmental impact on the site, ETC conducted interviews and reviewed available records and documents.

4.0 SITE DESCRIPTION

4.1 Location and Description

The Subject Property, located at 710 S. King Street is comprised of 161,499 square feet (ft^2) of land in Honolulu, Hawaii, on the southern portion of the island of Oahu (Figure 1). The site and surrounding areas appeared relatively flat, with no discernible gradient.

The nearest surface water body is the Kewalo Basin located approximately 5,500 feet southwest of the Subject Property. The Subject Property is situated at an elevation of approximately 10 feet above mean sea level (msl). The Site Location Map is included in Appendix I, Figure 1. Photographic documentation is included in Appendix II.

4.2 Surface Area and Adjacent Properties

Groundcover at the site was predominantly asphalt and concrete with limited areas of landscaped vegetation. The Subject Property is bordered by S. Hotel Street (formerly Young Street) to the north, Kealamakai Street to the east, S. King Street to the south, and Alapai Street to the west. Other areas in the vicinity are primarily used for commercial purposes.

4.3 Geology/Hydrogeology

4.3.1 Regional Geology

The island of Oahu is formed by the erosional remnants of two shield volcanoes. These are the Waianae range to the west and the Koolau range to the east. The Waianae volcano is estimated to have formed 2.4 to 3.6 million years before present. It consists of a tholeiitic lava shield with a thick cap of transitional to alkalic rock. Rejuvenation-stage volcanics of undifferentiated age occur in Kolekole Pass and on the south flank of the Waianae shield. Dike orientations define northwest and southwest rift zones (Macdonald, et al., 1983).

The Koolau volcano is estimated to have formed 1.8 to 2.6 million years before the present (Macdonald, et al., 1983). It consists of a tholeiitic lava shield and lacks an alkalic cap. It has well defined major dike complex trending northwest-southwest. A third, minor rift zone referred to as the Kaau rift trends southward from Kaau crater, near the upland crest of the Koolau Ridge. After a long dormant period and periods of deep erosion, the Koolau volcano developed abundant and scattered rejuvenation-stage vents, typically aligned on northeast-striking fissures (Macdonald, et al., 1983)).

4.3.2 Site Geology

The soil at the Subject Property is mapped as Makiki clay loam, 0 to 2 percent slopes (MkA). The Makiki Series consists of well-drained soils formed in alluvium mixed with volcanic ash and cinders. The Makiki clay loam, 0 to 2 percent slopes overlays smooth fans and terraces and exhibits small stony areas and small areas of Kaena soils. A representative profile includes a dark brown clay loam, underlain by a dark brown clay loam subsoil that has subangular blocky structures and includes cinders and rock fragments. Underlying the subsoil is a material that is similar to the subsoil and below this are volcanic cinders. Acidity of the soil ranges from medium to strong, permeability is moderately rapid, runoff is slow and the erosion hazard is no more than slight. These soils are generally used for urban purposes (USDA, 1972).

4.3.3 Regional Hydrogeology

The primary drinking water in the Hawaiian Islands is drawn from basal groundwater. Basal groundwater is formed by rainwater percolating down through the residual soils and permeable volcanic rock. All of the islands are situated below sea level, except within rift zones of the volcanoes, is saturated with ocean salt water and thus forms a basal lens called the "Ghyben-Herzberg" lens. A zone of transition between the fresh groundwater and the ocean salt water occurs due to the constant movement of the interface as a result of tidal fluctuations, seasonal fluctuations in recharge and discharge and aquifer development (Macdonald, et al., 1983).

Downward percolation of rainwater may be stopped by impermeable layers such as dense lava flows, alluvial clay layers and volcanic ash. The groundwater then forms a perched or high level aquifer, which is not in contact with salt water. Recharge of the aquifer occurs in areas of high rainfall, which are the interior mountainous areas. The groundwater flows from the recharge areas to the areas of discharge along the shoreline. Frictional resistance to groundwater flow causes it to pile up within the island until it attains sufficient hydraulic head to overcome friction. Thus, basal groundwater tends to slope toward the shoreline.

4.3.4 Site Hydrogeology

The Subject Property is underlain by the Nuuanu Aquifer System, which is part of the Honolulu Aquifer Sector on the island of Oahu. The aquifer is classified by Mink and Lau, 1990, with the system identification number 30102116 (13321). This system includes an unconfined basal aquifer in sedimentary (nonvolcanic) lithology. The groundwater in this aquifer is described as being currently used, but is neither a drinking water source nor ecologically important. The groundwater contains a moderate salinity (1,000 to 5,000 mg/l Cl^-) and is described as replaceable with a high vulnerability to contamination (Mink and Lau, 1990). The site is further underlain by a second aquifer of the same system. The aquifer is a confined, basal aquifer in flank compartments, and is classified with the system identification number 30102121 (11113). The groundwater in this aquifer is described as a currently used drinking water source with a fresh salinity (<250 mg/l Cl^-). The groundwater is also described as irreplaceable with a low vulnerability to contamination (Mink and Lau, 1990).

5.0 HISTORICAL DATA/RECORDS REVIEW

5.1 Standard Environmental Records Sources

To obtain information concerning recognized environmental conditions at or near the Subject Property, ETC contracted Environmental Data Resources, Inc. (EDR) to conduct an environmental database search. EDR is a company that specializes in the review of public regulatory environmental databases. The regulatory agency report provided (Appendix III) is based on an evaluation of the data collected and compiled by a contracted data research company. The report is a radius search report, which focuses on both the Subject Property and adjacent properties that may impact the Subject Property. Adjacent properties listed in governmental environmental records are identified within a specific search radius (Table 1). The search radius varies depending on the particular record being researched. The search is designed to meet the requirements of the current industry approach and ASTM E-1527-00 standard. The information provided is assumed to be correct and complete, unless noted otherwise.

TABLE 1

ASTM STANDARD ENVIRONMENTAL RECORD SOURCES AND RECOMMENDED SEARCH DISTANCES

Environmental Database Sources	ASTM Standard Search Distances (miles)
Federal NPL Site List	1.0
Federal CERCLIS List	0.5
Federal CERCLIS NFRAP Site List	Subject Property and adjoining properties
Federal RCRA CORRACTS Facilities List	1.0
Federal RCRA non-CORRACTS TSD Facilities List	0.5
Federal RCRA Generators List	Subject Property and adjoining properties
Federal ERNS List	Subject Property only
State-Equivalent NPL	1.0
State-Equivalent CERCLIS	0.5
State Landfill and/or Solid Waste Disposal Site Lists	0.5
State Leaking UST List	0.5
State Registered UST List	Subject Property and adjoining properties

5.1.1 Federal NPL

The National Priorities List (NPL) is the Environmental Protection Agency's (EPA) database of uncontrolled or abandoned hazardous waste properties, which are considered to pose an immediate threat to human health and the environment. These properties are identified for priority remedial response actions under the Superfund Program. The Subject Property was not identified as a NPL site. Additionally, the database did not identify any NPL sites within a 1-mile radius of the Subject Property.

5.1.2 Federal CERCLIS and CERCLIS NFRAP

The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database contains information on various aspects of potentially uncontrolled or abandoned hazardous waste properties from initial screening and assessment phases to listing on the NPL. The Subject Property was not identified as a CERCLIS or CERCLIS No Further Remedial Action Planned (NFRAP) site. Additionally, the database search did not identify any active CERCLIS sites within a 0.5-mile radius of the Subject Property or any CERCLIS sites classified by the EPA as NFRAP located on adjoining properties.

5.1.3 Federal RCRA CORRACTS

The Resource Conservation and Recovery Act (RCRA) Corrective Action Sites (CORRACTS) database contains RCRIS sites with reported corrective action. The Subject Property was not identified as a CORRACTS facility. However, the database search did identify one (1) CORRACTS facility within a 1-mile radius of the Subject Property. Therefore, ETC requested and reviewed one (1) facility file for *Hawaiian Electric Company Honolulu* (HID00150680) at the Hawaii Department of Health (DOH) Solid and Hazardous Waste Branch (SHWB). File review indicated the *Hawaiian Electric Company Honolulu* facility was under a RCRA corrective action for the closure of three sumps at the Honolulu generator station. This facility is situated topographically crossgradient from the Subject Property and it is located greater than 0.5-miles from the Subject Property. Therefore, based on ETC's file review, contaminant migration from this facility does not pose a reasonable risk of impacting the Subject Property.

5.1.4 Federal RCRA (non-CORRACTS) TSD Facilities

The EPA's Resource Conservation and Recovery Act (RCRA) program identifies and tracks hazardous waste from the point of generation to the point of final disposal. The RCRA Treatment, Storage or Disposal (TSD) facility database compiles those reporting facilities that treat, store, or dispose of hazardous waste. The Subject Property was not listed as a RCRA TSD facility. Additionally, the database search did not identify any RCRA TSD facilities within a 0.5-mile radius of the Subject Property.

5.1.5 Federal RCRA Generator

The RCRA Generator database is a compilation by EPA's Resource Conservation and Recovery Information System (RCRIS) of regulated facilities that generate hazardous waste. The Subject Property was not identified as a RCRA Large Quantity Generator (LQG) or as a RCRA Small Quantity Generator (SQG). However, the database search identified six (6) RCRA SQG facilities located on potential adjoining properties with respect to the Subject Property. Based on ETC's file and database review, contaminant migration from these four facilities does not pose a reasonable risk of impacting the Subject Property.

5.1.6 Federal ERNS

The Emergency Response Notification System (ERNS) tracks the initial notification of reported oil and hazardous material spills. The database contains information regarding the discharger, release date, material, amount released, incident location and release action taken. The Subject Property was not identified as an ERNS facility.

5.1.7 State Equivalent NPL and CERCLIS

The CERCLIS List is a compilation of known or suspected uncontrolled or abandoned hazardous waste sites. These sites either have been investigated or are currently under investigation by the EPA for the release, or threatened release, of hazardous substances. Once a site is placed in CERCLIS, it may be subjected to several levels of review and evaluation and ultimately placed on the National Priorities List. The State of Hawaii does not have a formal "State Superfund" program, therefore, the State Hazardous Waste Sites (SHWS) are the State of Hawaii's equivalent to the federal EPA's CERCLIS database. Additionally, because this information is acquired from the DOH Hazard Evaluation and Emergency Response (HEER) office, these sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup that use state funds (state equivalent superfund) are identified along with sites where cleanup is paid for by the potentially responsible parties. The Subject Property was not identified as a SHWS. However, the database identified forty-six (46) SHWS facilities within a 1-mile radius of the Subject Property. Therefore, ETC requested and reviewed three (3) SHWS facility files for the *One Archer Lane (801 S. King Street), Chevron USA, Inc. (1001 Bishop Street),* and *Capital Place Developmental Project (1212 Queen Emma Street)* facilities at the DOH HEER Office. ETC's database review indicated that the remaining forty (43) identified SHWS sites were either classified as "no further action" sites, are situated topographically downgradient or crossgradient from the Subject Property, and/or were too distant to reasonably impact the Subject Property.

Review of the *Chevron USA, Inc. (1001 Bishop Street)* facility file indicated that the facility was incorrectly geo-coded and is in fact located greater than 1-mile from the Subject Property. Review of the *One Archer Lane (801 S. King Street)* and *Capitol Place Developmental Project (1212 Queen Emma Street)* files indicated that both facilities were issued letters indicating "no further action" was required in response to their releases. Therefore, ETC believes contaminant migration from these facilities does not pose a reasonable risk of impacting the Subject Property.

5.1.8 State Landfill and/or Solid Waste Disposal

The State of Hawaii has records of all facilities that have received a solid waste management permit, including solid waste landfills, transfer stations, and incinerators. The Subject Property was not identified as a SWF/LF facility. However, the database search identified a SWF/LF within a 0.5-mile radius. Database review indicated the *Kapiolani* SWF/LF site was active in 1936 and the type of waste was classified as MSW (municipal solid waste). The *Kapiolani* SWF/LF site is located greater than 0.25-miles topographically downgradient from the Subject Property. In addition, database review indicates that the facility is the current the location of McKinley High School, which has been present since the 1920s. No other information was available for the site. Based on ETC's database review, contaminant migration from this facility does not pose a reasonable risk of impacting the Subject Property.

5.1.9 State Leaking Underground Storage Tanks

The DOH Underground Storage Tank (UST) Program maintains a listing of all reported leaks and releases from USTs. The Subject Property was not identified as a leaking underground storage tank (LUST) facility. However, the database identified fifty-three (53) LUST facilities within a 0.5-mile radius of the Subject Property. Forty-six (46) of the fifty-three (53) facilities were classified as having "Site Cleanup Completed" status in the database. Database review indicated that five (5) LUST sites were listed as either "LUST Cleanup Initiated" or "Confirmed Release" indicating that the sites are "open" LUST sites where cleanup has not been completed. Database review indicated that the two (2) remaining sites were transferred to DOH HEER Office. Note that these sites were addressed as part of ETC's SHWS review (Section 5.1.7). As such, ETC requested and reviewed five (5) LUST facility files at the DOH SHWB. In addition to the "open" LUST facility identified in the database, ETC also reviewed three (3) "no further action" LUST facility files, which are located adjacent and/or in close proximity to the Subject Property. ETC's LUST file review is summarized below.

TABLE 2:

LUST FACILITY FILE REVIEW

751 S King Street and 710 S King Street, Honolulu, Hawaii

Facility Name	LUST ID#	Distance/ Direction (miles)	Discussion
MTL Bus Facility	9-100150	North Adjacent Property	At least thirteen (13) USTs were formerly located at the site. A petroleum release was observed during construction activities at the site in October 1989. Although no confirmed release from the former USTs was documented, it was concluded that a release occurred from one or more of the former USTs. As such release response activities were performed including free product removal, soil removal and groundwater monitoring. Subsequently, the facility received a letter from the DOH SHWB on October 24, 1995 indicating "no further action" was required to address the release.

Facility Name	LUST ID#	Distance/ Direction (miles)	Discussion
Tesoro Gas Express King & Cooke	9-102158	South Adjacent Property	A release was observed during the closure of four USTs in 1989. Subsequent release response activities were performed including contaminant plume delineation and the facility received a letter from the DOH SHWB on February 20, 1997 indicating "no further action" was required to address the release.
Scan Line Building	9-102752	East Adjacent Property	A release was observed during the closure of three USTs in July 1993. Subsequent release response activities were performed and the facility received a letter from the DOH SHWB on November 15, 1993 indicated that "no further action" was required to address the release.
MID PAC Petroleum LLC #270595	9-100040	1/8 – 1/4 E	A release was observed during a subsurface investigation in July 2004. Release response activities were performed; however, impacted soil and groundwater were identified on-site. File correspondence indicated that groundwater monitoring was performed. The facility has not been issued a "no further action" letter; however analytical results indicated that all constituent concentrations were below their DOH Tier 1 Action Levels.
Melim Bldg	9-103105	1/4 – 1/2 WNW	A release was reported during a site investigation in January 1991. The site investigation report was not available; therefore, a subsurface investigation was performed in June 1992. The USTs were removed and confirmed to have been leaking in March 1993. Subsequent release response activities were performed including contaminant plume delineation. Groundwater monitoring is currently ongoing.
Mike's Automotive/Supply Inc	9-101034	1/4 – 1/2 NNW	A gasoline release was observed during the repair of UST distribution piping. From 1989 to 1994 several subsurface investigations were performed. In December 1995, five USTs were removed and replaced with two USTs. During UST removal, significant impact to the soil and groundwater was noted. Subsequent release response activities were performed including contaminant plume delineation. A soil vapor extraction / air sparge (SVE/AS) system was installed at the facility in December 1995. The SVE/AS system was used from 1995 to 2003. Groundwater monitoring is currently ongoing.
IMM Vineyard	9-100343	1/4 – 1/2 NNW	A release was observed during site investigation activities in April 1998. Subsequent release response activities were performed including contaminant plume delineation and the facility received a letter from the DOH SHWB on May 11, 2000 indicating "no further action" was required to address the release. A second release was observed during a baseline assessment in May 2005.
Kakaako Fire Department	9-100074	1/4 – 1/2 WSW	A release was observed during the closure of three USTs in August 1999. Subsequent release response activities were performed including contaminant plume delineation. The facility has not been issued a "no further action" letter; however, the most recent groundwater monitoring report, dated December 2003 indicated that all concentrations were below DOH Tier 1 Action Levels.

File review of the *MTL Bus Facility (9-100150)* file indicated that site cleanup has been completed at the site. Although the facility was issued a "no further action" letter, review of investigative reports indicated that a limited amount of contaminated soil and groundwater was left onsite. In addition, file review further indicated that the contaminant plume may have migrated offsite under Hotel Street towards the Subject Property. Due to the facility's close proximity to the Subject Property, ETC cannot dismiss the possibility of offsite contaminant migration from this facility affecting the Subject Property. Therefore, it is considered a REC.

Review of the *Tesoro Gas Express King & Cooke (9-102158)* and *Scan Line Building (9-102752)* LUST facility files indicated that site cleanup has been completed at both facilities. Both of these facilities are in close proximity to the Subject Property, however, contaminant source removal and site cleanup has been completed at all of these facilities. Therefore, these LUST facilities are considered *de minimis* conditions.

The Mid Pac Petroleum #570595 (9-100040) facility file was identified as an "open" LUST site where site cleanup has not yet been completed. However, the contaminant plume has been delineated and analytical results indicated that all constituents of concern were below DOH Tier 1 Action Levels. Therefore, it is believed that contaminant migration from this facility does not pose a reasonable risk of impacting the Subject Property.

Review of the *Melim Building (9-100812)* and *Mike's Automotive/Supply Inc. (9-101034)* facility files indicated that these facilities are considered "open" LUST sites where site cleanup has not yet been completed. At both sites, the contaminant source has been removed, respective contaminant plumes have been delineated, and groundwater monitoring is currently ongoing. Additionally, both facilities appear to be situated greater than 0.25-mile from the Subject Property. Based on file review, the contaminant plume appears to be stable and/or diminishing; therefore, ETC believes that contaminant migration from this facility does not pose a reasonable risk of impacting the Subject Property.

Review of the *IMM Vineyard (9-100343)* facility file indicated that the facility is considered an "open" LUST site where site cleanup has not yet been completed. Although the contaminant plume has not been delineated, the facility is situated approximately 0.5-miles from the facility. Therefore, ETC believed that contaminant migration from this facility does not pose a reasonable risk of impacting the Subject Property.

The *Kakaako Fire Department (9-100074)* was identified as an "open" LUST site where the cleanup has not yet been completed. However, the contaminant plume has been delineated and the most recent groundwater monitoring report indicated that all constituents of concern were below DOH Tier 1 Action Levels. Therefore, ETC believes that contaminant migration from this facility does not pose a reasonable risk of impacting the Subject Property.

5.1.10 State Registered Underground Storage Tanks

The DOH Underground Storage Tank (UST) Program registration system tracks known and registered UST systems. The Subject Property was not identified as a UST facility. However, the database search identified seven (7) UST facilities located on potential adjoining properties with respect to the Subject Property. The *MTL Bus Facility (9-100150), Tesoro Gas Express (9-102158),* and *Scan Line Building (9-102752)* facilities were discussed in Section 5.1.9 and therefore will not be repeated here. Therefore ETC requested and reviewed four (4) UST facility files at the DOH SHWB.

File review of the *Civic Center Parking Structure (9-100121)* and *Honolulu Municipal Building (9-100122)* facility files indicated that both facilities are routinely inspected and in compliance with current UST regulations.

File review of the *Nikko Restoration Massage, Inc. (9-100281)* facility file indicated that a diesel UST was installed in 1952 and was closed in-place in November 1990. No further documentation was noted.

File review of the *Honolulu Police Department (9-100815)* facility file indicated a total of eight USTs at the facility. Four of the eight USTs were removed/closed in June 1990. No releases were noted during closure. The remaining four USTs were installed in 1992 and are routinely inspected. A UST field inspection report dated March 2006 indicated that the facility was issued a field citation for UST monitoring record violations. In addition, facility maps indicated that the four currently in-use USTs are located on, or in close proximity to the northeast portion of the Subject Property. Based on the location of these USTs coupled with the current citation status of the facility, ETC cannot dismiss the possibility that contaminant migration from these USTs may impact the Subject Property.

5.2 Unmappable/Orphan Sites

Unmappable/Orphan Sites are facility sites which cannot be plotted or geocoded with certainty, however they can be located by zip code or city name. In most cases, the facilities cannot be geocoded due to erroneous, incomplete, or missing information in the respective state and/or government environmental databases. In most cases, these unmappable sites are not considered to be *practically reviewable* per the ASTM E-1527-00 standard. ETC personnel performed a visual reconnaissance of surrounding properties; and cross referenced addresses and site names for the thirty-nine (39) unmappable facility sites listed in the contracted database report. The Subject Property and adjacent properties were not identified on the Orphan Summary in the environmental database report.

5.3 Other Federal Regulatory Databases

The EDR database also included a number of other regulatory databases that are not specified by the ASTM Standard. The EDR database did not identify the Subject Property in any of the following databases.

- CONSENT – Superfund (CERCLA) Consent Decrees
- ROD – Records of Decision
- Delisted NPL – National Priority List Deletions
- FINDS – Facility Index System
- HMIRS – Hazardous Materials Information Reporting System
- MLTS – Material Licensing Tracking System
- MINES – Mines Master Index File
- NPL Liens – Federal Superfund Liens
- PADS – PCB Activity Database System
- ODI – Open Dump Inventory
- UMTRA – Uranium Mill Tailings Sites
- FUDS – Formerly Used Defense Sites
- INDIAN RESERV – Indian Reservations
- US Brownfields – A Listing of Brownfields Sites
- DOD – Department of Defense Sites
- RAATS – RCRA Administrative Action Tracking System
- TRIS – Toxic Chemical Release Inventory System
- TSCA – Toxic Substances Control Act
- SSTS – Section 7 Tracking Systems
- FTTS INSP – FIFRA/TSCA Tracking System – FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act)/ TSCA
- SPILLS – Release Notifications
- Coal Gas – Former Manufactured Gas (Coal Gas) Sites
- VCP – Voluntary Response Program Sites

5.4 Standard Historical Record Sources

Historical uses of the Subject Property were investigated through the review of documentation available from public land records and State of Hawaii archived information. In addition, available aerial photographs, plat maps, Sanborn maps, and building permits were reviewed.

5.4.1 Aerial Photographs

ETC reviewed eight (8) aerial photographs acquired from the Map Collection of the University of Hawaii's Hamilton Library. These photographs were dated 1952, 1959, 1963, 1968, 1978, 1992, 1993, and 2000. Review of the 1952 aerial photograph indicated that the west portion of the Subject Property appeared partially developed and cleared, while the central portion contained vegetation. The east portion also appeared partially developed. There were no structures present. The surrounding area appeared to contain commercial structures with patchy vegetation. In addition the property north of the Subject Property appeared to be a warehouse yard. Review of the 1959 aerial photograph indicated that the Subject Property had been redeveloped. A large commercial type structure was present in the western portion of the subject property, and the remaining area appeared to be blacktopped and contained vehicles of both personal and commercial type. The adjacent properties appeared to be relatively unchanged. Review of the 1963 and 1968 aerial photograph indicated that the property underwent no significant changes. Review of the 1978 aerial photograph indicated the Subject Property had been partially redeveloped. The previously observed structure on the west portion appeared to have been removed and no significant changes were observed on the east portion. Review of the 1992 aerial photograph indicated that the Subject Property had been partially redeveloped and appeared to be blacktopped. No structures were present. Additionally North Hotel Street, running along the northern side of the Subject Property, had been removed. The property north of the Subject Property also appeared to have been cleared. Review of the 1993 aerial photograph indicated that the Subject Property appeared to be an asphalt-paved lot. In addition, a road appeared to have been made along the east side, and the northern property appeared to have been filled in with vegetation. The 2000 aerial photograph appeared similar to the 1993 aerial photograph with no significant changes.

5.4.2 Fire Insurance Maps

ETC contracted EDR to conduct a search for Sanborn fire insurance maps of the Subject Property. The search included an extensive review of the ERIIS Historical Map Collection, which is a private collection of prior-use maps in the United States. There were thirteen (13) Sanborn maps available for the Subject Property in the RRIIS Historical Map Collection dated 1914, 1927, 1950, 1955, 1956, 1962, 1972, 1975, 1976, 1977, 1986, 1991, and 1993, which are included in Appendix IV.

Review of the 1914 Sanborn map indicated a total of seven structures on the north portion, consisting of two structures labeled as the "dwellings." The surrounding areas appeared to be developed with commercial and residential structures. Specifically, the "Honolulu Rapid Transit & Land Co.," (HRT) was observed north of the Subject Property. The HRT property consisted of a boiler room, car barn, repair shop, wood-working, paint shop, power house, and office space.

Review of the 1927 Sanborn map indicated the Subject Property was partially redeveloped containing a total of three structures. The structures were labeled as "servants," "servants quarters," and "lobby, dining room, kitchen." Additionally, the Subject Property appeared to be part of a larger property labeled the "Fernhurst YMCA, Boarding Home For Girls." The surrounding areas appeared partially redeveloped with residential and commercial structures.

Review of the 1950 Sanborn map indicated that the west portion of the site had been completely redeveloped. Specifically, one structure on west portion labeled as "Tennis Courts" was observed. Other areas of the Subject Property appeared similar to the 1927 Sanborn map. The surrounding areas appeared similar to the 1927 Sanborn map with no significant changes.

Review of the 1955 through 1956 Sanborn maps indicated that all previously noted structures were no longer present. The Subject Property appeared to be labeled as "Bus Parking." The surrounding areas appeared similar to the 1950 map with no significant changes.

Review of the 1962 through 1976 Sanborn maps indicated that the property had been redeveloped with one structure located on the southwest portion the site. This structure appeared to be used as a "Bowling" alley. The east portion of the Subject Property was labeled as "Bus Parking." The surrounding areas appeared partially redeveloped with residential and commercial structures.

Review of the 1986 Sanborn map indicated that the Subject Property had been partially redeveloped. Specifically, all previously noted structures ("bowling" alley) were no longer present. The entire Subject Property appeared to be used as a parking lot. The surrounding areas appeared similar to the 1976 Sanborn map with no significant changes.

Review of the remaining Sanborn maps indicated that the layout of the Subject Property has not changed since 1986. Minor changes were noted in the site layout details, however, the layout of the Subject Property has remained unchanged. In addition, except for the development of the Police Headquarters and attached parking structure north of the Subject Property, all visible adjacent properties have remained unchanged.

5.4.3 Chain of Title

ETC conducted a chain of title search of the Subject Property at the City and County of Honolulu Tax Assessment office. The Subject Property is identified as Tax Map Key (TMK) identification number (1) 2-1-42: Parcel 4 and 13. The current owner of the Subject Property is listed as the City and County of Honolulu. The Subject Property has been owned by the City and County of Honolulu. Previous owners include Honolulu Limited; JB Atherton Estate Ltd.; HRT, Ltd.; Honolulu Rapid Transit Co., Ltd.; and the Y.W.C.A. Previous lessees of the Subject Property include Honolulu, Ltd.; Bowling, Limited; and Varsity Bowling Center.

No apparent evidence of recognized environmental conditions in connection with the Subject Property were found during chain of title review

5.4.4 USGS 7.5 Minute Topographic Maps

Topographic map coverage of the Subject Property vicinity is provided by the United States Geological Survey Island of Oahu, Hawaii 7.5 minute Honolulu Quadrangle, 1998. The elevation of the Subject Property is between 10 and 20 feet above mean sea level (msl).

5.4.4 Building Department Records

A review of available building permits issued by the City and County of Honolulu indicated that the permits issued pertained to building construction, alterations, demolition, concrete, and electrical work. No apparent evidence of recognized environmental conditions in connection with the Subject Property was identified during ETC's building permit review.

6.0 SITE RECONNAISSANCE

6.1 Hazardous Materials

ETC performed a site reconnaissance on July 28, 2006 in order to complete a visual survey to identify the use and/or storage of hazardous materials. Four open canopy structures were noted on the south portion of the Subject Property and appeared to be currently used as a bus stop/depot. The remaining areas of the Subject Property appeared to be used for vehicle parking. No subsurface structures or drains were observed during ETC's site reconnaissance. No hazardous materials or wastes were observed on the Subject Property. Additionally, there was no visual or olfactory evidence to suggest significant chemical contamination. Photographic documentation of ETC's site reconnaissance is included in Appendix II.

6.2 Operational Activities

The south and west portions of the Subject Property are currently used as a bus depot and parking lot. The north and west portions of the Subject Property appeared to be used as a parking lot.

6.3 Lead and Asbestos-Containing Materials

A lead and asbestos survey was not completed as part of the scope of work for this Phase I ESA.

6.4 Dielectric Fluid Containing Equipment

A visual inspection for hydraulic and electrical equipment or electrical components that use fluid that may contain PCBs was conducted. The following observations were noted:

- No hydraulic equipment was observed.
- No transformers were observed within the Subject Property.

6.5 USTs/ASTs

Visual evidence (i.e. vent or fill pipes, dispensers, etc.) of potential USTs and/or ASTs were near the northeast border of the Subject Property. Based on the location of these apparent USTs, the USTs are likely the property of the *Honolulu Police Department (9-100815)*. These apparent USTs were discussed in Section 5.1.10 and therefore will not be repeated here.

7.0 INTERVIEW

Interview(s) with person(s) familiar with the site or surrounding area also provided information. The following are individual(s) interviewed by ETC to obtain information related to the use of the Subject Property or surrounding area:

Mr. Pearson Koike, Project Engineer, City and County of Honolulu, Department of Transportation Services

Mr. Koike provided ETC with the following information:

- Mr. Koike's knowledge of the Subject Property dates back greater than 5 years.
- In general, the Subject Property is used as a bus facility/transportation.
- In addition, the Honolulu Police Department also uses the north portion of the Subject Property for vehicle parking.
- Prior to the current usage, the Subject Property and north adjacent property (former MTL Bus Facility) was occupied by the Hawaii Rapid Transit (HRT). However, the Subject Property area has always been used as a parking lot.
- The is no potable water or sewer system infrastructure for the Subject Property.
- There are no USTs on the property.
- There are no hazardous materials or wastes (pesticides, PCBs, solvents, oils, etc.) on the Subject Property.
- The north adjacent property was previously the subject of an environmental cleanup.

CONCLUSIONS

ETC has performed this Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-00 of the Subject Property.

There were no apparent indicators during the site visit to suggest that the site has been significantly impacted by hazardous materials/wastes, USTs, ASTs, and/or PCB-containing equipment. However, file and document reviews indicated that previous investigation and remediation activities were performed at or adjacent to the Subject Property.

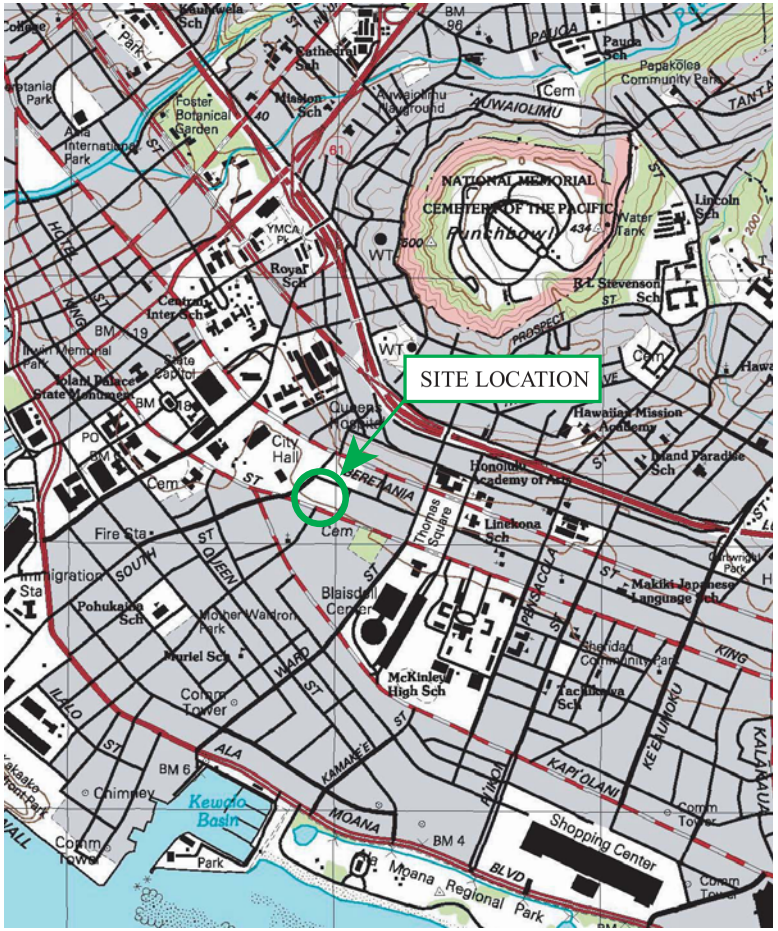
This ESA has revealed no evidence of recognized environmental conditions in connection with the Subject Property, except for the following:

- The potential offsite contaminant migration from the *MTL Bus Facility* and *Honolulu Police Department* facility may affect the Subject Property.

8.0 REFERENCES

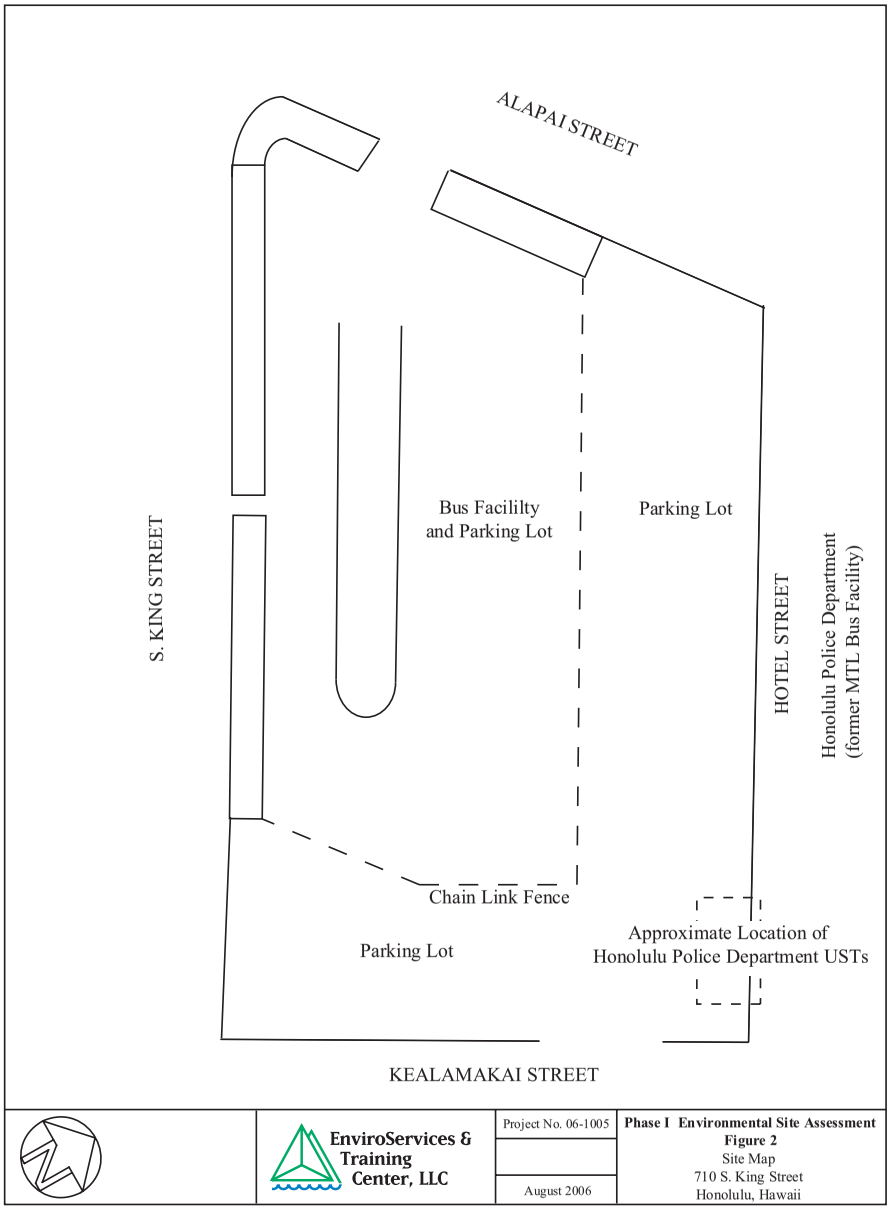
- City and County of Honolulu, Department of Planning and Permitting, Building Permit Records.
- Environmental Data Resources, Inc., “Sanborn® Map Report,” Order No. 1662115.2s, April 25, 2006.
- Environmental Data Resources, Inc., “The EDR Radius Map with GeoCheck,” Report Inquiry No. 1662115.3r, April 26, 2006.
- Macdonald, G.A., A.T. Abbot, and F.L. Peterson, "Volcanoes and the Sea." University of Hawaii Press, 1983.
- Mink, John F. and Stephen L. Lau, "Aquifer Identification and Classification for Oahu: Groundwater Protection Strategy for Hawaii." March 1990.
- State of Hawaii Department of Health, Hazard Evaluation and Emergency Response office.
- State of Hawaii Department of Health, Solid and Hazardous Waste Branch, RCRA, UST, and LUST Files.
- State of Hawaii Department of Health, Underground Storage Tank Program, "Technical Guidance Manual for Underground Storage Tank Closure & Release Response." March 2000.
- State of Hawaii Taxation Map Bureau, Tax Map Key (1) 2-1-42: Parcels 4 and 13.
- University of Hawaii at Manoa, Hamilton Library Map Collection, Aerial Photographs of Hawaii, 1952, 1959, 1963, 1968, 1978, 1992, 1993, and 2000.
- U.S. Department of Agriculture Soil Conservation Service, "Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii." 1972.
- U.S. Department of Interior Geological Survey, "Honolulu Quadrangle, 7.5 Minute Series (Topographic Map)," 1983.

APPENDIX I
Figures



Source:
Image Peak Systems Corporation 2003
U.S. Department Of Geological Services
Honolulu Quadrangle
Island of Oahu, 7.5 Minute Series
1998

	EnviroServices & Training Center, LLC	Project: 06-1005 August 2006	**Phase I Environmental Site Assessment** **Figure 1** **Site Location Map** 710 S. King Street Honolulu, Oahu, Hawaii



APPENDIX II
Photographic Documentation

Photograph 1: Front view of the Subject Property along S. King Street.

Photograph 2: North portion of the Subject Property along Hotel Street.

Photograph 3: Location of Honolulu Police Department USTs near the northeast corner of the Subject Property.

	EnviroServices & Training Center, LLC	Project: 06-1005 August 2006	**Phase I Environmental Site Assessment** **Photographic Documentation** 710 S. King Street Honolulu, Oahu, Hawaii

APPENDIX III
The EDR Radius Map with GeoCheck®

The EDR Radius Map
with GeoCheck®

Alapai Transit Center
710 S. King Street
Honolulu, HI 96813

Inquiry Number: 1662115.2s

April 25, 2006

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

710 S. KING STREET
HONOLULU, HI 96813

COORDINATES

Latitude (North):	21.303600 - 21˚ 18' 13.0''
Longitude (West):	157.853300 - 157˚ 51' 11.9''
Universal Tranverse Mercator:	Zone 4
UTM X (Meters):	618940.2
UTM Y (Meters):	2356042.2
Elevation:	10 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	21157-C7 HONOLULU, HI
Most Recent Revision:	Not reported

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

FEDERAL RECORDS

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
Delisted NPL	National Priority List Deletions
NPL RECOVERY	Federal Superfund Liens
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
RCRA-TSDF	Resource Conservation and Recovery Act Information
ERNS	Emergency Response Notification System
HMIRS	Hazardous Materials Information Reporting System
US ENG CONTROLS	Engineering Controls Sites List

EXECUTIVE SUMMARY

US INST CONTROL	Sites with Institutional Controls
FUDS	Formerly Used Defense Sites
US BROWNFIELDS	A Listing of Brownfields Sites
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
ODI	Open Dump Inventory
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
SSTS	Section 7 Tracking Systems
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
MINES	Mines Master Index File
FINDS	Facility Index System/Facility Registry System
RAATS	RCRA Administrative Action Tracking System

STATE AND LOCAL RECORDS

SPILLS	Release Notifications
BROWNFIELDS	Brownfields Sites

TRIBAL RECORDS

INDIAN RESERV	Indian Reservations

EDR PROPRIETARY RECORDS

Manufactured Gas Plants	EDR Proprietary Manufactured Gas Plants
EDR Historical Auto Stations	EDR Proprietary Historic Gas Stations
EDR Historical Cleaners	EDR Proprietary Historic Dry Cleaners

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL RECORDS

CERCLIS-NFRAP: Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List

(NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

A review of the CERC-NFRAP list, as provided by EDR, and dated 02/01/2006 has revealed that there are 3 CERC-NFRAP sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
QUEEN EMMALANI TOWER	***600 QUEEN ST***	***1/4 - 1/2WSW***	***T71***	***45***
SYMPHONY PARK	WARD AVE & KAPIOLANI BL	1/4 - 1/2S	74	47
AMELCO CORPORATION	645 HALEKAUWILA STREET	1/4 - 1/2WSW	Y86	52

CORRACTS: CORRACTS is a list of handlers with RCRA Corrective Action Activity. This report shows which nationally-defined corrective action core events have occurred for every handler that has had corrective action activity.

A review of the CORRACTS list, as provided by EDR, and dated 03/15/2006 has revealed that there is 1 CORRACTS site within approximately 1 mile of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
HAWAIIAN ELECTRIC COMPANY HONO	***170 ALA MOANA BOULEVARD***	***1/2 - 1 W***	***118***	***71***

RCRAInfo: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-LQG list, as provided by EDR, and dated 02/21/2006 has revealed that there is 1 RCRA-LQG site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
SZYMANSKI PROPERTIES LLC	***757 KAWAIAHAO ST***	***1/8 - 1/4SSW***	***R57***	***38***

RCRAInfo: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store , treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are

individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-SQG list, as provided by EDR, and dated 02/24/2006 has revealed that there are 20 RCRA-SQG sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
MTL INCORPORATED	***1133 ALAPAI STREET***	***0 - 1/8***	***C4***	***9***
TESORO HAWAII CORPORATION	***759 S KING STREET***	***0 - 1/8***	***B6***	***10***
UNITED TECH OTIS ELEVATOR	***793 S HOTEL ST***	***0 - 1/8 ESE***	***9***	***11***
PVT INCORPORATED SCANLINE BUIL	***788 SOUTH KING STREET***	***0 - 1/8 ESE***	***B10***	***11***
HONOLULU POLICE DEPT	***801 S. BERETANIA ST.***	***0 - 1/8 ENE***	***G24***	***21***
HONOLULU POLICE CRIME LAB	***801 S BERETANIA ST***	***0 - 1/8 ENE***	***G25***	***21***
BOARD OF WATER SUPPLY	***630 SOUTH BERETANIA STR***	***0 - 1/8 NNW***	***H26***	***22***
STRAUB CLINIC AND HOSPITAL	888 S KING ST	1/8 - 1/4 ESE	J33	25
CONCOPHILLIPS COMPANY 2705952	***882 SOUTH BERETANIA STR***	***1/8 - 1/4 E***	***K35***	***26***
HONOLULU MEDICAL GROUP INC	***550 S BERETANIA ST***	***1/8 - 1/4 NW***	***39***	***29***
MISSION HOUSES MUSEUM	***553 S KING ST***	***1/8 - 1/4 WNW***	***N46***	***33***
BUDGET AND FINANCE ICSD GIS	1151 PUNCHBOWL ST BASEM	1/8 - 1/4 NW	O52	36
DAGS CSD KALANIMOKU BLDG	***1151 PUNCHBOWL ST BASEM***	***1/8 - 1/4 NW***	***O53***	***36***
HONOLULU HALE	***530 S KING ST***	***1/8 - 1/4 WNW***	***N54***	***37***
DEPARTMENT OF HEALTH	***1250 PUNCHBOWL ST***	***1/8 - 1/4 NNW***	***65***	***42***

Lower Elevation	Address	Dist / Dir	Map ID	Page
HAWAII NEWSPAPER AGENCY, INC	***605 KAPIOLANI BLVD***	***0 - 1/8 W***	***F20***	***18***
WARD AVENUE COMPLEX	***820 WARD AVE***	***1/8 - 1/4 SSE***	***M45***	***32***
KYLES SVC	***869 KAWAIHAAO***	***1/8 - 1/4 WSW***	***47***	***33***
WAIMANU SASH AND DOOR LTD	***815 WAIMANU STREET***	***1/8 - 1/4 SSW***	***P50***	***35***
C AND C HONOLULU AUDITORIUMS	***777 WARD AVE***	***1/8 - 1/4 S***	***51***	***35***

Federal Lands: Consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

A review of the DOD list, as provided by EDR, and dated 12/31/2004 has revealed that there is 1 DOD site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
SAND ISLAND MILITARY RESERVATI		1/2 - 1 NW	0	6

STATE AND LOCAL RECORDS

SHWS: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the Department of Health.

A review of the SHWS list, as provided by EDR, and dated 08/24/2005 has revealed that there are 46 SHWS sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
ONE ARCHER LANE	***801 S KING ST***	***0 - 1/8 ESE***	***B13***	***13***

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
1510 FREAR STREET	***1510 FREAR ST***	***1/4 - 1/2 NNE***	***82***	***50***
CAPITOL PLACE DEVELOPMENTAL PR	1212 QUEEN EMMA ST	1/4 - 1/2 NW	114	68
CHEVRON USA, INC.	***1001 BISHOP ST***	***1/2 - 1 NW***	***117***	***71***
1012 PIIKOI STREET, ANIN-PIIKO	***1012 PIIKOI ST***	***1/2 - 1 ESE***	***119***	***78***
SCHUMAN CARRIAGE MOTORS, LTD.	***1234 S BERETANIA ST***	***1/2 - 1 ESE***	***124***	***87***
YEE HOP BUILDING MAUNAKEA STRE	950 MAUNAKEA ST	1/2 - 1 NW	135	97
KEKAULIKE DIAMOND HEAD BLOCK R	***163 N HOTEL ST***	***1/2 - 1 NW***	***138***	***99***
MEADOW GOLD DAIRIES (ICE CREAM	***1418 YOUNG ST***	***1/2 - 1 ESE***	***139***	***100***
CARTWRIGHT NEIGHBORHOOD PARK	***KEEAUMOKU ST & MATLOCK***	***1/2 - 1 E***	***141***	***105***

Lower Elevation	Address	Dist / Dir	Map ID	Page
MOTOR IMPORTS	***650 KAPIOLANI BLVD***	***0 - 1/8 SW***	***E18***	***17***
HD&C, 725 KAPIOLANI BOULEVARD	***725 KAPIOLANI BLVD***	***1/8 - 1/4 SSW***	***I29***	***24***
BMW OF HONOLULU	***777 KAPIOLANI BLVD***	***1/8 - 1/4 SSW***	***L42***	***30***
HECO SOIL CONTAMINATION CHAPIN	CHAPIN LN / KAPIOLANI	1/8 - 1/4 S	Q55	37
CHUEI SHOKOH, INC.	***825 KAPIOLANI BLVD***	***1/8 - 1/4 S***	***Q62***	***40***
SYMPHONY PARK	850 KAPIOLANI BLVD	1/8 - 1/4 S	68	43
QUEEN EMMALANI TOWER	***600 QUEEN ST***	***1/4 - 1/2 WSW***	***T71***	***45***
AMERICAN LINEN WAREHOUSE	***837 KAWAIAHAO ST***	***1/4 - 1/2 SSW***	***U73***	***47***
AMELCO CORPORATION	***645 HALEKAUWILA ST***	***1/4 - 1/2 WSW***	***Y87***	***53***
HAWAII INSTRUMENTATION & CONTR	***822 HALEKAUWILA ST***	***1/4 - 1/2 SSW***	***91***	***55***
HDC PROPERTIES, STAINED SOILS	***1015 KAPIOLANI BLVD***	***1/4 - 1/2 SSE***	***99***	***58***
COOKE STREET LEAD CONTAMINATIO	***501 COOKE ST***	***1/4 - 1/2 SW***	***104***	***61***
GLOVER BUILDING	***1046 WAIMANU ST***	***1/4 - 1/2 S***	***AB108***	***63***
SELF STORAGE 1	***438 KAMAKEE ST***	***1/2 - 1 SSE***	***116***	***69***
HAWAIIAN ELECTRIC COMPANY HONO	***170 ALA MOANA BOULEVARD***	***1/2 - 1 W***	***118***	***71***
RESERVE HOUSING TOWER SOIL CON	***1141 WAIMANU ST***	***1/2 - 1 SSE***	***120***	***80***
EVERSHINE X	***1230 KAPIOLANI BLVD***	***1/2 - 1 SSE***	***121***	***81***
KAKAAKO BROWNFIELD PROJECT-UNI	***1011 ALA MOANA BLVD***	***1/2 - 1 SSW***	***122***	***82***
UNDERGROUND HOISTS	***744 ALA MOANA BLVD***	***1/2 - 1 SW***	***123***	***86***
KOOLANI TOWER PROJECT	***1189 WAIMANU ST***	***1/2 - 1 SSE***	***125***	***89***
HARBOR COURT	***66 QUEEN ST***	***1/2 - 1 WNW***	***126***	***90***
HONOLULU HARBOR IWILEI DISTRIC	615 PIIKOI ST	1/2 - 1 SE	127	90
KAKAAKO PUMP STATION	***240 KEAWE ST***	***1/2 - 1 SW***	***128***	***91***
ALA MOANA #2 WWPS	***210 KEAWE ST***	***1/2 - 1 SW***	***129***	***91***
KAKAAKO MAKAI GATEWAY	***COOKE ST & ILALO ST***	***1/2 - 1 SW***	***130***	***93***
HCDA/UH HEALTH AND WELLNESS CE	***651 ILALO ST***	***1/2 - 1 SW***	***131***	***93***
HAKUYOSHA HAWAII, INC	***730 SHERIDAN ST***	***1/2 - 1 SE***	***132***	***94***
KAKAAKO BROWNFIELD PROJECT-UNI	***160 AHUI ST***	***1/2 - 1 SSW***	***133***	***95***
CUTTER CHEVROLET	***1391 KAPIOLANI BLVD***	***1/2 - 1 SE***	***134***	***96***
ROBERTS HAWAII	***759 KELIKOI ST***	***1/2 - 1 SW***	***AD136***	***97***
KEWALO INCINERATOR/ASH DUMP	***111 OHE ST***	***1/2 - 1 SW***	***AD137***	***98***
C&C WASTE WATER DIVISION MAINT	***98 KOULA ST***	***1/2 - 1 SSW***	***140***	***104***
LIKE LIKE PLAZA PETROLEUM CONT	***745 KEEAUMOKU ST***	***1/2 - 1 SE***	***142***	***105***
KAKAAKO BROWNFIELD PROJECT-UNI	***59 AHUI ST***	***1/2 - 1 SSW***	***143***	***106***
TOWN INN	***248-258 N BERETANIA ST***	***1/2 - 1 NW***	***144***	***107***
215 NORTH KING STREET CONSTRUC	215 N KING ST	1/2 - 1 NW	145	108

SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the Department of Health's Permitted Landfills in the State of Hawaii database.

A review of the SWF/LF list, as provided by EDR, and dated 05/19/2004 has revealed that there is 1 SWF/LF site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
KAPIOLANI		1/4 - 1/2 SE	96	57

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Health's Active Leaking Underground Storage Tank Log Listing.

A review of the LUST list, as provided by EDR, and dated 02/01/2006 has revealed that there are 53 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
MTL BUS FACILITY	***1133 ALAPAI ST***	***0 - 1/8***	***C3***	***7***
Facility Status: Site Cleanup Completed				
TESORO GAS EXPRESS KING & COOK	***759 S KING ST***	***0 - 1/8***	***B7***	***11***
Facility Status: Site Cleanup Completed				
SCAN LINE BUILDING	***788 S KING ST***	***0 - 1/8 ESE***	***B11***	***12***
Facility Status: Site Cleanup Completed				
ONE ARCHER LANE (FORMERLY KING	***809 S KING ST***	***0 - 1/8 ESE***	***D15***	***16***
Facility Status: Site Cleanup Completed				
Facility Status: Site Cleanup Completed				
BERETANIA STATION	***630 S BERETANIA ST***	***0 - 1/8 NNW***	***H27***	***22***
Facility Status: Site Cleanup Completed				
STRAUB CLINIC	***888 S KING ST***	***1/8 - 1/4 ESE***	***J34***	***25***
Facility Status: Site Cleanup Completed				
MID PAC PETROLEUM LLC # 270595	***882 S BERETANIA ST***	***1/8 - 1/4 E***	***K36***	***27***
Facility Status: LUST Cleanup Initiated: Petroleum				
KALANIMOKU BLDG	TMK 2-1-24:01 1151 PUN	1/8 - 1/4 NW	O48	34
Facility Status: Site Cleanup Completed				
QUEEN'S MEDICAL CENTER	***1301 PUNCHBOWL ST***	***1/4 - 1/2 NNW***	***75***	***48***
Facility Status: Disconfirmed Release				
Facility Status: Site Cleanup Completed				
JN GROUP, INC	***1069 S BERETANIA ST***	***1/4 - 1/2 ESE***	***AA93***	***56***
Facility Status: Disconfirmed Release				
BMW OF HONOLULU, LTD.	***1075 S BERETANIA ST***	***1/4 - 1/2 ESE***	***AA94***	***57***
Facility Status: Site Cleanup Completed				
Facility Status: Site Cleanup Completed				
MELIM BLDG	***333 QUEEN ST***	***1/4 - 1/2 WNW***	***102***	***61***
Facility Status: LUST Cleanup Initiated: Petroleum				
STATE CAPITOL - TMK 2-1-33:25	***235 S BERETANIA ST***	***1/4 - 1/2 NW***	***107***	***63***
Facility Status: Site Cleanup Completed				
ROD S AUTO SERVICE	***1489 PUNCHBOWL STREET***	***1/4 - 1/2 N***	***111***	***66***
Facility Status: Site Cleanup Completed				
MIKE'S AUTOMOTIVE/SUPPLY INC	***225 S VINEYARD BLVD***	***1/4 - 1/2 NNW***	***AC113***	***67***
Facility Status: LUST Cleanup Initiated: Petroleum				

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
IMM VINEYARD	***215 S VINEYARD BLVD***	***1/4 - 1/2NNW***	***AC115***	***69***
Facility Status: Site Cleanup Completed				
Facility Status: Confirmed Release				

Lower Elevation	Address	Dist / Dir	Map ID	Page
KAPIOLANI BOWL	***KAPIOLANI BLVD X WARD A***	***0 - 1/8 SSW***	***14***	***15***
Facility Status: Case Transferred to HEER				
HAWAII NEWSPAPER AGENCY, INC.	***605 KAPIOLANI BLVD***	***0 - 1/8 W***	***F21***	***18***
Facility Status: Site Cleanup Completed				
Facility Status: Site Cleanup Completed				
IMPERIAL PLAZA	***725 KAPIOLANI BLVD***	***1/8 - 1/4SSW***	***I31***	***25***
Facility Status: Site Cleanup Completed				
KAPIOLANI X CHAPIN	KAPIOLANI BLVD X CHAPIN	1/8 - 1/4SSW	L40	29
Facility Status: Disconfirmed Release				
CHUEI SHOKO	***777 KAPIOLANI BLVD***	***1/8 - 1/4SSW***	***L43***	***31***
Facility Status: Site Cleanup Completed				
WARD AVENUE COMPLEX	***820 WARD AVE***	***1/8 - 1/4SSE***	***M45***	***32***
Facility Status: Site Cleanup Completed				
SZYMANSKI PROPERTIES LLC	***757 KAWAIAHAO ST***	***1/8 - 1/4SSW***	***R57***	***38***
Facility Status: Site Cleanup Completed				
FORMER "HOTEL - YOUNG LAUNDRY"	***825 KAPIOLANI BLVD***	***1/8 - 1/4S***	***Q61***	***40***
Facility Status: Case Transferred to HEER				
SHELLY MOTORS INC.	***830 KAPIOLANI BLVD***	***1/8 - 1/4S***	***Q63***	***41***
Facility Status: Site Cleanup Completed				
POHULANI ELDERLY PROJECT	***677 QUEEN ST***	***1/8 - 1/4SW***	***S66***	***43***
Facility Status: Site Cleanup Completed				
FINOVA HAWAIIAN HOLDINGS, LLC	***701 S QUEEN ST***	***1/8 - 1/4SW***	***S69***	***44***
Facility Status: Site Cleanup Completed				
GENSIRO KAWAMOTO	***627 QUEEN ST***	***1/4 - 1/2WSW***	***70***	***45***
Facility Status: Site Cleanup Completed				
AAA HAWAII BUILDING	***590 QUEEN ST***	***1/4 - 1/2WSW***	***T72***	***46***
Facility Status: Site Cleanup Completed				
K & Y CHEVRON 91524	***571 S QUEEN ST***	***1/4 - 1/2WSW***	***V76***	***48***
Facility Status: Site Cleanup Completed				
HAWAIIAN SECURITIES & REALTY,	***819, 835 AND 841 KAWAIA***	***1/4 - 1/2SSW***	***U77***	***49***
Facility Status: Site Cleanup Completed				
KAKAAKO FIRE STATION	***555 QUEEN ST***	***1/4 - 1/2W***	***V78***	***49***
Facility Status: Site Cleanup Completed				
KAKAAKO FIRE DEPARTMENT MECHAN	***620 SOUTH ST***	***1/4 - 1/2WSW***	***W79***	***50***
Facility Status: LUST Cleanup Initiated: Petroleum				
GENSIRO KAWAMOTO	***630 KEAWE ST***	***1/4 - 1/2WSW***	***80***	***50***
Facility Status: Site Cleanup Completed				
CBI, INC	***614 SOUTH ST***	***1/4 - 1/2WSW***	***W81***	***50***
Facility Status: Site Cleanup Completed				
HAWAII COMMUNITY DEVELOPMENT A	***548 COOKE ST***	***1/4 - 1/2SW***	***83***	***51***
Facility Status: Site Cleanup Completed				

Lower Elevation	Address	Dist / Dir	Map ID	Page
MOTOR IMPORTS SERVICE DEPARTME	***609 SOUTH STREET***	***1/4 - 1/2WSW***	***X84***	***51***
Facility Status: Site Cleanup Completed				
H. HAMADA STORE INC.	***885 QUEEN ST***	***1/4 - 1/2SSW***	***85***	***52***
Facility Status: Site Cleanup Completed				
INTERNATIONAL LIFE SUPPORT	***633 HALEKAUWILA ST***	***1/4 - 1/2WSW***	***X88***	***53***
Facility Status: Site Cleanup Completed				
FRENCH WRENCH CORP.	***520 WARD AVE***	***1/4 - 1/2SSW***	***Z89***	***53***
Facility Status: Site Cleanup Completed				
Facility Status: Site Cleanup Completed				
AMELCO BUILDING (SERVICE STATI	***603 HALEKAUWILA ST***	***1/4 - 1/2WSW***	***X90***	***54***
Facility Status: Site Cleanup Completed				
HAWAIIAN HARDWOOD CO., LTD	***935 QUEEN ST***	***1/4 - 1/2SSW***	***Z92***	***56***
Facility Status: Site Cleanup Completed				
EUROCARE/KEICO PACIFIC/SHONS A	***545 SOUTH ST***	***1/4 - 1/2WSW***	***95***	***57***
Facility Status: Site Cleanup Completed				
RAY'S AUTO SERVICE	***959 QUEEN ST***	***1/4 - 1/2S***	***97***	***58***
Facility Status: Site Cleanup Completed				
TIRE RECAP SERVICE	***526 KEAWE ST***	***1/4 - 1/2SW***	***98***	***58***
Facility Status: Site Cleanup Completed				
REED LANE WAREHOUSE	***556 REED LN***	***1/4 - 1/2WSW***	***100***	***60***
Facility Status: Site Cleanup Completed				
420 WARD AVE	***420 WARD AVE/901 ILANIW***	***1/4 - 1/2SSW***	***101***	***60***
Facility Status: Site Cleanup Completed				
SERVICE AUTO MACHINE WORKS	***518 CUMMINS ST***	***1/4 - 1/2S***	***103***	***61***
Facility Status: Site Cleanup Completed				
KODAK BUILDING	***1065 KAPIOLANI BLVD***	***1/4 - 1/2SSE***	***105***	***62***
Facility Status: Site Cleanup Completed				
TAI HING CO., INC.	***1023 KAWAIAHAO ST***	***1/4 - 1/2S***	***106***	***62***
Facility Status: Site Cleanup Completed				
JAS W GLOVER LTD	***1046 WAIMAMU ST***	***1/4 - 1/2S***	***AB109***	***65***
Facility Status: Site Cleanup Completed				
HONOLULU SHIP SUPPLY	***834 POHUKAINA ST***	***1/4 - 1/2SSW***	***110***	***66***
Facility Status: Site Cleanup Completed				
SAN AUTO BODY AND PAINTING	***1058 WAIMANU ST***	***1/4 - 1/2SSE***	***AB112***	***67***
Facility Status: Site Cleanup Completed				

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Health's Listing of Underground Storage Tanks.

A review of the UST list, as provided by EDR, and dated 02/01/2006 has revealed that there are 29 UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
CIVIC CENTER PARKING STRUCTURE	1100 ALAPAI ST	0 - 1/8	A1	6
TESORO GAS EXPRESS KING & COOK	759 S KING ST	0 - 1/8	B2	6
MTL BUS FACILITY	***1133 ALAPAI ST***	***0 - 1/8***	***C3***	***7***

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
SCAN LINE BUILDING	***788 S KING ST***	***0 - 1/8 ESE***	***B11***	***12***
ONE ARCHER LANE (FORMERLY KING	809 S KING ST	0 - 1/8 ESE	D16	16
NIKKO RESTORATION MASSAGE, INC	801 S HOTEL ST	0 - 1/8 ESE	17	17
HONOLULU POLICE DEPARTMENT	801 S BERETANIA ST	0 - 1/8 ENE	G23	19
BERETANIA STATION	630 S BERETANIA ST	0 - 1/8 NNW	H28	23
CANCER RESEARCH CENTER OF HAWA	1236 LAUHALA ST	1/8 - 1/4NNW	32	25
STRAUB CLINIC	***888 S KING ST***	***1/8 - 1/4ESE***	***J34***	***25***
MID PAC PETROLEUM LLC # 270595	***882 S BERETANIA ST***	***1/8 - 1/4E***	***K36***	***27***
QUEEN'S PHYSICIANS' OFFICE BUI	1329 LUSITANA ST	1/8 - 1/4NNE	38	28
PACIFIC PARK PLAZA	711 KAPIOLANI BLVD, SUI	1/8 - 1/4WNW	58	39
KALANIMOKU BLDG	TMK 2-1-24:01 1151 PUN	1/8 - 1/4NW	59	39

Lower Elevation	Address	Dist / Dir	Map ID	Page
HONOLULU MUNICIPAL BLDG	650 S KING ST	0 - 1/8 W	A12	13
KAPIOLANI BOWL	***KAPIOLANI BLVD X WARD A***	***0 - 1/8 SSW***	***14***	***15***
SERVCO PACIFIC	650 KAPIOLANI BLVD	0 - 1/8 SW	E19	18
HAWAII NEWSPAPER AGENCY, INC.	***605 KAPIOLANI BLVD***	***0 - 1/8 W***	***F21***	***18***
SHELLY MAZDA SERVICE AREA	CHAPIN ST	0 - 1/8 W	F22	19
IMPERIAL PLAZA	725 KAPIOLANI BLVD	1/8 - 1/4SSW	I30	24
CHARLES AND JANET FUJII	901-905 WAIMANU ST	1/8 - 1/4SW	37	28
CHUEI SHOKO	777 KAPIOLANI BLVD	1/8 - 1/4SSW	L41	29
WARD AVENUE COMPLEX	820 WARD AVE	1/8 - 1/4SSE	M44	31
WAIMANU SASH & DOOR, LTD.	815 WAIMANU ST	1/8 - 1/4SSW	P49	34
SZYMANSKI PROPERTIES LLC	757 KAWAIAHAO ST	1/8 - 1/4SSW	R56	38
FORMER "HOTEL - YOUNG LAUNDRY"	825 KAPIOLANI BLVD	1/8 - 1/4S	Q60	39
SHELLY MOTORS INC.	830 KAPIOLANI BLVD	1/8 - 1/4S	Q64	42
POHULANI ELDERLY PROJECT	677 QUEEN ST	1/8 - 1/4SW	S67	43
FINOVA HAWAIIAN HOLDINGS, LLC	***701 S QUEEN ST***	***1/8 - 1/4SW***	***S69***	***44***

Voluntary Remediation Program and Brownfields sites with institutional controls in place.

A review of the INST CONTROL list, as provided by EDR, and dated 08/24/2005 has revealed that there are 5 INST CONTROL sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
1510 FREAR STREET	***1510 FREAR ST***	***1/4 - 1/2NNE***	***82***	***50***

Lower Elevation	Address	Dist / Dir	Map ID	Page
BMW OF HONOLULU	***777 KAPIOLANI BLVD***	***1/8 - 1/4SSW***	***L42***	***30***
CHUEI SHOKOH, INC.	***825 KAPIOLANI BLVD***	***1/8 - 1/4S***	***Q62***	***40***
HDC PROPERTIES, STAINED SOILS	***1015 KAPIOLANI BLVD***	***1/4 - 1/2SSE***	***99***	***58***
COOKE STREET LEAD CONTAMINATIO	***501 COOKE ST***	***1/4 - 1/2SW***	***104***	***61***

VCP: Voluntary Response Program Sites.

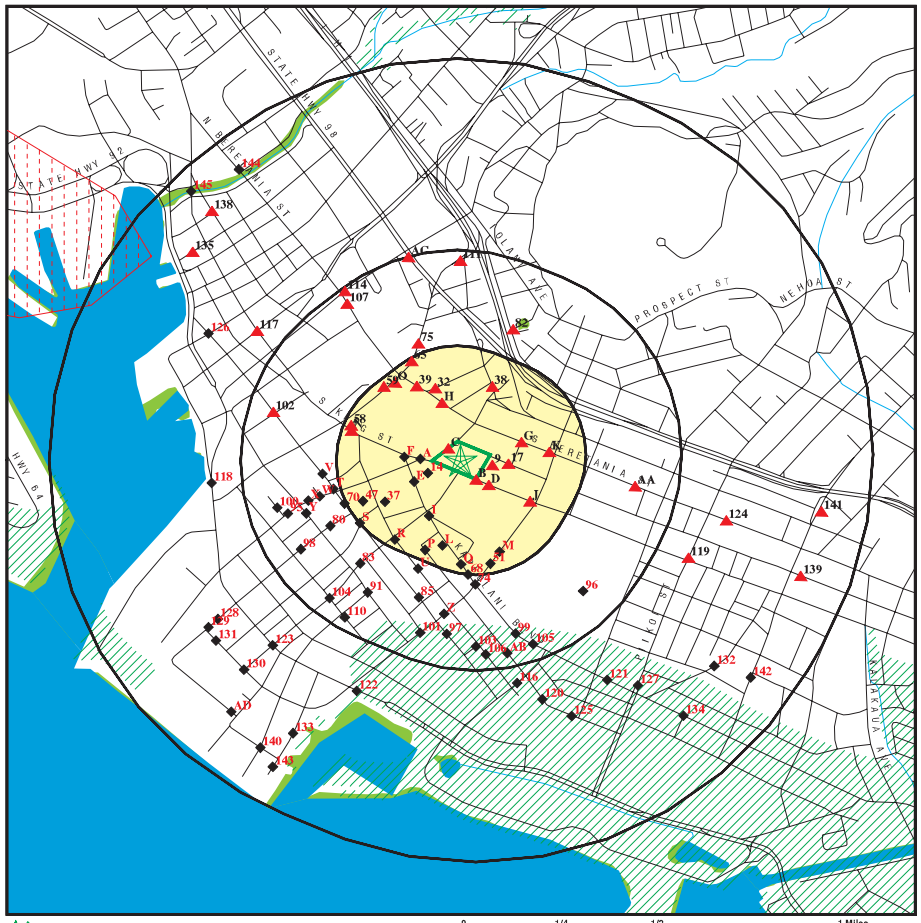
A review of the VCP list, as provided by EDR, and dated 08/24/2005 has revealed that there is 1 VCP site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
CHUEI SHOKOH, INC.	***825 KAPIOLANI BLVD***	***1/8 - 1/4S***	***Q62***	***40***

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
KAKAAKO BROWNFIELD PROJECT-UNIT 7	SHWS, FINDS, BROWNFIELDS, INST CONTROL
KAKAAKO BROWNFIELD PROJECT-UNIT 5	SHWS, FINDS
CANNON CLUB	SHWS, BROWNFIELDS, INST CONTROL
DOMESTIC COMMERCIAL FISHING VILLAGE	SHWS
ELLIOT STREET DRAINAGE CANAL	SHWS, SPILLS
HALAWA STREAM CHANNEL PETROLEUM CONTAMINATION	SHWS
KEEHI LAGOON CANOE FACILITY, INCREMENT II	SHWS, FINDS
KAKAAKO BROWNFIELD PROJECT-UNIT 10	SHWS, FINDS, BROWNFIELDS
KAKAAKO IMPROVEMENT DISTRICT 7	SHWS, BROWNFIELDS
ABC DISPOSAL COMPANY	SHWS, FINDS
KEEAUMOKU SUPERBLOCK PROJECT	SHWS, SPILLS, INST CONTROL
KAKAAKO BROWNFIELD PROJECT-UNIT 4	SHWS, FINDS
KAKAAKO BROWNFIELD PROJECT-UNIT 2	SHWS, FINDS
KAKAAKO BROWNFIELD PROJECT-UNIT 1	SHWS, FINDS
KUHIO PARK TERRACE, UNITS D1 AND D2	SHWS, FINDS, BROWNFIELDS, INST CONTROL
STAN SHERIFF SPECIAL EVENTS ARENA	SHWS, FINDS, SPILLS
420-470 NORTH NIMITZ HIGHWAY	SHWS
NIMITZ HIGHWAY WATER IMPROVEMENT PROJECT SUMNER TO	SHWS
ZIPPY'S 580 NORTH NIMITZ HIGHWAY	SHWS, SPILLS
DLNR BURIED DRUM SITE	SHWS, FINDS, SPILLS
MATSON NAVIGATION TERMINAL	SHWS, SPILLS
SEA-LAND SERVICE	SHWS, SPILLS
KAPALAMA MILITARY RESERVATION	SHWS, UST
HAWAII HALL	SHWS
HAWAIIAN BITUMULS PAVING & PRECAST COMPANY, MOKULE	SHWS
KMCAS LANDFILL	SWF/LF
SHELLY MAZDA SERVICE AREA	FINDS, LUST
KAKAAKO SITE	LUST
KOOLANI TOWER	LUST
KOOLANI TOWER	UST
DAGS CSD STATE OFFICE TOWER BLDG	RCRA-SQG, FINDS
HAWAII MARITIME CENTER	RCRA-SQG, FINDS
POLYNESIAN ADVENTURE TOURS INC	RCRA-SQG, FINDS
KEEHI MARINE CENTER 24 SAND ISLAND ROAD	ERNS
KEEHI MARINE CENTER	ERNS
NAVAL SUPPLY CENTER PIER PEARL HARBOR	ERNS
FIRST HAWAIIAN CENTER, TANK REMOVAL	FINDS, SPILLS
BUS RAPID TRANSIT	FINDS
KING STREET & CENTURY CENTER	SPILLS

OVERVIEW MAP - 1662115.2s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Alapai Transit Center ADDRESS: 710 S. King Street Honolulu HI 96813 LAT/LONG: 21.3036 / 157.8533	CLIENT: Enviro Srvcs. and Trng. Center CONTACT: Sharla Horiuchi INQUIRY #: 1662115.2s DATE: April 25, 2006

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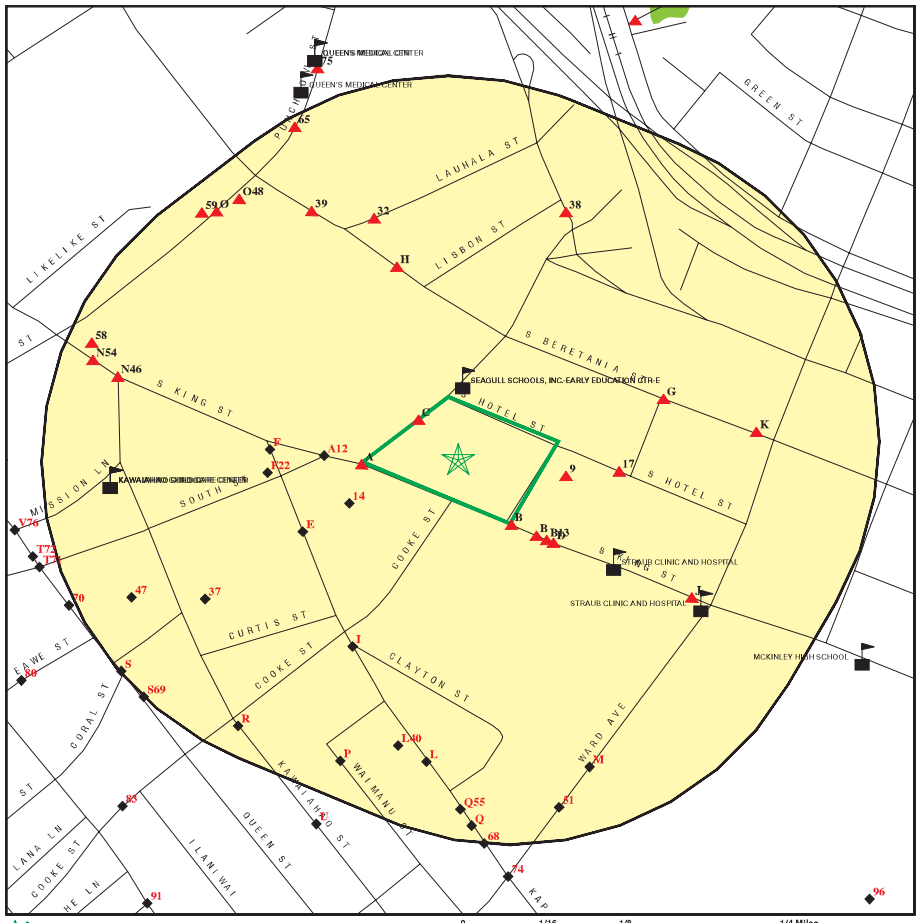
DETAIL MAP - 1662115.2s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory

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MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL RECORDS								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
NPL RECOVERY		TP	NR	NR	NR	NR	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.500	0	0	3	NR	NR	3
CORRACTS		1.000	0	0	0	1	NR	1
RCRA TSD		0.500	0	0	0	NR	NR	0
RCRA Lg. Quan. Gen.		0.250	0	1	NR	NR	NR	1
RCRA Sm. Quan. Gen.		0.250	8	12	NR	NR	NR	20
ERNS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
DOD		1.000	0	0	0	1	NR	1
FUDS		1.000	0	0	0	0	NR	0
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
STATE AND LOCAL RECORDS								
SHWS		1.000	2	5	9	30	NR	46
State Landfill		0.500	0	0	1	NR	NR	1
LUST		0.500	7	12	34	NR	NR	53
UST		0.250	13	16	NR	NR	NR	29
SPILLS		TP	NR	NR	NR	NR	NR	0
INST CONTROL		0.500	0	2	3	NR	NR	5
VCP		0.500	0	1	0	NR	NR	1
BROWNFIELDS		0.500	0	0	0	NR	NR	0
TRIBAL RECORDS								
INDIAN RESERV		1.000	0	0	0	0	NR	0
EDR PROPRIETARY RECORDS								
Manufactured Gas Plants		1.000	0	0	0	0	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
EDR Historical Auto Stations		0.250	0	0	NR	NR	NR	0
EDR Historical Cleaners		0.250	0	0	NR	NR	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

DOD **SAND ISLAND MILITARY RESERVATION** **DOD** **CUSA047697**
Region NW **N/A**
1/2-1 **SAND ISLAND MILITARY RESE (County), HI**
4104 ft.

FEDERAL LANDS:

Feature 1:	Army DOD
Feature 2:	Not reported
Feature 3:	Not reported
Agency:	DOD
URL:	Not reported
Name 1:	Sand Island Military Reservation
Name 2:	Not reported
Name 3:	Not reported
State:	HI

A1 **CIVIC CENTER PARKING STRUCTURE** **UST** **U001235059**
1100 ALAPAI ST **N/A**
< 1/8 **HONOLULU, HI 96813**
1 ft.

Site 1 of 3 in cluster A

Relative: Higher

Actual: 10 ft.

UST:

Facility ID:	9-100121	Tank ID:	87B
Tank Status:	Currently In Use		
Tank Capacity:	1000	Installed:	5/13/1979
Date Closed:	Not reported	Substance:	Gasoline
Owner:	C&C HNL - DEPT OF FACILITY MAINTENANCE 1000 ULUOHIA ST, SUITE 215 Honolulu, HI 96813		

Facility ID:	9-100121	Tank ID:	87A
Tank Status:	Currently In Use		
Tank Capacity:	1000	Installed:	5/13/1979
Date Closed:	Not reported	Substance:	Gasoline
Owner:	C&C HNL - DEPT OF FACILITY MAINTENANCE 1000 ULUOHIA ST, SUITE 215 Honolulu, HI 96813		

B2 **TESORO GAS EXPRESS KING & COOKE** **UST** **U001235754**
759 S KING ST **N/A**
< 1/8 **HONOLULU, HI 96813**
1 ft.

Site 1 of 7 in cluster B

Relative: Higher

Actual: 10 ft.

UST:

Facility ID:	9-102158	Tank ID:	R-1
Tank Status:	Permanently Out of Use		
Tank Capacity:	1000	Installed:	Not reported
Date Closed:	6/8/1989	Substance:	Used Oil
Owner:	TESORO HAWAII CORPORATION 1311 Palama St Honolulu, HI 96813		

Facility ID:	9-102158	Tank ID:	R-4
Tank Status:	Permanently Out of Use		
Tank Capacity:	11500	Installed:	Not reported
Date Closed:	6/9/1989	Substance:	Gasoline
Owner:	TESORO HAWAII CORPORATION		

TESORO GAS EXPRESS KING & COOKE (Continued) **U001235754**

1311 Palama St
Honolulu, HI 96813

Facility ID:	9-102158	Tank ID:	3
Tank Status:	Currently In Use		
Tank Capacity:	12000	Installed:	10/1/2000
Date Closed:	Not reported	Substance:	Diesel
Owner:	TESORO HAWAII CORPORATION 1311 Palama St Honolulu, HI 96813		

Facility ID:	9-102158	Tank ID:	92
Tank Status:	Currently In Use		
Tank Capacity:	12000	Installed:	10/1/2000
Date Closed:	Not reported	Substance:	Gasoline
Owner:	TESORO HAWAII CORPORATION 1311 Palama St Honolulu, HI 96813		

Facility ID:	9-102158	Tank ID:	87
Tank Status:	Currently In Use		
Tank Capacity:	12000	Installed:	10/1/2000
Date Closed:	Not reported	Substance:	Gasoline
Owner:	TESORO HAWAII CORPORATION 1311 Palama St Honolulu, HI 96813		

Facility ID:	9-102158	Tank ID:	R-2
Tank Status:	Permanently Out of Use		
Tank Capacity:	5000	Installed:	Not reported
Date Closed:	6/9/1989	Substance:	Gasoline
Owner:	TESORO HAWAII CORPORATION 1311 Palama St Honolulu, HI 96813		

Facility ID:	9-102158	Tank ID:	R-3
Tank Status:	Permanently Out of Use		
Tank Capacity:	10000	Installed:	Not reported
Date Closed:	6/9/1989	Substance:	Gasoline
Owner:	TESORO HAWAII CORPORATION 1311 Palama St Honolulu, HI 96813		

C3 **MTL BUS FACILITY** **LUST** **U001235067**
1133 ALAPAI ST **UST** **N/A**
< 1/8 **HONOLULU, HI 96813**
1 ft.

Site 1 of 2 in cluster C

Relative: Higher

LUST:

Facility ID:	9-100150
Release ID:	900069
Facility Status Date:	1995-10-24 00:00:00
Facility Status:	**Site Cleanup Completed**
Project Officer:	Sadoyama

Actual: 10 ft.

UST:

Facility ID:	9-100150	Tank ID:	R-A7
Tank Status:	Permanently Out of Use		

MTL BUS FACILITY (Continued) **U001235067**

Tank Capacity: 4000 Installed: Not reported
Date Closed: 6/30/1990 Substance: Gasoline
Owner: C&C OF HNL - DEPT OF DESIGN AND CONSTRUCTION
650 S KING ST
Honolulu, HI 96813

Facility ID: 9-100150 Tank ID: R-A4
Tank Status: Permanently Out of Use
Tank Capacity: 4000 Installed: Not reported
Date Closed: 6/30/1990 Substance: Diesel
Owner: C&C OF HNL - DEPT OF DESIGN AND CONSTRUCTION
650 S KING ST
Honolulu, HI 96813

Facility ID: 9-100150 Tank ID: R-1
Tank Status: Permanently Out of Use
Tank Capacity: 12000 Installed: 1/21/1987
Date Closed: Not reported Substance: Diesel
Owner: C&C OF HNL - DEPT OF DESIGN AND CONSTRUCTION
650 S KING ST
Honolulu, HI 96813

Facility ID: 9-100150 Tank ID: R-4
Tank Status: Permanently Out of Use
Tank Capacity: 4000 Installed: 1/21/1952
Date Closed: Not reported Substance: Used Oil
Owner: C&C OF HNL - DEPT OF DESIGN AND CONSTRUCTION
650 S KING ST
Honolulu, HI 96813

Facility ID: 9-100150 Tank ID: R-3
Tank Status: Permanently Out of Use
Tank Capacity: 6000 Installed: 1/21/1987
Date Closed: Not reported Substance: Gasoline
Owner: C&C OF HNL - DEPT OF DESIGN AND CONSTRUCTION
650 S KING ST
Honolulu, HI 96813

Facility ID: 9-100150 Tank ID: R-2
Tank Status: Permanently Out of Use
Tank Capacity: 12000 Installed: 1/21/1987
Date Closed: Not reported Substance: Diesel
Owner: C&C OF HNL - DEPT OF DESIGN AND CONSTRUCTION
650 S KING ST
Honolulu, HI 96813

Facility ID: 9-100150 Tank ID: R-A5
Tank Status: Permanently Out of Use
Tank Capacity: 2000 Installed: Not reported
Date Closed: 6/30/1990 Substance: Not Listed
Owner: C&C OF HNL - DEPT OF DESIGN AND CONSTRUCTION
650 S KING ST
Honolulu, HI 96813

Facility ID: 9-100150 Tank ID: R-A3
Tank Status: Permanently Out of Use
Tank Capacity: 4000 Installed: Not reported

MTL BUS FACILITY (Continued) **U001235067**

Date Closed: 6/30/1990 Substance: Diesel
Owner: C&C OF HNL - DEPT OF DESIGN AND CONSTRUCTION
650 S KING ST
Honolulu, HI 96813

Facility ID: 9-100150 Tank ID: R-A2
Tank Status: Permanently Out of Use
Tank Capacity: 5000 Installed: Not reported
Date Closed: 6/30/1991 Substance: Diesel
Owner: C&C OF HNL - DEPT OF DESIGN AND CONSTRUCTION
650 S KING ST
Honolulu, HI 96813

Facility ID: 9-100150 Tank ID: R-A1
Tank Status: Permanently Out of Use
Tank Capacity: 4000 Installed: Not reported
Date Closed: 6/30/1990 Substance: Diesel
Owner: C&C OF HNL - DEPT OF DESIGN AND CONSTRUCTION
650 S KING ST
Honolulu, HI 96813

Facility ID: 9-100150 Tank ID: R-A6
Tank Status: Permanently Out of Use
Tank Capacity: 2000 Installed: Not reported
Date Closed: 6/30/1990 Substance: Not Listed
Owner: C&C OF HNL - DEPT OF DESIGN AND CONSTRUCTION
650 S KING ST
Honolulu, HI 96813

C4 **MTL INCORPORATED** **RCRA-SQG** **1000119347**
1133 ALAPAI STREET **FINDS** **HID981990047**
< 1/8 **HONOLULU, HI 96813**
1 ft.

Relative: Higher

Actual: 10 ft.

Site 2 of 2 in cluster C

RCRAInfo:
Owner: CITY OF HONOLULU
(415) 555-1212
EPA ID: HID981990047

Contact: ENVIRONMENTAL MANAGER
(808) 537-9216

Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: Violations exist

Regulation Violated: 262.10-12.A
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 03/21/1989
Actual Date Achieved Compliance: 03/21/1994

Enforcement Action: INITIAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date: 09/28/1990
Penalty Type: Not reported

Enforcement Action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date: 05/03/1991
Penalty Type: Not reported

There are 1 violation record(s) reported at this site:

Evaluation	Area of Violation	Date of Compliance

MTL INCORPORATED (Continued) **1000119347**

Compliance Evaluation Inspection GENERATOR-ALL REQUIREMENTS (OVERSIGHT) 19940321

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

B5 **MALAMA PACIFIC CORPORATION** **SPILLS** **S106818940**
759 S KING ST **N/A**
< 1/8 **HONOLULU, HI 96813**
1 ft.

Site 2 of 7 in cluster B

Relative: Higher

Actual: 10 ft.

HI SPILLS:

Case Number:	19890718-0001
Island:	Oahu
Numerical Quantity:	Not reported
Less Or Greater Than :	Not reported
Units :	Not reported
Activity Type :	Response
Assignment Date :	1989-07-18 00:00:00
Activity Lead :	Not reported
Assignment End Date :	Not reported
Result :	8
Supplemental Loc. Text:	Not reported
Unit:	Malama Pacific Corporation
Substances:	SEE INCIDENT DESCRIPTION
Incident :	EPCRA
Initial :	EPCRA
Report :	EPCRA

B6 **TESORO HAWAII CORPORATION** **RCRA-SQG** **1000388929**
759 S KING STREET **FINDS** **HID981652704**
< 1/8 **HONOLULU, HI 96813**
1 ft.

Site 3 of 7 in cluster B

Relative: Higher

Actual: 10 ft.

RCRAInfo:

Owner:	PRESTIGE AUTO CARE INC (415) 555-1212
EPA ID:	HID981652704
Contact:	ENVIRONMENTAL MANAGER (808) 545-3433
Classification:	Conditionally Exempt Small Quantity Generator
TSDF Activities:	Not reported
Violation Status:	No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

B7 **TESORO GAS EXPRESS KING & COOKE** **FINDS** **1006842081**
759 S KING ST **LUST** **110014034794**
< 1/8 **HONOLULU, HI 96813**
1 ft.

Site 4 of 7 in cluster B

Relative: Higher

Actual: 10 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:

Facility ID:	9-102158
Release ID:	890019
Facility Status Date:	1997-02-20 00:00:00
Facility Status:	**Site Cleanup Completed**
Project Officer:	Ruiz

A8 **CIVIC CENTER PARKING STRUCTURE** **FINDS** **1006843747**
1100 ALAPAI ST **110014053193**
< 1/8 **HONOLULU, HI 96813**
1 ft.

Site 2 of 3 in cluster A

Relative: Higher

Actual: 10 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

---

9 **UNITED TECH OTIS ELEVATOR** **RCRA-SQG** **1000473213**
ESE **793 S HOTEL ST** **FINDS** **HID982433856**
< 1/8 **HONOLULU, HI 96813**
99 ft.

Relative: Higher

Actual: 12 ft.

RCRAInfo:

Owner:	UNITED TECH OTIS ELEVATOR (415) 555-1212
EPA ID:	HID982433856
Contact:	ENVIRONMENTAL MANAGER (808) 531-5051
Classification:	Conditionally Exempt Small Quantity Generator
TSDF Activities:	Not reported
Violation Status:	No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

B10 **PVT INCORPORATED SCANLINE BUILDING** **RCRA-SQG** **1000886881**
ESE **788 SOUTH KING STREET** **FINDS** **HI0000117721**
< 1/8 **HONOLULU, HI 96813**
118 ft.

Site 5 of 7 in cluster B

Relative: Higher

Actual: 10 ft.

PVT INCORPORATED SCANLINE BUILDING (Continued) **1000886881**

RCRAInfo:
Owner: PVT INC
(808) 593-9191
EPA ID: HI0000117721
Contact: ALBERT SHIGEMURA
(808) 593-9191
Classification: Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

B11 ESE < 1/8 118 ft.
Relative: Higher
Actual: 10 ft.

SCAN LINE BUILDING **LUST** **U003154619**
788 S KING ST **UST** **N/A**
HONOLULU, HI 96800

Site 6 of 7 in cluster B

LUST:
Facility ID: 9-102752
Release ID: 940019
Facility Status Date: 1993-11-15 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Ruiz

UST:
Facility ID: 9-102752 Tank ID: R-1
Tank Status: Permanently Out of Use
Tank Capacity: Not reported Installed: Not reported
Date Closed: 7/27/1993 Substance: Other
Owner: SCAN LINE BUILDING
788 S KING ST
Honolulu, HI 96800

Facility ID: 9-102752 Tank ID: R-2
Tank Status: Permanently Out of Use
Tank Capacity: Not reported Installed: Not reported
Date Closed: 7/27/1993 Substance: Other
Owner: SCAN LINE BUILDING
788 S KING ST
Honolulu, HI 96800

Facility ID: 9-102752 Tank ID: R-3
Tank Status: Permanently Out of Use
Tank Capacity: Not reported Installed: Not reported
Date Closed: 7/27/1993 Substance: Other
Owner: SCAN LINE BUILDING
788 S KING ST
Honolulu, HI 96800

A12 West < 1/8 160 ft.
Relative: Lower
Actual: 8 ft.

HONOLULU MUNICIPAL BLDG **UST** **U001235060**
650 S KING ST **N/A**
HONOLULU, HI 96813

Site 3 of 3 in cluster A

UST:
Facility ID: 9-100122 Tank ID: M-1
Tank Status: Currently In Use
Tank Capacity: 12000 Installed: 9/1/1994
Date Closed: Not reported Substance: Diesel
Owner: C&C HNL - DEPT OF FACILITY MAINTENANCE
1000 ULUOHIA ST, SUITE 215
Honolulu, HI 96813

Facility ID: 9-100122 Tank ID: R-1
Tank Status: Permanently Out of Use
Tank Capacity: 10000 Installed: 4/1/1975
Date Closed: 3/1/1994 Substance: Diesel
Owner: C&C HNL - DEPT OF FACILITY MAINTENANCE
1000 ULUOHIA ST, SUITE 215
Honolulu, HI 96813

B13 ESE < 1/8 163 ft.
Relative: Higher
Actual: 10 ft.

ONE ARCHER LANE **SHWS** **1006818981**
801 S KING ST **FINDS** **11001376741 4**
HONOLULU, HI 96813 **SPILLS**

Site 7 of 7 in cluster B

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM

SHWS:
Supplement : Not reported
Restricted Use : Not reported
Fed Id : Not reported
Funding : Not reported
Agreement/program : State Site
Activity Type : Screening
Assignment Date : 2004-05-20 00:00:00
Activity Lead : John Peard
Assignment End Date : Not reported
End fill : 2005-08-24 00:00:00
Result fill : Ongoing
Overall Status : Ongoing
File Under : Myers King Street Partners
Restricted Use Comm : Not reported
Ic Relied On In Remedy : Not reported
Unit : One Archer Lane Petroleum Contamination
Sitelist Name : One Archer Lane Petroleum Contamination

HI SPILLS:
Case Number: 19961002-1100
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : 1996-10-02 00:00:00
Activity Lead : Terry Corpus
Assignment End Date : Not reported

ONE ARCHER LANE (Continued) **1006818981**

Result : 8
Supplemental Loc. Text: Not reported
Unit: One Archer Lane, discovered UST
Substances: Not reported
Incident : Contractors working for the Myers Corp. on the One Archer Lane project uncovered an unidentified UST.
Discovered petroleum contamination during construction. Tanks had been pulled previously.
SOSC Bill Perry responded assessing a white powder at 1 Archer Lane after a reported 42 had possiblily been exposed to a potential bioterrorism agent anthrax. The powder as discovered in an envelope marked Astrarza Co. was sampled and taken for anal
ysis.
Initial : Ogden Environmental was immediately called to to test tank contents. Plans to have PENCO pump tank, dispose of substances and then remove tank were made by Myers Corp.
Ogden is characterizing the site.
SOSC went to scene and assessed the situation. Hazmat grabbed a sample to analyze. Decon procedures were taken to protect the public.The 42 people on site who had been potentially exposed were directed to get medical observation pending sampling re
sults.
Report : See also 960724-1544. Forwarded to SDAR.
See also 961002-1100. Forwarded to SDAR.
Location 1 Archer Lane white powder in envelope marked ASTARAZA Co. two people exposed initially then a reported 42 people are in isolation pending analysis of powder. HAZMAT asked DOH HEER to analyze substance.

Case Number: 19960724-1544
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : 1996-07-24 00:00:00
Activity Lead : Terry Corpus
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Not reported
Unit: One Archer Lane, petroleum contamination
Substances: Petroleum
Incident : Contractors working for the Myers Corp. on the One Archer Lane project uncovered an unidentified UST.
Discovered petroleum contamination during construction. Tanks had been pulled previously.
SOSC Bill Perry responded assessing a white powder at 1 Archer Lane after a reported 42 had possiblily been exposed to a potential bioterrorism agent anthrax. The powder as discovered in an envelope marked Astrarza Co. was sampled and taken for anal
ysis.
Initial : Ogden Environmental was immediately called to to test tank contents. Plans to have PENCO pump tank, dispose of substances and then remove tank were made by Myers Corp.
Ogden is characterizing the site.
SOSC went to scene and assessed the situation. Hazmat grabbed a sample to analyze. Decon procedures were taken to protect the public.The 42 people on site who had been potentially exposed were directed to get medical observation

ONE ARCHER LANE (Continued) **1006818981**

pending sampling re
sults.
Report : See also 960724-1544. Forwarded to SDAR.
See also 961002-1100. Forwarded to SDAR.
Location 1 Archer Lane white powder in envelope marked ASTARAZA Co. two people exposed initially then a reported 42 people are in isolation pending analysis of powder. HAZMAT asked DOH HEER to analyze substance.

Case Number: 20011013-1451
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : 2001-10-13 00:00:00
Activity Lead : Bill Perry
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Not reported
Unit: 1 Archer Lane, Honolulu, White Powder-Anthrax Scare
Substances: Unknown white powder possibily containing a bioterrorism agent anthrax
Incident : Contractors working for the Myers Corp. on the One Archer Lane project uncovered an unidentified UST.
Discovered petroleum contamination during construction. Tanks had been pulled previously.
SOSC Bill Perry responded assessing a white powder at 1 Archer Lane after a reported 42 had possiblily been exposed to a potential bioterrorism agent anthrax. The powder as discovered in an envelope marked Astrarza Co. was sampled and taken for anal
ysis.
Initial : Ogden Environmental was immediately called to to test tank contents. Plans to have PENCO pump tank, dispose of substances and then remove tank were made by Myers Corp.
Ogden is characterizing the site.
SOSC went to scene and assessed the situation. Hazmat grabbed a sample to analyze. Decon procedures were taken to protect the public.The 42 people on site who had been potentially exposed were directed to get medical observation pending sampling re
sults.
Report : See also 960724-1544. Forwarded to SDAR.
See also 961002-1100. Forwarded to SDAR.
Location 1 Archer Lane white powder in envelope marked ASTARAZA Co. two people exposed initially then a reported 42 people are in isolation pending analysis of powder. HAZMAT asked DOH HEER to analyze substance.

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14 SSW < 1/8 178 ft. **KAPIOLANI BOWL** **LUST U001237402**
KAPIOLANI BLVD X WARD AVE **UST N/A**
HONOLULU, HI 96800

Relative: Lower
Actual: 7 ft.

LUST:
Facility ID: 9-102703
Release ID: 930011
Facility Status Date: 2001-10-01 00:00:00
Facility Status: Case Transferred to HEER
Project Officer: HEER

UST:

KAPIOLANI BOWL (Continued) **U001237402**

Facility ID:	9-102703	Tank ID:	R-1
Tank Status:	Permanently Out of Use		
Tank Capacity:	Not reported	Installed:	Not reported
Date Closed:	Not reported	Substance:	Not Listed
Owner:	UNDETERMINED AT THIS TIME Address Unknown Honolulu, HI 96800		

D15 ESE < 1/8 193 ft. **Relative: Higher** **Actual: 10 ft.**

ONE ARCHER LANE (FORMERLY KING STREET CARWASH) **FINDS 1006842582**
809 S KING ST **LUST 110014040313**
HONOLULU, HI 96813

Site 1 of 2 in cluster D

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:

Facility ID:	9-102451
Release ID:	920002
Facility Status Date:	1995-03-01 00:00:00
Facility Status:	**Site Cleanup Completed**
Project Officer:	Sadoyama

Facility ID:	9-102451
Release ID:	970002
Facility Status Date:	1997-02-10 00:00:00
Facility Status:	**Site Cleanup Completed**
Project Officer:	Sadoyama

D16 ESE < 1/8 193 ft. **Relative: Higher** **Actual: 10 ft.**

ONE ARCHER LANE (FORMERLY KING STREET CARWASH) **UST U003221738**
809 S KING ST **N/A**
HONOLULU, HI 96800

Site 2 of 2 in cluster D

UST:

Facility ID:	9-102451	Tank ID:	R-4
Tank Status:	Permanently Out of Use		
Tank Capacity:	300	Installed:	Not reported
Date Closed:	10/2/1996	Substance:	Not Listed
Owner:	SCHUBERT INDUSTRIES P.O. BOX 3443 Honolulu, HI 96800		

Facility ID:	9-102451	Tank ID:	R-1
Tank Status:	Permanently Out of Use		
Tank Capacity:	10000	Installed:	Not reported
Date Closed:	Not reported	Substance:	Gasoline
Owner:	SCHUBERT INDUSTRIES P.O. BOX 3443 Honolulu, HI 96800		

Facility ID:	9-102451	Tank ID:	R-2
Tank Status:	Permanently Out of Use		
Tank Capacity:	10000	Installed:	Not reported
Date Closed:	Not reported	Substance:	Gasoline
Owner:	SCHUBERT INDUSTRIES		

ONE ARCHER LANE (FORMERLY KING STREET CARWASH) (Continued) **U003221738**

P.O. BOX 3443
Honolulu, HI 96800

Facility ID:	9-102451	Tank ID:	R-3
Tank Status:	Permanently Out of Use		
Tank Capacity:	10000	Installed:	Not reported
Date Closed:	Not reported	Substance:	Gasoline
Owner:	SCHUBERT INDUSTRIES P.O. BOX 3443 Honolulu, HI 96800		

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17 ESE < 1/8 280 ft. **Relative: Higher** **Actual: 16 ft.**

NIKKO RESTORATION MASSAGE, INC. **UST U003154460**
801 S HOTEL ST **N/A**
HONOLULU, HI 96813

UST:

Facility ID:	9-100281	Tank ID:	R-1
Tank Status:	Permanently Out of Use		
Tank Capacity:	550	Installed:	3/22/1952
Date Closed:	2/28/1990	Substance:	Diesel
Owner:	NIKKO RESTORATION MASSAGE,INC. 801 S HOTEL ST Honolulu, HI 96813		

E18 SW < 1/8 378 ft. **Relative: Lower** **Actual: 7 ft.**

MOTOR IMPORTS **SHWS 1006818926**
650 KAPIOLANI BLVD **FINDS 110013766825**
HONOLULU, HI 96813

Site 1 of 2 in cluster E

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM

SHWS:

Supplement :	Not reported
Restricted Use :	Not reported
Fed Id :	Not reported
Funding :	ERRF
Agreement/program :	State Site
Activity Type :	Removal
Assignment Date :	1999-10-08 00:00:00
Activity Lead :	Mark Sutterfield
Assignment End Date :	2004-07-13 00:00:00
End fill :	2004-07-13 00:00:00
Result fill :	No Further Action (NFA) with Conditions
Overall Status :	SDAR NFA
File Under :	Servco Pacific, Inc.
Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	Motor Imports
Sitelist Name :	Motor Imports

E19 SW < 1/8 378 ft.
Relative: Lower
Actual: 7 ft.

SERVCO PACIFIC — **UST** — **U003402864** / **N/A**
650 KAPIOLANI BLVD
HONOLULU, HI 96814

Site 2 of 2 in cluster E

UST:
Facility ID: 9-103500 — Tank ID: R-1
Tank Status: Permanently Out of Use
Tank Capacity: 1000 — Installed: Not reported
Date Closed: 11/23/1998 — Substance: Gasoline
Owner: SERVCO PACIFIC, INC.
900 FORT St MALL, SUITE 600 P.O. BOX 2788
Honolulu, HI 96814

F20 West < 1/8 385 ft.
Relative: Lower
Actual: 8 ft.

HAWAII NEWSPAPER AGENCY, INC — **RCRA-SQG, FINDS** — **1004688838** / **HID982368474**
605 KAPIOLANI BLVD
HONOLULU, HI 96813

Site 1 of 3 in cluster F

RCRAInfo:
Owner: GANNETT PAC-HONO ADV
(415) 555-1212
EPA ID: HID982368474
Contact: LEONARD RAPOZO
(808) 525-8000
Classification: Conditionally Exempt Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM
HAWAII-UNDERGROUND STORAGE TANK
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

F21 West < 1/8 385 ft.
Relative: Lower
Actual: 8 ft.

HAWAII NEWSPAPER AGENCY, INC. — **LUST, UST** — **1000146678** / **N/A**
605 KAPIOLANI BLVD
HONOLULU, HI 96813

Site 2 of 3 in cluster F

LUST:
Facility ID: 9-100938
Release ID: 940008
Facility Status Date: 1993-10-27 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Sadoyama

Facility ID: 9-100938
Release ID: 930071
Facility Status Date: 1999-05-07 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Maniulit

UST:
Facility ID: 9-100938 — Tank ID: R-3
Tank Status: Permanently Out of Use

HAWAII NEWSPAPER AGENCY, INC. (Continued) — **1000146678**

Tank Capacity: Not reported — Installed: Not reported
Date Closed: 10/16/1989 — Substance: Not Listed
Owner: HAWAII NEWSPAPER AGENCY, INC.
605 KAPIOLANI BLVD
Honolulu, HI 96813

Facility ID: 9-100938 — Tank ID: R-1
Tank Status: Permanently Out of Use
Tank Capacity: 6000 — Installed: 5/16/1978
Date Closed: 12/1/1994 — Substance: Gasoline
Owner: HAWAII NEWSPAPER AGENCY, INC.
605 KAPIOLANI BLVD
Honolulu, HI 96813

Facility ID: 9-100938 — Tank ID: R-2
Tank Status: Permanently Out of Use
Tank Capacity: 6000 — Installed: 5/16/1978
Date Closed: 12/1/1994 — Substance: Gasoline
Owner: HAWAII NEWSPAPER AGENCY, INC.
605 KAPIOLANI BLVD
Honolulu, HI 96813

F22 West < 1/8 393 ft.
Relative: Lower
Actual: 7 ft.

SHELLY MAZDA SERVICE AREA — **UST** — **U001237403** / **N/A**
CHAPIN ST
HONOLULU, HI 96800

Site 3 of 3 in cluster F

UST:
Facility ID: 9-102704 — Tank ID: R-2
Tank Status: Permanently Out of Use
Tank Capacity: Not reported — Installed: Not reported
Date Closed: Not reported — Substance: Not Listed
Owner: UNDETERMINED AT THIS TIME
Address Unknown
Honolulu, HI 96800

Facility ID: 9-102704 — Tank ID: R-3
Tank Status: Permanently Out of Use
Tank Capacity: Not reported — Installed: Not reported
Date Closed: Not reported — Substance: Not Listed
Owner: UNDETERMINED AT THIS TIME
Address Unknown
Honolulu, HI 96800

G23 ENE < 1/8 468 ft.
Relative: Higher
Actual: 23 ft.

HONOLULU POLICE DEPARTMENT — **UST** — **U003221617** / **N/A**
801 S BERETANIA ST
HONOLULU, HI 96813

Site 1 of 3 in cluster G

UST:
Facility ID: 9-100815 — Tank ID: R-1A
Tank Status: Permanently Out of Use
Tank Capacity: 12000 — Installed: 1/1/1987
Date Closed: 6/1/1990 — Substance: Diesel
Owner: C&C OF HNL - POLICE DEPT
801 S BERETANIA ST

HONOLULU POLICE DEPARTMENT (Continued) **U003221617**

Honolulu, HI 96813

Facility ID:	9-100815	Tank ID:	2
Tank Status:	Currently In Use		
Tank Capacity:	1000	Installed:	2/28/1992
Date Closed:	Not reported	Substance:	Used Oil
Owner:	C&C OF HNL - POLICE DEPT 801 S BERETANIA ST Honolulu, HI 96813		

Facility ID:	9-100815	Tank ID:	92
Tank Status:	Currently In Use		
Tank Capacity:	12000	Installed:	3/30/1992
Date Closed:	Not reported	Substance:	Gasoline
Owner:	C&C OF HNL - POLICE DEPT 801 S BERETANIA ST Honolulu, HI 96813		

Facility ID:	9-100815	Tank ID:	R-2A
Tank Status:	Permanently Out of Use		
Tank Capacity:	12000	Installed:	1/1/1987
Date Closed:	6/1/1990	Substance:	Diesel
Owner:	C&C OF HNL - POLICE DEPT 801 S BERETANIA ST Honolulu, HI 96813		

Facility ID:	9-100815	Tank ID:	R-4A
Tank Status:	Permanently Out of Use		
Tank Capacity:	4000	Installed:	Not reported
Date Closed:	6/1/1990	Substance:	Used Oil
Owner:	C&C OF HNL - POLICE DEPT 801 S BERETANIA ST Honolulu, HI 96813		

Facility ID:	9-100815	Tank ID:	3
Tank Status:	Currently In Use		
Tank Capacity:	550	Installed:	2/28/1992
Date Closed:	Not reported	Substance:	Mixture
Owner:	C&C OF HNL - POLICE DEPT 801 S BERETANIA ST Honolulu, HI 96813		

Facility ID:	9-100815	Tank ID:	R-3A
Tank Status:	Permanently Out of Use		
Tank Capacity:	6000	Installed:	1/1/1987
Date Closed:	6/1/1990	Substance:	Gasoline
Owner:	C&C OF HNL - POLICE DEPT 801 S BERETANIA ST Honolulu, HI 96813		

Facility ID:	9-100815	Tank ID:	m-4
Tank Status:	Currently In Use		
Tank Capacity:	8000	Installed:	1/1/1992
Date Closed:	Not reported	Substance:	Diesel
Owner:	C&C OF HNL - POLICE DEPT 801 S BERETANIA ST Honolulu, HI 96813		

G24 ENE < 1/8 468 ft. **HONOLULU POLICE DEPT** **PADS 1000455797**
801 S. BERETANIA ST. **RCRA-SQG HID982495871**
HONOLULU, HI 96815

Site 2 of 3 in cluster G

Relative: Higher

Actual: 23 ft.

RCRAInfo:

Owner:	HONOLULU CITY OF (415) 555-1212
EPA ID:	HID982495871
Contact:	V. HASEBE (808) 973-7295
Classification:	Small Quantity Generator
TSDF Activities:	Not reported

Violation Status: Violations exist

Regulation Violated:	HAR 11--262-11
Area of Violation:	GENERATOR-GENERAL REQUIREMENTS
Date Violation Determined:	05/02/2005
Actual Date Achieved Compliance:	10/21/2005
Enforcement Action:	WRITTEN INFORMAL
Enforcement Action Date:	05/25/2005
Penalty Type:	Not reported
Regulation Violated:	HAR 11-279-22(c)(1)
Area of Violation:	HIUOG
Date Violation Determined:	05/02/2005
Actual Date Achieved Compliance:	10/21/2005
Enforcement Action:	WRITTEN INFORMAL
Enforcement Action Date:	05/25/2005
Penalty Type:	Not reported
Regulation Violated:	HAR 11-279-22(d)
Area of Violation:	HIUOG
Date Violation Determined:	05/02/2005
Actual Date Achieved Compliance:	10/21/2005
Enforcement Action:	WRITTEN INFORMAL
Enforcement Action Date:	05/25/2005
Penalty Type:	Not reported

There are 3 violation record(s) reported at this site:

Evaluation	Area of Violation	Date of Compliance
Compliance Evaluation Inspection	GENERATOR-GENERAL REQUIREMENTS	20051021
	HIUOG	20051021
	HIUOG	20051021

G25 ENE < 1/8 468 ft. **HONOLULU POLICE CRIME LAB** **RCRA-SQG 1004688735**
801 S BERETANIA ST **FINDS HI000184812**
HONOLULU, HI 96813

Site 3 of 3 in cluster G

Relative: Higher

Actual: 23 ft.

HONOLULU POLICE CRIME LAB (Continued) **1004688735**

RCRAInfo:
Owner: CITY AND COUNTY OF HONOLULU
(808) 523-4141
EPA ID: HI0000184812
Contact: GARY DIAS
(808) 529-3541
Classification: Conditionally Exempt Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM
HAWAII-UNDERGROUND STORAGE TANK
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

H26
NNW
< 1/8
576 ft.

Relative: Higher

Actual: 10 ft.

BOARD OF WATER SUPPLY **RCRA-SQG** **1000354650**
630 SOUTH BERETANIA STREET **FINDS** **HID982476673**
HONOLULU, HI 96843

Site 1 of 3 in cluster H

RCRAInfo:
Owner: BOARD OF WAT SUPPLY
(808) 527-5203
EPA ID: HID982476673
Contact: Not reported
Classification: Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
INTEGRATED COMPLIANCE INFORMATION SYSTEM
NATIONAL COMPLIANCE DATABASE SYSTEM
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

H27
NNW
< 1/8
576 ft.

Relative: Higher

Actual: 10 ft.

BERETANIA STATION **FINDS** **1006841654**
630 S BERETANIA ST **LUST** **110014029988**
HONOLULU, HI 96843

Site 2 of 3 in cluster H

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-100118
Release ID: 930104
Facility Status Date: 1993-07-16 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Assigned

H28
NNW
< 1/8
576 ft.

Relative: Higher

Actual: 10 ft.

BERETANIA STATION **UST** **U003221567**
630 S BERETANIA ST **N/A**
HONOLULU, HI 96843

Site 3 of 3 in cluster H

UST:

Facility ID:	9-100118	Tank ID:	R-6
Tank Status:	Permanently Out of Use		
Tank Capacity:	10000	Installed:	12/30/1926
Date Closed:	8/30/1992	Substance:	Other
Owner:	C&C OF HNL - BOARD OF WATER SUPPLY 630 S BERETANIA ST Honolulu, HI 96843		

Facility ID:	9-100118	Tank ID:	R-5
Tank Status:	Permanently Out of Use		
Tank Capacity:	10000	Installed:	12/30/1926
Date Closed:	8/30/1992	Substance:	Other
Owner:	C&C OF HNL - BOARD OF WATER SUPPLY 630 S BERETANIA ST Honolulu, HI 96843		

Facility ID:	9-100118	Tank ID:	2
Tank Status:	Temporarily Out of Use		
Tank Capacity:	2500	Installed:	10/1/1993
Date Closed:	Not reported	Substance:	Gasoline
Owner:	C&C OF HNL - BOARD OF WATER SUPPLY 630 S BERETANIA ST Honolulu, HI 96843		

Facility ID:	9-100118	Tank ID:	1
Tank Status:	Temporarily Out of Use		
Tank Capacity:	2500	Installed:	10/1/1993
Date Closed:	Not reported	Substance:	Gasoline
Owner:	C&C OF HNL - BOARD OF WATER SUPPLY 630 S BERETANIA ST Honolulu, HI 96843		

Facility ID:	9-100118	Tank ID:	R-4
Tank Status:	Permanently Out of Use		
Tank Capacity:	550	Installed:	12/30/1960
Date Closed:	11/24/1992	Substance:	Diesel
Owner:	C&C OF HNL - BOARD OF WATER SUPPLY 630 S BERETANIA ST Honolulu, HI 96843		

Facility ID:	9-100118	Tank ID:	M-3
Tank Status:	Currently In Use		
Tank Capacity:	1000	Installed:	10/1/1993
Date Closed:	Not reported	Substance:	Diesel
Owner:	C&C OF HNL - BOARD OF WATER SUPPLY 630 S BERETANIA ST Honolulu, HI 96843		

I29 SSW 1/8-1/4 715 ft. Relative: Lower Actual: 3 ft.

HD&C, 725 KAPIOLANI BOULEVARD — **SHWS** **S106817426**
725 KAPIOLANI BLVD — **SPILLS** **N/A**
HONOLULU, HI

Site 1 of 3 in cluster I

SHWS:

Supplement :	The Imperial Plaza
Restricted Use :	Not reported
Fed Id :	Not reported
Funding :	Not reported
Agreement/program :	State Site
Activity Type :	Screening
Assignment Date :	2004-05-20 00:00:00
Activity Lead :	Eric Sadoyama
Assignment End Date :	2004-05-21 00:00:00
End fill :	2004-05-21 00:00:00
Result fill :	NFA by OSC
Overall Status :	SDAR NFA
File Under :	Hawaiian Dredging & Construction Company
Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	725 Kapiolani Boulevard
Sitelist Name :	725 Kapiolani Boulevard

HI SPILLS:

Case Number:	19900417-2
Island:	Oahu
Numerical Quantity:	Not reported
Less Or Greater Than :	Not reported
Units :	Not reported
Activity Type :	Response
Assignment Date :	Not reported
Activity Lead :	Curtis Martin
Assignment End Date :	Not reported
Result :	8
Supplemental Loc. Text:	The Imperial Plaza
Unit:	HD&C, 725 Kapiolani Boulevard
Substances:	OIL, DIESEL
Incident :	OIL DISCOVERED WHILE DRILLING HOLES FOR PILINGS.
Initial :	OIL DISCOVERED WHILE DRILLING HOLES FOR PILINGS.
Report :	OIL DISCOVERED WHILE DRILLING HOLES FOR PILINGS.

I30 SSW 1/8-1/4 715 ft. Relative: Lower Actual: 3 ft.

IMPERIAL PLAZA — **UST** **U001235761**
725 KAPIOLANI BLVD — **N/A**
HONOLULU, HI 96813

Site 2 of 3 in cluster I

UST:

Facility ID:	9-102177	Tank ID:	1
Tank Status:	Permanently Out of Use		
Tank Capacity:	Not reported	Installed:	Not reported
Date Closed:	Not reported	Substance:	Heating Oil
Owner:	BUSINESS INVESTMENT, LTD SUITE 2700, PACIFIC TOWER / 1001 BISHOP ST Honolulu, HI 96813		

I31 SSW 1/8-1/4 715 ft. Relative: Lower Actual: 3 ft.

IMPERIAL PLAZA — **FINDS** **1006842123**
725 KAPIOLANI BLVD — **LUST** **110014035276**
HONOLULU, HI 96813

Site 3 of 3 in cluster I

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:

Facility ID:	9-102177
Release ID:	900074
Facility Status Date:	1996-02-13 00:00:00
Facility Status:	**Site Cleanup Completed**
Project Officer:	Brewer

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32 NNW 1/8-1/4 796 ft. Relative: Higher Actual: 10 ft.

CANCER RESEARCH CENTER OF HAWAII — **UST** **U003711695**
1236 LAUHALA ST — **N/A**
HONOLULU, HI 96813

UST:

Facility ID:	9-103525	Tank ID:	M-1
Tank Status:	Currently In Use		
Tank Capacity:	500	Installed:	5/1/1977
Date Closed:	Not reported	Substance:	Diesel
Owner:	CANCER RESEARCH CENTER OF HAWAII 1236 LAUHALA ST Honolulu, HI 96813		

J33 ESE 1/8-1/4 798 ft. Relative: Higher Actual: 12 ft.

STRAUB CLINIC AND HOSPITAL — **RCRA-SQG** **1007092153**
888 S KING ST — **HIR000135376**
HONOLULU, HI 96813

Site 1 of 2 in cluster J

RCRAInfo:

Owner:	STRAUB CLINIC AND HOSPITAL
EPA ID:	HIR000135376
Contact:	BERNIE RODAL 808-522-3039
Classification:	Small Quantity Generator
TSDF Activities:	Not reported
Violation Status:	No violations found

J34 ESE 1/8-1/4 798 ft. Relative: Higher Actual: 12 ft.

STRAUB CLINIC — **LUST** **1000490912**
888 S KING ST — **MLTS** **N/A**
HONOLULU, HI 96813 — **UST**

Site 2 of 2 in cluster J

MLTS:

License Number:	53-18126-01	First License Date:	09/22/1989
License Date:	10/18/2005	Institution Code:	18126
License Expires:	05/31/2015		
Primary Program:	Not reported		
License Use:	Not reported		

STRAUB CLINIC (Continued) **1000490912**

Department: DEPT OF NUCLEAR MEDICINE
Building: Not reported
Status: Not reported
Contact Name: EDWINA LEE, HOSPITAL ADMIN. Contact Phone: 808-522-4501
States Allowing Use: Not reported
Store Material: No
Redistribution: No Incineration: No
Burial: No
Last Inspection: 03/2005
Inspector Name: RAL
Next Inspection: 03/2008

LUST:
Facility ID: 9-100814
Release ID: 990169
Facility Status Date: 1999-11-05 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Takaba

UST:
Facility ID: 9-100814 Tank ID: R-M-001
Tank Status: Permanently Out of Use
Tank Capacity: 1800 Installed: 6/8/1970
Date Closed: 3/9/1999 Substance: Diesel
Owner: STRAUB CLINIC & HOSPITAL INC.
888 S KING ST
Honolulu, HI 96813

Facility ID: 9-100814 Tank ID: R-M-2
Tank Status: Permanently Out of Use
Tank Capacity: 1000 Installed: 3/28/1962
Date Closed: 8/7/1992 Substance: Diesel
Owner: STRAUB CLINIC & HOSPITAL INC.
888 S KING ST
Honolulu, HI 96813

K35 East 1/8-1/4 817 ft. Relative: Higher Actual: 26 ft.

CONCOPHILLIPS COMPANY 2705952 **RCRA-SQG 1000823257**
882 SOUTH BERETANIA STREET **FINDS HID984468967**
HONOLULU, HI 96813

Site 1 of 2 in cluster K

RCRAInfo:
Owner: UNION OIL CO OF CALIF
(808) 522-7600
EPA ID: HID984468967

Contact: HAROLD TAKARA
(808) 522-7600

Classification: Small Quantity Generator
TSDF Activities: Not reported

CONCOPHILLIPS COMPANY 2705952 (Continued) **1000823257**

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM
HAWAII-UNDERGROUND STORAGE TANK
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

K36 East 1/8-1/4 817 ft. Relative: Higher Actual: 26 ft.

MID PAC PETROLEUM LLC # 2705952 **LUST U003402799**
882 S BERETANIA ST **UST N/A**
HONOLULU, HI 96813

Site 2 of 2 in cluster K

LUST:
Facility ID: 9-100040
Release ID: 040051
Facility Status Date: 2004-10-25 00:00:00
Facility Status: LUST Cleanup Initiated: Petroleum
Project Officer: Westerman

UST:
Facility ID: 9-100040 Tank ID: 92
Tank Status: Currently In Use
Tank Capacity: 15000 Installed: 12/1/1995
Date Closed: Not reported Substance: Gasoline
Owner: Mid Pac Petroleum LLC
745 Fort Street, TOPA Financial Center, Suite 1800
Honolulu, HI 96813

Facility ID: 9-100040 Tank ID: R-02
Tank Status: Permanently Out of Use
Tank Capacity: 12000 Installed: 12/23/1986
Date Closed: 7/6/1995 Substance: Gasoline
Owner: Mid Pac Petroleum LLC
745 Fort Street, TOPA Financial Center, Suite 1800
Honolulu, HI 96813

Facility ID: 9-100040 Tank ID: R-03
Tank Status: Permanently Out of Use
Tank Capacity: 550 Installed: 12/23/1986
Date Closed: 7/6/1995 Substance: Used Oil
Owner: Mid Pac Petroleum LLC
745 Fort Street, TOPA Financial Center, Suite 1800
Honolulu, HI 96813

Facility ID: 9-100040 Tank ID: R-01
Tank Status: Permanently Out of Use
Tank Capacity: 12000 Installed: 12/23/1986
Date Closed: 7/6/1995 Substance: Gasoline
Owner: Mid Pac Petroleum LLC
745 Fort Street, TOPA Financial Center, Suite 1800
Honolulu, HI 96813

Facility ID: 9-100040 Tank ID: R-4
Tank Status: Permanently Out of Use
Tank Capacity: 550 Installed: 4/2/1955
Date Closed: 12/1/1986 Substance: Used Oil
Owner: Mid Pac Petroleum LLC

MID PAC PETROLEUM LLC # 2705952 (Continued) — **U003402799**

745 Fort Street, TOPA Financial Center, Suite 1800
Honolulu, HI 96813

Facility ID:	9-100040	Tank ID:	R-2
Tank Status:	Permanently Out of Use		
Tank Capacity:	5000	Installed:	4/2/1955
Date Closed:	12/1/1986	Substance:	Gasoline
Owner:	Mid Pac Petroleum LLC 745 Fort Street, TOPA Financial Center, Suite 1800 Honolulu, HI 96813		

Facility ID:	9-100040	Tank ID:	R-1
Tank Status:	Permanently Out of Use		
Tank Capacity:	7500	Installed:	4/2/1955
Date Closed:	12/1/1986	Substance:	Gasoline
Owner:	Mid Pac Petroleum LLC 745 Fort Street, TOPA Financial Center, Suite 1800 Honolulu, HI 96813		

Facility ID:	9-100040	Tank ID:	87
Tank Status:	Currently In Use		
Tank Capacity:	15000	Installed:	12/1/1995
Date Closed:	Not reported	Substance:	Gasoline
Owner:	Mid Pac Petroleum LLC 745 Fort Street, TOPA Financial Center, Suite 1800 Honolulu, HI 96813		

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37 SW 1/8-1/4 858 ft. — **CHARLES AND JANET FUJII** — **UST** — **U001235120 / N/A**
901-905 WAIMANU ST
HONOLULU, HI 96814

Relative: Lower — **Actual: 5 ft.**

UST:

Facility ID:	9-100254	Tank ID:	R-1
Tank Status:	Permanently Out of Use		
Tank Capacity:	550	Installed:	1/1/1965
Date Closed:	2/1/1988	Substance:	Gasoline
Owner:	CHARLES AND JANET FUJII 918 A-4 KAWAIAHAO ST Honolulu, HI 96814		

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38 NNE 1/8-1/4 886 ft. — **QUEEN'S PHYSICIANS' OFFICE BUILDING** — **UST** — **U001235983 / N/A**
1329 LUSITANA ST
HONOLULU, HI 96813

Relative: Higher — **Actual: 48 ft.**

UST:

Facility ID:	9-102622	Tank ID:	M-1
Tank Status:	Currently In Use		
Tank Capacity:	500	Installed:	11/30/1990
Date Closed:	Not reported	Substance:	Diesel
Owner:	THE QUEEN'S MEDICAL CENTER FACILITIES & BUILDING MAINTENANCE 1301 PUNCHBOWL ST Honolulu, HI 96813		

39 NW 1/8-1/4 948 ft. — **HONOLULU MEDICAL GROUP INC** — **RCRA-SQG, FINDS** — **1000823319 / HID984469833**
550 S BERETANIA ST
HONOLULU, HI 96822

Relative: Higher — **Actual: 10 ft.**

RCRAInfo:

Owner:	HONOLULU MEDICAL GROUP INC (808) 537-2211
EPA ID:	HID984469833
Contact:	WAYNE JAMES (808) 537-2211
Classification:	Small Quantity Generator
TSDF Activities:	Not reported
Violation Status:	No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

L40 SSW 1/8-1/4 1019 ft. — **KAPIOLANI X CHAPIN** — **LUST** — **S102688194 / N/A**
KAPIOLANI BLVD X CHAPIN ST
HONOLULU, HI 96813

Site 1 of 4 in cluster L

Relative: Lower — **Actual: 3 ft.**

LUST:

Facility ID:	9-102179
Release ID:	900078
Facility Status Date:	2002-07-10 00:00:00
Facility Status:	**Disconfirmed Release**
Project Officer:	Ruiz

L41 SSW 1/8-1/4 1036 ft. — **CHUEI SHOKO** — **UST** — **U003402867 / N/A**
777 KAPIOLANI BLVD
HONOLULU, HI 96815

Site 2 of 4 in cluster L

Relative: Lower — **Actual: 3 ft.**

UST:

Facility ID:	9-103508	Tank ID:	R-3
Tank Status:	Permanently Out of Use		
Tank Capacity:	5000	Installed:	Not reported
Date Closed:	Not reported	Substance:	Gasoline
Owner:	SHELTON INVESTMENTS 1075 S BERETANIA ST. Honolulu, HI 96815		

Facility ID:	9-103508	Tank ID:	R-2
Tank Status:	Permanently Out of Use		
Tank Capacity:	5000	Installed:	Not reported
Date Closed:	Not reported	Substance:	Gasoline
Owner:	SHELTON INVESTMENTS 1075 S BERETANIA ST. Honolulu, HI 96815		

Facility ID:	9-103508	Tank ID:	R-4
Tank Status:	Permanently Out of Use		
Tank Capacity:	5000	Installed:	Not reported

CHUEI SHOKO (Continued) **U003402867**

Date Closed: Not reported — Substance: Gasoline
Owner: SHELTON INVESTMENTS, 1075 S BERETANIA ST., Honolulu, HI 96815

Facility ID: 9-103508 — Tank ID: R-1
Tank Status: Permanently Out of Use
Tank Capacity: 5000 — Installed: Not reported
Date Closed: Not reported — Substance: Gasoline
Owner: SHELTON INVESTMENTS, 1075 S BERETANIA ST., Honolulu, HI 96815

L42 SSW 1/8-1/4 1036 ft. Relative: Lower Actual: 3 ft.

BMW OF HONOLULU — **SHWS** **S106816569**
777 KAPIOLANI BLVD — **SPILLS** **N/A**
HONOLULU, HI — **INST CONTROL**

Site 3 of 4 in cluster L

SHWS:
Supplement : Not reported
Restricted Use : This site has restrictions on its use.
Fed Id : Not reported
Funding : Not reported
Agreement/program : Not reported
Activity Type : ISST
Assignment Date : 2000-06-06 00:00:00
Activity Lead : Amy Playdon
Assignment End Date : 2001-01-22 00:00:00
End fill : 2001-01-22 00:00:00
Result fill : NFA
Overall Status : SDAR NFA
File Under : BMW of Honolulu
Restricted Use Comm : Additional investigation & remediation may be necessary if future demolition or excavation is conducted on site (1/24/01 HEER letter 01-031-AP).
Ic Relied On In Remedy : Not reported
Unit : BMW Dealership
Sitelist Name : BMW Dealership

HI INSTUTIONAL CONTROL:
Facility Addr 2: Not reported
File Under: BMW of Honolulu
Restricted Use: This site has restrictions on its use.
Comments on Restricted Use: Additional investigation & remediation may be necessary if future demolition or excavation is conducted on site (1/24/01 HEER letter 01-031-AP).
IC Relied on in Remedy: Not reported

HI SPILLS:
Case Number: 19990401-1450
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : 1999-04-01 00:00:00
Activity Lead : Terry Corpus
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Not reported
Unit: Free Petroleum Product Found at 777 Kapiolani Blvd.

BMW OF HONOLULU (Continued) **S106816569**

Substances: Petroleum product
Incident : Loc: inside building scheduled for renovation; found free petroleum product in groundwater at 5.5 ft. below ground surface on 3/24/99.
Initial : The contractor applied sorbent materials to absorb the free product (see written notification).
Report : Referred to ISST.

L43 SSW 1/8-1/4 1036 ft. Relative: Lower Actual: 3 ft.

CHUEI SHOKO — **FINDS** **1006843568**
777 KAPIOLANI BLVD — **LUST** **11001405132 8**
HONOLULU, HI 96815

Site 4 of 4 in cluster L

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-103508
Release ID: 990143
Facility Status Date: 1999-08-11 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Ruiz

M44 SSE 1/8-1/4 1052 ft. Relative: Lower Actual: 3 ft.

WARD AVENUE COMPLEX — **UST** **U003221628**
820 WARD AVE — **N/A**
HONOLULU, HI 96813

Site 1 of 2 in cluster M

UST:
Facility ID: 9-100957 — Tank ID: R-4
Tank Status: Permanently Out of Use
Tank Capacity: 5000 — Installed: 11/24/1962
Date Closed: 3/3/1992 — Substance: Gasoline
Owner: HAWAIIAN ELECTRIC CO., INC., P.O. BOX 2750, Honolulu, HI 96813

Facility ID: 9-100957 — Tank ID: R-5
Tank Status: Permanently Out of Use
Tank Capacity: 1000 — Installed: 11/24/1978
Date Closed: 8/1/1988 — Substance: Used Oil
Owner: HAWAIIAN ELECTRIC CO., INC., P.O. BOX 2750, Honolulu, HI 96813

Facility ID: 9-100957 — Tank ID: R-3
Tank Status: Permanently Out of Use
Tank Capacity: 5000 — Installed: 11/24/1962
Date Closed: 3/3/1992 — Substance: Diesel
Owner: HAWAIIAN ELECTRIC CO., INC., P.O. BOX 2750, Honolulu, HI 96813

Facility ID: 9-100957 — Tank ID: R-2
Tank Status: Permanently Out of Use
Tank Capacity: 3000 — Installed: 11/24/1962
Date Closed: 3/3/1992 — Substance: Gasoline

WARD AVENUE COMPLEX (Continued) **U003221628**

Owner: HAWAIIAN ELECTRIC CO., INC.
P.O. BOX 2750
Honolulu, HI 96813

Facility ID: 9-100957 Tank ID: 87
Tank Status: Currently In Use
Tank Capacity: 10000 Installed: 2/28/1992
Date Closed: Not reported Substance: Gasoline
Owner: HAWAIIAN ELECTRIC CO., INC.
P.O. BOX 2750
Honolulu, HI 96813

Facility ID: 9-100957 Tank ID: 6
Tank Status: Currently In Use
Tank Capacity: 6000 Installed: 2/28/1992
Date Closed: Not reported Substance: Diesel
Owner: HAWAIIAN ELECTRIC CO., INC.
P.O. BOX 2750
Honolulu, HI 96813

Facility ID: 9-100957 Tank ID: 5
Tank Status: Currently In Use
Tank Capacity: 1000 Installed: 3/21/1989
Date Closed: Not reported Substance: Used Oil
Owner: HAWAIIAN ELECTRIC CO., INC.
P.O. BOX 2750
Honolulu, HI 96813

Facility ID: 9-100957 Tank ID: R-1
Tank Status: Permanently Out of Use
Tank Capacity: 3000 Installed: 11/24/1962
Date Closed: 3/3/1992 Substance: Gasoline
Owner: HAWAIIAN ELECTRIC CO., INC.
P.O. BOX 2750
Honolulu, HI 96813

M45 SSE 1/8-1/4 1052 ft. **Relative: Lower** **Actual: 3 ft.**

WARD AVENUE COMPLEX **RCRA-SQG 1007092165**
820 WARD AVE **LUST HIT000610907**
HONOLULU, HI 96814

Site 2 of 2 in cluster M

RCRAInfo:
Owner: HAWAIIAN ELECTRIC CO
(415) 555-1212
EPA ID: HIT000610907

Contact: DONN FUKUDA
(808) 543-5674

Classification: Small Quantity Generator
TSDF Activities: Not reported

BIENNIAL REPORTS:
Last Biennial Reporting Year: 2003

Waste	Quantity (Lbs)	Waste	Quantity (Lbs)
D001	8085.00	D002	40.00
D005	160.00	D007	160.00
D008	160.00	D009	50.00

WARD AVENUE COMPLEX (Continued) **1007092165**

D018	400.00	D035	1225.00
F001	350.00	F002	350.00

Violation Status: Violations exist

Regulation Violated: Not reported
Area of Violation: GENERATOR-GENERAL REQUIREMENTS
Date Violation Determined: 10/03/2003
Actual Date Achieved Compliance: Not reported

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 11/26/2003
Penalty Type: Not reported

There are 1 violation record(s) reported at this site:

Evaluation	Area of Violation	Date of Compliance
Compliance Evaluation Inspection	GENERATOR-GENERAL REQUIREMENTS	

LUST:
Facility ID: 9-100957
Release ID: 920118
Facility Status Date: 2001-11-13 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Liu

N46 WNW 1/8-1/4 1066 ft. **Relative: Higher** **Actual: 10 ft.**

MISSION HOUSES MUSEUM **RCRA-SQG 1001116174**
553 S KING ST **FINDS HIR000001016**
HONOLULU, HI 96813

Site 1 of 2 in cluster N

RCRAInfo:
Owner: HAWAIIAN MISION CHILDRENS SOCIETY
(808) 531-0481
EPA ID: HIR000001016

Contact: Not reported

Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

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47 WSW 1/8-1/4 1101 ft. **Relative: Lower** **Actual: 6 ft.**

KYLES SVC **RCRA-SQG 1000221661**
869 KAWAIHAAO **FINDS HID981972375**
HONOLULU, HI 96813

KYLES SVC (Continued) **1000221661**

RCRAInfo:
Owner: KYLE T METCALF
(415) 555-1212
EPA ID: HID981972375
Contact: ENVIRONMENTAL MANAGER
(808) 537-9877
Classification: Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

O48 NW 1/8-1/4 1169 ft. Relative: Higher Actual: 13 ft.

KALANIMOKU BLDG **LUST** **S104872298**
TMK 2-1-24:01 1151 PUNCHBOWL ST **N/A**
HONOLULU, HI 96800

Site 1 of 3 in cluster O

LUST:
Facility ID: 9-102691
Release ID: 000093
Facility Status Date: 2000-09-05 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Takaba

P49 SSW 1/8-1/4 1169 ft. Relative: Lower Actual: 3 ft.

WAIMANU SASH & DOOR, LTD. **UST** **U003154470**
815 WAIMANU ST **N/A**
HONOLULU, HI 96813

Site 1 of 2 in cluster P

UST:
Facility ID: 9-100361 Tank ID: R-2
Tank Status: Permanently Out of Use
Tank Capacity: 200 Installed: Not reported
Date Closed: 1/1/1995 Substance: Not Listed
Owner: WAIMANU SASH & DOOR, LTD.
815 WAIMANU ST
Honolulu, HI 96813

Facility ID: 9-100361 Tank ID: R-1
Tank Status: Permanently Out of Use
Tank Capacity: 750 Installed: 1/1/1960
Date Closed: 1/9/1995 Substance: Gasoline
Owner: WAIMANU SASH & DOOR, LTD.
815 WAIMANU ST
Honolulu, HI 96813

P50 SSW 1/8-1/4 1169 ft. Relative: Lower Actual: 3 ft.

WAIMANU SASH AND DOOR LTD **RCRA-SQG** **1000295861**
815 WAIMANU STREET **FINDS** **HID009152059**
HONOLULU, HI 96813

Site 2 of 2 in cluster P

RCRAInfo:
Owner: WAIMANU SASH & DOOR, LTD
(415) 555-1212
EPA ID: HID009152059
Contact: ENVIRONMENTAL MANAGER
(808) 533-3895
Classification: Small Quantity Generator
TSDF Activities: Not reported
Violation Status: Violations exist

Regulation Violated: Not reported
Area of Violation: GENERATOR-GENERAL REQUIREMENTS
Date Violation Determined: 12/11/1990
Actual Date Achieved Compliance: 02/26/1991
Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 01/25/1991
Penalty Type: Not reported

Regulation Violated: Not reported
Area of Violation: GENERATOR-GENERAL REQUIREMENTS
Date Violation Determined: 09/12/1985
Actual Date Achieved Compliance: 06/02/1986

There are 2 violation record(s) reported at this site:

Evaluation	Area of Violation	Date of Compliance
Compliance Evaluation Inspection	GENERATOR-GENERAL REQUIREMENTS	19910226
Compliance Evaluation Inspection	GENERATOR-GENERAL REQUIREMENTS	19860602

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

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51 South 1/8-1/4 1183 ft. Relative: Lower Actual: 3 ft.

C AND C HONOLULU AUDITORIUMS **RCRA-SQG** **1004688944**
777 WARD AVE **FINDS** **HIR000000554**
HONOLULU, HI 96814

RCRAInfo:
Owner: C AND C OF HONOLULU AUDITORIUMS
(808) 527-5400
EPA ID: HIR000000554
Contact: WILLIAM CORLISS
(808) 527-5412
Classification: Conditionally Exempt Small Quantity Generator
TSDF Activities: Not reported

C AND C HONOLULU AUDITORIUMS (Continued) **1004688944**

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM
NATIONAL COMPLIANCE DATABASE SYSTEM
PERMIT COMPLIANCE SYSTEM
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

O52 NW 1/8-1/4 1184 ft. Relative: Higher Actual: 13 ft.

BUDGET AND FINANCE ICSD GIS — **RCRA-SQG** — **1004688922**
1151 PUNCHBOWL ST BASEMENT — **HID984469882**
HONOLULU, HI 96813

Site 2 of 3 in cluster O

RCRAInfo:
Owner: STATE GOVERNMENT
(808) 586-1940
EPA ID: HID984469882
Contact: JOY TOYAMA
(808) 586-1940
Classification: Conditionally Exempt Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

O53 NW 1/8-1/4 1184 ft. Relative: Higher Actual: 13 ft.

DAGS CSD KALANIMOKU BLDG — **RCRA-SQG, FINDS, HAZNET** — **1004688763**
1151 PUNCHBOWL ST BASEMENT — **HI0000842930**
HONOLULU, HI 96813

Site 3 of 3 in cluster O

RCRAInfo:
Owner: STATE OF HAWAII DAGS CEN SVCS
(808) 831-6734
EPA ID: HI0000842930
Contact: JAMES HISANO
(808) 831-6734
Classification: Conditionally Exempt Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

DAGS CSD KALANIMOKU BLDG (Continued) **1004688763**

HAZNET:
Gepaid: HI0000842930
TSD EPA ID: Not reported
Gen County: Not reported
Tsd County: Los Angeles
Tons: 0.68
Facility Address 2: Not reported
Waste Category: Waste oil and mixed oil
Disposal Method: Transfer Station
Contact: JAMES HISANO
Telephone: (808) 831-6734
Mailing Name: Not reported
Mailing Address: 729 KAKOI ST STE B
HONOLULU, HI 96819
County Not reported

N54 WNW 1/8-1/4 1186 ft. Relative: Higher Actual: 10 ft.

HONOLULU HALE — **RCRA-SQG, FINDS** — **1000823212**
530 S KING ST — **HID077701647**
HONOLULU, HI 96813

Site 2 of 2 in cluster N

RCRAInfo:
Owner: CITY AND COUNTY OF HONOLULU
(808) 523-4141
EPA ID: HID077701647
Contact: GEORGE NAKAMURA
(808) 523-4789
Classification: Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

Q55 South 1/8-1/4 1191 ft. Relative: Lower Actual: 3 ft.

HECO SOIL CONTAMINATION CHAPIN LANE AND KAPIOLANI — **SHWS** — **S106817445**
CHAPIN LN / KAPIOLANI BLVD — **N/A**
HONOLULU, HI

Site 1 of 6 in cluster Q

SHWS:
Supplement : Not reported
Restricted Use : Not reported
Fed Id : Not reported
Funding : Not reported
Agreement/program : State Site
Activity Type : ISST
Assignment Date : 2002-01-31 00:00:00
Activity Lead : Richard Palmer
Assignment End Date : Not reported
End fill : 2005-08-24 00:00:00
Result fill : Ongoing
Overall Status : Ongoing
File Under : Hawaiian Electric Co., Inc. (HECO)

HECO SOIL CONTAMINATION CHAPIN LANE AND KAPIOLANI (Continued) — **S106817445**

Restricted Use Comm : Not reported
Ic Relied On In Remedy : Not reported
Unit : Kapiolani Blvd. and Chapin Ln. Soil Contamination
Sitelist Name : Kapiolani Blvd. and Chapin Ln. Soil Contamination

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R56 / SSW / 1/8-1/4 / 1199 ft. / Relative: Lower / Actual: 3 ft.

SZYMANSKI PROPERTIES LLC — **UST** — **U003914035 / N/A**
757 KAWAIAHAO ST
HONOLULU, HI 96813

Site 1 of 2 in cluster R

UST:

Facility ID:	9-103765	Tank ID:	R-1
Tank Status:	Permanently Out of Use		
Tank Capacity:	1000	Installed:	1/1/1940
Date Closed:	7/7/2003	Substance:	Used Oil
Owner:	VOYTEK SZYMANSKI PROPERTIES LLC 757 KAWAIAHAO ST Honolulu, HI 96813		

Facility ID:	9-103765	Tank ID:	R-2
Tank Status:	Permanently Out of Use		
Tank Capacity:	550	Installed:	1/1/1955
Date Closed:	7/1/2003	Substance:	Gasoline
Owner:	VOYTEK SZYMANSKI PROPERTIES LLC 757 KAWAIAHAO ST Honolulu, HI 96813		

R57 / SSW / 1/8-1/4 / 1199 ft. / Relative: Lower / Actual: 3 ft.

SZYMANSKI PROPERTIES LLC — **FINDS** — **1000252025**
757 KAWAIAHAO ST — **LUST** — **HID981686744**
HONOLULU, HI 96813 — **RCRA-LQG**

Site 2 of 2 in cluster R

RCRAInfo:
Owner: CHARLES WONG
(415) 555-1212
EPA ID: HID981686744

Contact: ENVIRONMENTAL MANAGER

Classification: Large Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

LUST:
Facility ID: 9-103765
Release ID: 030043
Facility Status Date: 2004-01-05 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Ruiz

58 / WNW / 1/8-1/4 / 1217 ft. / Relative: Higher / Actual: 10 ft.

PACIFIC PARK PLAZA — **UST** — **U003402865 / N/A**
711 KAPIOLANI BLVD, SUITE 1450
HONOLULU, HI 96813

UST:

Facility ID:	9-103505	Tank ID:	M-1
Tank Status:	Currently In Use		
Tank Capacity:	1000	Installed:	8/1/1988
Date Closed:	Not reported	Substance:	Diesel
Owner:	TMS-CURCI, LLC 711 KAPIOLANI BLVD Suite 1150 Honolulu, HI 96813		

---

59 / NW / 1/8-1/4 / 1217 ft. / Relative: Higher / Actual: 13 ft.

KALANIMOKU BLDG — **UST** — **U001237400 / N/A**
TMK 2-1-24:01 1151 PUNCHBOWL ST
HONOLULU, HI 96800

UST:

Facility ID:	9-102691	Tank ID:	R-1
Tank Status:	Permanently Out of Use		
Tank Capacity:	2000	Installed:	5/1/1973
Date Closed:	3/6/1993	Substance:	Not Listed
Owner:	STATE DAGS - PROJECT MANAGEMENT BRANCH 1151 PUNCHBOWL ST, RM 427 Honolulu, HI 96800		

Q60 / South / 1/8-1/4 / 1251 ft. / Relative: Lower / Actual: 3 ft.

FORMER "HOTEL - YOUNG LAUNDRY" — **UST** — **U003402860 / N/A**
825 KAPIOLANI BLVD
HONOLULU, HI 96814

Site 2 of 6 in cluster Q

UST:

Facility ID:	9-103487	Tank ID:	R-1
Tank Status:	Permanently Out of Use		
Tank Capacity:	1000	Installed:	Not reported
Date Closed:	12/17/1998	Substance:	Heating Oil
Owner:	CHUEI SOKOH, INC McCORRISTON MIHO MILLER MUKAI 500 ALA MOANA BLVD, 4TH FLOOR Honolulu, HI 96814		

Facility ID:	9-103487	Tank ID:	R-2
Tank Status:	Permanently Out of Use		
Tank Capacity:	1000	Installed:	Not reported
Date Closed:	12/18/1998	Substance:	Heating Oil
Owner:	CHUEI SOKOH, INC McCORRISTON MIHO MILLER MUKAI 500 ALA MOANA BLVD, 4TH FLOOR Honolulu, HI 96814		

Facility ID:	9-103487	Tank ID:	R-3
Tank Status:	Permanently Out of Use		
Tank Capacity:	830	Installed:	Not reported
Date Closed:	12/22/1998	Substance:	Other
Owner:	CHUEI SOKOH, INC McCORRISTON MIHO MILLER MUKAI 500 ALA MOANA BLVD, 4TH FLOOR Honolulu, HI 96814		

Facility ID: 9-103487 Tank ID: R-5

FORMER "HOTEL - YOUNG LAUNDRY" (Continued) **U003402860**

Tank Status: Permanently Out of Use
Tank Capacity: 1500 Installed: Not reported
Date Closed: 12/22/1998 Substance: Unknown
Owner: CHUEI SOKOH, INC
McCORRISTON MIHO MILLER MUKAI 500 ALA MOANA BLVD, 4TH FLOOR
Honolulu, HI 96814

Q61 South 1/8-1/4 1251 ft.
Relative: Lower
Actual: 3 ft.

FORMER "HOTEL - YOUNG LAUNDRY" **FINDS 1006844254**
825 KAPIOLANI BLVD **LUST 110014058982**
HONOLULU, HI 96814

Site 3 of 6 in cluster Q

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-103487
Release ID: 990100
Facility Status Date: 1999-09-22 00:00:00
Facility Status: Case Transferred to HEER
Project Officer: HEER

Q62 South 1/8-1/4 1251 ft.
Relative: Lower
Actual: 3 ft.

CHUEI SHOKOH, INC. **SHWS 1006820040**
825 KAPIOLANI BLVD **FINDS 110013779269**
HONOLULU, HI 96813 **SPILLS**
VCP
Site 4 of 6 in cluster Q **INST CONTROL**

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM

SHWS:
Supplement : Not reported
Restricted Use : This site is available for unrestricted use.
Fed Id : Not reported
Funding : ERRF-VRP
Agreement/program : VRP
Activity Type : O&M
Assignment Date : 2003-07-03 00:00:00
Activity Lead : Mark Sutterfield
Assignment End Date : Not reported
End fill : 2005-08-24 00:00:00
Result fill : Ongoing
Overall Status : Ongoing
File Under : Chuei Shokoh, Inc.
Restricted Use Comm : The site is available for unrestricted use with the removal of subsurface contamination..
Ic Relied On In Remedy : No institutional controls.
Unit : Chuei Shokoh, Inc. 825 Kapiolani Blvd.
Sitelist Name : Chuei Shokoh, Inc. 825 Kapiolani Blvd.

HI INSTUTIONAL CONTROL:
Facility Addr 2: Not reported
File Under: Chuei Shokoh, Inc.
Restricted Use: This site is available for unrestricted use.
Comments on Restricted Use: The site is available for unrestricted use with the removal of subsurface contamination..

CHUEI SHOKOH, INC. (Continued) **1006820040**

IC Relied on in Remedy: No institutional controls.

HI SPILLS:
Case Number: 19981207-1525
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : 1998-12-07 00:00:00
Activity Lead : Liz Galvez
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Not reported
Unit: Former Auto Body Shop and UST
Substances: Diesel Fuel
Incident : Phase I conducted on site. Former auto body shop and underground storage tanks located. Petroleum contaminated soils and and groundwater on site.
Initial : Referral to the ISST
Report : Report to be submitted to the Office. 12/11/98: Report received from Belt Collins (Nancy Convard). Analytical results: Soil: up to 10,240 ppm for TPH-g; 6,343 ppm for TPH-d; groundwater: 0.0071 ppm lead.

VCP:
Supplemental Location Text: Not reported
Restricted Use: This site is available for unrestricted use.
Comments on Restricted Use: The site is available for unrestricted use with the removal of subsurface contamination..
IC Relied on in Remedy: No institutional controls.
FED_ID: Not reported
Activity Type: O&M
Assignment Date: 2003-07-03 00:00:00
Activity Lead: Mark Sutterfield
Assignment End Date: Not reported
Result: 8
Agreement/Program: VRP
Overall Status: Ongoing
File Under: Chuei Shokoh, Inc.
Unit: Chuei Shokoh, Inc. 825 Kapiolani Blvd.
Funding: ERRF-VRP
Site List: Chuei Shokoh, Inc. 825 Kapiolani Blvd.
End Fill: 2005-08-24 00:00:00

Q63 South 1/8-1/4 1266 ft.
Relative: Lower
Actual: 3 ft.

SHELLY MOTORS INC. **FINDS 1006844131**
830 KAPIOLANI BLVD **LUST 110014057616**
HONOLULU, HI 96813

Site 5 of 6 in cluster Q

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-101826
Release ID: 930013
Facility Status Date: 2003-10-06 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Takaba

Q64
South
1/8-1/4
1266 ft.

Relative:
Lower

Actual:
3 ft.

SHELLY MOTORS INC. — **UST** — **U001235600** / **N/A**
830 KAPIOLANI BLVD
HONOLULU, HI 96813

Site 6 of 6 in cluster Q

UST:

Facility ID:	9-101826	Tank ID:	R-6
Tank Status:	Permanently Out of Use		
Tank Capacity:	Not reported	Installed:	Not reported
Date Closed:	5/30/1992	Substance:	Not Listed
Owner:	SHELLY MOTORS INC. 2969 MAPUNAPUNA PL Honolulu, HI 96813		

Facility ID:	9-101826	Tank ID:	R-8
Tank Status:	Permanently Out of Use		
Tank Capacity:	Not reported	Installed:	Not reported
Date Closed:	5/30/1992	Substance:	Not Listed
Owner:	SHELLY MOTORS INC. 2969 MAPUNAPUNA PL Honolulu, HI 96813		

65
NNW
1/8-1/4
1277 ft.

Relative:
Higher

Actual:
13 ft.

DEPARTMENT OF HEALTH — **RCRA-SQG** — **1000156469**
1250 PUNCHBOWL ST — **FINDS** — **HID980736987**
HONOLULU, HI 96813 — **HAZNET**

RCRAInfo:

Owner:	STATE OF HAWAII (415) 555-1212
EPA ID:	HID980736987
Contact:	ENVIRONMENTAL MANAGER (808) 548-2303
Classification:	Small Quantity Generator
TSDF Activities:	Not reported
Violation Status:	No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
AEROMETRIC INFORMATION RETRIEVAL SYSTEM/AIR QUALITY SYSTEM
HAWAII ENGINE CONTROL SYSTEM
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

HAZNET:

Gepaid:	HID980736987
TSD EPA ID:	Not reported
Gen County:	99
Tsd County:	99
Tons:	0.11
Facility Address 2:	Not reported
Waste Category:	
Disposal Method:	Not reported
Contact:	--
Telephone:	--
Mailing Name:	Not reported
Mailing Address:	1250 PUNCHBOWL ST HONOLULU, HI 96813
County	Not reported

S66
SW
1/8-1/4
1313 ft.

Relative:
Lower

Actual:
3 ft.

POHULANI ELDERLY PROJECT — **FINDS** — **1006842332**
677 QUEEN ST — **LUST** — **110014037595**
HONOLULU, HI 96813

Site 1 of 3 in cluster S

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:

Facility ID:	9-101396
Release ID:	910006
Facility Status Date:	1999-08-24 00:00:00
Facility Status:	**Site Cleanup Completed**
Project Officer:	Sadoyama

S67
SW
1/8-1/4
1313 ft.

Relative:
Lower

Actual:
3 ft.

POHULANI ELDERLY PROJECT — **UST** — **U001235471**
677 QUEEN ST — **N/A**
HONOLULU, HI 96813

Site 2 of 3 in cluster S

UST:

Facility ID:	9-101396	Tank ID:	R-3
Tank Status:	Permanently Out of Use		
Tank Capacity:	1000	Installed:	Not reported
Date Closed:	6/8/1991	Substance:	Not Listed
Owner:	STATE DBEDT - HAWAII COMM DEVELOPMENT AUTHORITY 677 ALA MOANA BLVD, SUITE 1001 Honolulu, HI 96813		

Facility ID:	9-101396	Tank ID:	R-2
Tank Status:	Permanently Out of Use		
Tank Capacity:	1000	Installed:	Not reported
Date Closed:	4/16/1991	Substance:	Not Listed
Owner:	STATE DBEDT - HAWAII COMM DEVELOPMENT AUTHORITY 677 ALA MOANA BLVD, SUITE 1001 Honolulu, HI 96813		

Facility ID:	9-101396	Tank ID:	R-1
Tank Status:	Permanently Out of Use		
Tank Capacity:	500	Installed:	Not reported
Date Closed:	11/20/1990	Substance:	Diesel
Owner:	STATE DBEDT - HAWAII COMM DEVELOPMENT AUTHORITY 677 ALA MOANA BLVD, SUITE 1001 Honolulu, HI 96813		

68
South
1/8-1/4
1319 ft.

Relative:
Lower

Actual:
3 ft.

SYMPHONY PARK — **SHWS** — **S107022567**
850 KAPIOLANI BLVD — **N/A**
HONOLULU, HI 96807

SHWS:

Supplement :	Intersection with Ward Avenue
Restricted Use :	Not reported
Fed Id :	HID984467654
Funding :	Not reported
Agreement/program :	State Site
Activity Type :	Remedial
Assignment Date :	2005-04-13 00:00:00

SYMPHONY PARK (Continued) **S107022567**

Activity Lead : Eric Sadoyama
Assignment End Date : Not reported
End fill : 2005-08-24 00:00:00
Result fill : Ongoing
Overall Status : Ongoing
File Under : Symphony Park (Myers Corporation)
Restricted Use Comm : Not reported
Ic Relied On In Remedy : Not reported
Unit : Symphony Park
Sitelist Name : Symphony Park

S69 SW 1/8-1/4 1320 ft. **Relative: Lower** **Actual: 3 ft.**

FINOVA HAWAIIAN HOLDINGS, LLC DBA LEX BRODIE TIRE **LUST U001235766**
701 S QUEEN ST **UST N/A**
HONOLULU, HI 96813

Site 3 of 3 in cluster S

LUST:
Facility ID: 9-102200
Release ID: 910036
Facility Status Date: 2003-02-10 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Ruiz

UST:
Facility ID: 9-102200 Tank ID: R-3
Tank Status: Permanently Out of Use
Tank Capacity: 10000 Installed: 3/6/1968
Date Closed: 2/5/1991 Substance: Gasoline
Owner: FINOVA HAWAIIAN HOLDINGS LLC
4800 N SCOTTSDALE ROAD, MS3W90
Honolulu, HI 96813

Facility ID: 9-102200 Tank ID: R-2
Tank Status: Permanently Out of Use
Tank Capacity: 5000 Installed: 3/6/1964
Date Closed: 2/5/1991 Substance: Gasoline
Owner: FINOVA HAWAIIAN HOLDINGS LLC
4800 N SCOTTSDALE ROAD, MS3W90
Honolulu, HI 96813

Facility ID: 9-102200 Tank ID: R-1
Tank Status: Permanently Out of Use
Tank Capacity: 5000 Installed: 3/6/1964
Date Closed: 2/5/1991 Substance: Gasoline
Owner: FINOVA HAWAIIAN HOLDINGS LLC
4800 N SCOTTSDALE ROAD, MS3W90
Honolulu, HI 96813

Facility ID: 9-102200 Tank ID: 92
Tank Status: Currently In Use
Tank Capacity: 5000 Installed: 3/1/1991
Date Closed: Not reported Substance: Gasoline
Owner: FINOVA HAWAIIAN HOLDINGS LLC
4800 N SCOTTSDALE ROAD, MS3W90
Honolulu, HI 96813

Facility ID: 9-102200 Tank ID: 87
Tank Status: Currently In Use

FINOVA HAWAIIAN HOLDINGS, LLC DBA LEX BRODIE TIRE (Continued) **U001235766**

Tank Capacity: 15000 Installed: 3/1/1991
Date Closed: Not reported Substance: Gasoline
Owner: FINOVA HAWAIIAN HOLDINGS LLC
4800 N SCOTTSDALE ROAD, MS3W90
Honolulu, HI 96813

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70 WSW 1/4-1/2 1343 ft. **Relative: Lower** **Actual: 5 ft.**

GENSIRO KAWAMOTO **FINDS 1006841787**
627 QUEEN ST **LUST 110014031458**
HONOLULU, HI 96813

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-102963
Release ID: 940174
Facility Status Date: 2005-08-30 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Takaba

T71 WSW 1/4-1/2 1396 ft. **Relative: Lower** **Actual: 7 ft.**

QUEEN EMMALANI TOWER **RCRA-SQG 1000688441**
600 QUEEN ST **SHWS HID982442394**
HONOLULU, HI 96813 **FINDS**
SPILLS
Site 1 of 2 in cluster T **CERC-NFRAP**

CERCLIS-NFRAP Classification Data:
Federal Facility: Not a Federal Facility
Non NPL Code: NFRAP
NPL Status: Not on the NPL
CERCLIS-NFRAP Assessment History:
Assessment: DISCOVERY Completed: 06/04/1991
Assessment: PRELIMINARY ASSESSMENT Completed: 10/11/1994
Assessment: ARCHIVE SITE Completed: 10/11/1994
CERCLIS-NFRAP Alias Name(s):
QUEEN EMMALANI TOWER

RCRAInfo:
Owner: MOTOI KOSAN USA INC
(415) 555-1212
EPA ID: HID982442394
Contact: ENVIRONMENTAL MANAGER
(808) 949-0065
Classification: Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

SHWS:
Supplement : Not reported
Restricted Use : Not reported
Fed Id : HID984466698

QUEEN EMMALANI TOWER (Continued) **1000688441**

Funding : ERRF
Agreement/program : State Site
Activity Type : Remedial
Assignment Date : 2005-01-10 00:00:00
Activity Lead : Mark Sutterfield
Assignment End Date : Not reported
End fill : 2005-08-24 00:00:00
Result fill : Ongoing
Overall Status : Ongoing
File Under : Queen Emmalani Tower
Restricted Use Comm : Not reported
Ic Relied On In Remedy : Not reported
Unit : Queen Emmalani Tower
Sitelist Name : Queen Emmalani Tower

HI SPILLS:
Case Number: 19910807-2
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : Not reported
Activity Lead : Terry Corpus
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Not reported
Unit: Queen Emmalani Tower Development
Substances: petroleum
Incident : Complaints of odors from soil at the development.
Initial : Investigation and remediation.
Report : Investigation and remediation.

T72 **AAA HAWAII BUILDING** **FINDS** **1006841729**
WSW **590 QUEEN ST** **LUST** **110014030823**
1/4-1/2 **HONOLULU, HI 96813**
1411 ft.

Site 2 of 2 in cluster T

Relative: Lower

Actual: 7 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-100155
Release ID: 980195
Facility Status Date: 2001-11-08 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Sutterfield

U73 **AMERICAN LINEN WAREHOUSE** **SHWS** **S106816215**
SSW **837 KAWAIAHAO ST** **SPILLS** **N/A**
1/4-1/2 **HONOLULU, HI**
1446 ft.

Site 1 of 2 in cluster U

Relative: Lower

Actual: 3 ft.

SHWS:
Supplement : Not reported
Restricted Use : Not reported
Fed Id : Not reported
Funding : ERRF
Agreement/program : State Site
Activity Type : Unregulated UST
Assignment Date : 2004-10-26 00:00:00
Activity Lead : Mark Sutterfield
Assignment End Date : 2005-03-24 00:00:00
End fill : 2005-03-24 00:00:00
Result fill : No Further Action (NFA)-Cleanup Goals Achieved (Removal)
Overall Status : SDAR NFA
File Under : American Linen
Restricted Use Comm : Not reported
Ic Relied On In Remedy : Not reported
Unit : 837 Kawaiahao Street
Sitelist Name : 837 Kawaiahao Street

HI SPILLS:
Case Number: 19970312-0000
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : 1997-03-12 00:00:00
Activity Lead : Bill Perry
Assignment End Date : 2002-10-28 00:00:00
Result : 8
Supplemental Loc. Text: Not reported
Unit: Kawaiahao Street Leaking Heating Oil Tank
Substances: Fuel Oil #5, Fuel Oil #6, Bunker C
Incident : Kawaiahao Street Leaking Heating Oil Tank
Initial : Tank removal, sampling and backfilling.
Report : Tank removal, sampling and backfilling.

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74 **SYMPHONY PARK** **CERC-NFRAP** **1003879625**
South **WARD AVE & KAPIOLANI BLVD** **HID984467654**
1/4-1/2 **HONOLULU, HI 96807**
1450 ft.

Relative: Lower

Actual: 3 ft.

CERCLIS-NFRAP Classification Data:
Federal Facility: Not a Federal Facility
Non NPL Code: NFRAP
NPL Status: Not on the NPL
CERCLIS-NFRAP Assessment History:
Assessment: DISCOVERY Completed: 12/31/1991
Assessment: PRELIMINARY ASSESSMENT Completed: 01/11/1993
Assessment: SITE INSPECTION Completed: 09/27/1995
Assessment: ARCHIVE SITE Completed: 01/23/1996

75 NNW 1/4-1/2 1455 ft.

Relative: Higher

Actual: 17 ft.

QUEEN'S MEDICAL CENTER — **LUST** **1000490311**
1301 PUNCHBOWL ST — **UST** **N/A**
HONOLULU, HI 96813

LUST:
Facility ID: 9-100901
Release ID: 900056
Facility Status Date: 1993-06-30 00:00:00
Facility Status: Disconfirmed Release
Project Officer: Ichinotsubo

Facility ID: 9-100901
Release ID: 990096
Facility Status Date: 1999-09-24 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Takaba

UST:
Facility ID: 9-100901 — Tank ID: M-1
Tank Status: Currently In Use
Tank Capacity: 15000 — Installed: 4/9/1985
Date Closed: Not reported — Substance: Diesel
Owner: THE QUEEN'S MEDICAL CENTER
FACILITIES & BUILDING MAINTENANCE 1301 PUNCHBOWL ST
Honolulu, HI 96813

V76 WSW 1/4-1/2 1458 ft.

Relative: Lower

Actual: 7 ft.

K & Y CHEVRON 91524 — **LUST** **U001235370**
571 S QUEEN ST — **UST** **N/A**
HONOLULU, HI 96813

Site 1 of 2 in cluster V

LUST:
Facility ID: 9-101107
Release ID: 020041
Facility Status Date: 2003-07-09 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Takaba

UST:
Facility ID: 9-101107 — Tank ID: R-1
Tank Status: Permanently Out of Use
Tank Capacity: 10000 — Installed: 7/18/1982
Date Closed: 8/26/2002 — Substance: Gasoline
Owner: CHEVRON PRODUCTS COMPANY
91-480 MALAKOLE ST.
Honolulu, HI 96813

Facility ID: 9-101107 — Tank ID: R-3
Tank Status: Permanently Out of Use
Tank Capacity: 10000 — Installed: 7/18/1982
Date Closed: 8/26/2002 — Substance: Gasoline
Owner: CHEVRON PRODUCTS COMPANY
91-480 MALAKOLE ST.
Honolulu, HI 96813

Facility ID: 9-101107 — Tank ID: R-2
Tank Status: Permanently Out of Use
Tank Capacity: 10000 — Installed: 7/18/1982
Date Closed: 8/26/2002 — Substance: Gasoline
Owner: CHEVRON PRODUCTS COMPANY

K & Y CHEVRON 91524 (Continued) — **U001235370**

91-480 MALAKOLE ST.
Honolulu, HI 96813

Facility ID: 9-101107 — Tank ID: R-4
Tank Status: Permanently Out of Use
Tank Capacity: 1000 — Installed: 7/18/1982
Date Closed: 8/26/2002 — Substance: Used Oil
Owner: CHEVRON PRODUCTS COMPANY
91-480 MALAKOLE ST.
Honolulu, HI 96813

U77 SSW 1/4-1/2 1464 ft.

Relative: Lower

Actual: 3 ft.

HAWAIIAN SECURITIES & REALTY, LTD — **LUST** **U003402840**
819, 835 AND 841 KAWAIAHAO ST — **UST** **N/A**
HONOLULU, HI 96813

Site 2 of 2 in cluster U

LUST:
Facility ID: 9-103418
Release ID: 980216
Facility Status Date: 1999-08-27 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Maniulit

UST:
Facility ID: 9-103418 — Tank ID: R-1
Tank Status: Permanently Out of Use
Tank Capacity: 260 — Installed: Not reported
Date Closed: 7/29/1998 — Substance: Gasoline
Owner: HAWAIIAN SECURITIES & REALTY, LTD
1132 BISHOP ST, SUITE 1412
Honolulu, HI 96813

V78 West 1/4-1/2 1521 ft.

Relative: Lower

Actual: 8 ft.

KAKAAKO FIRE STATION — **FINDS** **1006843321**
555 QUEEN ST — **LUST** **11001404867 2**
HONOLULU, HI 96813

Site 2 of 2 in cluster V

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-100075
Release ID: 940155
Facility Status Date: 1999-05-17 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Maniulit

W79 WSW 1/4-1/2 1622 ft.
Relative: Lower
Actual: 7 ft.

KAKAAKO FIRE DEPARTMENT MECHANIC SHOP — **FINDS 1006843318**, **LUST 110014048645**
620 SOUTH ST
HONOLULU, HI 96813

Site 1 of 2 in cluster W

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-100074
Release ID: 990209
Facility Status Date: 1999-08-05 00:00:00
Facility Status: LUST Cleanup Initiated: Petroleum
Project Officer: Li

---

80 WSW 1/4-1/2 1665 ft.
Relative: Lower
Actual: 3 ft.

GENSIRO KAWAMOTO — **FINDS 1006841791**, **LUST 110014031494**
630 KEAWE ST
HONOLULU, HI 96813

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-102965
Release ID: 940173
Facility Status Date: 2005-08-30 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Takaba

W81 WSW 1/4-1/2 1691 ft.
Relative: Lower
Actual: 7 ft.

CBI, INC — **FINDS 1006842608**, **LUST 110014040590**
614 SOUTH ST
HONOLULU, HI 96813

Site 2 of 2 in cluster W

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-102467
Release ID: 910091
Facility Status Date: 1992-06-01 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Mackenzie

---

82 NNE 1/4-1/2 1724 ft.
Relative: Higher
Actual: 97 ft.

1510 FREAR STREET — **SHWS S107022534**, **INST CONTROL N/A**
1510 FREAR ST
HONOLULU, HI 96813

SHWS:
Supplement : Not reported
Restricted Use : This site has restrictions on its use.
Fed Id : Not reported
Funding : Not reported
Agreement/program : State Site

1510 FREAR STREET (Continued) — **S107022534**

Activity Type : Remedial
Assignment Date : 2005-04-13 00:00:00
Activity Lead : Eric Sadoyama
Assignment End Date : 2005-07-15 00:00:00
End fill : 2005-07-15 00:00:00
Result fill : No Further Action (NFA)-Unrestricted Use
Overall Status : Ongoing
File Under : 1510A Frear Street
Restricted Use Comm : Not reported
Ic Relied On In Remedy : Not reported
Unit : 1510A Frear Street
Sitelist Name : 1510A Frear Street

HI INSTUTIONAL CONTROL:
Facility Addr 2: Unit A
File Under: 1510A Frear Street
Restricted Use: This site has restrictions on its use.
Comments on Restricted Use: Not reported
IC Relied on in Remedy: Not reported

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83 SW 1/4-1/2 1725 ft.
Relative: Lower
Actual: 3 ft.

HAWAII COMMUNITY DEVELOPMENT AUTHORITY — **FINDS 1006842518**, **LUST 110014039600**
548 COOKE ST
HONOLULU, HI 96813

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-102418
Release ID: 910060
Facility Status Date: 1999-08-24 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Takaba

X84 WSW 1/4-1/2 1792 ft.
Relative: Lower
Actual: 6 ft.

MOTOR IMPORTS SERVICE DEPARTMENT — **RCRA-SQG 1000340499**, **FINDS HID981654262**, **LUST**, **UST**
609 SOUTH STREET
HONOLULU, HI 96813

Site 1 of 3 in cluster X

RCRAInfo:
Owner: SERVCO PACIFIC INC
(415) 555-1212
EPA ID: HID981654262

Contact: GEORGE ENDO
(808) 521-6511

Classification: Conditionally Exempt Small Quantity Generator
TSDF Activities: Not reported

MOTOR IMPORTS SERVICE DEPARTMENT (Continued) **1000340499**

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

LUST:

Facility ID:	9-100879
Release ID:	970114
Facility Status Date:	2005-10-20 00:00:00
Facility Status:	**Site Cleanup Completed**
Project Officer:	Takaba

UST:

Facility ID:	9-100879	Tank ID:	R-1
Tank Status:	Permanently Out of Use		
Tank Capacity:	500	Installed:	5/6/1971
Date Closed:	7/9/1997	Substance:	Used Oil
Owner:	SERVCO PACIFIC, INC. P.O. BOX 2788 Honolulu, HI 96813		

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85 SSW 1/4-1/2 1808 ft. **H. HAMADA STORE INC.** **FINDS 1006842787**
885 QUEEN ST **LUST 110014042650**
HONOLULU, HI 96813

Relative: Lower
Actual: 3 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:

Facility ID:	9-101673
Release ID:	970045
Facility Status Date:	2001-01-04 00:00:00
Facility Status:	**Site Cleanup Completed**
Project Officer:	Li

Y86 WSW 1/4-1/2 1879 ft. **AMELCO CORPORATION** **CERC-NFRAP 1003879447**
645 HALEKAUWILA STREET **HID984466383**
HONOLULU, HI 96813

Relative: Lower
Actual: 3 ft.

Site 1 of 2 in cluster Y

CERCLIS-NFRAP Classification Data:

Federal Facility:	Not a Federal Facility
Non NPL Code:	NFRAP
NPL Status:	Not on the NPL

CERCLIS-NFRAP Assessment History:

Assessment:	DISCOVERY	Completed:	10/09/1990
Assessment:	PRELIMINARY ASSESSMENT	Completed:	11/05/1991
Assessment:	ARCHIVE SITE	Completed:	11/05/1991

Y87 WSW 1/4-1/2 1879 ft. **AMELCO CORPORATION** **SHWS 1006820316**
645 HALEKAUWILA ST **FINDS 110013782567**
HONOLULU, HI 96813

Relative: Lower
Actual: 3 ft.

Site 2 of 2 in cluster Y

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM

SHWS:

Supplement :	Not reported
Restricted Use :	Not reported
Fed Id :	HID984466383
Funding :	ERRF
Agreement/program :	State Site
Activity Type :	Remedial
Assignment Date :	2003-10-13 00:00:00
Activity Lead :	Steve Mow
Assignment End Date :	2005-04-25 00:00:00
End fill :	2005-04-25 00:00:00
Result fill :	Referred to SHWB
Overall Status :	SDAR NFA
File Under :	AMELCO Corporation
Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	Amelco Corporation
Sitelist Name :	Amelco Corporation

X88 WSW 1/4-1/2 1889 ft. **INTERNATIONAL LIFE SUPPORT** **FINDS 1006843082**
633 HALEKAUWILA ST **LUST 110014046004**
HONOLULU, HI 96813

Relative: Lower
Actual: 3 ft.

Site 2 of 3 in cluster X

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:

Facility ID:	9-102759
Release ID:	930109
Facility Status Date:	1997-06-20 00:00:00
Facility Status:	**Site Cleanup Completed**
Project Officer:	Sadoyama

Z89 SSW 1/4-1/2 1908 ft. **FRENCH WRENCH CORP.** **LUST U003221596**
520 WARD AVE **UST N/A**
HONOLULU, HI 96814

Relative: Lower
Actual: 3 ft.

Site 1 of 2 in cluster Z

LUST:

Facility ID:	9-100316
Release ID:	950036
Facility Status Date:	1997-10-17 00:00:00
Facility Status:	**Site Cleanup Completed**
Project Officer:	Okoji
Facility ID:	9-100316
Release ID:	980069

FRENCH WRENCH CORP. (Continued) **U003221596**

Facility Status Date: 2001-03-05 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Ruiz

UST:

Facility ID:	9-100316	Tank ID:	87
Tank Status:	Currently In Use		
Tank Capacity:	10000	Installed:	4/8/1985
Date Closed:	Not reported	Substance:	Gasoline
Owner:	EQUILON ENTERPRISES, LLC DBA SHELL OIL PRODUCTS US 2555 13TH AVE, SW Honolulu, HI 96814		

Facility ID:	9-100316	Tank ID:	92
Tank Status:	Currently In Use		
Tank Capacity:	10000	Installed:	4/8/1985
Date Closed:	Not reported	Substance:	Gasoline
Owner:	EQUILON ENTERPRISES, LLC DBA SHELL OIL PRODUCTS US 2555 13TH AVE, SW Honolulu, HI 96814		

Facility ID:	9-100316	Tank ID:	R-4
Tank Status:	Permanently Out of Use		
Tank Capacity:	550	Installed:	4/8/1964
Date Closed:	2/3/1998	Substance:	Used Oil
Owner:	EQUILON ENTERPRISES, LLC DBA SHELL OIL PRODUCTS US 2555 13TH AVE, SW Honolulu, HI 96814		

Facility ID:	9-100316	Tank ID:	89
Tank Status:	Currently In Use		
Tank Capacity:	10000	Installed:	4/8/1985
Date Closed:	Not reported	Substance:	Gasoline
Owner:	EQUILON ENTERPRISES, LLC DBA SHELL OIL PRODUCTS US 2555 13TH AVE, SW Honolulu, HI 96814		

X90 WSW 1/4-1/2 1924 ft.
Relative: Lower
Actual: 3 ft.

AMELCO BUILDING (SERVICE STATION) **FINDS 1006842278**
603 HALEKAUWILA ST **LUST 110014037014**
HONOLULU, HI 96813

Site 3 of 3 in cluster X

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-101356
Release ID: 930106
Facility Status Date: 1997-06-20 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Sadoyama

91 SSW 1/4-1/2 2018 ft.
Relative: Lower
Actual: 3 ft.

HAWAII INSTRUMENTATION & CONTROLS, INC **SHWS S106817350**
822 HALEKAUWILA ST **SPILLS N/A**
HONOLULU, HI

SHWS:

Supplement :	Not reported
Restricted Use :	Not reported
Fed Id :	Not reported
Funding :	Not reported
Agreement/program :	Not reported
Activity Type :	ISST
Assignment Date :	1997-02-05 00:00:00
Activity Lead :	Unknown
Assignment End Date :	1997-02-07 00:00:00
End fill :	1997-02-07 00:00:00
Result fill :	NFA
Overall Status :	SDAR NFA
File Under :	Hawaii Instrumentation & Controls Inc.
Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	Hawaii Instrumentation & Controls, Inc
Sitelist Name :	Hawaii Instrumentation & Controls, Inc

HI SPILLS:

Case Number:	19910620-3
Island:	Oahu
Numerical Quantity:	Not reported
Less Or Greater Than :	Not reported
Units :	Not reported
Activity Type :	Response
Assignment Date :	Not reported
Activity Lead :	Not reported
Assignment End Date :	Not reported
Result :	8
Supplemental Loc. Text:	Not reported
Unit:	HAWAII INSTRUMENTATION & CONTROLS, INC., HALEKAUWILA ST. 822
Substances:	UNKNOWN CHEMICAL

Incident : SOMEONE DUMPED CHEMICALS OVER FENCE.
Rcvd notification from Irene of HCDA stating a lingering foul odor has engulfed the building for a lon period and has not been identified or a source found.
DOH/HEER to investigate as last resort. Time reported 0.65.

Initial : UNABLE TO EXTRACT A CONFESSION FROM ANY OF THE BUSINESSES ON THE OTHER SIDE OF THE FENCE. NOTHING DONE, NO CLEANUP.
Rcvd notification from Irene of HCDA stating a lingering foul odor has engulfed the building for a lon period and has not been identified or a source found.
DOH/HEER to investigate as last resort. Time reported 0.65.

Report : UNABLE TO EXTRACT A CONFESSION FROM ANY OF THE BUSINESSES ON THE OTHER SIDE OF THE FENCE. NOTHING DONE, NO CLEANUP.
Rcvd notification from Irene of HCDA stating a lingering foul odor has engulfed the building for a lon period and has not been identified or a source found.
DOH/HEER to investigate as last resort. Time reported 0.65.

Case Number:	19941216-4
Island:	Oahu
Numerical Quantity:	Not reported
Less Or Greater Than :	Not reported
Units :	Odor
Activity Type :	Response
Assignment Date :	Not reported

HAWAII INSTRUMENTATION & CONTROLS, INC (Continued) **S106817350**

Activity Lead : Mike Cripps
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Not reported
Unit: HCDA Site/Hawaii Instrumentaion & Controls Inc.
Substances: unknown odor
Incident : SOMEONE DUMPED CHEMICALS OVER FENCE.
Rcvd notification from Irene of HCDA stating a lingering foul odor has engulfed the building for a lon period and has not been identified or a source found.
DOH/HEER to investigate as last resort. Time reported 0.65.
Initial : UNABLE TO EXTRACT A CONFESSION FROM ANY OF THE BUSINESSES ON THE OTHER SIDE OF THE FENCE. NOTHING DONE, NO CLEANUP.
Rcvd notification from Irene of HCDA stating a lingering foul odor has engulfed the building for a lon period and has not been identified or a source found.
DOH/HEER to investigate as last resort. Time reported 0.65.
Report : UNABLE TO EXTRACT A CONFESSION FROM ANY OF THE BUSINESSES ON THE OTHER SIDE OF THE FENCE. NOTHING DONE, NO CLEANUP.
Rcvd notification from Irene of HCDA stating a lingering foul odor has engulfed the building for a lon period and has not been identified or a source found.
DOH/HEER to investigate as last resort. Time reported 0.65.

Z92 SSW 1/4-1/2 2031 ft. Relative: Lower Actual: 3 ft.

HAWAIIAN HARDWOOD CO., LTD **FINDS 1006843675**
935 QUEEN ST **LUST 110014052434**
HONOLULU, HI 96814

Site 2 of 2 in cluster Z

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-103660
Release ID: 010029
Facility Status Date: 2001-11-23 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Fu

AA93 ESE 1/4-1/2 2046 ft. Relative: Higher Actual: 22 ft.

JN GROUP, INC **LUST U003221577**
1069 S BERETANIA ST **UST N/A**
HONOLULU, HI 96814

Site 1 of 2 in cluster AA

LUST:
Facility ID: 9-100184
Release ID: 010012
Facility Status Date: 2000-12-26 00:00:00
Facility Status: Disconfirmed Release
Project Officer: Takaba

UST:
Facility ID: 9-100184 Tank ID: R-1
Tank Status: Permanently Out of Use
Tank Capacity: 500 Installed: 5/1/1983
Date Closed: 3/31/1989 Substance: Used Oil
Owner: JN Group Inc.
1069 South Beretania St
Honolulu, HI 96814

JN GROUP, INC (Continued) **U003221577**

Facility ID: 9-100184 Tank ID: 2
Tank Status: Currently In Use
Tank Capacity: 550 Installed: 3/19/1989
Date Closed: Not reported Substance: Used Oil
Owner: JN Group Inc.
1069 South Beretania St
Honolulu, HI 96814

AA94 ESE 1/4-1/2 2105 ft. Relative: Higher Actual: 22 ft.

BMW OF HONOLULU, LTD. **FINDS 1006843778**
1075 S BERETANIA ST **LUST 110014053549**
HONOLULU, HI 96814

Site 2 of 2 in cluster AA

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-100174
Release ID: 930009
Facility Status Date: 1995-09-07 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Sadoyama

Facility ID: 9-100174
Release ID: 000063
Facility Status Date: 2000-04-26 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Li

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95 WSW 1/4-1/2 2114 ft. Relative: Lower Actual: 3 ft.

EUROCARE/KEICO PACIFIC/SHONS AUT **FINDS 1006844136**
545 SOUTH ST **LUST 110014057670**
HONOLULU, HI 96813

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-102760
Release ID: 930110
Facility Status Date: 1997-06-20 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Brewer

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96 SE 1/4-1/2 2136 ft. Relative: Lower Actual: 3 ft.

KAPIOLANI **SWF/LF S106401374**
HONOLULU, HI **N/A**

LF:
Permit : Not reported
Permit Date : Not reported
Owner: Not reported
Facility Type: Not reported
Facility Status: Not reported

KAPIOLANI (Continued) **S106401374**

Closure Year : Not reported
Renewal Year : Not reported
Date Received : Not reported
TMK : 2-3-09:1
Active Dates : 1936
Size (acres) : Not reported
Type of Waste : MSW
Lat/Long : 211755 / 1575054

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97 South 1/4-1/2 2170 ft. **RAY'S AUTO SERVICE** **LUST U001235980**
959 QUEEN ST **UST N/A**
HONOLULU, HI 96814

Relative: Lower

Actual: 3 ft.

LUST:
Facility ID: 9-102612
Release ID: 930065
Facility Status Date: 1993-11-16 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Seid

UST:
Facility ID: 9-102612 Tank ID: R-1
Tank Status: Permanently Out of Use
Tank Capacity: 500 Installed: 9/30/1986
Date Closed: 2/11/1993 Substance: Used Oil
Owner: RAYMOND TAMURA
RAY'S AUTO SERVICE / 959 QUEEN ST
Honolulu, HI 96814

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98 SW 1/4-1/2 2180 ft. **TIRE RECAP SERVICE** **FINDS 1006843074**
526 KEAWE ST **LUST 110014045924**
HONOLULU, HI 96813

Relative: Lower

Actual: 3 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-102758
Release ID: 930108
Facility Status Date: 1997-06-20 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Sadoyama

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99 SSE 1/4-1/2 2196 ft. **HDC PROPERTIES, STAINED SOILS** **SHWS 1006821118**
1015 KAPIOLANI BLVD **FINDS 110013791655**
HONOLULU, HI 96813 **SPILLS**
INST CONTROL

Relative: Lower

Actual: 3 ft.

HDC PROPERTIES, STAINED SOILS (Continued) **1006821118**

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM

SHWS:
Supplement : Kapiolani (Makai), between Ward Ave & Kamakee St
Restricted Use : This site is available for unrestricted use.
Fed Id : Not reported
Funding : Not reported
Agreement/program : State Site
Activity Type : Screening
Assignment Date : 2004-05-20 00:00:00
Activity Lead : Steve Mow
Assignment End Date : 2004-08-23 00:00:00
End fill : 2004-08-23 00:00:00
Result fill : Screening NFA-Unrestricted Use
Overall Status : SDAR NFA
File Under : Honolulu Design Center, LLC
Restricted Use Comm : Not reported
Ic Relied On In Remedy : Not reported
Unit : HDC Properties Stained Soils
Sitelist Name : HDC Properties Stained Soils

HI INSTUTIONAL CONTROL:
Facility Addr 2: Not reported
File Under: Honolulu Design Center, LLC
Restricted Use: This site is available for unrestricted use.
Comments on Restricted Use: Not reported
IC Relied on in Remedy: Not reported

HI SPILLS:
Case Number: 20020124-0904
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : 2002-01-24 00:00:00
Activity Lead : Terry Corpus
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Kapiolani (Makai), between Ward Ave & Kamakee St
Unit: HDC Properties, stained soils
Substances: Not reported
Incident : Construction of property found stained soils. Analysis on soil samples found trace amounts of TPH (Tier 1). Source is unknown. Property Owner is HDC Properties.
Initial : Plans for exploration holes being developed.
Report : Plans for exploration holes being developed.

100 WSW 1/4-1/2 2230 ft. — **REED LANE WAREHOUSE**, **556 REED LN**, **HONOLULU, HI 96813** — **FINDS** **1006843586**, **LUST** **110014051523**

Relative: Lower
Actual: 3 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-103537
Release ID: 990222
Facility Status Date: 2001-05-03 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Fu

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101 SSW 1/4-1/2 2251 ft. — **420 WARD AVE**, **420 WARD AVE/901 ILANIWAI ST**, **HONOLULU, HI 96814** — **LUST** **U003732581**, **SPILLS** **N/A**, **UST**

Relative: Lower
Actual: 3 ft.

LUST:
Facility ID: 9-103631
Release ID: 000075
Facility Status Date: 2001-06-13 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Ruiz

HI SPILLS:
Case Number: 20000504-1347
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : 2000-05-04 00:00:00
Activity Lead : Bill Perry
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Not reported
Unit: UST discovered Ward Ave.
Substances: Not reported
Incident : Ken Beal reported 3 tanks at Ward Ave. Possible used for solvents high, Btex levels. Written report to follow.
Initial : Ken Beal reported 3 tanks at Ward Ave. Possible used for solvents high, Btex levels. Written report to follow.
Report : Ken Beal reported 3 tanks at Ward Ave. Possible used for solvents high, Btex levels. Written report to follow.

UST:
Facility ID: 9-103631 — Tank ID: R-1
Tank Status: Permanently Out of Use
Tank Capacity: 250 — Installed: Not reported
Date Closed: 4/7/2000 — Substance: Other
Owner: VICTORIA WARD LTD
1210 AUAHI ST / SUITE 115
Honolulu, HI 96814

Facility ID: 9-103631 — Tank ID: R-2
Tank Status: Permanently Out of Use
Tank Capacity: 250 — Installed: Not reported
Date Closed: 4/7/2000 — Substance: Other

420 WARD AVE (Continued) — **U003732581**

Owner: VICTORIA WARD LTD
1210 AUAHI ST / SUITE 115
Honolulu, HI 96814

Facility ID: 9-103631 — Tank ID: R-3
Tank Status: Permanently Out of Use
Tank Capacity: 250 — Installed: Not reported
Date Closed: 4/7/2000 — Substance: Other
Owner: VICTORIA WARD LTD
1210 AUAHI ST / SUITE 115
Honolulu, HI 96814

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102 WNW 1/4-1/2 2289 ft. — **MELIM BLDG**, **333 QUEEN ST**, **HONOLULU, HI 96813** — **FINDS** **1006842928**, **LUST** **110014044220**

Relative: Higher
Actual: 10 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-100812
Release ID: 910037
Facility Status Date: 1993-03-06 00:00:00
Facility Status: LUST Cleanup Initiated: Petroleum
Project Officer: Pritchard

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103 South 1/4-1/2 2307 ft. — **SERVICE AUTO MACHINE WORKS**, **518 CUMMINS ST**, **HONOLULU, HI 96814** — **FINDS** **1006842119**, **LUST** **110014035230**

Relative: Lower
Actual: 3 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-103105
Release ID: 950133
Facility Status Date: 1995-12-21 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Sadoyama

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104 SW 1/4-1/2 2362 ft. — **COOKE STREET LEAD CONTAMINATION**, **501 COOKE ST**, **HONOLULU, HI 96813** — **SHWS** **1006820105**, **FINDS** **110013780051**, **INST CONTROL**

Relative: Lower
Actual: 3 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM

SHWS:
Supplement : Not reported
Restricted Use : This site has restrictions on its use.
Fed Id : Not reported
Funding : ERRF
Agreement/program : State Site

COOKE STREET LEAD CONTAMINATION (Continued) **1006820105**

Activity Type : Remedial
Assignment Date : 2003-10-13 00:00:00
Activity Lead : Steve Mow
Assignment End Date : 2005-04-22 00:00:00
End fill : 2005-04-22 00:00:00
Result fill : No Further Action (NFA) with Institutional Controls
Overall Status : SDAR NFA
File Under : Kamehameha School-Bishop Estate
Restricted Use Comm : Prohibit Any Activity That May Disturb the Integrity of the Capping System
Ic Relied On In Remedy : Not reported
Unit : Cooke Street Lead Contamination
Sitelist Name : Cooke Street Lead Contamination

HI INSTUTIONAL CONTROL:
Facility Addr 2: Not reported
File Under: Kamehameha School-Bishop Estate
Restricted Use: This site has restrictions on its use.
Comments on Restricted Use: Prohibit Any Activity That May Disturb the Integrity of the Capping System
IC Relied on in Remedy: Not reported

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105 SSE 1/4-1/2 2408 ft. — **KODAK BUILDING**, **1065 KAPIOLANI BLVD**, **HONOLULU, HI 96814** — **FINDS 1006843643**, **LUST 110014052096**

Relative: Lower
Actual: 3 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-103609
Release ID: 000044
Facility Status Date: 2000-02-10 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Li

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106 South 1/4-1/2 2418 ft. — **TAI HING CO., INC.**, **1023 KAWAIAHAO ST**, **HONOLULU, HI 96814** — **FINDS 1006842954**, **LUST 110014044532**

Relative: Lower
Actual: 3 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-100831
Release ID: 970062
Facility Status Date: 1997-09-26 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Ruiz

107 NW 1/4-1/2 2435 ft. — **STATE CAPITOL - TMK 2-1-33:25**, **235 S BERETANIA ST**, **HONOLULU, HI 96813** — **LUST U003154612**, **UST N/A**

Relative: Higher
Actual: 23 ft.

LUST:
Facility ID: 9-102692
Release ID: 930076
Facility Status Date: 1999-11-26 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Hodges

UST:
Facility ID: 9-102692 — Tank ID: R-2
Tank Status: Permanently Out of Use
Tank Capacity: 1000 — Installed: 12/30/1972
Date Closed: 3/3/1993 — Substance: Not Listed
Owner: STATE DAGS - PROJECT MANAGEMENT BRANCH
1151 PUNCHBOWL ST, RM 427
Honolulu, HI 96813

Facility ID: 9-102692 — Tank ID: R-1
Tank Status: Permanently Out of Use
Tank Capacity: 1000 — Installed: 12/30/1972
Date Closed: 3/3/1993 — Substance: Diesel
Owner: STATE DAGS - PROJECT MANAGEMENT BRANCH
1151 PUNCHBOWL ST, RM 427
Honolulu, HI 96813

AB108 South 1/4-1/2 2436 ft. — **GLOVER BUILDING**, **1046 WAIMANU ST**, **HONOLULU, HI 96814** — **SHWS S106817188**, **SPILLS N/A**

Site 1 of 3 in cluster AB

Relative: Lower
Actual: 3 ft.

SHWS:
Supplement : Not reported
Restricted Use : Not reported
Fed Id : Not reported
Funding : ERRF
Agreement/program : State Site
Activity Type : Screening
Assignment Date : 2004-05-20 00:00:00
Activity Lead : Melody Calisay
Assignment End Date : 2004-06-10 00:00:00
End fill : 2004-06-10 00:00:00
Result fill : NFA by OSC
Overall Status : SDAR NFA
File Under : Jas. W. Glover, Ltd.
Restricted Use Comm : Not reported
Ic Relied On In Remedy : Not reported
Unit : Glover Building
Sitelist Name : Glover Building

HI SPILLS:
Case Number: 19950202
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Unknown
Activity Type : Response
Assignment Date : Not reported

GLOVER BUILDING (Continued) **S106817188**

Activity Lead : Mike Cripps
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Not reported
Unit: Glover Building
Substances: Hydraulic Oil
Incident : During removal of 2 vehicle maintenance lifts, contractor advised of contaminated soil. Just purchased property for development and had Phase I assessment done. Later learned there was a UST removed from the property. hydraulic tank leaked staining soil with approx. 3 - 4 gallons on Friday 10/21/94.
Heavy smoke released from asphalt tanker.
Initial : Responsible party to get consultant opinion on procedure.
Land owner to clean up spill
Hilo Hazmat was on scene had the contractor turn off the heating element.
Report : Responsible party to get consultant opinion on procedure.
Land owner to clean up spill
Hilo Hazmat was on scene had the contractor turn off the heating element.

Case Number: 19941024
Island: Oahu
Numerical Quantity: 3
Less Or Greater Than : Not reported
Units : Gallons
Activity Type : Response
Assignment Date : Not reported
Activity Lead : Not reported
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Not reported
Unit: 1046 Waimanu Street
Substances: Hydraulic Oil
Incident : During removal of 2 vehicle maintenance lifts, contractor advised of contaminated soil. Just purchased property for development and had Phase I assessment done. Later learned there was a UST removed from the property. hydraulic tank leaked staining soil with approx. 3 - 4 gallons on Friday 10/21/94.
Heavy smoke released from asphalt tanker.
Initial : Responsible party to get consultant opinion on procedure.
Land owner to clean up spill
Hilo Hazmat was on scene had the contractor turn off the heating element.
Report : Responsible party to get consultant opinion on procedure.
Land owner to clean up spill
Hilo Hazmat was on scene had the contractor turn off the heating element.

Case Number: 20040606-0830
Island: Oahu
Numerical Quantity: 1
Less Or Greater Than : Not reported
Units : Drum (55)
Activity Type : Response
Assignment Date : 2004-06-06 00:00:00
Activity Lead : Paul Chong
Assignment End Date : 2004-06-10 00:00:00
Result : 8
Supplemental Loc. Text: Not reported
Unit: Glover Waimea Asphalt Plant

GLOVER BUILDING (Continued) **S106817188**

Substances: Smoke
Incident : During removal of 2 vehicle maintenance lifts, contractor advised of contaminated soil. Just purchased property for development and had Phase I assessment done. Later learned there was a UST removed from the property. hydraulic tank leaked staining soil with approx. 3 - 4 gallons on Friday 10/21/94.
Heavy smoke released from asphalt tanker.
Initial : Responsible party to get consultant opinion on procedure.
Land owner to clean up spill
Hilo Hazmat was on scene had the contractor turn off the heating element.
Report : Responsible party to get consultant opinion on procedure.
Land owner to clean up spill
Hilo Hazmat was on scene had the contractor turn off the heating element.

AB109 **JAS W GLOVER LTD** **RCRA-SQG** **1000135795**
South **1046 WAIMAMU ST** **FINDS** **HID981637861**
1/4-1/2 **HONOLULU, HI 96814** **LUST**
2436 ft. **UST**

Site 2 of 3 in cluster AB

Relative: Lower

Actual: 3 ft.

RCRAInfo:
Owner: JAS W GLOVER
(415) 555-1212
EPA ID: HID981637861
Contact: ENVIRONMENTAL MANAGER
(808) 533-1777
Classification: Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM
HAWAII-UNDERGROUND STORAGE TANK
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

LUST:
Facility ID: 9-100835
Release ID: 020019
Facility Status Date: 2004-05-26 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Takaba

UST:
Facility ID: 9-100835 Tank ID: R-1
Tank Status: Permanently Out of Use
Tank Capacity: 600 Installed: 3/7/1937
Date Closed: 11/12/1990 Substance: Gasoline
Owner: JAS W. GLOVER, LTD
725 KAPIOLANI BLVD, SUITE 306
Honolulu, HI 96814

110 SSW 1/4-1/2 2469 ft. — **HONOLULU SHIP SUPPLY**, **834 POHUKAINA ST**, **HONOLULU, HI 96813** — **FINDS** **1006843728**; **LUST** **110014053004**

Relative: Lower
Actual: 3 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-103735
Release ID: 940090
Facility Status Date: 2001-12-27 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Fu

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111 North 1/4-1/2 2495 ft. — **ROD S AUTO SERVICE**, **1489 PUNCHBOWL STREET**, **HONOLULU, HI 96813** — **RCRA-SQG** **1000373884**; **FINDS** **HID981693260**; **LUST**; **UST**

Relative: Higher
Actual: 47 ft.

RCRAInfo:
Owner: RODNEY Y TAKAMATSU
(415) 555-1212
EPA ID: HID981693260
Contact: ENVIRONMENTAL MANAGER
(808) 536-9724
Classification: Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM

LUST:
Facility ID: 9-100889
Release ID: 910063
Facility Status Date: 1998-11-18 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Takaba

UST:
Facility ID: 9-100889 — Tank ID: R-2
Tank Status: Permanently Out of Use
Tank Capacity: 7500 — Installed: 5/8/1956
Date Closed: Not reported — Substance: Gasoline
Owner: WILLUM, LTD.
94-748A HIKIMOE ST
Honolulu, HI 96813

Facility ID: 9-100889 — Tank ID: R-3
Tank Status: Permanently Out of Use
Tank Capacity: 500 — Installed: 5/8/1956
Date Closed: Not reported — Substance: Used Oil
Owner: WILLUM, LTD.
94-748A HIKIMOE ST
Honolulu, HI 96813

ROD S AUTO SERVICE (Continued) — **1000373884**

Facility ID: 9-100889 — Tank ID: R-1
Tank Status: Permanently Out of Use
Tank Capacity: 5000 — Installed: 5/8/1956
Date Closed: Not reported — Substance: Gasoline
Owner: WILLUM, LTD.
94-748A HIKIMOE ST
Honolulu, HI 96813

AB112 SSE 1/4-1/2 2519 ft. — **SAN AUTO BODY AND PAINTING**, **1058 WAIMANU ST**, **HONOLULU, HI 96814** — **FINDS** **1006843646**; **LUST** **110014052130**

Site 3 of 3 in cluster AB

Relative: Lower
Actual: 3 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII-UNDERGROUND STORAGE TANK

LUST:
Facility ID: 9-103612
Release ID: 000041
Facility Status Date: 2000-02-10 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Takaba

AC113 NNW 1/4-1/2 2579 ft. — **MIKE'S AUTOMOTIVE/SUPPLY INC**, **225 S VINEYARD BLVD**, **HONOLULU, HI 96813** — **LUST** **U001235351**; **UST** **N/A**

Site 1 of 2 in cluster AC

Relative: Higher
Actual: 30 ft.

LUST:
Facility ID: 9-101034
Release ID: 880026
Facility Status Date: 1989-03-04 00:00:00
Facility Status: LUST Cleanup Initiated: Petroleum
Project Officer: Pritchard

UST:
Facility ID: 9-101034 — Tank ID: R-1
Tank Status: Permanently Out of Use
Tank Capacity: 6000 — Installed: 4/19/1971
Date Closed: 9/18/1995 — Substance: Gasoline
Owner: EQUILON ENTERPRISES, LLC DBA SHELL OIL PRODUCTS US
2555 13TH AVE, SW
Honolulu, HI 96813

Facility ID: 9-101034 — Tank ID: R-5
Tank Status: Permanently Out of Use
Tank Capacity: 550 — Installed: 4/18/1966
Date Closed: 9/20/1995 — Substance: Used Oil
Owner: EQUILON ENTERPRISES, LLC DBA SHELL OIL PRODUCTS US
2555 13TH AVE, SW
Honolulu, HI 96813

Facility ID: 9-101034 — Tank ID: R-6
Tank Status: Permanently Out of Use
Tank Capacity: 12000 — Installed: 9/26/1995

MIKE'S AUTOMOTIVE/SUPPLY INC (Continued) **U001235351**

Date Closed: 12/17/2001 Substance: Gasoline
Owner: EQUILON ENTERPRISES, LLC DBA SHELL OIL PRODUCTS US
2555 13TH AVE, SW
Honolulu, HI 96813

Facility ID: 9-101034 Tank ID: R-7
Tank Status: Permanently Out of Use
Tank Capacity: 12000 Installed: 9/26/1995
Date Closed: 12/17/2001 Substance: Gasoline
Owner: EQUILON ENTERPRISES, LLC DBA SHELL OIL PRODUCTS US
2555 13TH AVE, SW
Honolulu, HI 96813

Facility ID: 9-101034 Tank ID: R-4
Tank Status: Permanently Out of Use
Tank Capacity: 4000 Installed: 4/18/1966
Date Closed: 9/18/1995 Substance: Gasoline
Owner: EQUILON ENTERPRISES, LLC DBA SHELL OIL PRODUCTS US
2555 13TH AVE, SW
Honolulu, HI 96813

Facility ID: 9-101034 Tank ID: R-3
Tank Status: Permanently Out of Use
Tank Capacity: 6000 Installed: 4/18/1966
Date Closed: 9/18/1995 Substance: Gasoline
Owner: EQUILON ENTERPRISES, LLC DBA SHELL OIL PRODUCTS US
2555 13TH AVE, SW
Honolulu, HI 96813

Facility ID: 9-101034 Tank ID: R-2
Tank Status: Permanently Out of Use
Tank Capacity: 7000 Installed: 4/18/1966
Date Closed: 9/18/1995 Substance: Gasoline
Owner: EQUILON ENTERPRISES, LLC DBA SHELL OIL PRODUCTS US
2555 13TH AVE, SW
Honolulu, HI 96813

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114 NW 1/4-1/2 2590 ft. — **CAPITOL PLACE DEVELOPMENTAL PROJECT** — **SHWS** — **S106816666 / N/A**
1212 QUEEN EMMA ST
HONOLULU, HI 96813

Relative: Higher
Actual: 23 ft.

SHWS:

Supplement :	Not reported
Restricted Use :	Not reported
Fed Id :	Not reported
Funding :	Not reported
Agreement/program :	State Site
Activity Type :	Remedial
Assignment Date :	2005-04-13 00:00:00
Activity Lead :	Eric Sadoyama
Assignment End Date :	Not reported
End fill :	2005-08-24 00:00:00
Result fill :	Ongoing
Overall Status :	Ongoing
File Under :	PMK Development LLC
Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	Capitol Place Developmental Project

CAPITOL PLACE DEVELOPMENTAL PROJECT (Continued) **S106816666**

Sitelist Name : Capitol Place Developmental Project

AC115 NNW 1/4-1/2 2632 ft. — **IMM VINEYARD** — **LUST** — **U001235169**
215 S VINEYARD BLVD — **UST** — **N/A**
HONOLULU, HI 96813

Site 2 of 2 in cluster AC

Relative: Higher
Actual: 30 ft.

LUST:

Facility ID: 9-100343
Release ID: 980150
Facility Status Date: 2000-05-08 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Ruiz

Facility ID: 9-100343
Release ID: 050025
Facility Status Date: 2005-05-04 00:00:00
Facility Status: Confirmed Release
Project Officer: Westerman

UST:

Facility ID: 9-100343 Tank ID: 87
Tank Status: Currently In Use
Tank Capacity: 10000 Installed: 2/6/1985
Date Closed: Not reported Substance: Gasoline
Owner: ALOHA PETROLEUM, LTD.
1132 BISHOP STREET, SUITE 1700
Honolulu, HI 96813

Facility ID: 9-100343 Tank ID: 89
Tank Status: Currently In Use
Tank Capacity: 10000 Installed: 2/6/1985
Date Closed: Not reported Substance: Gasoline
Owner: ALOHA PETROLEUM, LTD.
1132 BISHOP STREET, SUITE 1700
Honolulu, HI 96813

Facility ID: 9-100343 Tank ID: 92
Tank Status: Currently In Use
Tank Capacity: 10000 Installed: 2/6/1985
Date Closed: Not reported Substance: Gasoline
Owner: ALOHA PETROLEUM, LTD.
1132 BISHOP STREET, SUITE 1700
Honolulu, HI 96813

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116 SSE 1/2-1 2868 ft. — **SELF STORAGE 1** — **SHWS** — **1006819998**
438 KAMAKEE ST — **FINDS** — **110013778769**
HONOLULU, HI 96814 — **SPILLS**

Relative: Lower
Actual: 3 ft.

SELF STORAGE 1 (Continued) **1006819998**

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM

SHWS:

Supplement :	Not reported
Restricted Use :	Not reported
Fed Id :	Not reported
Funding :	ERRF
Agreement/program :	State Site
Activity Type :	Site Assessment
Assignment Date :	2004-06-09 00:00:00
Activity Lead :	Mark Sutterfield
Assignment End Date :	2004-08-26 00:00:00
End fill :	2004-08-26 00:00:00
Result fill :	No Further Action (NFA)-Unrestricted Use
Overall Status :	SDAR NFA
File Under :	Self Storage 1
Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	Honolulu Laundry
Sitelist Name :	Honolulu Laundry

HI SPILLS:

Case Number:	19981028-1300
Island:	Oahu
Numerical Quantity:	Not reported
Less Or Greater Than :	Not reported
Units :	Not reported
Activity Type :	Response
Assignment Date :	1998-10-28 00:00:00
Activity Lead :	Bill Perry
Assignment End Date :	Not reported
Result :	8
Supplemental Loc. Text:	Not reported
Unit:	Self Storage 1 (previously Volkswagon repair shop, Laundry Facility) 5 sand filled UST's onsite
Substances:	Oil/Hydraulic Fluid/Solvents

Incident : New Owners discovered two 2" diameter steel (galvenized) pipes abandoned onsite with Oil and Hydraulic Fluid residuals. The pipes are full to the top and capacity unknown. The subsurface pipe ends/direction are unknown.

Initial : A joint inspection by DOH, UST Section and HEER SOSC, of the site. Complete an initial assessment. The new owner will be issued a State Letter of Interest. PENCO Vac Truck on standby should an immediate response be required. Sampled stained soil by
pipes.

Report : DOH, UST Reps and SOSC met with Mr Gray Horton. Observed two 2" steel (galvenized) pipes suspected to lead to two of five (abandoned) sand filled UST's . Stained soil sample obtained immediate to the pipes. Letter of interest issued, specific concer
ns: re

117 NW 1/2-1 3005 ft. **CHEVRON USA, INC.** **SHWS 1006820046**
1001 BISHOP ST **FINDS 110013779321**
HONOLULU, HI 96813

Relative: Higher

Actual: 10 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM

SHWS:

Supplement :	Pauahi Tower
Restricted Use :	Not reported
Fed Id :	Not reported
Funding :	ERRF
Agreement/program :	State Site
Activity Type :	Screening
Assignment Date :	2004-07-26 00:00:00
Activity Lead :	Laura Young
Assignment End Date :	Not reported
End fill :	2005-08-24 00:00:00
Result fill :	Ongoing
Overall Status :	Ongoing
File Under :	Chevron USA, Inc.
Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	Chevron USA, Inc.
Sitelist Name :	Chevron USA, Inc.

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118 West 1/2-1 3054 ft. **HAWAIIAN ELECTRIC COMPANY HONOLULU GENERATING STATION** **RCRA-SQG 1000146691**
170 ALA MOANA BOULEVARD **SHWS HID000150680**
HONOLULU, HI 96813 **FINDS**
SPILLS
RCRA-TSDF
CORRACTS
CERC-NFRAP

Relative: Lower

Actual: 3 ft.

CERCLIS-NFRAP Classification Data:

Federal Facility:	Not a Federal Facility
Non NPL Code:	DR
NPL Status:	Not on the NPL

CERCLIS-NFRAP Assessment History:

Assessment:	DISCOVERY	Completed:	05/08/1990
Assessment:	PRELIMINARY ASSESSMENT	Completed:	05/15/1990
Assessment:	ARCHIVE SITE	Completed:	01/23/1996

CORRACTS Data:

EPA Id:	HID000150680
Region:	09
Area Name:	ENTIRE FACILITY
Actual Date:	03/16/1992
Corrective Action:	CA075LO - CA Prioritization, Facility or area was assigned a low corrective action priority
2002 NAICS Title:	Fossil Fuel Electric Power Generation

EPA Id:	HID000150680
Region:	09
Area Name:	ENTIRE FACILITY
Actual Date:	04/30/1990
Corrective Action:	CA075LO - CA Prioritization, Facility or area was assigned a low corrective action priority
2002 NAICS Title:	Fossil Fuel Electric Power Generation

HAWAIIAN ELECTRIC COMPANY HONOLULU GENERATING STATION (Continued) **1000146691**

RCRAInfo Corrective Action Summary:

Event: CA Prioritization, Facility or area was assigned a low corrective action priority.
Event Date: 03/16/1992

Event: Stabilization Measures Evaluation,This facility is not amenable to stabilization activity at the present time for reasons other than 1) it appears to be technically infeasible or inappropriate (NF) or 2) there is a lack of technical information (IN). Reasons for this conclusion may be the status of closure at the facility, the degree of risk, timing considerations, the status of corrective action work at the facility, or other administrative considerations.
Event Date: 03/16/1992

Event: CA Prioritization, Facility or area was assigned a low corrective action priority.
Event Date: 04/30/1990

RCRAInfo:

Owner: HAWAIIAN ELECTRIC CO., INC.
(808) 548-7311
EPA ID: HID000150680

Contact: Not reported

Classification: TSDF
TSDF Activities: Used oil market burner, Used oil spec marketer

BIENNIAL REPORTS:
Last Biennial Reporting Year: 2003

Waste	Quantity (Lbs)	Waste	Quantity (Lbs)
D001	1380.11	D002	35.00
D007	15.00	D008	40.00
D009	10.00	D018	1150.00
F003	1165.00	P106	20.00

Violation Status: Violations exist

Regulation Violated: 40 CFR 262.34(a)(2)
Area of Violation: GENERATOR-PRE-TRANSPORT REQUIREMENTS
Date Violation Determined: 03/18/2003
Actual Date Achieved Compliance: Not reported

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 07/31/2003
Penalty Type: Not reported

Regulation Violated: 40 CFR 279.22(c)(1)
Area of Violation: 09UOG
Date Violation Determined: 03/18/2003
Actual Date Achieved Compliance: Not reported

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 07/31/2003
Penalty Type: Not reported

Regulation Violated: Not reported
Area of Violation: TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS
Date Violation Determined: 03/31/1986
Actual Date Achieved Compliance: 05/08/1986

Enforcement Action: WRITTEN INFORMAL

HAWAIIAN ELECTRIC COMPANY HONOLULU GENERATING STATION (Continued) **1000146691**

Enforcement Action Date: 03/31/1986
Penalty Type: Not reported

There are 3 violation record(s) reported at this site:

Evaluation	Area of Violation	Date of Compliance
Compliance Evaluation Inspection	GENERATOR-PRE-TRANSPORT REQUIREMENTS 09UOG	
Financial Record Review	TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS	19860508

FINDS:
Other Pertinent Environmental Activity Identified at Site:
AEROMETRIC INFORMATION RETRIEVAL SYSTEM/AIRS FACILITY SYSTEM
HAWAII ENGINE CONTROL SYSTEM
HAWAII-UNDERGROUND STORAGE TANK
INTEGRATED COMPLIANCE INFORMATION SYSTEM
NATIONAL EMISSIONS INVENTORY
PERMIT COMPLIANCE SYSTEM
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM
TOXIC CHEMICAL RELEASE INVENTORY SYSTEM

SHWS:

Supplement : Not reported
Restricted Use : Not reported
Fed Id : HID000150680
Funding : Not reported
Agreement/program : State Site
Activity Type : Remedial
Assignment Date : 2003-10-17 00:00:00
Activity Lead : Unassigned (low)
Assignment End Date : Not reported
End fill : 2005-08-24 00:00:00
Result fill : Ongoing
Overall Status : Ongoing
File Under : Hawaiian Electric Co., Inc. (HECO)
Restricted Use Comm : Not reported
Ic Relied On In Remedy : Not reported
Unit : Hawaiian Electric Company (HECO)-Honolulu Generating Station
Sitelist Name : Hawaiian Electric Company (HECO)-Honolulu Generating Station

HI SPILLS:

Case Number: 19960214-1545
Island: Oahu
Numerical Quantity: 1000
Less Or Greater Than : Not reported
Units : Gallons
Activity Type : Response
Assignment Date : 1996-02-14 00:00:00
Activity Lead : Chris Takeno
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Not reported
Unit: Honolulu Power Plant HECO Fuel oil storage tanks
Substances: Fuel Oil #6
Incident : Line leak (rusted spot) contained leak inside trench. Concrete trench. Incident happened at 2:30.
Pressure in the primary fuel oil pump caused the relief valve to open, releasing the fuel oil. No media was impacted. The oil was contained within the concrete

HAWAIIAN ELECTRIC COMPANY HONOLULU GENERATING STATION (Continued) **1000146691**

lined fuel pipeline trough.
50 gallons of turbine oil to the sealed concrete floor. Release first reportedto Mike around 11:00a.
While cleaning up a tunnel, the guzzler, which cleans up debris, lost a cap and spilled hydraulic fluid. The hydraulic fluid caused a sheen at Pier 6 Honolulu Harbor.
Oil Sheen on water fronting the Intake for the gererating plant.
Received a call from HECO Andy Keith, Blown Transformer at the Ward facility.

Initial : Disabled sump pump. PENCO to assist in taking oil out of trench.
50 gallons of turbine oil to the sealed concrete floor. Release first reportedto Mike around 11:00a.
Crews began an immediate cleanup recovering usable product and removing remaining signs of contamination. Cleanup debris was taken to H-Power for disposal.
While cleaning up a tunnel, the guzzler, which cleans up debris, lost a cap and spilled hydraulic fluid. The hydraulic fluid caused a sheen at Pier 6 Honolulu Harbor.
Oil sheen fronting the seawater intake to the plant. Oil sheen cause due to large water main break in Nimitz Hwy.
Received a call from HECO Andy Keith, Blown Transformer at the Ward facility.

Report : Disabled sump pump. PENCO to assist in taking oil out of trench.
Crews began an immediate cleanup recovering usable product and removing remaining signs of contamination. Cleanup debris was taken to H-Power for disposal.
50 gallons of turbine oil to the sealed concrete floor. Release first reportedto Mike around 11:00a.
While cleaning up a tunnel, the guzzler, which cleans up debris, lost a cap and spilled hydraulic fluid. The hydraulic fluid caused a sheen at Pier 6 Honolulu Harbor.
Oil Sheen due to water main break on Nimitiz Hwy.
Received call fom Andy Keith, informed me that a transformer had exploded at their Ward Facility. He currently has several crews cleaning the site, incident is under control.

Case Number:	19970218-1413
Island:	Oahu
Numerical Quantity:	50
Less Or Greater Than :	Not reported
Units :	Gallons
Activity Type :	Response
Assignment Date :	1997-02-18 00:00:00
Activity Lead :	Terry Corpus
Assignment End Date :	Not reported
Result :	8
Supplemental Loc. Text:	Not reported
Unit:	Honolulu Generating Station
Substances:	Turbine Oil

Incident : Line leak (rusted spot) contained leak inside trench. Concrete trench. Incident happened at 2:30.
Pressure in the primary fuel oil pump caused the relief valve to open, releasing the fuel oil. No media was impacted. The oil was contained within the concrete lined fuel pipeline trough.
50 gallons of turbine oil to the sealed concrete floor. Release first reportedto Mike around 11:00a.
While cleaning up a tunnel, the guzzler, which cleans up debris, lost a cap and spilled hydraulic fluid. The hydraulic fluid caused a sheen at Pier 6 Honolulu Harbor.

HAWAIIAN ELECTRIC COMPANY HONOLULU GENERATING STATION (Continued) **1000146691**

Oil Sheen on water fronting the Intake for the gererating plant.
Received a call from HECO Andy Keith, Blown Transformer at the Ward facility.

Initial : Disabled sump pump. PENCO to assist in taking oil out of trench.
50 gallons of turbine oil to the sealed concrete floor. Release first reportedto Mike around 11:00a.
Crews began an immediate cleanup recovering usable product and removing remaining signs of contamination. Cleanup debris was taken to H-Power for disposal.
While cleaning up a tunnel, the guzzler, which cleans up debris, lost a cap and spilled hydraulic fluid. The hydraulic fluid caused a sheen at Pier 6 Honolulu Harbor.
Oil sheen fronting the seawater intake to the plant. Oil sheen cause due to large water main break in Nimitz Hwy.
Received a call from HECO Andy Keith, Blown Transformer at the Ward facility.

Report : Disabled sump pump. PENCO to assist in taking oil out of trench.
Crews began an immediate cleanup recovering usable product and removing remaining signs of contamination. Cleanup debris was taken to H-Power for disposal.
50 gallons of turbine oil to the sealed concrete floor. Release first reportedto Mike around 11:00a.
While cleaning up a tunnel, the guzzler, which cleans up debris, lost a cap and spilled hydraulic fluid. The hydraulic fluid caused a sheen at Pier 6 Honolulu Harbor.
Oil Sheen due to water main break on Nimitiz Hwy.
Received call fom Andy Keith, informed me that a transformer had exploded at their Ward Facility. He currently has several crews cleaning the site, incident is under control.

Case Number:	19980415-0845
Island:	Oahu
Numerical Quantity:	35
Less Or Greater Than :	Not reported
Units :	Gallons
Activity Type :	Response
Assignment Date :	1998-04-15 00:00:00
Activity Lead :	Not reported
Assignment End Date :	Not reported
Result :	8
Supplemental Loc. Text:	Not reported
Unit:	HECO-Honolulu Gererating Station
Substances:	Fuel Oil

Incident : Line leak (rusted spot) contained leak inside trench. Concrete trench. Incident happened at 2:30.
Pressure in the primary fuel oil pump caused the relief valve to open, releasing the fuel oil. No media was impacted. The oil was contained within the concrete lined fuel pipeline trough.
50 gallons of turbine oil to the sealed concrete floor. Release first reportedto Mike around 11:00a.
While cleaning up a tunnel, the guzzler, which cleans up debris, lost a cap and spilled hydraulic fluid. The hydraulic fluid caused a sheen at Pier 6 Honolulu Harbor.
Oil Sheen on water fronting the Intake for the gererating plant.
Received a call from HECO Andy Keith, Blown Transformer at the Ward facility.

Initial : Disabled sump pump. PENCO to assist in taking oil out of trench.
50 gallons of turbine oil to the sealed concrete floor. Release first reportedto Mike around 11:00a.
Crews began an immediate cleanup recovering usable product and removing

HAWAIIAN ELECTRIC COMPANY HONOLULU GENERATING STATION (Continued) **1000146691**

remaining signs of contamination. Cleanup debris was taken to H-Power for disposal.
While cleaning up a tunnel, the guzzler, which cleans up debris, lost a cap and spilled hydraulic fluid. The hydraulic fluid caused a sheen at Pier 6 Honolulu Harbor.
Oil sheen fronting the seawater intake to the plant. Oil sheen cause due to large water main break in Nimitz Hwy.
Received a call from HECO Andy Keith, Blown Transformer at the Ward facility.

Report : Disabled sump pump. PENCO to assist in taking oil out of trench.
Crews began an immediate cleanup recovering usable product and removing remaining signs of contamination. Cleanup debris was taken to H-Power for disposal.
50 gallons of turbine oil to the sealed concrete floor. Release first reportedto Mike around 11:00a.
While cleaning up a tunnel, the guzzler, which cleans up debris, lost a cap and spilled hydraulic fluid. The hydraulic fluid caused a sheen at Pier 6 Honolulu Harbor.
Oil Sheen due to water main break on Nimitiz Hwy.
Received call fom Andy Keith, informed me that a transformer had exploded at their Ward Facility. He currently has several crews cleaning the site, incident is under control.

Case Number:	20011024-1407
Island:	Oahu
Numerical Quantity:	10
Less Or Greater Than :	Not reported
Units :	Gallons
Activity Type :	Response
Assignment Date :	2001-10-24 00:00:00
Activity Lead :	Not reported
Assignment End Date :	Not reported
Result :	8
Supplemental Loc. Text:	Not reported
Unit:	Guzzler Hydraulic Fluid Spill
Substances:	Hydraulic Fluid

Incident : Line leak (rusted spot) contained leak inside trench. Concrete trench. Incident happened at 2:30.
Pressure in the primary fuel oil pump caused the relief valve to open, releasing the fuel oil. No media was impacted. The oil was contained within the concrete lined fuel pipeline trough.
50 gallons of turbine oil to the sealed concrete floor. Release first reportedto Mike around 11:00a.
While cleaning up a tunnel, the guzzler, which cleans up debris, lost a cap and spilled hydraulic fluid. The hydraulic fluid caused a sheen at Pier 6 Honolulu Harbor.
Oil Sheen on water fronting the Intake for the gererating plant.
Received a call from HECO Andy Keith, Blown Transformer at the Ward facility.

Initial : Disabled sump pump. PENCO to assist in taking oil out of trench.
50 gallons of turbine oil to the sealed concrete floor. Release first reportedto Mike around 11:00a.
Crews began an immediate cleanup recovering usable product and removing remaining signs of contamination. Cleanup debris was taken to H-Power for disposal.
While cleaning up a tunnel, the guzzler, which cleans up debris, lost a cap and spilled hydraulic fluid. The hydraulic fluid caused a sheen at Pier 6 Honolulu Harbor.
Oil sheen fronting the seawater intake to the plant. Oil sheen cause due to

HAWAIIAN ELECTRIC COMPANY HONOLULU GENERATING STATION (Continued) **1000146691**

large water main break in Nimitz Hwy.
Received a call from HECO Andy Keith, Blown Transformer at the Ward facility.

Report : Disabled sump pump. PENCO to assist in taking oil out of trench.
Crews began an immediate cleanup recovering usable product and removing remaining signs of contamination. Cleanup debris was taken to H-Power for disposal.
50 gallons of turbine oil to the sealed concrete floor. Release first reportedto Mike around 11:00a.
While cleaning up a tunnel, the guzzler, which cleans up debris, lost a cap and spilled hydraulic fluid. The hydraulic fluid caused a sheen at Pier 6 Honolulu Harbor.
Oil Sheen due to water main break on Nimitiz Hwy.
Received call fom Andy Keith, informed me that a transformer had exploded at their Ward Facility. He currently has several crews cleaning the site, incident is under control.

Case Number:	20040708-0700
Island:	Oahu
Numerical Quantity:	1
Less Or Greater Than :	<
Units :	Gallons
Activity Type :	Response
Assignment Date :	2004-07-08 00:00:00
Activity Lead :	Paul Chong
Assignment End Date :	2004-07-08 00:00:00
Result :	8
Supplemental Loc. Text:	Not reported
Unit:	Honolulu Generating Station Seawater Intake
Substances:	Oil Sheen

Incident : Line leak (rusted spot) contained leak inside trench. Concrete trench. Incident happened at 2:30.
Pressure in the primary fuel oil pump caused the relief valve to open, releasing the fuel oil. No media was impacted. The oil was contained within the concrete lined fuel pipeline trough.
50 gallons of turbine oil to the sealed concrete floor. Release first reportedto Mike around 11:00a.
While cleaning up a tunnel, the guzzler, which cleans up debris, lost a cap and spilled hydraulic fluid. The hydraulic fluid caused a sheen at Pier 6 Honolulu Harbor.
Oil Sheen on water fronting the Intake for the gererating plant.
Received a call from HECO Andy Keith, Blown Transformer at the Ward facility.

Initial : Disabled sump pump. PENCO to assist in taking oil out of trench.
50 gallons of turbine oil to the sealed concrete floor. Release first reportedto Mike around 11:00a.
Crews began an immediate cleanup recovering usable product and removing remaining signs of contamination. Cleanup debris was taken to H-Power for disposal.
While cleaning up a tunnel, the guzzler, which cleans up debris, lost a cap and spilled hydraulic fluid. The hydraulic fluid caused a sheen at Pier 6 Honolulu Harbor.
Oil sheen fronting the seawater intake to the plant. Oil sheen cause due to large water main break in Nimitz Hwy.
Received a call from HECO Andy Keith, Blown Transformer at the Ward facility.

Report : Disabled sump pump. PENCO to assist in taking oil out of trench.
Crews began an immediate cleanup recovering usable product and removing remaining signs of contamination. Cleanup debris was taken to H-Power for disposal.

HAWAIIAN ELECTRIC COMPANY HONOLULU GENERATING STATION (Continued) **1000146691**

50 gallons of turbine oil to the sealed concrete floor. Release first reportedto Mike around 11:00a.
While cleaning up a tunnel, the guzzler, which cleans up debris, lost a cap and spilled hydraulic fluid. The hydraulic fluid caused a sheen at Pier 6 Honolulu Harbor.
Oil Sheen due to water main break on Nimitiz Hwy.
Received call fom Andy Keith, informed me that a transformer had exploded at their Ward Facility. He currently has several crews cleaning the site, incident is under control.
These are the most recent HI Spills records for this site.

Click this hyperlink while viewing on your computer to access
1 additional HI Spills record(s) in the EDR Site Report.

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119 ESE 1/2-1 3082 ft. **1012 PIIKOI STREET, ANIN-PIIKOI BUILDING** **SHWS** **S106815117**
1012 PIIKOI ST **SPILLS** **N/A**
HONOLULU, HI 96814 **INST CONTROL**

Relative: Higher
Actual: 12 ft.

SHWS:
Supplement : Anin-Piikoi Building
Restricted Use : This site is available for unrestricted use.
Fed Id : Not reported
Funding : ERRF
Agreement/program : State Site
Activity Type : Removal
Assignment Date : 2003-10-08 00:00:00
Activity Lead : Mark Sutterfield
Assignment End Date : 2004-03-16 00:00:00
End fill : 2004-03-16 00:00:00
Result fill : No Further Action (NFA)-Unrestricted Use (HHA shows no sign of risk)
Overall Status : SDAR NFA
File Under : SCI Noel
Restricted Use Comm : Not reported
Ic Relied On In Remedy : Not reported
Unit : Anin-Piikoi Building Site
Sitelist Name : Anin-Piikoi Building Site

HI INSTUTIONAL CONTROL:
Facility Addr 2: Not reported
File Under: SCI Noel
Restricted Use: This site is available for unrestricted use.
Comments on Restricted Use: Not reported
IC Relied on in Remedy: Not reported

HI SPILLS:
Case Number: 20020523-1051
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : 2002-04-19 00:00:00
Activity Lead : Terry Corpus
Assignment End Date : 2003-11-25 00:00:00
Result : 8
Supplemental Loc. Text: Anin-Piikoi Building
Unit: Anin-Piikoi Building Chemical Spill
Substances: dieldrin
Incident : Presumed release was discovered after the laboratory analysis of soil samples

1012 PIIKOI STREET, ANIN-PIIKOI BUILDING (Continued) **S106815117**

collected on April 19, 2002, form stained soil indicated the presence of Chlordane, dieldrin, and fluoranthene exceeding Tier 1 Soil Action Levels.
Presumed release was discovered after the laboratory analysis of soil samples collected on April 19, 2002, form stained soil indicated the presence of Chlordane, dieldrin, and fluoranthene exceeding Tier 1 Soil Action Levels.
Presumed release was discovered after the laboratory analysis of soil samples collected on April 19, 2002, form stained soil indicated the presence of Chlordane, dieldrin, and fluoranthene exceeding Tier 1 Soil Action Levels.
Initial : Since this investigation has been picked up by the SDAR Section, I have indicated that Terry sent it to ISST.-Marsha
Since this investigation has been picked up by the SDAR Section, I have indicated that Terry sent it to ISST.-Marsha
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Report : Since this investigation has been picked up by the SDAR Section, I have indicated that Terry sent it to ISST.-Marsha
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Case Number: 20020523-1051
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : 2002-04-19 00:00:00
Activity Lead : Terry Corpus
Assignment End Date : 2003-11-25 00:00:00
Result : 8
Supplemental Loc. Text: Anin-Piikoi Building
Unit: Anin-Piikoi Building Chemical Spill
Substances: fluoranthene
Incident : Presumed release was discovered after the laboratory analysis of soil samples collected on April 19, 2002, form stained soil indicated the presence of Chlordane, dieldrin, and fluoranthene exceeding Tier 1 Soil Action Levels.
Presumed release was discovered after the laboratory analysis of soil samples collected on April 19, 2002, form stained soil indicated the presence of Chlordane, dieldrin, and fluoranthene exceeding Tier 1 Soil Action Levels.
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Initial : Since this investigation has been picked up by the SDAR Section, I have indicated that Terry sent it to ISST.-Marsha
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Report : Since this investigation has been picked up by the SDAR Section, I have indicated that Terry sent it to ISST.-Marsha
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Case Number: 20020523-1051

1012 PIIKOI STREET, ANIN-PIIKOI BUILDING (Continued) **S106815117**

Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : 2002-04-19 00:00:00
Activity Lead : Terry Corpus
Assignment End Date : 2003-11-25 00:00:00
Result : 8
Supplemental Loc. Text: Anin-Piikoi Building
Unit: Anin-Piikoi Building Chemical Spill
Substances: Chlordane
Incident : Presumed release was discovered after the laboratory analysis of soil samples collected on April 19, 2002, form stained soil indicated the presence of Chlordane, dieldrin, and fluoranthene exceeding Tier 1 Soil Action Levels. Presumed release was discovered after the laboratory analysis of soil samples collected on April 19, 2002, form stained soil indicated the presence of Chlordane, dieldrin, and fluoranthene exceeding Tier 1 Soil Action Levels. Presumed release was discovered after the laboratory analysis of soil samples collected on April 19, 2002, form stained soil indicated the presence of Chlordane, dieldrin, and fluoranthene exceeding Tier 1 Soil Action Levels.
Initial : Since this investigation has been picked up by the SDAR Section, I have indicated that Terry sent it to ISST.-Marsha
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Since this investigation has been picked up by the SDAR Section, I have indicated that Terry sent it to ISST.-Marsha
Report : Since this investigation has been picked up by the SDAR Section, I have indicated that Terry sent it to ISST.-Marsha
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120 SSE 1/2-1 3171 ft. **RESERVE HOUSING TOWER SOIL CONTAMINATION** **SHWS FINDS SPILLS** **1006819959 110013778322**
1141 WAIMANU ST
HONOLULU, HI 96813

Relative: Lower

Actual: 3 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM

SHWS:
Supplement : Not reported
Restricted Use : Not reported
Fed Id : Not reported
Funding : Not reported
Agreement/program : Not reported
Activity Type : ISST
Assignment Date : 1995-10-24 00:00:00
Activity Lead : Unknown
Assignment End Date : 1995-10-25 00:00:00
End fill : 1995-10-25 00:00:00
Result fill : NFA
Overall Status : SDAR NFA
File Under : Reserve Housing Tower
Restricted Use Comm : Not reported
Ic Relied On In Remedy : Not reported

RESERVE HOUSING TOWER SOIL CONTAMINATION (Continued) **1006819959**

Unit : Reserve Housing Tower Soil Contamination
Sitelist Name : Reserve Housing Tower Soil Contamination

HI SPILLS:
Case Number: 19951025-2
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : Not reported
Activity Lead : Bill Perry
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Not reported
Unit: Reserve Housing Tower
Substances: oil/stained soil
Incident : Rest Environmental contracted to treat oil contaminated soil prior to construction of the reserve housing tower, by Waldron Venturals. Reported July 24, 1995 with remediation report.
Initial : Rust Environmental/soil washing/case review/soil contaminated on-site after over extraction. Created slurry container (soil washed) diesel to below DOH interim cleanup goals. Technology was effective and acceptable.
Report : Rust Environmental/soil washing/case review/soil contaminated on-site after over extraction. Created slurry container (soil washed) diesel to below DOH interim cleanup goals. Technology was effective and acceptable.

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121 SSE 1/2-1 3307 ft. **EVERSHINE X** **SHWS VCP INST CONTROL** **S105262688 N/A**
1230 KAPIOLANI BLVD
HONOLULU, HI 96814

Relative: Lower

Actual: 3 ft.

SHWS:
Supplement : Not reported
Restricted Use : This site is available for unrestricted use.
Fed Id : Not reported
Funding : ERRF-VRP
Agreement/program : VRP
Activity Type : Site Assessment
Assignment Date : 2002-10-01 00:00:00
Activity Lead : Mark Sutterfield
Assignment End Date : 2004-08-18 00:00:00
End fill : 2004-08-18 00:00:00
Result fill : Letter of Completion (LOC)-Cleanup Goals Achieved
Overall Status : SDAR NFA
File Under : Evershine X
Restricted Use Comm : Not reported
Ic Relied On In Remedy : No institutional controls.
Unit : Evershine X
Sitelist Name : Evershine X

HI INSTUTIONAL CONTROL:
Facility Addr 2: Not reported
File Under: Evershine X
Restricted Use: This site is available for unrestricted use.
Comments on Restricted Use: Not reported
IC Relied on in Remedy: No institutional controls.

VCP:
Supplemental Location Text: Not reported

EVERSHINE X (Continued) **S105262688**

Restricted Use: This site is available for unrestricted use.
Comments on Restricted Use: Not reported
IC Relied on in Remedy: No institutional controls.
FED_ID: Not reported
Activity Type: Site Assessment
Assignment Date: 2002-10-01 00:00:00
Activity Lead: Mark Sutterfield
Assignment End Date: 2004-08-18 00:00:00
Result: 8
Agreement/Program: VRP
Overall Status: SDAR NFA
File Under: Evershine X
Unit: Evershine X
Funding: ERRF-VRP
Site List: Evershine X
End Fill: 2004-08-18 00:00:00

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122 SSW 1/2-1 3327 ft. | **KAKAAKO BROWNFIELD PROJECT-UNIT 6** | **1011 ALA MOANA BLVD** | **HONOLULU, HI 96814** | **SHWS** | **FINDS** | **SPILLS** | **BROWNFIELDS** | **INST CONTROL** | **1006820761** | **110013787704**

Relative: Lower

Actual: 3 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM

SHWS:
Supplement : Ahui St & Ward Ave
Restricted Use : This site is under evaluation for use restriction.
Fed Id : Not reported
Funding : Not reported
Agreement/program : Brownfields
Activity Type : Phase III
Assignment Date : 2005-04-13 00:00:00
Activity Lead : Davis Bernstein
Assignment End Date : Not reported
End fill : 2005-08-24 00:00:00
Result fill : Ongoing
Overall Status : Ongoing
File Under : State of Hawaii, Hawaii Community Development Authority
Restricted Use Comm : Not reported
Ic Relied On In Remedy : Not reported
Unit : Kakaako Brownfield Project-Unit 6
Sitelist Name : Kakaako Brownfield Project-Unit 6

Supplement : Ahui St & Ward Ave
Restricted Use : This site is under evaluation for use restriction.
Fed Id : Not reported
Funding : Not reported
Agreement/program : State Site
Activity Type : Screening
Assignment Date : 2004-05-20 00:00:00
Activity Lead : Steve Mow
Assignment End Date : 2004-08-23 00:00:00
End fill : 2004-08-23 00:00:00
Result fill : Screening Referred for Assessment
Overall Status : Ongoing
File Under : State of Hawaii, Hawaii Community Development Authority

KAKAAKO BROWNFIELD PROJECT-UNIT 6 (Continued) **1006820761**

Restricted Use Comm : Not reported
Ic Relied On In Remedy : Not reported
Unit : Kewalo Basin-Tuna Packers
Sitelist Name : Kewalo Basin-Tuna Packers

HI INSTUTIONAL CONTROL:
Facility Addr 2: Not reported
File Under: State of Hawaii, Hawaii Community Development Authority
Restricted Use: This site is under evaluation for use restriction.
Comments on Restricted Use: Not reported
IC Relied on in Remedy: Not reported

Facility Addr 2: Not reported
File Under: State of Hawaii, Hawaii Community Development Authority
Restricted Use: This site is under evaluation for use restriction.
Comments on Restricted Use: Not reported
IC Relied on in Remedy: Not reported

HI SPILLS:
Case Number: 19901217
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : Not reported
Activity Lead : Not reported
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Ahui St & Ward Ave
Unit: TUNA PACKERS
Substances: BLACK WASTE OIL
Incident : SLIP = LADING DOCK BY TUNA PACKERS RECIEVED TWO COMPLAINTS TODAY.
RELEASE OF AMMONIA GAS FROM REFRIGERATION UNITS AT HI. TUNA PACKERS.
Emptying ammonia cooling system caused an ammonia smell at Fishermans Wharf Restaurant. Odor detected but no burning of eyes or throat.
Construction is on-going in the back of 919 Ala Moana Bldg. for Ward Ave. Extension project. The contractor found oil in the water in the trench while digging a line for a drainage line.
Initial : MSO INVESTIGATIONS O/S, NO POLLUTION FOUND.
RELEASE WAS STOPPED, AMMONIA DISPERSED
Emptying ammonia cooling system caused an ammonia smell at Fishermans Wharf Restaurant. Odor detected but no burning of eyes or throat.
Site visit conducted by L. Galvez, S. Okoji, J. Fujimoto, L. Young.
Report : MSO INVESTIGATIONS O/S, NO POLLUTION FOUND.
RELEASE WAS STOPPED, AMMONIA DISPERSED
Ice Technology emptied ammonia cooling system in Febuary 1998 and transferred material to Unico.
5/18/99 approximately 1400 hours: Site visit was conducted by L. Galvez, S. Okoji, J. Fujimoto, and Laura Young. Met with Chris Jarrett with TM Designs who showed us the location of the trench where a 72 inch drain line is planned to be installed.
Four

Case Number: 19900706
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported

KAKAAKO BROWNFIELD PROJECT-UNIT 6 (Continued) **1006820761**

Units : Not reported
Activity Type : Response
Assignment Date : Not reported
Activity Lead : Not reported
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Ahui St & Ward Ave
Unit: HAWAII TUNA PACKERS, KEWALO BASIN, WARD & ALA MOANA
Substances: Ammonia
Incident : SLIP = LADING DOCK BY TUNA PACKERS RECIEVED TWO COMPLAINTS TODAY.
RELEASE OF AMMONIA GAS FROM REFRIGERATION UNITS AT HI. TUNA PACKERS.
Emptying ammonia cooling system caused an ammonia smell at Fishermans Wharf
Restaurant. Odor detected but no burning of eyes or throat.
Construction is on-going in the back of 919 Ala Moana Bldg. for Ward Ave.
Extension project. The contractor found oil in the water in the trench while
digging a line for a drainage line.
Initial : MSO INVESTIGATIONS O/S, NO POLLUTION FOUND.
RELEASE WAS STOPPED, AMMONIA DISPERSED
Emptying ammonia cooling system caused an ammonia smell at Fishermans Wharf
Restaurant. Odor detected but no burning of eyes or throat.
Site visit conducted by L. Galvez, S. Okoji, J. Fujimoto, L. Young.
Report : MSO INVESTIGATIONS O/S, NO POLLUTION FOUND.
RELEASE WAS STOPPED, AMMONIA DISPERSED
Ice Technology emptied ammonia cooling system in Febuary 1998 and transferred
material to Unico.
5/18/99 approximately 1400 hours: Site visit was conducted by L. Galvez, S.
Okoji, J. Fujimoto, and Laura Young. Met with Chris Jarrett with TM Designs who
showed us the location of the trench where a 72 inch drain line is planned to be
installed.
Four

Case Number: 19980202-1030
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : 1998-02-02 00:00:00
Activity Lead : Mike Cripps
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Ahui St & Ward Ave
Unit: Hawaiian Tuna Packers Ammonia Odor
Substances: Ammonia
Incident : SLIP = LADING DOCK BY TUNA PACKERS RECIEVED TWO COMPLAINTS TODAY.
RELEASE OF AMMONIA GAS FROM REFRIGERATION UNITS AT HI. TUNA PACKERS.
Emptying ammonia cooling system caused an ammonia smell at Fishermans Wharf
Restaurant. Odor detected but no burning of eyes or throat.
Construction is on-going in the back of 919 Ala Moana Bldg. for Ward Ave.
Extension project. The contractor found oil in the water in the trench while
digging a line for a drainage line.
Initial : MSO INVESTIGATIONS O/S, NO POLLUTION FOUND.
RELEASE WAS STOPPED, AMMONIA DISPERSED
Emptying ammonia cooling system caused an ammonia smell at Fishermans Wharf
Restaurant. Odor detected but no burning of eyes or throat.
Site visit conducted by L. Galvez, S. Okoji, J. Fujimoto, L. Young.
Report : MSO INVESTIGATIONS O/S, NO POLLUTION FOUND.

KAKAAKO BROWNFIELD PROJECT-UNIT 6 (Continued) **1006820761**

RELEASE WAS STOPPED, AMMONIA DISPERSED
Ice Technology emptied ammonia cooling system in Febuary 1998 and transferred
material to Unico.
5/18/99 approximately 1400 hours: Site visit was conducted by L. Galvez, S.
Okoji, J. Fujimoto, and Laura Young. Met with Chris Jarrett with TM Designs who
showed us the location of the trench where a 72 inch drain line is planned to be
installed.
Four

Case Number: 19990517-1549
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : 1999-05-17 00:00:00
Activity Lead : Liz Galvez
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Ahui St & Ward Ave
Unit: Ward Avenue Extension Project
Substances: Oil
Incident : SLIP = LADING DOCK BY TUNA PACKERS RECIEVED TWO COMPLAINTS TODAY.
RELEASE OF AMMONIA GAS FROM REFRIGERATION UNITS AT HI. TUNA PACKERS.
Emptying ammonia cooling system caused an ammonia smell at Fishermans Wharf
Restaurant. Odor detected but no burning of eyes or throat.
Construction is on-going in the back of 919 Ala Moana Bldg. for Ward Ave.
Extension project. The contractor found oil in the water in the trench while
digging a line for a drainage line.
Initial : MSO INVESTIGATIONS O/S, NO POLLUTION FOUND.
RELEASE WAS STOPPED, AMMONIA DISPERSED
Emptying ammonia cooling system caused an ammonia smell at Fishermans Wharf
Restaurant. Odor detected but no burning of eyes or throat.
Site visit conducted by L. Galvez, S. Okoji, J. Fujimoto, L. Young.
Report : MSO INVESTIGATIONS O/S, NO POLLUTION FOUND.
RELEASE WAS STOPPED, AMMONIA DISPERSED
Ice Technology emptied ammonia cooling system in Febuary 1998 and transferred
material to Unico.
5/18/99 approximately 1400 hours: Site visit was conducted by L. Galvez, S.
Okoji, J. Fujimoto, and Laura Young. Met with Chris Jarrett with TM Designs who
showed us the location of the trench where a 72 inch drain line is planned to be
installed.
Four

HI BROWNFIELDS:
Fed ID: Not reported
File Under : State of Hawaii, Hawaii Community Development Authority
Funding : Not reported
Site List Name: Kakaako Brownfield Project-Unit 6
End Fill : 2005-08-24 00:00:00
Supplemental Location Text: Ahui St & Ward Ave
Restricted Use: This site is under evaluation for use restriction.
Comments on Restricted Use: Not reported
IC Relied on in Remedy: Not reported
Activity Type: Phase III
Assignment Date: 2005-04-13 00:00:00
Activity Lead: Davis Bernstein
Assignment End Date: Not reported

KAKAAKO BROWNFIELD PROJECT-UNIT 6 (Continued) **1006820761**

Result: 8
Agreement/Program: Brownfields
Overall Status: Ongoing

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123 SW 1/2-1 3360 ft.
Relative: Lower
Actual: 3 ft.

UNDERGROUND HOISTS **SHWS** **1006819562**
744 ALA MOANA BLVD **FINDS** **110013773844**
HONOLULU, HI 96813 **SPILLS**
INST CONTROL

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM

SHWS:
Supplement : Not reported
Restricted Use : This site has restrictions on its use.
Fed Id : Not reported
Funding : ERRF
Agreement/program : State Site
Activity Type : Unregulated UST
Assignment Date : 2003-05-16 00:00:00
Activity Lead : Clarence Callahan
Assignment End Date : 2003-06-30 00:00:00
End fill : 2003-06-30 00:00:00
Result fill : No Further Action (NFA)-Unrestricted Use (Zoned Industrial)
Overall Status : SDAR NFA
File Under : Kamehameha School-Bishop Estate
Restricted Use Comm : The Site is limited to commercial use. See the hardcopy file for a description of the restrictions in use.
Ic Relied On In Remedy : Not reported
Unit : Bishop Estate - Underground Hoists Removal
Sitelist Name : Bishop Estate - Underground Hoists Removal

HI INSTUTIONAL CONTROL:
Facility Addr 2: Not reported
File Under: Kamehameha School-Bishop Estate
Restricted Use: This site has restrictions on its use.
Comments on Restricted Use: The Site is limited to commercial use. See the hardcopy file for a description of the restrictions in use.
IC Relied on in Remedy: Not reported

HI SPILLS:
Case Number: 20021113-1500
Island: Oahu
Numerical Quantity: 25
Less Or Greater Than : Not reported
Units : Gallons
Activity Type : Response
Assignment Date : 2002-11-13 00:00:00
Activity Lead : Liz Galvez
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Not reported
Unit: Underground Hoists Removal
Substances: Hydraulic Oil
Incident : Property owned by Kamehameha Schools. Removal of 2 underground hoists, 1 of 2 leaked. 3-5 yrs of soil removed and stockpiled on site. Ground water is at 5 ft. and is tidally influenced. Monitoring well to be placed, formerly CONT
Initial : Lust site, received NFA on 1993, for gas and waste Oil . Notification taken, referral to ISST. POC Joy Takahashi.

UNDERGROUND HOISTS (Continued) **1006819562**

Report : Lust site, received NFA on 1993, for gas and waste Oil . Notification taken, referral to ISST. POC Joy Takahashi.

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124 ESE 1/2-1 3381 ft.
Relative: Higher
Actual: 20 ft.

SCHUMAN CARRIAGE MOTORS, LTD. **SHWS** **U003221663**
1234 S BERETANIA ST **LUST** **N/A**
HONOLULU, HI 96814 **SPILLS**
UST

SHWS:
Supplement : Not reported
Restricted Use : Not reported
Fed Id : Not reported
Funding : Not reported
Agreement/program : State Site
Activity Type : ISST
Assignment Date : 2002-01-31 00:00:00
Activity Lead : Richard Palmer
Assignment End Date : Not reported
End fill : 2005-08-24 00:00:00
Result fill : Ongoing
Overall Status : Ongoing
File Under : Schumann Carriage
Restricted Use Comm : Not reported
Ic Relied On In Remedy : Not reported
Unit : Schuman Carriage Hydraulic Fluid Release
Sitelist Name : Schuman Carriage Hydraulic Fluid Release

LUST:
Facility ID: 9-101276
Release ID: 900058
Facility Status Date: 2000-04-19 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Maniulit

Facility ID: 9-101276
Release ID: 000024
Facility Status Date: 1999-12-14 00:00:00
Facility Status: Disconfirmed Release
Project Officer: Maniulit

Facility ID: 9-101276
Release ID: 060001
Facility Status Date: 2005-11-03 00:00:00
Facility Status: Site Cleanup Completed
Project Officer: Takaba

HI SPILLS:
Case Number: 19991210-1047
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : 1999-12-10 00:00:00
Activity Lead : Liz Galvez
Assignment End Date : Not reported
Result : 7
Supplemental Loc. Text: Not reported
Unit: Schuman Carriage
Substances: Hydraulic Fluid

SCHUMAN CARRIAGE MOTORS, LTD. (Continued) **U003221663**

Incident : Suspected fuel spill.Test of soil indicated hydraulic liquid while drilling under cement canopy of service area at Schuman Carriage. 10K THP pmg/pkg. Sample taken from approx. 10 ft from ground surface.12/22/99 Will file report with UST (Renato Man iulit)

Initial : Suspected fuel spill.Test of soil indicated hydraulic liquid while drilling under cement canopy of service area at Schuman Carriage. 10K THP pmg/pkg. Sample taken from approx. 10 ft from ground surface.12/22/99 Will file report with UST (Renato Man iulit)

Report : Suspected fuel spill.Test of soil indicated hydraulic liquid while drilling under cement canopy of service area at Schuman Carriage. 10K THP pmg/pkg. Sample taken from approx. 10 ft from ground surface.12/22/99 Will file report with UST (Renato Man iulit)

UST:

Facility ID: 9-101276 Tank ID: R-1
Tank Status: Permanently Out of Use
Tank Capacity: 3000 Installed: 5/5/1961
Date Closed: 11/9/1999 Substance: Gasoline
Owner: SCHUMAN CARRIAGE MOTORS, LTD. 1234 S BERETANIA ST P.O. BOX 2420 Honolulu, HI 96814

Facility ID: 9-101276 Tank ID: r-5
Tank Status: Permanently Out of Use
Tank Capacity: 1000 Installed: 3/1/1990
Date Closed: 1/26/2005 Substance: Used Oil
Owner: SCHUMAN CARRIAGE MOTORS, LTD. 1234 S BERETANIA ST P.O. BOX 2420 Honolulu, HI 96814

Facility ID: 9-101276 Tank ID: R-4
Tank Status: Permanently Out of Use
Tank Capacity: 500 Installed: 5/5/1961
Date Closed: 12/1/1990 Substance: Used Oil
Owner: SCHUMAN CARRIAGE MOTORS, LTD. 1234 S BERETANIA ST P.O. BOX 2420 Honolulu, HI 96814

Facility ID: 9-101276 Tank ID: R-3
Tank Status: Permanently Out of Use
Tank Capacity: 550 Installed: 5/5/1961
Date Closed: 11/8/1999 Substance: Other
Owner: SCHUMAN CARRIAGE MOTORS, LTD. 1234 S BERETANIA ST P.O. BOX 2420 Honolulu, HI 96814

Facility ID: 9-101276 Tank ID: R-6
Tank Status: Permanently Out of Use
Tank Capacity: 550 Installed: 5/5/1961
Date Closed: 12/1/1990 Substance: Other
Owner: SCHUMAN CARRIAGE MOTORS, LTD. 1234 S BERETANIA ST P.O. BOX 2420 Honolulu, HI 96814

Facility ID: 9-101276 Tank ID: R-2

SCHUMAN CARRIAGE MOTORS, LTD. (Continued) **U003221663**

Tank Status: Permanently Out of Use
Tank Capacity: 550 Installed: 5/5/1961
Date Closed: 11/8/1999 Substance: Other
Owner: SCHUMAN CARRIAGE MOTORS, LTD. 1234 S BERETANIA ST P.O. BOX 2420 Honolulu, HI 96814

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125 SSE 1/2-1 3523 ft. **KOOLANI TOWER PROJECT** **1189 WAIMANU ST** **HONOLULU, HI 96814** **SHWS** **S106818609** **SPILLS** **N/A**

Relative: Lower

Actual: 3 ft.

SHWS:

Supplement : Not reported
Restricted Use : Not reported
Fed Id : Not reported
Funding : ERRF
Agreement/program : State Site
Activity Type : Screening
Assignment Date : 2004-10-29 00:00:00
Activity Lead : Mark Sutterfield
Assignment End Date : 2005-02-28 00:00:00
End fill : 2005-02-28 00:00:00
Result fill : No Further Action (NFA)-Closeout Letter
Overall Status : SDAR NFA
File Under : Cresent Heights
Restricted Use Comm : Not reported
Ic Relied On In Remedy : Not reported
Unit : Koolani Tower Project
Sitelist Name : Koolani Tower Project

HI SPILLS:

Case Number: 20040615-1651
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Unknown
Activity Type : Response
Assignment Date : 2004-06-15 00:00:00
Activity Lead : Liz Galvez
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Not reported
Unit: Koolani Tower Project
Substances: Diesel Fuel
Incident : Unknown substance discovered during soil testing at project site.
Initial : Unknown substance discovered during soil testing at project site.
Report : 12/7/2004: Notification received by L. Galvez; no other information available. No emergency response action necessary at this time. Refer to ISST.

126 WNW 1/2-1 3547 ft. — **HARBOR COURT, 66 QUEEN ST, HONOLULU, HI 96813** — **SHWS 1006820894**, **FINDS 110013789212**

Relative: Lower
Actual: 6 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM

SHWS:

Supplement :	Not reported
Restricted Use :	Not reported
Fed Id :	Not reported
Funding :	Not reported
Agreement/program :	Not reported
Activity Type :	ISST
Assignment Date :	1994-12-15 00:00:00
Activity Lead :	Unknown
Assignment End Date :	1994-12-21 00:00:00
End fill :	1994-12-21 00:00:00
Result fill :	NFA
Overall Status :	SDAR NFA
File Under :	Harbor Court
Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	Harbor Court
Sitelist Name :	Harbor Court

127 SE 1/2-1 3615 ft. — **HONOLULU HARBOR IWILEI DISTRICT PARTICIPATING PART, 615 PIIKOI ST, HONOLULU, HI 96814** — **SHWS S106820631**, **N/A**

Relative: Lower
Actual: 3 ft.

SHWS:

Supplement :	Honolulu Harbor c/o URS Corporation
Restricted Use :	Not reported
Fed Id :	Not reported
Funding :	ERRF
Agreement/program :	State Site
Activity Type :	Remedial
Assignment Date :	2005-02-01 00:00:00
Activity Lead :	Clarence Callahan
Assignment End Date :	Not reported
End fill :	2005-08-24 00:00:00
Result fill :	Ongoing
Overall Status :	Ongoing
File Under :	Iwilei District Participating Parties, LLC (IDPP)
Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	Honolulu Harbor Iwilei
Sitelist Name :	Honolulu Harbor Iwilei

128 SW 1/2-1 3670 ft. — **KAKAAKO PUMP STATION, 240 KEAWE ST, HONOLULU, HI 96813** — **SHWS S107022565**, **BROWNFIELDS N/A**, **INST CONTROL**

Relative: Lower
Actual: 3 ft.

SHWS:

Supplement :	Ala Moana Blvd & Forrest St, Kakaako Area
Restricted Use :	This site is under evaluation for use restriction.
Fed Id :	Not reported
Funding :	SRP
Agreement/program :	Brownfields
Activity Type :	Phase II Recommended
Assignment Date :	2004-10-01 00:00:00
Activity Lead :	Melody Calisay
Assignment End Date :	Not reported
End fill :	2005-08-24 00:00:00
Result fill :	Ongoing
Overall Status :	Ongoing
File Under :	State of Hawaii, Hawaii Community Development Authority
Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	Kakaako Pump Station
Sitelist Name :	Kakaako Pump Station

HI INSTUTIONAL CONTROL:

Facility Addr 2:	Not reported
File Under:	State of Hawaii, Hawaii Community Development Authority
Restricted Use:	This site is under evaluation for use restriction.
Comments on Restricted Use:	Not reported
IC Relied on in Remedy:	Not reported

HI BROWNFIELDS:

Fed ID:	Not reported
File Under :	State of Hawaii, Hawaii Community Development Authority
Funding :	SRP
Site List Name:	Kakaako Pump Station
End Fill :	2005-08-24 00:00:00
Supplemental Location Text:	Ala Moana Blvd & Forrest St, Kakaako Area
Restricted Use:	This site is under evaluation for use restriction.
Comments on Restricted Use:	Not reported
IC Relied on in Remedy:	Not reported
Activity Type:	Phase II Recommended
Assignment Date:	2004-10-01 00:00:00
Activity Lead:	Melody Calisay
Assignment End Date:	Not reported
Result:	8
Agreement/Program:	Brownfields
Overall Status:	Ongoing

129 SW 1/2-1 3842 ft. — **ALA MOANA #2 WWPS, 210 KEAWE ST, HONOLULU, HI 96813** — **SHWS S106816012**, **SPILLS N/A**

Relative: Lower
Actual: 3 ft.

SHWS:

Supplement :	Not reported
Restricted Use :	Not reported
Fed Id :	Not reported
Funding :	ERRF
Agreement/program :	State Site
Activity Type :	Screening
Assignment Date :	2004-05-20 00:00:00

ALA MOANA #2 WWPS (Continued) **S106816012**

Activity Lead : Mark Sutterfield
Assignment End Date : 2004-11-04 00:00:00
End fill : 2004-11-04 00:00:00
Result fill : No Further Action (NFA) with Conditions
Overall Status : SDAR NFA
File Under : City and County of Honolulu, Department of Environmental Services, Wastewater Treatment and Disposal
Restricted Use Comm : Not reported
Ic Relied On In Remedy : Not reported
Unit : Ala Moana #2 WWPS
Sitelist Name : Ala Moana #2 WWPS

HI SPILLS:
Case Number: 19900712
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : Not reported
Activity Lead : Not reported
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Not reported
Unit: Pacific Construction, Gold Bond Building, Keawe St
Substances: COOKING GREASE
Incident : COOKING GREASE IN THE STORM DRAIN. REPORTED AS OIL AND GREASE. Break in main at Ala Moana pump station, 500 gals into draining box. Pumped out and divert into sewer manhole. Three to five (3-5) gals per min. 08:49-10:27 secured. TMK 121015023.
Initial : COOKING GREASE WAS MIXED WITH SOIL AND BURIED ON SITE. THE AREA WAS THEN PAVED OVER WITH ASPHALT. C/C-WW lead.
Report : COOKING GREASE WAS MIXED WITH SOIL AND BURIED ON SITE. THE AREA WAS THEN PAVED OVER WITH ASPHALT. C/C-WW lead.

Case Number: 19991002-1228
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : 1999-10-02 00:00:00
Activity Lead : Mike Cripps
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Not reported
Unit: Ala Moana Pump Station - Sewage Main Break
Substances: sewage
Incident : COOKING GREASE IN THE STORM DRAIN. REPORTED AS OIL AND GREASE. Break in main at Ala Moana pump station, 500 gals into draining box. Pumped out and divert into sewer manhole. Three to five (3-5) gals per min. 08:49-10:27 secured. TMK 121015023.
Initial : COOKING GREASE WAS MIXED WITH SOIL AND BURIED ON SITE. THE AREA WAS THEN PAVED OVER WITH ASPHALT. C/C-WW lead.
Report : COOKING GREASE WAS MIXED WITH SOIL AND BURIED ON SITE. THE AREA WAS THEN PAVED

ALA MOANA #2 WWPS (Continued) **S106816012**

OVER WITH ASPHALT. C/C-WW lead.

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130 SW 1/2-1 3875 ft. **KAKAAKO MAKAI GATEWAY** **SHWS 1006820751**
COOKE ST & ILALO ST **FINDS 110013787606**
HONOLULU, HI 96814

Relative: Lower
Actual: 4 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM

SHWS:
Supplement : Not reported
Restricted Use : Not reported
Fed Id : Not reported
Funding : Not reported
Agreement/program : State Site
Activity Type : Ranking
Assignment Date : 2005-04-13 00:00:00
Activity Lead : Eric Sadoyama
Assignment End Date : 2005-08-11 00:00:00
End fill : 2005-08-11 00:00:00
Result fill : SDAR Ranked No Further Action (NFA)
Overall Status : Ongoing
File Under : State of Hawaii, Hawaii Community Development Authority
Restricted Use Comm : Not reported
Ic Relied On In Remedy : Not reported
Unit : Y. Hata Company, Ltd.
Sitelist Name : Y. Hata Company, Ltd.

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131 SW 1/2-1 3876 ft. **HCDA/UH HEALTH AND WELLNESS CENTER** **SHWS 1006821120**
651 ILALO ST **FINDS 110013791673**
HONOLULU, HI 96813 **INST CONTROL**

Relative: Lower
Actual: 3 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM

SHWS:
Supplement : Not reported
Restricted Use : This site has restrictions on its use.
Fed Id : Not reported
Funding : Not reported
Agreement/program : State Site
Activity Type : Screening
Assignment Date : 2002-05-21 00:00:00
Activity Lead : Steve Mow
Assignment End Date : 2004-08-23 00:00:00
End fill : 2004-08-23 00:00:00
Result fill : No Further Action (NFA) with Conditions
Overall Status : SDAR NFA
File Under : State of Hawaii, Hawaii Community Development Authority
Restricted Use Comm : An exposure management plan is in use.
Ic Relied On In Remedy : An exposure management plan is in use.
Unit : HCDA/UH Medical School
Sitelist Name : HCDA/UH Medical School

HCDA/UH HEALTH AND WELLNESS CENTER (Continued) **1006821120**

HI INSTUTIONAL CONTROL:

Facility Addr 2:	Not reported
File Under:	State of Hawaii, Hawaii Community Development Authority
Restricted Use:	This site has restrictions on its use.
Comments on Restricted Use:	An exposure management plan is in use.
IC Relied on in Remedy:	An exposure management plan is in use.

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132 SE 1/2-1 4176 ft. — **HAKUYOSHA HAWAII, INC**, **730 SHERIDAN ST**, **HONOLULU, HI 96814** — **SHWS SPILLS** — **S106817254 N/A**

Relative: Lower

Actual: 6 ft.

SHWS:

Supplement :	Not reported
Restricted Use :	Not reported
Fed Id :	Not reported
Funding :	Not reported
Agreement/program :	State Site
Activity Type :	Remedial
Assignment Date :	2004-06-11 00:00:00
Activity Lead :	Unassigned (low)
Assignment End Date :	Not reported
End fill :	2005-08-24 00:00:00
Result fill :	Ongoing
Overall Status :	Ongoing
File Under :	Hakuyosha Hawaii Inc.
Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	Hakuyosha Hawaii, Inc.
Sitelist Name :	Hakuyosha Hawaii, Inc.

HI SPILLS:

Case Number:	19950303
Island:	Oahu
Numerical Quantity:	Not reported
Less Or Greater Than :	Not reported
Units :	Not reported
Activity Type :	Response
Assignment Date :	1995-03-03 00:00:00
Activity Lead :	Bryce Hataoka
Assignment End Date :	Not reported
Result :	8
Supplemental Loc. Text:	Not reported
Unit:	Hakuyosha Hawaii Inc.
Substances:	Diesel Fuel

Incident : After removal of 1000 gal diesel tank, free product/visual contam was found along w/holes in tank. Aprox. 210 gal free product was recovered. Contam soil buried in excavation w/in 40 ml lining. Lateral extent of contam not determined. No treatment.

Initial : Tank removed. approx. 210 gal diesel removed. Area lined and contam soil placed back in hole.

Report : Tank removed. approx. 210 gal diesel removed. Area lined and contam soil placed back in hole.

133 SSW 1/2-1 4217 ft. — **KAKAAKO BROWNFIELD PROJECT-UNIT 3**, **160 AHUI ST**, **HONOLULU, HI 96814** — **SHWS SPILLS BROWNFIELDS** — **S105887713 N/A**

Relative: Lower

Actual: 3 ft.

SHWS:

Supplement :	Bounded by Ilalo, Ahui, Olemehani & Koula Streets
Restricted Use :	Not reported
Fed Id :	Not reported
Funding :	Not reported
Agreement/program :	Brownfields (EPA)
Activity Type :	Brownfields DOH
Assignment Date :	2002-11-08 00:00:00
Activity Lead :	Laura Young
Assignment End Date :	2003-03-17 00:00:00
End fill :	2003-03-17 00:00:00
Result fill :	Complete
Overall Status :	SDAR NFA
File Under :	State of Hawaii, Hawaii Community Development Authority
Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	Kakaako Brownfield Project-Unit 3
Sitelist Name :	Kakaako Brownfield Project-Unit 3

HI SPILLS:

Case Number:	20001121-1100
Island:	Oahu
Numerical Quantity:	Not reported
Less Or Greater Than :	Not reported
Units :	Not reported
Activity Type :	Response
Assignment Date :	2000-11-21 00:00:00
Activity Lead :	Mike Cripps
Assignment End Date :	Not reported
Result :	8
Supplemental Loc. Text:	Bounded by Ilalo, Ahui, Olemehani & Koula Streets
Unit:	Kewalo Demolition
Substances:	Not reported

Incident : Oily water discovered during demolition of buildings on Ilalo St. in concrete vault, possibly hdro-carbon. TMK 2-6-60 Parcel #5.

Initial : Oily water discovered during demolition of buildings on Ilalo St. in concrete vault, possibly hdro-carbon. TMK 2-6-60 Parcel #5.

Report : Oily water discovered during demolition of buildings on Ilalo St. in concrete vault, possibly hdro-carbon. TMK 2-6-60 Parcel #5.

HI BROWNFIELDS:

Fed ID:	Not reported
File Under :	State of Hawaii, Hawaii Community Development Authority
Funding :	Not reported
Site List Name:	Kakaako Brownfield Project-Unit 3
End Fill :	2003-03-17 00:00:00
Supplemental Location Text:	Bounded by Ilalo, Ahui, Olemehani & Koula Streets
Restricted Use:	Not reported
Comments on Restricted Use:	Not reported
IC Relied on in Remedy:	Not reported
Activity Type:	Brownfields DOH
Assignment Date:	2002-11-08 00:00:00
Activity Lead:	Laura Young
Assignment End Date:	2003-03-17 00:00:00
Result:	8

KAKAAKO BROWNFIELD PROJECT-UNIT 3 (Continued) **S105887713**

Agreement/Program: Brownfields (EPA)
Overall Status: SDAR NFA

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134 SE 1/2-1 4339 ft. — **CUTTER CHEVROLET, 1391 KAPIOLANI BLVD, HONOLULU, HI 96814** — **SHWS, SPILLS** — **S106816818, N/A**

Relative: Lower
Actual: 3 ft.

SHWS:

Supplement :	2nd Driveway from Kona Iki St
Restricted Use :	Not reported
Fed Id :	Not reported
Funding :	Not reported
Agreement/program :	State Site
Activity Type :	Screening
Assignment Date :	1999-11-10 00:00:00
Activity Lead :	Steve Mow
Assignment End Date :	2004-08-11 00:00:00
End fill :	2004-08-11 00:00:00
Result fill :	Screening No Further Action (NFA)
Overall Status :	SDAR NFA
File Under :	Cutter Chevrolet
Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	Cutter Chevrolet Hydraulic Lift
Sitelist Name :	Cutter Chevrolet Hydraulic Lift

HI SPILLS:

Case Number:	19930217-1348
Island:	Oahu
Numerical Quantity:	Not reported
Less Or Greater Than :	Not reported
Units :	Not reported
Activity Type :	Response
Assignment Date :	1993-02-17 00:00:00
Activity Lead :	Not reported
Assignment End Date :	Not reported
Result :	8
Supplemental Loc. Text:	2nd Driveway from Kona Iki St
Unit:	Cutter Chevrolet/Geo, Kona St side
Substances:	Engine Degreaser or Hand Soap

Incident : Dumping of unknown shop waste on to ground.

Initial : 2/17/93: OSC on-scene around 210pm. Mel with Bill Reso, Svc Mgr & Rodney Uyeoka, assistant. Reso & Uyeoka didn't exactly know what the white-color liquid was. They said that it was either wash water from soap or engine degreaser.

Report : OSC asked Mr Reso to clean up liquid and prevent future occurrences. Mr Reso said he'll have someone to clean it up immediately. OSC will drive by after work to follow up. Result of follow up: 520pm same day, water puddle was removed.

135 NW 1/2-1 4382 ft. — **YEE HOP BUILDING MAUNAKEA STREET, 950 MAUNAKEA ST, HONOLULU, HI** — **SHWS** — **S106821168, N/A**

Relative: Higher
Actual: 12 ft.

SHWS:

Supplement :	Not reported
Restricted Use :	Not reported
Fed Id :	Not reported
Funding :	ERRF
Agreement/program :	State Site
Activity Type :	Remedial
Assignment Date :	2004-10-15 00:00:00
Activity Lead :	Mark Sutterfield
Assignment End Date :	Not reported
End fill :	2005-08-24 00:00:00
Result fill :	Ongoing
Overall Status :	Ongoing
File Under :	City and County of Honolulu, Department of Design and Construction
Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	Yee Hop Building Maunakea Street
Sitelist Name :	Yee Hop Building Maunakea Street

AD136 SW 1/2-1 4433 ft. — **ROBERTS HAWAII, 759 KELIKOI ST, HONOLULU, HI 96814** — **SHWS, SPILLS, INST CONTROL** — **S106820242, N/A**

Site 1 of 2 in cluster AD

Relative: Lower
Actual: 9 ft.

SHWS:

Supplement :	Not reported
Restricted Use :	This site has restrictions on its use.
Fed Id :	Not reported
Funding :	ERRF
Agreement/program :	State Site
Activity Type :	Remedial
Assignment Date :	2003-10-13 00:00:00
Activity Lead :	Steve Mow
Assignment End Date :	2005-04-22 00:00:00
End fill :	2005-04-22 00:00:00
Result fill :	No Further Action (NFA) with Institutional Controls
Overall Status :	SDAR NFA
File Under :	Roberts Hawaii Tours
Restricted Use Comm :	Prohibit Any Activity That May Disturb the Integrity of the Capping System
Ic Relied On In Remedy :	Not reported
Unit :	Roberts Hawaii
Sitelist Name :	Roberts Hawaii

HI INSTUTIONAL CONTROL:

Facility Addr 2:	Not reported
File Under:	Roberts Hawaii Tours
Restricted Use:	This site has restrictions on its use.
Comments on Restricted Use:	Prohibit Any Activity That May Disturb the Integrity of the Capping System
IC Relied on in Remedy:	Not reported

HI SPILLS:

Case Number:	19901012-2
Island:	Oahu
Numerical Quantity:	Not reported
Less Or Greater Than :	Not reported
Units :	Not reported

ROBERTS HAWAII (Continued) **S106820242**

Activity Type : Response
Assignment Date : Not reported
Activity Lead : Not reported
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Not reported
Unit: Roberts Hawaii on Kelikoi Street
Substances: USED MOTOR OIL, SOLVENTS, DIESEL ANTIFREEZE AND HYDCAULICOIL
Incident : SOILS CONTAMINATED WITH OIL AND HYDRAULIC FLUID. EPCRA
Initial : SOIL TAKEN TO LANDFILL FOR DISPOSAL
Report : SOIL TAKEN TO LANDFILL FOR DISPOSAL

AD137
SW
1/2-1
4435 ft.

Relative: Lower

Actual: 7 ft.

KEWALO INCINERATOR/ASH DUMP **SHWS** **S106818511**
111 OHE ST **INST CONTROL** **N/A**
HONOLULU, HI 96813

Site 2 of 2 in cluster AD

SHWS:
Supplement : 709 Kelikoi St
Restricted Use : Not reported
Fed Id : HID980497226
Funding : Not reported
Agreement/program : Not reported
Activity Type : ISST
Assignment Date : 1989-03-29 00:00:00
Activity Lead : Unknown
Assignment End Date : 1996-01-12 00:00:00
End fill : 1996-01-12 00:00:00
Result fill : NFA
Overall Status : SDAR NFA
File Under : State of Hawaii, Hawaii Community Development Authority
Restricted Use Comm : The site is currently a park w/ unlimited access
Ic Relied On In Remedy : Not reported
Unit : Kewalo Incinerator Landfill
Sitelist Name : Kewalo Incinerator Landfill

Supplement : 709 Kelikoi St
Restricted Use : Not reported
Fed Id : Not reported
Funding : Not reported
Agreement/program : State Site
Activity Type : Screening
Assignment Date : 2004-05-20 00:00:00
Activity Lead : Steve Mow
Assignment End Date : 2004-08-24 00:00:00
End fill : 2004-08-24 00:00:00
Result fill : Screening No Further Action (NFA)
Overall Status : SDAR NFA
File Under : State of Hawaii, Hawaii Community Development Authority
Restricted Use Comm : The site is currently a park w/ unlimited access
Ic Relied On In Remedy : Not reported
Unit : Kewalo Incinerator
Sitelist Name : Kewalo Incinerator

HI INSTUTIONAL CONTROL:
Facility Addr 2: Not reported
File Under: State of Hawaii, Hawaii Community Development Authority
Restricted Use: Not reported

KEWALO INCINERATOR/ASH DUMP (Continued) **S106818511**

Comments on Restricted Use: The site is currently a park w/ unlimited access
IC Relied on in Remedy: Not reported

Facility Addr 2: Not reported
File Under: State of Hawaii, Hawaii Community Development Authority
Restricted Use: Not reported
Comments on Restricted Use: The site is currently a park w/ unlimited access
IC Relied on in Remedy: Not reported

138
NW
1/2-1
4594 ft.

Relative: Higher

Actual: 13 ft.

KEKAULIKE DIAMOND HEAD BLOCK REVITALIZATION **SHWS** **1006819184**
163 N HOTEL ST **FINDS** **110013769564**
HONOLULU, HI 96817 **SPILLS**

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM

SHWS:
Supplement : Hotel St & Kekaulike St
Restricted Use : Not reported
Fed Id : Not reported
Funding : Not reported
Agreement/program : Not reported
Activity Type : Unregulated UST
Assignment Date : 2004-10-26 00:00:00
Activity Lead : John Peard
Assignment End Date : Not reported
End fill : 2005-08-24 00:00:00
Result fill : Ongoing
Overall Status : Ongoing
File Under : City and County of Honolulu, Department of Housing and Community Development
Restricted Use Comm : Not reported
Ic Relied On In Remedy : Not reported
Unit : Kekaulike Diamond Head Block Revitalization
Sitelist Name : Kekaulike Diamond Head Block Revitalization

HI SPILLS:
Case Number: 19941215-0915
Island: Oahu
Numerical Quantity: Not reported
Less Or Greater Than : Not reported
Units : Not reported
Activity Type : Response
Assignment Date : 1994-12-15 00:00:00
Activity Lead : Mike Cripps
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Hotel St & Kekaulike St
Unit: Kekaulike Diamond Head Block
Substances: oil
Incident : Digging - Drilling piling test holes, hit only soil across street is Maunakea Marketplace, makai, ewa of site was old gas station.
Initial : Hawaiian Dredging reported/County to hire environmental contractor to investigate. Hawaiian Dredging Construction Company, Justin Ohara 532-35821 1/17/94 Mike Shiroma ,HCDA, has hired PSI (Mike Polkinghorn) as consultant. UST removed on
Report : Hawaiian Dredging reported/County to hire environmental contractor to investigate. Hawaiian Dredging Construction Company, Justin Ohara 532-35821 1/17/94 Mike Shiroma ,HCDA, has hired PSI (Mike Polkinghorn) as consultant.

KEKAULIKE DIAMOND HEAD BLOCK REVITALIZATION (Continued) **1006819184**

UST removed on

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139 ESE 1/2-1 4598 ft. **MEADOW GOLD DAIRIES (ICE CREAM PLANT)** **SHWS** **S104657475**
1418 YOUNG ST **SPILLS** **N/A**
HONOLULU, HI 96814

Relative: Higher

Actual: 20 ft.

SHWS:

Supplement :	Not reported
Restricted Use :	Not reported
Fed Id :	Not reported
Funding :	Not reported
Agreement/program :	State Site
Activity Type :	Remedial
Assignment Date :	2003-10-13 00:00:00
Activity Lead :	Unassigned (low)
Assignment End Date :	Not reported
End fill :	2005-08-24 00:00:00
Result fill :	Ongoing
Overall Status :	Ongoing
File Under :	Meadow Gold Dairies, Division of Southern Foods Group, LP
Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	Meadow Gold Ice Cream Plant Fuel Oil Spill
Sitelist Name :	Meadow Gold Ice Cream Plant Fuel Oil Spill

HI SPILLS:

Case Number:	19890208
Island:	Oahu
Numerical Quantity:	25
Less Or Greater Than :	<
Units :	Pounds
Activity Type :	Response
Assignment Date :	Not reported
Activity Lead :	Not reported
Assignment End Date :	Not reported
Result :	8
Supplemental Loc. Text:	Not reported
Unit:	KEEAUMOKU ST.
Substances:	Ammonia

Incident : Ammonia leak
AMMONIA LEAK FROM MEADOW GOLD DAIRY
AMMONIA LEAK AT MEADOW GOLD ICE CREAM PLANT.
AMMONIA RELEASE FROM REFRIGERATION UNIT
AMMONIA GAS LEAK @ 375 S King St
Faulty valve caused ammonia release during maintenence of line. Valves were shut, but not totally sealed when the line was cut, ammonia was released.
No. 6 Fuel Oil (CAS 68553004) was released during boiler repair work. Found some product yesterday at 5:00 and discovered stained soil today upon excavating to 10 or 12 feet. Estimate 500 gallons was released.
Seam broken in freezer inside bldg.

Initial : The leak was from a glycol tube bundle on the chiller. Meadow Gold had shut the system down and were going to repair the leak.
LEAK CLOSED OFF, STRONG WINDS DISSIPATED AMMONIA.
LEAK REPAIRED.
NO INJURIES, GAS DISSIPATED, <100 LBS RELEASED, REPORTABLE QUANTITY =100 LBS.
LEAK STOPPED BY REPAIRMAN.
Lines shut down, evacuated building, vented building outside. HFD did not respond.

MEADOW GOLD DAIRIES (ICE CREAM PLANT) (Continued) **S104657475**

Contacted Brewer Environmental Consultants.
Meadow Gold evacuated, shut off valve and isolated leak. About 9,000 lbs. In system.

Report : The leak was from a glycol tube bundle on the chiller. Meadow Gold had shut the system down and were going to repair the leak.
LEAK CLOSED OFF, STRONG WINDS DISSIPATED AMMONIA.
LEAK STOPPED BY REPAIRMAN.
LEAK REPAIRED.
NO INJURIES, GAS DISSIPATED, <100 LBS RELEASED, REPORTABLE QUANTITY =100 LBS.
Lines shut down, evacuated building, vented building outside. HFD did not respond.
ISST has ranked site.
Meadow Gold evacuated, shut off valve and isolated leak. About 9,000 lbs. In system.

Case Number:	19901224
Island:	Oahu
Numerical Quantity:	250
Less Or Greater Than :	Not reported
Units :	Pounds
Activity Type :	Response
Assignment Date :	1990-12-24 00:00:00
Activity Lead :	Not reported
Assignment End Date :	Not reported
Result :	8
Supplemental Loc. Text:	Not reported
Unit:	Meadow Gold Ammonia Leak from Chiller
Substances:	Ammonia

Incident : Ammonia leak
AMMONIA LEAK FROM MEADOW GOLD DAIRY
AMMONIA LEAK AT MEADOW GOLD ICE CREAM PLANT.
AMMONIA RELEASE FROM REFRIGERATION UNIT
AMMONIA GAS LEAK @ 375 S King St
Faulty valve caused ammonia release during maintenence of line. Valves were shut, but not totally sealed when the line was cut, ammonia was released.
No. 6 Fuel Oil (CAS 68553004) was released during boiler repair work. Found some product yesterday at 5:00 and discovered stained soil today upon excavating to 10 or 12 feet. Estimate 500 gallons was released.
Seam broken in freezer inside bldg.

Initial : The leak was from a glycol tube bundle on the chiller. Meadow Gold had shut the system down and were going to repair the leak.
LEAK CLOSED OFF, STRONG WINDS DISSIPATED AMMONIA.
LEAK REPAIRED.
NO INJURIES, GAS DISSIPATED, <100 LBS RELEASED, REPORTABLE QUANTITY =100 LBS.
LEAK STOPPED BY REPAIRMAN.
Lines shut down, evacuated building, vented building outside. HFD did not respond.
Contacted Brewer Environmental Consultants.
Meadow Gold evacuated, shut off valve and isolated leak. About 9,000 lbs. In system.

Report : The leak was from a glycol tube bundle on the chiller. Meadow Gold had shut the system down and were going to repair the leak.
LEAK CLOSED OFF, STRONG WINDS DISSIPATED AMMONIA.
LEAK STOPPED BY REPAIRMAN.
LEAK REPAIRED.
NO INJURIES, GAS DISSIPATED, <100 LBS RELEASED, REPORTABLE QUANTITY =100 LBS.
Lines shut down, evacuated building, vented building outside. HFD did not

MEADOW GOLD DAIRIES (ICE CREAM PLANT) (Continued) **S104657475**

respond.
ISST has ranked site.
Meadow Gold evacuated, shut off valve and isolated leak. About 9,000 lbs. In system.

Case Number: 19900904-1
Island: Oahu
Numerical Quantity: 200
Less Or Greater Than : Not reported
Units : Pounds
Activity Type : Response
Assignment Date : Not reported
Activity Lead : Not reported
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Not reported
Unit: YOUNG ST. 1418
Substances: Ammonia
Incident : Ammonia leak
AMMONIA LEAK FROM MEADOW GOLD DAIRY
AMMONIA LEAK AT MEADOW GOLD ICE CREAM PLANT.
AMMONIA RELEASE FROM REFRIGERATION UNIT
AMMONIA GAS LEAK @ 375 S King St
Faulty valve caused ammonia release during maintenence of line. Valves were shut, but not totally sealed when the line was cut, ammonia was released.
No. 6 Fuel Oil (CAS 68553004) was released during boiler repair work. Found some product yesterday at 5:00 and discovered stained soil today upon excavating to 10 or 12 feet. Estimate 500 gallons was released.
Seam broken in freezer inside bldg.
Initial : The leak was from a glycol tube bundle on the chiller. Meadow Gold had shut the system down and were going to repair the leak.
LEAK CLOSED OFF, STRONG WINDS DISSIPATED AMMONIA.
LEAK REPAIRED.
NO INJURIES, GAS DISSIPATED, <100 LBS RELEASED, REPORTABLE QUANTITY =100 LBS.
LEAK STOPPED BY REPAIRMAN.
Lines shut down, evacuated building, vented building outside. HFD did not respond.
Contacted Brewer Environmental Consultants.
Meadow Gold evacuated, shut off valve and isolated leak. About 9,000 lbs. In system.
Report : The leak was from a glycol tube bundle on the chiller. Meadow Gold had shut the system down and were going to repair the leak.
LEAK CLOSED OFF, STRONG WINDS DISSIPATED AMMONIA.
LEAK STOPPED BY REPAIRMAN.
LEAK REPAIRED.
NO INJURIES, GAS DISSIPATED, <100 LBS RELEASED, REPORTABLE QUANTITY =100 LBS.
Lines shut down, evacuated building, vented building outside. HFD did not respond.
ISST has ranked site.
Meadow Gold evacuated, shut off valve and isolated leak. About 9,000 lbs. In system.

Case Number: 19900904
Island: Oahu
Numerical Quantity: 1200
Less Or Greater Than : Not reported
Units : Pounds

MEADOW GOLD DAIRIES (ICE CREAM PLANT) (Continued) **S104657475**

Activity Type : Response
Assignment Date : Not reported
Activity Lead : Not reported
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Not reported
Unit: MEADOW GOLD DAIRY, YOUNG ST. 1418
Substances: Ammonia
Incident : Ammonia leak
AMMONIA LEAK FROM MEADOW GOLD DAIRY
AMMONIA LEAK AT MEADOW GOLD ICE CREAM PLANT.
AMMONIA RELEASE FROM REFRIGERATION UNIT
AMMONIA GAS LEAK @ 375 S King St
Faulty valve caused ammonia release during maintenence of line. Valves were shut, but not totally sealed when the line was cut, ammonia was released.
No. 6 Fuel Oil (CAS 68553004) was released during boiler repair work. Found some product yesterday at 5:00 and discovered stained soil today upon excavating to 10 or 12 feet. Estimate 500 gallons was released.
Seam broken in freezer inside bldg.
Initial : The leak was from a glycol tube bundle on the chiller. Meadow Gold had shut the system down and were going to repair the leak.
LEAK CLOSED OFF, STRONG WINDS DISSIPATED AMMONIA.
LEAK REPAIRED.
NO INJURIES, GAS DISSIPATED, <100 LBS RELEASED, REPORTABLE QUANTITY =100 LBS.
LEAK STOPPED BY REPAIRMAN.
Lines shut down, evacuated building, vented building outside. HFD did not respond.
Contacted Brewer Environmental Consultants.
Meadow Gold evacuated, shut off valve and isolated leak. About 9,000 lbs. In system.
Report : The leak was from a glycol tube bundle on the chiller. Meadow Gold had shut the system down and were going to repair the leak.
LEAK CLOSED OFF, STRONG WINDS DISSIPATED AMMONIA.
LEAK STOPPED BY REPAIRMAN.
LEAK REPAIRED.
NO INJURIES, GAS DISSIPATED, <100 LBS RELEASED, REPORTABLE QUANTITY =100 LBS.
Lines shut down, evacuated building, vented building outside. HFD did not respond.
ISST has ranked site.
Meadow Gold evacuated, shut off valve and isolated leak. About 9,000 lbs. In system.

Case Number: 19900120
Island: Oahu
Numerical Quantity: 100
Less Or Greater Than : <
Units : Pounds
Activity Type : Response
Assignment Date : Not reported
Activity Lead : Not reported
Assignment End Date : Not reported
Result : 8
Supplemental Loc. Text: Not reported
Unit: Meadow Gold Ammonia Leak
Substances: Ammonia
Incident : Ammonia leak
AMMONIA LEAK FROM MEADOW GOLD DAIRY

MEADOW GOLD DAIRIES (ICE CREAM PLANT) (Continued) **S104657475**

AMMONIA LEAK AT MEADOW GOLD ICE CREAM PLANT.
AMMONIA RELEASE FROM REFRIGERATION UNIT
AMMONIA GAS LEAK @ 375 S King St
Faulty valve caused ammonia release during maintenence of line. Valves were shut, but not totally sealed when the line was cut, ammonia was released.
No. 6 Fuel Oil (CAS 68553004) was released during boiler repair work. Found some product yesterday at 5:00 and discovered stained soil today upon excavating to 10 or 12 feet. Estimate 500 gallons was released.
Seam broken in freezer inside bldg.

Initial : The leak was from a glycol tube bundle on the chiller. Meadow Gold had shut the system down and were going to repair the leak.
LEAK CLOSED OFF, STRONG WINDS DISSIPATED AMMONIA.
LEAK REPAIRED.
NO INJURIES, GAS DISSIPATED, <100 LBS RELEASED, REPORTABLE QUANTITY =100 LBS.
LEAK STOPPED BY REPAIRMAN.
Lines shut down, evacuated building, vented building outside. HFD did not respond.
Contacted Brewer Environmental Consultants.
Meadow Gold evacuated, shut off valve and isolated leak. About 9,000 lbs. In system.

Report : The leak was from a glycol tube bundle on the chiller. Meadow Gold had shut the system down and were going to repair the leak.
LEAK CLOSED OFF, STRONG WINDS DISSIPATED AMMONIA.
LEAK STOPPED BY REPAIRMAN.
LEAK REPAIRED.
NO INJURIES, GAS DISSIPATED, <100 LBS RELEASED, REPORTABLE QUANTITY =100 LBS.
Lines shut down, evacuated building, vented building outside. HFD did not respond.
ISST has ranked site.
Meadow Gold evacuated, shut off valve and isolated leak. About 9,000 lbs. In system.
These are the most recent HI Spills records for this site.

Click this hyperlink while viewing on your computer to access 3 additional HI Spills record(s) in the EDR Site Report.

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140 SSW 1/2-1 4610 ft. | **C&C WASTE WATER DIVISION MAINTENANCE YARD** | **SHWS 1006820134** | **FINDS 110013780382**
98 KOULA ST
HONOLULU, HI 96813

Relative: Lower
Actual: 3 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM
HAWAII-UNDERGROUND STORAGE TANK

SHWS:

Supplement :	Not reported
Restricted Use :	Not reported
Fed Id :	Not reported
Funding :	Not reported
Agreement/program :	Not reported
Activity Type :	ISST
Assignment Date :	2001-07-08 00:00:00
Activity Lead :	Unknown
Assignment End Date :	2001-07-09 00:00:00
End fill :	2001-07-09 00:00:00
Result fill :	NFA
Overall Status :	SDAR NFA

C&C WASTE WATER DIVISION MAINTENANCE YARD (Continued) **1006820134**

File Under :	City and County of Honolulu, Department of Environmental Services, Wastewater Treatment and Disposal
Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	City & County Wastewater Collection System Maintenance Yard
Sitelist Name :	City & County Wastewater Collection System Maintenance Yard

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141 East 1/2-1 4634 ft. | **CARTWRIGHT NEIGHBORHOOD PARK** | **SHWS 1006820122** | **FINDS 110013780257**
KEEAUMOKU ST & MATLOCK AVE
HONOLULU, HI 96814

Relative: Higher
Actual: 30 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM

SHWS:

Supplement :	Not reported
Restricted Use :	Not reported
Fed Id :	Not reported
Funding :	ERRF
Agreement/program :	State Site
Activity Type :	Remedial
Assignment Date :	2003-10-13 00:00:00
Activity Lead :	Steve Mow
Assignment End Date :	2005-04-25 00:00:00
End fill :	2005-04-25 00:00:00
Result fill :	No Further Action (NFA)-Cleanup Goals Achieved (Removal)
Overall Status :	SDAR NFA
File Under :	City and County of Honolulu, Department of Parks and Recreation, Parks & Playgrounds
Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	Cartwright Neighborhood Park
Sitelist Name :	Cartwright Neighborhood Park

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142 SE 1/2-1 4673 ft. | **LIKE LIKE PLAZA PETROLEUM CONTAMINATION** | **SHWS 1006819347** | **FINDS 110013771383**
745 KEEAUMOKU ST
HONOLULU, HI 96814

Relative: Lower
Actual: 7 ft.

FINDS:
Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM

SHWS:

Supplement :	Not reported
Restricted Use :	Not reported
Fed Id :	Not reported
Funding :	Not reported
Agreement/program :	State Site
Activity Type :	Remedial
Assignment Date :	2003-10-13 00:00:00
Activity Lead :	Unassigned (low)
Assignment End Date :	Not reported
End fill :	2005-08-24 00:00:00
Result fill :	Ongoing
Overall Status :	Ongoing
File Under :	Like Like Plaza

LIKE LIKE PLAZA PETROLEUM CONTAMINATION (Continued) **1006819347**

Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	Like Like Plaza Petroleum Contamination
Sitelist Name :	Like Like Plaza Petroleum Contamination

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143 SSW 1/2-1 4757 ft. | **KAKAAKO BROWNFIELD PROJECT-UNIT 8** | **SHWS** | **S106708611**
59 AHUI ST | **BROWNFIELDS** | **N/A**
HONOLULU, HI 96814 | **INST CONTROL**

Relative: Lower

Actual: 3 ft.

SHWS:

Supplement :	Not reported
Restricted Use :	This site is under evaluation for use restriction.
Fed Id :	Not reported
Funding :	Not reported
Agreement/program :	Brownfields
Activity Type :	Phase III
Assignment Date :	2005-04-13 00:00:00
Activity Lead :	Davis Bernstein
Assignment End Date :	Not reported
End fill :	2005-08-24 00:00:00
Result fill :	Ongoing
Overall Status :	Ongoing
File Under :	State of Hawaii, Hawaii Community Development Authority
Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	Kakaako Brownfield Project-Unit 8
Sitelist Name :	Kakaako Brownfield Project-Unit 8

HI INSTUTIONAL CONTROL:

Facility Addr 2:	Not reported
File Under:	State of Hawaii, Hawaii Community Development Authority
Restricted Use:	This site is under evaluation for use restriction.
Comments on Restricted Use:	Not reported
IC Relied on in Remedy:	Not reported

HI BROWNFIELDS:

Fed ID:	Not reported
File Under :	State of Hawaii, Hawaii Community Development Authority
Funding :	Not reported
Site List Name:	Kakaako Brownfield Project-Unit 8
End Fill :	2005-08-24 00:00:00
Supplemental Location Text:	Not reported
Restricted Use:	This site is under evaluation for use restriction.
Comments on Restricted Use:	Not reported
IC Relied on in Remedy:	Not reported
Activity Type:	Phase III
Assignment Date:	2005-04-13 00:00:00
Activity Lead:	Davis Bernstein
Assignment End Date:	Not reported
Result:	8
Agreement/Program:	Brownfields
Overall Status:	Ongoing

144 NW 1/2-1 4810 ft. | **TOWN INN** | **SHWS** | **1006819555**
248-258 N BERETANIA ST | **FINDS** | **110013773755**
HONOLULU, HI 96817 | **VCP**
INST CONTROL

Relative: Lower

Actual: 3 ft.

FINDS:

Other Pertinent Environmental Activity Identified at Site:
HAWAII ENGINE CONTROL SYSTEM

SHWS:

Supplement :	1200 College Walk
Restricted Use :	This site has restrictions on its use.
Fed Id :	Not reported
Funding :	ERRF-VRP
Agreement/program :	VRP
Activity Type :	O&M
Assignment Date :	2004-08-18 00:00:00
Activity Lead :	Mark Sutterfield
Assignment End Date :	Not reported
End fill :	2005-08-24 00:00:00
Result fill :	Ongoing
Overall Status :	Ongoing
File Under :	Town Inn
Restricted Use Comm :	Prohibit Any Activity That May disturb the Integrity of the Monitoring System
Ic Relied On In Remedy :	Publication-Internet Announcement
Unit :	Town Inn
Sitelist Name :	Town Inn

HI INSTUTIONAL CONTROL:

Facility Addr 2:	Not reported
File Under:	Town Inn
Restricted Use:	This site has restrictions on its use.
Comments on Restricted Use:	Prohibit Any Activity That May disturb the Integrity of the Monitoring System
IC Relied on in Remedy:	Publication-Internet Announcement

VCP:

Supplemental Location Text:	1200 College Walk
Restricted Use:	This site has restrictions on its use.
Comments on Restricted Use:	Prohibit Any Activity That May disturb the Integrity of the Monitoring System
IC Relied on in Remedy:	Publication-Internet Announcement
FED_ID:	Not reported
Activity Type:	O&M
Assignment Date:	2004-08-18 00:00:00
Activity Lead:	Mark Sutterfield
Assignment End Date:	Not reported
Result:	8
Agreement/Program:	VRP
Overall Status:	Ongoing
File Under:	Town Inn
Unit:	Town Inn
Funding:	ERRF-VRP
Site List:	Town Inn
End Fill:	2005-08-24 00:00:00

MAP FINDINGS

Map ID / Direction / Distance / Distance (ft.) / Elevation	Site	Database(s)	EDR ID Number / EPA ID Number
145 NW 1/2-1 4982 ft.	**215 NORTH KING STREET CONSTRUCTION SITE, TANKS 1 & 215 N KING ST HONOLULU, HI 96814**	**SHWS**	**S106815334 N/A**

Relative: Lower

Actual: 0 ft.

SHWS:

Supplement :	Not reported
Restricted Use :	Not reported
Fed Id :	Not reported
Funding :	ERRF
Agreement/program :	State Site
Activity Type :	Removal
Assignment Date :	2004-11-16 00:00:00
Activity Lead :	Ukris Wongse-Ont
Assignment End Date :	2004-12-10 00:00:00
End fill :	2004-12-10 00:00:00
Result fill :	No Further Action (NFA)-Cleanup Goals Achieved (Removal)
Overall Status :	SDAR NFA
File Under :	Downtown Affordables, LLC
Restricted Use Comm :	Not reported
Ic Relied On In Remedy :	Not reported
Unit :	215 North King Street Construction Site, Tanks 1 & 2
Sitelist Name :	215 North King Street Construction Site, Tanks 1 & 2

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
HONOLULU	1006820749	KAKAAKO BROWNFIELD PROJECT-UNIT 7	AHUI ST	96814	SHWS, FINDS, BROWNFIELDS, INST CONTROL
HONOLULU	1006820762	KAKAAKO BROWNFIELD PROJECT-UNIT 5	AHUI ST	96814	SHWS, FINDS
HONOLULU	1004688758	DAGS CSD STATE OFFICE TOWER BLDG	235 S BERETANIA ST 1ST FL	96813	RCRA-SQG, FINDS
HONOLULU	1006820161	FIRST HAWAIIAN CENTER, TANK REMOVAL	99 BISHOP ST	96813	FINDS, SPILLS
HONOLULU	1006844104	SHELLY MAZDA SERVICE AREA	CHAPIN ST	96814	FINDS, LUST
HONOLULU	S106708609	CANNON CLUB	DIAMOND HEAD RD		SHWS, BROWNFIELDS, INST CONTR
HONOLULU	S107022563	DOMESTIC COMMERCIAL FISHING VILLAGE	DOMESTIC COMMERCIAL FISHING VILLAGE	96817	SHWS
HONOLULU	S104534136	ELLIOT STREET DRAINAGE CANAL	ELLIOT ST	96819	SHWS, SPILLS
HONOLULU	S106817262	HALAWA STREAM CHANNEL PETROLEUM CONTAMINATION	H-3		SHWS
HONOLULU	1008172438	BUS RAPID TRANSIT	HAIKU RD, HEEIA ST, ALALOA ST	96813	FINDS
HONOLULU	1000978853	HAWAII MARITIME CENTER	HONOLULU HARBOR PIER 7 AREA A	96813	RCRA-SQG, FINDS
HONOLULU	1006819301	KEEHI LAGOON CANOE FACILITY, INCREMENT II	HOONEE PL	96819	SHWS, FINDS
HONOLULU	1006820766	KAKAAKO BROWNFIELD PROJECT-UNIT 10	KAKAAKO DISTRICT	96814	SHWS, FINDS, BROWNFIELDS
HONOLULU	S106818064	KAKAAKO IMPROVEMENT DISTRICT 7	KAMAKEE ST		SHWS, BROWNFIELDS
HONOLULU	1006820337	ABC DISPOSAL COMPANY	2760 KAMEHAMEHA HWY	96819	SHWS, FINDS
HONOLULU	1000146720	KAKAAKO SITE	KAWAIAHAO ST X EMILY ST	96813	LUST
HONOLULU	S106818337	KEEAUMOKU SUPERBLOCK PROJECT	KEEAUMOKU ST		SHWS, SPILLS, INST CONTROL
HONOLULU	93336268	KEEHI MARINE CENTER 24 SAND ISLAND ROAD	KEEHI MARINE CENTER 24 SAND ISLAND ROAD		ERNS
HONOLULU	2000519057	KEEHI MARINE CENTER	KEEHI MARINE CENTER		ERNS
HONOLULU	S106818546	KING STREET & CENTURY CENTER	KING ST		SPILLS
HONOLULU	1006820763	KAKAAKO BROWNFIELD PROJECT-UNIT 4	KOULA ST	96814	SHWS, FINDS
HONOLULU	1006820765	KAKAAKO BROWNFIELD PROJECT-UNIT 2	KOULA ST	96814	SHWS, FINDS
HONOLULU	1006820767	KAKAAKO BROWNFIELD PROJECT-UNIT 1	KOULA ST	96814	SHWS, FINDS
HONOLULU	1006819424	KUHIO PARK TERRACE, UNITS D1 AND D2	LINAPUNI ST	96819	SHWS, FINDS, BROWNFIELDS, INST CONTROL
HONOLULU	1006819930	STAN SHERIFF SPECIAL EVENTS ARENA	LOWER CAMPUS RD	96822	SHWS, FINDS, SPILLS
HONOLULU	90184905	NAVAL SUPPLY CENTER PIER PEARL HARBOR	NAVAL SUPPLY CENTER PIER PEARL HARBOR		ERNS
HONOLULU	S106815536	420-470 NORTH NIMITZ HIGHWAY	420-470 N NIMITZ HWY	96817	SHWS
HONOLULU	S106819311	NIMITZ HIGHWAY WATER IMPROVEMENT PROJECT SUMNER TO	N NIMITZ HWY	96817	SHWS
HONOLULU	S106821180	ZIPPY'S 580 NORTH NIMITZ HIGHWAY	550-580 N NIMITZ HWY	96817	SHWS, SPILLS
HONOLULU	1006820220	DLNR BURIED DRUM SITE	SAND ISLAND ACCESS RD	96819	SHWS, FINDS, SPILLS
HONOLULU	S106818990	MATSON NAVIGATION TERMINAL	SAND ISLAND ACCESS RD	96819	SHWS, SPILLS
HONOLULU	S106820344	SEA-LAND SERVICE	SAND ISLAND ACCESS RD	96819	SHWS, SPILLS
HONOLULU	U003221556	KAPALAMA MILITARY RESERVATION	SAND ISLAND ACCESS RD, BLDG 935	96819	SHWS, UST
HONOLULU	S106817349	HAWAII HALL	VARNEY CIR	96822	SHWS
HONOLULU	1000441819	POLYNESIAN ADVENTURE TOURS INC	135 WAIMANU ST	96814	RCRA-SQG, FINDS
HONOLULU	U004022800	KOOLANI TOWER	1189 WAIMANU STREET	96814	UST
HONOLULU	S107550044	KOOLANI TOWER	1189 WAIMANU STREET	96814	LUST
HONOLULU COUNTY	S103763651	KMCAS LANDFILL	KANEOHE BAY		SWF/LF
MOKULEIA	S106817395	HAWAIIAN BITUMULS PAVING & PRECAST COMPANY, MOKULE	FARRINGTON HWY	96826	SHWS

EPA Waste Codes Addendum

Code	Description
D001	IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.
D002	A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.
D005	BARIUM
D007	CHROMIUM
D008	LEAD
D009	MERCURY
D018	BENZENE
D035	METHYL ETHYL KETONE
F001	THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLOROETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE, AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
F002	THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
F003	THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY

EPA Waste Codes Addendum

Code	Description
	VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
P106	SODIUM CYANIDE
P106	SODIUM CYANIDE NA(CN)

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List
National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 02/24/2006
Date Data Arrived at EDR: 03/01/2006
Date Made Active in Reports: 03/31/2006
Number of Days to Update: 30

Source: EPA
Telephone: N/A
Last EDR Contact: 03/01/2006
Next Scheduled EDR Contact: 05/01/2006
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 8
Telephone: 303-312-6774

EPA Region 4
Telephone 404-562-8033

Proposed NPL: Proposed National Priority List Sites

Date of Government Version: 02/24/2006
Date Data Arrived at EDR: 03/01/2006
Date Made Active in Reports: 03/31/2006
Number of Days to Update: 30

Source: EPA
Telephone: N/A
Last EDR Contact: 03/01/2006
Next Scheduled EDR Contact: 05/01/2006
Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 02/24/2006
Date Data Arrived at EDR: 03/01/2006
Date Made Active in Reports: 03/31/2006
Number of Days to Update: 30

Source: EPA
Telephone: N/A
Last EDR Contact: 03/01/2006
Next Scheduled EDR Contact: 05/01/2006
Data Release Frequency: Quarterly

NPL RECOVERY: Federal Superfund Liens
Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 03/06/2006
Next Scheduled EDR Contact: 05/22/2006
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 02/01/2006
Date Data Arrived at EDR: 03/21/2006
Date Made Active in Reports: 04/13/2006
Number of Days to Update: 23

Source: EPA
Telephone: 703-413-0223
Last EDR Contact: 03/21/2006
Next Scheduled EDR Contact: 06/19/2006
Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned
Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 02/01/2006
Date Data Arrived at EDR: 03/21/2006
Date Made Active in Reports: 04/13/2006
Number of Days to Update: 23

Source: EPA
Telephone: 703-413-0223
Last EDR Contact: 03/21/2006
Next Scheduled EDR Contact: 06/19/2006
Data Release Frequency: Quarterly

CORRACTS: Corrective Action Report
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/15/2006
Date Data Arrived at EDR: 03/17/2006
Date Made Active in Reports: 04/13/2006
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/06/2006
Next Scheduled EDR Contact: 06/05/2006
Data Release Frequency: Quarterly

RCRA: Resource Conservation and Recovery Act Information
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 02/21/2006
Date Data Arrived at EDR: 03/01/2006
Date Made Active in Reports: 03/31/2006
Number of Days to Update: 30

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/01/2006
Next Scheduled EDR Contact: 04/24/2006
Data Release Frequency: Quarterly

ERNS: Emergency Response Notification System
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 01/12/2006
Date Made Active in Reports: 02/21/2006
Number of Days to Update: 40

Source: National Response Center, United States Coast Guard
Telephone: 202-260-2342
Last EDR Contact: 01/12/2006
Next Scheduled EDR Contact: 04/24/2006
Data Release Frequency: Annually

HMIRS: Hazardous Materials Information Reporting System
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 01/16/2006
Date Made Active in Reports: 02/21/2006
Number of Days to Update: 36

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 04/14/2006
Next Scheduled EDR Contact: 07/17/2006
Data Release Frequency: Annually

US ENG CONTROLS: Engineering Controls Sites List
A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 08/02/2005
Date Data Arrived at EDR: 08/12/2005
Date Made Active in Reports: 10/06/2005
Number of Days to Update: 55

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 03/03/2006
Next Scheduled EDR Contact: 07/03/2006
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls
A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 01/10/2005
Date Data Arrived at EDR: 02/11/2005
Date Made Active in Reports: 04/06/2005
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 03/03/2006
Next Scheduled EDR Contact: 07/03/2006
Data Release Frequency: Varies

DOD: Department of Defense Sites
This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 02/08/2005
Date Made Active in Reports: 08/04/2005
Number of Days to Update: 177

Source: USGS
Telephone: 703-692-8801
Last EDR Contact: 02/06/2006
Next Scheduled EDR Contact: 05/08/2006
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites
The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 01/19/2006
Date Made Active in Reports: 02/21/2006
Number of Days to Update: 33

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 04/03/2006
Next Scheduled EDR Contact: 07/03/2006
Data Release Frequency: Varies

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 11/29/2005
Date Data Arrived at EDR: 12/05/2005
Date Made Active in Reports: 01/30/2006
Number of Days to Update: 56

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/13/2006
Next Scheduled EDR Contact: 06/12/2006
Data Release Frequency: Semi-Annually

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/14/2004
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 04/25/2005
Number of Days to Update: 69

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 03/13/2006
Next Scheduled EDR Contact: 07/24/2006
Data Release Frequency: Varies

ROD: Records Of Decision
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 12/07/2005
Date Data Arrived at EDR: 01/06/2006
Date Made Active in Reports: 02/21/2006
Number of Days to Update: 46

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 04/05/2006
Next Scheduled EDR Contact: 07/03/2006
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites
Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 11/04/2005
Date Data Arrived at EDR: 11/28/2005
Date Made Active in Reports: 01/30/2006
Number of Days to Update: 63

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 03/20/2006
Next Scheduled EDR Contact: 06/19/2006
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

TRIS: Toxic Chemical Release Inventory System
Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2003
Date Data Arrived at EDR: 07/13/2005
Date Made Active in Reports: 08/17/2005
Number of Days to Update: 35

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 03/21/2006
Next Scheduled EDR Contact: 06/19/2006
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act
Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002
Date Data Arrived at EDR: 04/27/2004
Date Made Active in Reports: 05/21/2004
Number of Days to Update: 24

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 04/12/2006
Next Scheduled EDR Contact: 07/17/2006
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 01/17/2006
Date Data Arrived at EDR: 01/24/2006
Date Made Active in Reports: 02/27/2006
Number of Days to Update: 34

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 03/20/2006
Next Scheduled EDR Contact: 06/19/2006
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Date of Government Version: 01/17/2006
Date Data Arrived at EDR: 01/24/2006
Date Made Active in Reports: 02/27/2006
Number of Days to Update: 34

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 03/20/2006
Next Scheduled EDR Contact: 06/19/2006
Data Release Frequency: Quarterly

SSTS: Section 7 Tracking Systems
Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2003
Date Data Arrived at EDR: 01/03/2005
Date Made Active in Reports: 01/25/2005
Number of Days to Update: 22

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 03/06/2006
Next Scheduled EDR Contact: 07/17/2006
Data Release Frequency: Annually

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 12/27/2005
Date Data Arrived at EDR: 02/08/2006
Date Made Active in Reports: 02/27/2006
Number of Days to Update: 19

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 02/08/2006
Next Scheduled EDR Contact: 05/08/2006
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 02/10/2006
Date Data Arrived at EDR: 02/16/2006
Date Made Active in Reports: 03/31/2006
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 04/03/2006
Next Scheduled EDR Contact: 07/03/2006
Data Release Frequency: Quarterly

MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 11/08/2005
Date Data Arrived at EDR: 12/27/2005
Date Made Active in Reports: 01/30/2006
Number of Days to Update: 34

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 03/29/2006
Next Scheduled EDR Contact: 06/26/2006
Data Release Frequency: Semi-Annually

FINDS: Facility Index System/Facility Registry System
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 01/09/2006
Date Data Arrived at EDR: 01/16/2006
Date Made Active in Reports: 02/21/2006
Number of Days to Update: 36

Source: EPA
Telephone: N/A
Last EDR Contact: 04/03/2006
Next Scheduled EDR Contact: 07/03/2006
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System
RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 03/06/2006
Next Scheduled EDR Contact: 06/05/2006
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2003
Date Data Arrived at EDR: 06/17/2005
Date Made Active in Reports: 08/04/2005
Number of Days to Update: 48

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 03/17/2006
Next Scheduled EDR Contact: 06/12/2006
Data Release Frequency: Biennially

STATE AND LOCAL RECORDS

SHWS: Sites List
Facilities, sites or areas in which the Office of Hazard Evaluation and Emergency Response has an interest, has investigated or may investigate under HRS 128D (includes CERCLIS sites).

Date of Government Version: 08/24/2005
Date Data Arrived at EDR: 08/29/2005
Date Made Active in Reports: 09/28/2005
Number of Days to Update: 30

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 03/24/2006
Next Scheduled EDR Contact: 06/19/2006
Data Release Frequency: Semi-Annually

SWF/LF: Permitted Landfills in the State of Hawaii
Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/19/2004
Date Data Arrived at EDR: 05/20/2004
Date Made Active in Reports: 06/22/2004
Number of Days to Update: 33

Source: Department of Health
Telephone: 808-586-4245
Last EDR Contact: 01/26/2006
Next Scheduled EDR Contact: 04/24/2006
Data Release Frequency: Varies

LUST: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 02/01/2006
Date Data Arrived at EDR: 02/20/2006
Date Made Active in Reports: 03/20/2006
Number of Days to Update: 28

Source: Department of Health
Telephone: 808-586-4228
Last EDR Contact: 03/30/2006
Next Scheduled EDR Contact: 06/26/2006
Data Release Frequency: Semi-Annually

UST: Underground Storage Tank Database
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 02/01/2006
Date Data Arrived at EDR: 02/20/2006
Date Made Active in Reports: 03/24/2006
Number of Days to Update: 32

Source: Department of Health
Telephone: 808-586-4228
Last EDR Contact: 03/20/2006
Next Scheduled EDR Contact: 06/26/2006
Data Release Frequency: Semi-Annually

SPILLS: Release Notifications
Releases of hazardous substances to the environment reported to the Office of Hazard Evaluation and Emergency Response since 1988.

Date of Government Version: 08/24/2005
Date Data Arrived at EDR: 08/29/2005
Date Made Active in Reports: 09/28/2005
Number of Days to Update: 30

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 03/24/2006
Next Scheduled EDR Contact: 06/19/2006
Data Release Frequency: Varies

INST CONTROL: Sites with Institutional Controls
Voluntary Remediation Program and Brownfields sites with institutional controls in place.

Date of Government Version: 08/24/2005
Date Data Arrived at EDR: 10/12/2005
Date Made Active in Reports: 10/26/2005
Number of Days to Update: 14

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 03/24/2006
Next Scheduled EDR Contact: 06/19/2006
Data Release Frequency: Varies

VCP: Voluntary Response Program Sites

Date of Government Version: 08/24/2005
Date Data Arrived at EDR: 10/31/2005
Date Made Active in Reports: 12/14/2005
Number of Days to Update: 44

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 03/24/2006
Next Scheduled EDR Contact: 06/19/2006
Data Release Frequency: Varies

BROWNFIELDS: Brownfields Sites

Date of Government Version: 08/24/2005
Date Data Arrived at EDR: 10/12/2005
Date Made Active in Reports: 10/26/2005
Number of Days to Update: 14

Source: Department of Health
Telephone: 808-586-4249
Last EDR Contact: 03/24/2006
Next Scheduled EDR Contact: 06/19/2006
Data Release Frequency: Varies

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 02/08/2005
Date Made Active in Reports: 08/04/2005
Number of Days to Update: 177

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 02/06/2006
Next Scheduled EDR Contact: 05/08/2006
Data Release Frequency: Semi-Annually

EDR PROPRIETARY RECORDS

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Historical Auto Stations: EDR Proprietary Historic Gas Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Historical Cleaners: EDR Proprietary Historic Dry Cleaners
EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

ALAPAI TRANSIT CENTER
710 S. KING STREET
HONOLULU, HI 96813

TARGET PROPERTY COORDINATES

Latitude (North):	21.30360 - 21˚ 18' 13.0''
Longitude (West):	157.8533 - 157˚ 51' 11.9''
Universal Tranverse Mercator:	Zone 4
UTM X (Meters):	618940.2
UTM Y (Meters):	2356042.2
Elevation:	10 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	21157-C7 HONOLULU, HI
Most Recent Revision:	Not reported

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

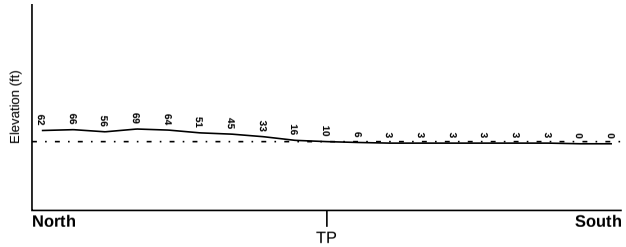
TOPOGRAPHIC INFORMATION

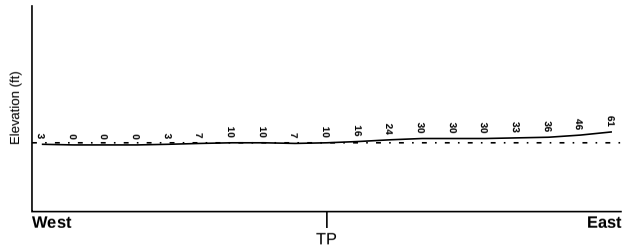
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SSW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 10 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
HONOLULU, HI	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 1500010120C

Additional Panels in search area: 1500010115C
1500010112C

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
HONOLULU	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

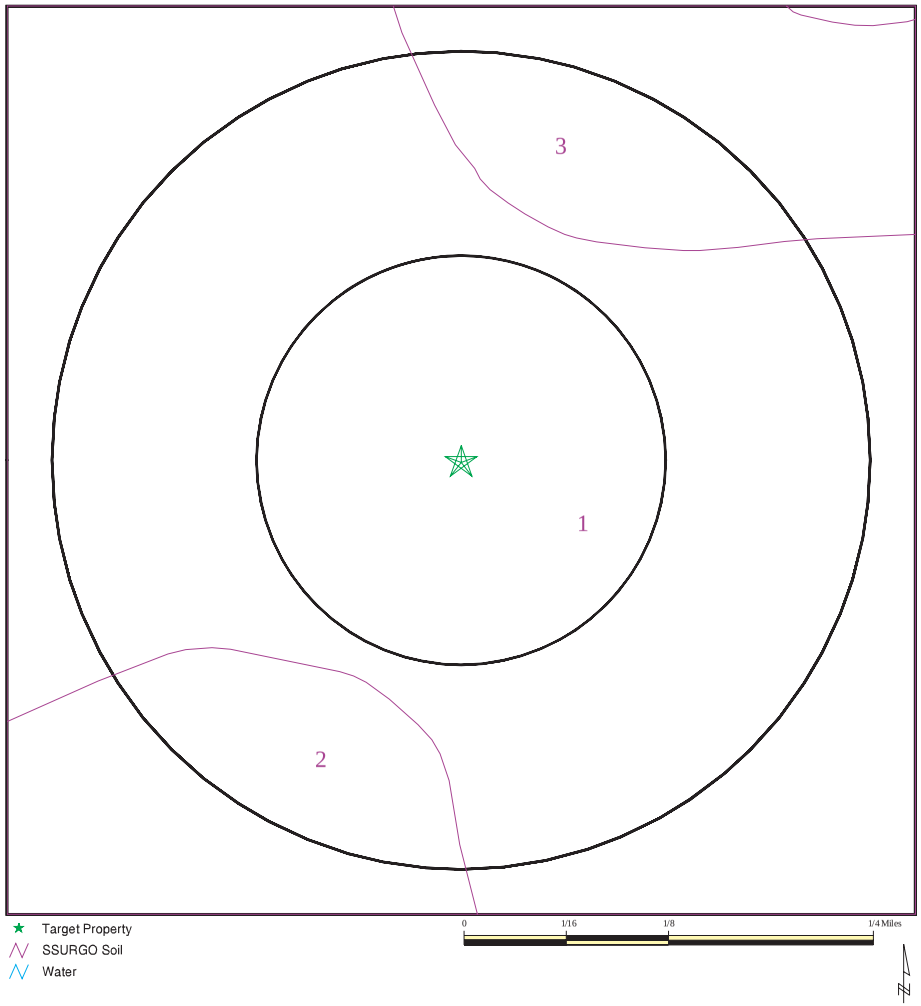
Era: -
System: -
Series: -
Code: N/A *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: -

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 1662115.2s



SITE NAME: Alapai Transit Center ADDRESS: 710 S. King Street Honolulu HI 96813 LAT/LONG: 21.3036 / 157.8533	CLIENT: Enviro Srvcs. and Trng. Center CONTACT: Sharla Horiuchi INQUIRY #: 1662115.2s DATE: April 25, 2006

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: MAKIKI

Soil Surface Texture: clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: MODERATE

Depth to Bedrock Min: > 0 inches

Depth to Bedrock Max: > 0 inches

Soil Layer Information

	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	20 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Andic suffix for MH	Max: 6.00 Min: 2.00	Max: 5.50 Min: 5.10
2	20 inches	30 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Andic suffix for MH	Max: 6.00 Min: 2.00	Max: 6.00 Min: 5.60
3	30 inches	60 inches	stratified	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 6.00 Min: 2.00	Max: 6.00 Min: 5.60

Soil Map ID: 2

Soil Component Name: FILL LAND, MIXED

Soil Surface Texture: variable

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 40 inches

Depth to Bedrock Max: > 60 inches

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	6 inches	variable	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 2.00 Min: 0.10	Max: 7.30 Min: 6.10
2	6 inches	60 inches	stratified	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 2.00 Min: 0.10	Max: 7.30 Min: 6.10
3	60 inches	70 inches	unweathered bedrock	Not reported	Not reported	Max: 2.00 Min: 0.00	Max: 0.00 Min: 0.00

Soil Map ID: 3

Soil Component Name: TANTALUS

Soil Surface Texture: silty clay loam

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: MODERATE

Depth to Bedrock Min: > 0 inches

Depth to Bedrock Max: > 0 inches

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	18 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Andic suffix for MH	Max: 6.00 Min: 2.00	Max: 7.30 Min: 6.10
2	18 inches	29 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Andic suffix for MH	Max: 6.00 Min: 2.00	Max: 7.30 Min: 6.10
3	29 inches	60 inches	cinders	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand.	Max: 20.00 Min: 6.00	Max: 7.30 Min: 6.10

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	HI0000308	0 - 1/8 Mile ENE

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A2	3-1851-008	0 - 1/8 Mile ENE
A3	3-1851-064	0 - 1/8 Mile South
A4	3-1851-020	0 - 1/8 Mile NNE
A5	3-1851-036	0 - 1/8 Mile East
B6	3-1851-059	0 - 1/8 Mile South
C7	3-1851-075	1/8 - 1/4 Mile North
C8	3-1851-033	1/8 - 1/4 Mile NNE
C9	3-1851-034	1/8 - 1/4 Mile NNE
C10	3-1851-067	1/8 - 1/4 Mile NNE
C11	3-1851-035	1/8 - 1/4 Mile NNE
C12	3-1851-032	1/8 - 1/4 Mile NNE
C13	3-1851-013	1/8 - 1/4 Mile NNE
C14	3-1851-025	1/8 - 1/4 Mile NNE
C15	3-1851-024	1/8 - 1/4 Mile NNE
C16	3-1851-031	1/8 - 1/4 Mile NNE
C17	3-1851-012	1/8 - 1/4 Mile NNE
18	3-1851-014	1/8 - 1/4 Mile SW
C19	3-1851-057	1/8 - 1/4 Mile North
C20	3-1851-074	1/8 - 1/4 Mile North
B21	3-1851-015	1/8 - 1/4 Mile South
D22	3-1851-060	1/8 - 1/4 Mile ESE
23	3-1851-026	1/8 - 1/4 Mile SSW
E24	3-1851-058	1/8 - 1/4 Mile South
E25	3-1851-063	1/4 - 1/2 Mile SSE
26	3-1851-044	1/4 - 1/2 Mile NW
F27	3-1851-002	1/4 - 1/2 Mile East
G28	3-1851-011	1/4 - 1/2 Mile North
29	3-1851-021	1/4 - 1/2 Mile WSW
D30	3-1851-001	1/4 - 1/2 Mile ESE
31	3-1851-062	1/4 - 1/2 Mile SE
H32	3-1851-073	1/4 - 1/2 Mile WNW
H33	3-1851-009	1/4 - 1/2 Mile WNW
F34	3-1851-010	1/4 - 1/2 Mile East
G35	3-1851-054	1/4 - 1/2 Mile North
I36	3-1851-065	1/4 - 1/2 Mile West
J37	3-1851-051	1/4 - 1/2 Mile NW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

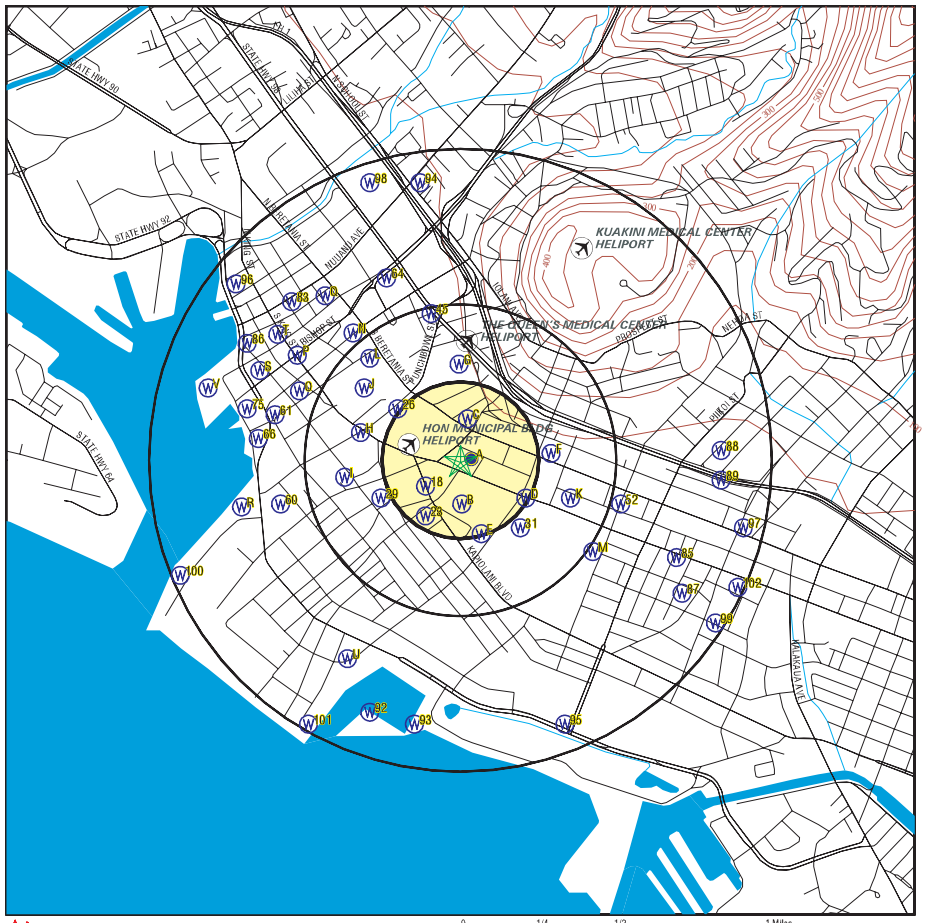
MAP ID	WELL ID	LOCATION FROM TP
K38	3-1851-028	1/4 - 1/2 Mile ESE
H39	3-1851-003	1/4 - 1/2 Mile WNW
K40	3-1851-006	1/4 - 1/2 Mile ESE
I41	3-1851-018	1/4 - 1/2 Mile West
J42	3-1851-004	1/4 - 1/2 Mile NW
L43	3-1851-066	1/4 - 1/2 Mile NW
L44	3-1851-061	1/4 - 1/2 Mile NW
45	3-1851-007	1/4 - 1/2 Mile North
M46	3-1850-028	1/4 - 1/2 Mile SE
N47	3-1851-005	1/2 - 1 Mile NW
N48	3-1851-056	1/2 - 1 Mile NW
N49	3-1851-055	1/2 - 1 Mile NW
M50	3-1850-009	1/2 - 1 Mile SE
M51	3-1850-029	1/2 - 1 Mile ESE
52	3-1850-017	1/2 - 1 Mile ESE
O53	3-1851-046	1/2 - 1 Mile WNW
O54	3-1851-045	1/2 - 1 Mile WNW
O55	3-1851-042	1/2 - 1 Mile WNW
O56	3-1851-043	1/2 - 1 Mile WNW
N57	3-1851-030	1/2 - 1 Mile NW
O58	3-1851-027	1/2 - 1 Mile WNW
P59	3-1851-023	1/2 - 1 Mile NW
60	3-1851-017	1/2 - 1 Mile WSW
61	3-1851-019	1/2 - 1 Mile WNW
P62	3-1851-048	1/2 - 1 Mile WNW
P63	3-1851-047	1/2 - 1 Mile WNW
64	3-1851-016	1/2 - 1 Mile NNW
P65	3-1851-052	1/2 - 1 Mile WNW
66	3-1851-022	1/2 - 1 Mile West
Q67	3-1851-041	1/2 - 1 Mile NW
Q68	3-1851-050	1/2 - 1 Mile NW
R69	3-1851-029	1/2 - 1 Mile WSW
S70	3-1851-053	1/2 - 1 Mile WNW
S71	3-1851-068	1/2 - 1 Mile WNW
S72	3-1851-069	1/2 - 1 Mile WNW
S73	3-1851-070	1/2 - 1 Mile WNW
T74	3-1851-040	1/2 - 1 Mile NW
75	3-1852-006	1/2 - 1 Mile WNW
S76	3-1851-038	1/2 - 1 Mile WNW
Q77	3-1851-037	1/2 - 1 Mile NW
T78	3-1851-049	1/2 - 1 Mile NW
U79	3-1751-002	1/2 - 1 Mile SSW
U80	3-1751-001	1/2 - 1 Mile SSW
S81	3-1851-072	1/2 - 1 Mile WNW
S82	3-1851-071	1/2 - 1 Mile WNW
83	3-1851-039	1/2 - 1 Mile NW
R84	3-1852-007	1/2 - 1 Mile WSW
85	3-1850-015	1/2 - 1 Mile ESE
86	3-1852-003	1/2 - 1 Mile WNW
87	3-1850-027	1/2 - 1 Mile ESE
88	3-1850-007	1/2 - 1 Mile East
89	3-1850-008	1/2 - 1 Mile East

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
V90	3-1852-005	1/2 - 1 Mile WNW
V91	3-1852-004	1/2 - 1 Mile WNW
92	3-1751-003	1/2 - 1 Mile SSW
93	3-1751-005	1/2 - 1 Mile South
94	3-1951-004	1/2 - 1 Mile North
95	3-1751-004	1/2 - 1 Mile SSE
96	3-1852-001	1/2 - 1 Mile NW
97	3-1850-016	1/2 - 1 Mile ESE
98	3-1951-001	1/2 - 1 Mile NNW
99	3-1750-009	1/2 - 1 Mile ESE
100	3-1852-002	1/2 - 1 Mile WSW
101	3-1751-006	1/2 - 1 Mile SSW
102	3-1850-020	1/2 - 1 Mile ESE

PHYSICAL SETTING SOURCE MAP - 1662115.2s



- County Boundary
- Major Roads
- Contour Lines
- Airports
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location

SITE NAME: Alapai Transit Center ADDRESS: 710 S. King Street Honolulu HI 96813 LAT/LONG: 21.3036 / 157.8533	CLIENT: Enviro Srvcs. and Trng. Center CONTACT: Sharla Horiuchi INQUIRY #: 1662115.2s DATE: April 25, 2006

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Map ID Direction Distance Elevation	Database	EDR ID Number
A1 **ENE** **0 - 1/8 Mile** **Higher**	**FRDS PWS**	**HI0000308**

PWS ID:	HI0000308	PWS Status:	Active
Date Initiated:	7706	Date Deactivated:	Not Reported
PWS Name:	MASS TRANSIT LINES 1140 ALAPAI HONOLULU, HI 96813		
Addressee / Facility:	Not Reported		
Facility Latitude:	21 18 25	Facility Longitude:	157 51 20
City Served:	Not Reported		
Treatment Class:	Untreated	Population:	00000400
PWS currently has or had major violation(s) or enforcement:		No	

	Database	EDR ID Number
A2 **ENE** **0 - 1/8 Mile** **Higher**	**HI WELLS**	**3-1851-008**

Wid:	3-1851-008	Island Code:	3
Island Name:	Oahu	Well no:	1851-08
Well name:	Hotel St	Old name:	Not Reported
Yr drilled:	1889	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211825
Longitude:	1575120	UTM:	Y
Gps:	N	Owner/user:	H R T
Old number:	86-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	19	Well depth:	648
Solid casing Depth:	584	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	50	Water Top Elev:	27.2
Chloride value:	56	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	28.2
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-629	bot_solid depth:	-565
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	28.2	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1889 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID Direction Distance Elevation	Database	EDR ID Number
A3 **South** **0 - 1/8 Mile** **Lower**	**HI WELLS**	**3-1851-064**

Wid:	3-1851-064	Island Code:	3
Island Name:	Oahu	Well no:	1851-64
Well name:	King St	Old name:	Not Reported
Yr drilled:	1967	Driller:	ROSCOE MOSS
Quad_map:	13	Latitude:	211821
Longitude:	1575122	UTM:	Y
Gps:	N	Owner/user:	Berts Service
Old number:	85-2	Well_type:	PER
Type:	Percussion Drill	Casing dia:	8
Ground Elev:	7	Well depth:	91
Solid casing Depth:	27	Perf casing Depth:	35
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	200	Drop in water Lvl:	0.3
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RTSP	Geology desc:	Round Top cinder (?) (QTF)
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-84	bot_solid depth:	-20
Bot_perf depth:	-28	Well Capacity:	667
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1967 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

	Database	EDR ID Number
A4 **NNE** **0 - 1/8 Mile** **Higher**	**HI WELLS**	**3-1851-020**

Wid:	3-1851-020	Island Code:	3
Island Name:	Oahu	Well no:	1851-20
Well name:	Beretania St.	Old name:	Not Reported
Yr drilled:	1901	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211828
Longitude:	1575120	UTM:	Y
Gps:	N	Owner/user:	Mtl Inc
Old number:	87-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	19	Well depth:	576

Solid casing Depth:	532	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	91	Water Top Elev:	31.2
Chloride value:	75	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	36	Static Water Lvl:	26.9
Geology:	RTSP	Geology desc:	Round Top cinder (?) (QTF)
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-557	bot_solid depth:	-513
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	0.1
Tax map key:	2-1-042:011	Aquifer code:	30102
Latest head mmt:	26.9	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1901 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

A5
East
0 - 1/8 Mile
Higher

HI WELLS **3-1851-036**

Wid:	3-1851-036	Island Code:	3
Island Name:	Oahu	Well no:	1851-36
Well name:	Hotel St	Old name:	Not Reported
Yr drilled:	1936	Driller:	MULLIN
Quad_map:	13	Latitude:	211824
Longitude:	1575117	UTM:	Y
Gps:	N	Owner/user:	Haw Juice Ind
Old number:	80-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	15	Well depth:	700
Solid casing Depth:	603	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	69	Water Top Elev:	29
Chloride value:	38	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	26.8
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-685	bot_solid depth:	-588
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	26.8	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1936 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

B6
South
0 - 1/8 Mile
Lower

HI WELLS **3-1851-059**

Wid:	3-1851-059	Island Code:	3
Island Name:	Oahu	Well no:	1851-59
Well name:	King St	Old name:	Not Reported
Yr drilled:	1960	Driller:	PACIFIC DRLG
Quad_map:	13	Latitude:	211819
Longitude:	1575121	UTM:	Y
Gps:	N	Owner/user:	Spuds Ldry
Old number:	85-1	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	4
Ground Elev:	8	Well depth:	678
Solid casing Depth:	607	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	76	Water Top Elev:	25.9
Chloride value:	48	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	36	Static Water Lvl:	9.5
Geology:	RTSP	Geology desc:	Round Top cinder (?) (QTF)
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-670	bot_solid depth:	-599
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	0.1
Tax map key:	2-1-045:017	Aquifer code:	30102
Latest head mmt:	9.5	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1960 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

C7
North
1/8 - 1/4 Mile
Higher

HI WELLS **3-1851-075**

Wid:	3-1851-075	Island Code:	3
Island Name:	Oahu	Well no:	1851-75
Well name:	Beretania Sta 2	Old name:	Not Reported
Yr drilled:	1989	Driller:	WAT RES INTL
Quad_map:	13	Latitude:	211831
Longitude:	1575121	UTM:	Y
Gps:	N	Owner/user:	Honolulu Bws
Old number:	Not Reported	Well_type:	ROT
Type:	Rotary Drill	Casing dia:	14
Ground Elev:	18	Well depth:	625

Solid casing Depth:	523	Perf casing Depth:	Not Reported
Use:	UNU	Use Desc:	Unused
Use year:	89	Water Top Elev:	22.9
Chloride value:	0	Test date:	05/12/1989 00:00:00
Pumping Test rate:	1400	Drop in water Lvl:	2.2
Chloride Test:	102	Temperature:	20.4
Units:	C	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-607	bot_solid depth:	-505
Bot_perf depth:	Not Reported	Well Capacity:	636
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-036:004	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	05/14/1989 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

C8
NNE
1/8 - 1/4 Mile
Higher

HI WELLS **3-1851-033**

Wid:	3-1851-033	Island Code:	3
Island Name:	Oahu	Well no:	1851-33
Well name:	Beretania P Sta	Old name:	Not Reported
Yr drilled:	1926	Driller:	PRIMMER
Quad_map:	13	Latitude:	211831
Longitude:	1575120	UTM:	Y
Gps:	N	Owner/user:	Honolulu Bws
Old number:	88-E	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	12
Ground Elev:	14	Well depth:	533
Solid casing Depth:	479	Perf casing Depth:	Not Reported
Use:	MUN	Use Desc:	Municipal
Use year:	74	Water Top Elev:	23.6
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	27.0
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-519	bot_solid depth:	-465
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-036:004	Aquifer code:	30102
Latest head mmt:	27	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1926 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

C9
NNE
1/8 - 1/4 Mile
Higher

HI WELLS **3-1851-034**

Wid:	3-1851-034	Island Code:	3
Island Name:	Oahu	Well no:	1851-34
Well name:	Beretania P Sta	Old name:	Not Reported
Yr drilled:	1926	Driller:	PRIMMER
Quad_map:	13	Latitude:	211831
Longitude:	1575120	UTM:	Y
Gps:	N	Owner/user:	Honolulu Bws
Old number:	88-F	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	12
Ground Elev:	14	Well depth:	636
Solid casing Depth:	484	Perf casing Depth:	Not Reported
Use:	MUN	Use Desc:	Municipal
Use year:	74	Water Top Elev:	23.6
Chloride value:	55	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	27.0
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-622	bot_solid depth:	-470
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-036:004	Aquifer code:	30102
Latest head mmt:	27	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1926 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

C10
NNE
1/8 - 1/4 Mile
Higher

HI WELLS **3-1851-067**

Wid:	3-1851-067	Island Code:	3
Island Name:	Oahu	Well no:	1851-67
Well name:	Beretania Obs	Old name:	Not Reported
Yr drilled:	1968	Driller:	LAYNE INT
Quad_map:	13	Latitude:	211831
Longitude:	1575120	UTM:	Y
Gps:	N	Owner/user:	Honolulu Bws
Old number:	88-J	Well_type:	ROT
Type:	Rotary Drill	Casing dia:	20
Ground Elev:	18	Well depth:	619

Solid casing Depth:	484	Perf casing Depth:	Not Reported
Use:	OBS	Use Desc:	Observation
Use year:	68	Water Top Elev:	3
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-601	bot_solid depth:	-466
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-036:004	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1968 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

C11
NNE
1/8 - 1/4 Mile
Higher

HI WELLS **3-1851-035**

Wid:	3-1851-035	Island Code:	3
Island Name:	Oahu	Well no:	1851-35
Well name:	Beretania P Sta	Old name:	Not Reported
Yr drilled:	1926	Driller:	PRIMMER
Quad_map:	13	Latitude:	211831
Longitude:	1575120	UTM:	Y
Gps:	N	Owner/user:	Honolulu Bws
Old number:	88-G	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	12
Ground Elev:	15	Well depth:	566
Solid casing Depth:	488	Perf casing Depth:	Not Reported
Use:	MUN	Use Desc:	Municipal
Use year:	74	Water Top Elev:	23.3
Chloride value:	47	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	26.9
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-551	bot_solid depth:	-473
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-036:004	Aquifer code:	30102
Latest head mmt:	26.9	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1926 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

C12
NNE
1/8 - 1/4 Mile
Higher

HI WELLS **3-1851-032**

Wid:	3-1851-032	Island Code:	3
Island Name:	Oahu	Well no:	1851-32
Well name:	Beretania P Sta	Old name:	Not Reported
Yr drilled:	1924	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211831
Longitude:	1575120	UTM:	Y
Gps:	N	Owner/user:	Honolulu Bws
Old number:	88-D	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	12
Ground Elev:	20	Well depth:	600
Solid casing Depth:	489	Perf casing Depth:	Not Reported
Use:	MUN	Use Desc:	Municipal
Use year:	74	Water Top Elev:	27.8
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	26.9
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-580	bot_solid depth:	-469
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-036:004	Aquifer code:	30102
Latest head mmt:	26.9	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1924 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

C13
NNE
1/8 - 1/4 Mile
Higher

HI WELLS **3-1851-013**

Wid:	3-1851-013	Island Code:	3
Island Name:	Oahu	Well no:	1851-13
Well name:	Beretania P Sta	Old name:	Not Reported
Yr drilled:	1895	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211831
Longitude:	1575120	UTM:	Y
Gps:	N	Owner/user:	Honolulu Bws
Old number:	88-I	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	10
Ground Elev:	22	Well depth:	616

Solid casing Depth:	499	Perf casing Depth:	Not Reported
Use:	MUN	Use Desc:	Municipal
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	87
Min chlorides:	01/01/1987 00:00:00	Min Cl year:	87
Bot_hole depth:	-594	bot_solid depth:	-477
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-036:004	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1895 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

C14
NNE
1/8 - 1/4 Mile
Higher

HI WELLS **3-1851-025**

Wid:	3-1851-025	Island Code:	3
Island Name:	Oahu	Well no:	1851-25
Well name:	Beretania P Sta	Old name:	Not Reported
Yr drilled:	1910	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211831
Longitude:	1575120	UTM:	Y
Gps:	N	Owner/user:	Honolulu Bws
Old number:	88-B	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	12
Ground Elev:	17	Well depth:	617
Solid casing Depth:	495	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	63	Water Top Elev:	27.7
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	21.2
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-600	bot_solid depth:	-478
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	21.2	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1910 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

C15
NNE
1/8 - 1/4 Mile
Higher

HI WELLS **3-1851-024**

Wid:	3-1851-024	Island Code:	3
Island Name:	Oahu	Well no:	1851-24
Well name:	Beretania P Sta	Old name:	Not Reported
Yr drilled:	1910	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211831
Longitude:	1575120	UTM:	Y
Gps:	N	Owner/user:	Honolulu Bws
Old number:	88-A	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	12
Ground Elev:	20	Well depth:	616
Solid casing Depth:	487	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	95	Water Top Elev:	26.9
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	30.9
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-596	bot_solid depth:	-467
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-036:004	Aquifer code:	30102
Latest head mmt:	30.9	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1910 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

C16
NNE
1/8 - 1/4 Mile
Higher

HI WELLS **3-1851-031**

Wid:	3-1851-031	Island Code:	3
Island Name:	Oahu	Well no:	1851-31
Well name:	Beretania P Sta	Old name:	Not Reported
Yr drilled:	1924	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211831
Longitude:	1575120	UTM:	Y
Gps:	N	Owner/user:	Honolulu Bws
Old number:	88-C	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	12
Ground Elev:	20	Well depth:	600

Solid casing Depth:	489	Perf casing Depth:	Not Reported
Use:	MUN	Use Desc:	Municipal
Use year:	74	Water Top Elev:	28
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	26.9
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-580	bot_solid depth:	-469
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-036:004	Aquifer code:	30102
Latest head mmt:	26.9	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1924 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

C17
NNE
1/8 - 1/4 Mile
Higher

HI WELLS **3-1851-012**

Wid:	3-1851-012	Island Code:	3
Island Name:	Oahu	Well no:	1851-12
Well name:	Beretania P Sta	Old name:	Not Reported
Yr drilled:	1895	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211831
Longitude:	1575120	UTM:	Y
Gps:	N	Owner/user:	Honolulu Bws
Old number:	88-H	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	10
Ground Elev:	21	Well depth:	580
Solid casing Depth:	499	Perf casing Depth:	Not Reported
Use:	MUN	Use Desc:	Municipal
Use year:	74	Water Top Elev:	32
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	2770	Static Water Lvl:	27.0
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	87
Min chlorides:	01/01/1987 00:00:00	Min Cl year:	87
Bot_hole depth:	-559	bot_solid depth:	-478
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	7.6
Tax map key:	2-1-036:004	Aquifer code:	30102
Latest head mmt:	27	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1895 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

18
SW
1/8 - 1/4 Mile
Lower

HI WELLS **3-1851-014**

Wid:	3-1851-014	Island Code:	3
Island Name:	Oahu	Well no:	1851-14
Well name:	Kapiolani Blvd	Old name:	Not Reported
Yr drilled:	1897	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211820
Longitude:	1575128	UTM:	Y
Gps:	N	Owner/user:	C&C Honolulu
Old number:	91-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	9	Well depth:	691
Solid casing Depth:	650	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	40	Water Top Elev:	24.9
Chloride value:	80	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	29.5
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-682	bot_solid depth:	-641
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	29.5	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1897 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

C19
North
1/8 - 1/4 Mile
Higher

HI WELLS **3-1851-057**

Wid:	3-1851-057	Island Code:	3
Island Name:	Oahu	Well no:	1851-57
Well name:	Bws Monitor	Old name:	Not Reported
Yr drilled:	1960	Driller:	PACIFIC DRLG
Quad_map:	13	Latitude:	211833
Longitude:	1575122	UTM:	Y
Gps:	N	Owner/user:	Honolulu Bws
Old number:	T85-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	23	Well depth:	1509

Solid casing Depth:	450	Perf casing Depth:	Not Reported
Use:	OBS	Use Desc:	Observation
Use year:	74	Water Top Elev:	26.9
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RTSP	Geology desc:	Round Top cinder (?) (QTF)
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-1486	bot_solid depth:	-427
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-036:005	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1960 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

C20
North
1/8 - 1/4 Mile
Higher

HI WELLS **3-1851-074**

Wid:	3-1851-074	Island Code:	3
Island Name:	Oahu	Well no:	1851-74
Well name:	Beretania Sta 1	Old name:	Not Reported
Yr drilled:	1988	Driller:	WAT RES INTL
Quad_map:	13	Latitude:	211833
Longitude:	1575123	UTM:	Y
Gps:	N	Owner/user:	Honolulu Bws
Old number:	Not Reported	Well_type:	ROT
Type:	Rotary Drill	Casing dia:	14
Ground Elev:	19	Well depth:	598
Solid casing Depth:	498	Perf casing Depth:	Not Reported
Use:	UNU	Use Desc:	Unused
Use year:	88	Water Top Elev:	21
Chloride value:	0	Test date:	09/26/1988 00:00:00
Pumping Test rate:	1400	Drop in water Lvl:	1.9
Chloride Test:	66	Temperature:	21.5
Units:	C	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-579	bot_solid depth:	-479
Bot_perf depth:	Not Reported	Well Capacity:	737
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-036:006	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	09/09/1988 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

B21
South
1/8 - 1/4 Mile
Lower

HI WELLS **3-1851-015**

Wid:	3-1851-015	Island Code:	3
Island Name:	Oahu	Well no:	1851-15
Well name:	Ward Ave	Old name:	Not Reported
Yr drilled:	1898	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211815
Longitude:	1575122	UTM:	Y
Gps:	N	Owner/user:	Heco
Old number:	85-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	5	Well depth:	734
Solid casing Depth:	602	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	88	Water Top Elev:	28.3
Chloride value:	70	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	26.9
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-729	bot_solid depth:	-597
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-044:039	Aquifer code:	30102
Latest head mmt:	26.9	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1898 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

D22
ESE
1/8 - 1/4 Mile
Higher

HI WELLS **3-1851-060**

Wid:	3-1851-060	Island Code:	3
Island Name:	Oahu	Well no:	1851-60
Well name:	Ward Ave	Old name:	Not Reported
Yr drilled:	1962	Driller:	SAMSON-ZERBE
Quad_map:	13	Latitude:	211819
Longitude:	1575112	UTM:	Y
Gps:	N	Owner/user:	Straub Clinic
Old number:	82-1	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	16	Well depth:	180

Solid casing Depth:	160	Perf casing Depth:	180
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	6
Chloride value:	470	Test date:	Not Reported
Pumping Test rate:	115	Drop in water Lvl:	4.0
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RTSP	Geology desc:	Round Top cinder (?) (QTF)
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-164	bot_solid depth:	-144
Bot_perf depth:	-164	Well Capacity:	29
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-043:011	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1962 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

23
SSW
1/8 - 1/4 Mile
Lower

HI WELLS **3-1851-026**

Wid:	3-1851-026	Island Code:	3
Island Name:	Oahu	Well no:	1851-26
Well name:	Kapiolani Blvd	Old name:	Not Reported
Yr drilled:	1910	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211815
Longitude:	1575128	UTM:	Y
Gps:	N	Owner/user:	Bus Invest Ltd
Old number:	89-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	6	Well depth:	725
Solid casing Depth:	659	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	90	Water Top Elev:	27.8
Chloride value:	95	Test date:	Not Reported
Pumping Test rate:	800	Drop in water Lvl:	6.0
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	36	Static Water Lvl:	28.3
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-719	bot_solid depth:	-653
Bot_perf depth:	Not Reported	Well Capacity:	133
Pump Capacity:	Not Reported	Draft (mgd):	0.1
Tax map key:	2-1-049:053	Aquifer code:	30102
Latest head mmt:	28.3	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1910 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

E24
South
1/8 - 1/4 Mile
Lower

HI WELLS **3-1851-058**

Wid:	3-1851-058	Island Code:	3
Island Name:	Oahu	Well no:	1851-58
Well name:	Kapiolani Myers	Old name:	Not Reported
Yr drilled:	1960	Driller:	PACIFIC DRLG
Quad_map:	13	Latitude:	211812
Longitude:	1575120	UTM:	Y
Gps:	N	Owner/user:	Meyers/Daiichi
Old number:	86-1	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	6	Well depth:	710
Solid casing Depth:	640	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	92	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	25.0
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-704	bot_solid depth:	-634
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-044:008	Aquifer code:	30102
Latest head mmt:	25	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1960 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

E25
SSE
1/4 - 1/2 Mile
Lower

HI WELLS **3-1851-063**

Wid:	3-1851-063	Island Code:	3
Island Name:	Oahu	Well no:	1851-63
Well name:	Nbc	Old name:	Not Reported
Yr drilled:	1967	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211812
Longitude:	1575116	UTM:	Y
Gps:	N	Owner/user:	C&C Pks&Rec
Old number:	Not Reported	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	16
Ground Elev:	Not Reported	Well depth:	80

Solid casing Depth:	28	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	700
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	1.008	Draft (mgd):	Not Reported
Tax map key:	2-3-008:001	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1967 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

26
NW
1/4 - 1/2 Mile
Higher

HI WELLS **3-1851-044**

Wid:	3-1851-044	Island Code:	3
Island Name:	Oahu	Well no:	1851-44
Well name:	Punchbowl St	Old name:	Not Reported
Yr drilled:	1939	Driller:	MULLIN
Quad_map:	13	Latitude:	211833
Longitude:	1575133	UTM:	Y
Gps:	N	Owner/user:	Medical Group
Old number:	97-1	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	Not Reported	Well depth:	62
Solid casing Depth:	40	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	57	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RTSP	Geology desc:	Round Top cinder (?) (QTF)
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1939 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

F27
East
1/4 - 1/2 Mile
Higher

HI WELLS **3-1851-002**

Wid:	3-1851-002	Island Code:	3
Island Name:	Oahu	Well no:	1851-02
Well name:	Thomas Square	Old name:	Not Reported
Yr drilled:	1882	Driller:	Not Reported
Quad_map:	13	Latitude:	211824
Longitude:	1575107	UTM:	Y
Gps:	N	Owner/user:	Honolulu Bws
Old number:	83-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	2
Ground Elev:	27	Well depth:	470
Solid casing Depth:	458	Perf casing Depth:	Not Reported
Use:	OBS	Use Desc:	Observation
Use year:	74	Water Top Elev:	27.2
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	23.6
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-443	bot_solid depth:	-431
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-4-001:001	Aquifer code:	30102
Latest head mmt:	23.6	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1882 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

G28
North
1/4 - 1/2 Mile
Higher

HI WELLS **3-1851-011**

Wid:	3-1851-011	Island Code:	3
Island Name:	Oahu	Well no:	1851-11
Well name:	Queens Hosp	Old name:	Not Reported
Yr drilled:	1894	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211839
Longitude:	1575122	UTM:	Y
Gps:	N	Owner/user:	Queens Hosp
Old number:	98-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	24	Well depth:	521

Solid casing Depth:	419	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	60	Water Top Elev:	27.1
Chloride value:	49	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	22.4
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-497	bot_solid depth:	-395
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	22.4	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1894 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

29
WSW
1/4 - 1/2 Mile
Lower

HI WELLS **3-1851-021**

Wid:	3-1851-021	Island Code:	3
Island Name:	Oahu	Well no:	1851-21
Well name:	Kawaiahao St	Old name:	Not Reported
Yr drilled:	1901	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211818
Longitude:	1575136	UTM:	Y
Gps:	N	Owner/user:	Magoon Estate
Old number:	92-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	4	Well depth:	791
Solid casing Depth:	614	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	90	Water Top Elev:	29.1
Chloride value:	90	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	22.2
Geology:	RTSP	Geology desc:	Round Top cinder (?) (QTF)
Installed:	Not Reported	Last Measured:	89
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	08/10/1989 00:00:00	Min Cl year:	0
Bot_hole depth:	-787	bot_solid depth:	-610
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-048:018	Aquifer code:	30102
Latest head mmt:	22.16	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1901 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

D30
ESE
1/4 - 1/2 Mile
Higher

HI WELLS **3-1851-001**

Wid:	3-1851-001	Island Code:	3
Island Name:	Oahu	Well no:	1851-01
Well name:	H I C	Old name:	Not Reported
Yr drilled:	1881	Driller:	Not Reported
Quad_map:	13	Latitude:	211817
Longitude:	1575108	UTM:	Y
Gps:	N	Owner/user:	Ward C P
Old number:	82-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	16	Well depth:	540
Solid casing Depth:	Not Reported	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	62	Water Top Elev:	30.8
Chloride value:	65	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	27.4
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-524	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	27.4	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1881 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

31
SE
1/4 - 1/2 Mile
Lower

HI WELLS **3-1851-062**

Wid:	3-1851-062	Island Code:	3
Island Name:	Oahu	Well no:	1851-62
Well name:	Nbc	Old name:	Not Reported
Yr drilled:	1967	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211813
Longitude:	1575111	UTM:	Y
Gps:	N	Owner/user:	C&C Pks&Rec
Old number:	Not Reported	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	16
Ground Elev:	Not Reported	Well depth:	65

Solid casing Depth:	14	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	376	Test date:	Not Reported
Pumping Test rate:	600	Drop in water Lvl:	1.9
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	700
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	07/14/1967 00:00:00	Max Cl year:	67
Min chlorides:	01/01/1987 00:00:00	Min Cl year:	67
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	316
Pump Capacity:	1.008	Draft (mgd):	Not Reported
Tax map key:	2-3-008:001	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	07/14/1967 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

H32
WNW
1/4 - 1/2 Mile
Higher

HI WELLS **3-1851-073**

Wid:	3-1851-073	Island Code:	3
Island Name:	Oahu	Well no:	1851-73
Well name:	Kawaiahao Church	Old name:	Not Reported
Yr drilled:	1986	Driller:	WAT RES INTL
Quad_map:	13	Latitude:	211828
Longitude:	1575139	UTM:	Y
Gps:	N	Owner/user:	Kawaiahao Ch
Old number:	Not Reported	Well_type:	ROT
Type:	Rotary Drill	Casing dia:	9
Ground Elev:	13	Well depth:	777
Solid casing Depth:	709	Perf casing Depth:	Not Reported
Use:	IRR	Use Desc:	Irrigation
Use year:	87	Water Top Elev:	19.17
Chloride value:	0	Test date:	05/28/1986 00:00:00
Pumping Test rate:	102	Drop in water Lvl:	6.0
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	01/01/1987 00:00:00	Max Cl year:	87
Min chlorides:	Not Reported	Min Cl year:	87
Bot_hole depth:	-764	bot_solid depth:	-696
Bot_perf depth:	Not Reported	Well Capacity:	17
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-032:017	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	05/22/1986 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

H33
WNW
1/4 - 1/2 Mile
Higher

HI WELLS **3-1851-009**

Wid:	3-1851-009	Island Code:	3
Island Name:	Oahu	Well no:	1851-09
Well name:	Kawaihao Ch	Old name:	Not Reported
Yr drilled:	1893	Driller:	PINKHAM
Quad_map:	13	Latitude:	211829
Longitude:	1575139	UTM:	Y
Gps:	N	Owner/user:	Kawaiahao Ch
Old number:	96-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	4
Ground Elev:	14	Well depth:	765
Solid casing Depth:	715	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	87	Water Top Elev:	26.1
Chloride value:	52	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	100
Annual Draft:	1	Static Water Lvl:	24.7
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-751	bot_solid depth:	-701
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	.144	Draft (mgd):	0.0
Tax map key:	2-1-032:017	Aquifer code:	30102
Latest head mmt:	24.7	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1893 00:00:00
Pump Inst. Date:	09/01/1972 00:00:00	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

F34
East
1/4 - 1/2 Mile
Higher

HI WELLS **3-1851-010**

Wid:	3-1851-010	Island Code:	3
Island Name:	Oahu	Well no:	1851-10
Well name:	Acad Of Arts	Old name:	Not Reported
Yr drilled:	1894	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211827
Longitude:	1575104	UTM:	Y
Gps:	N	Owner/user:	Cooke C M
Old number:	84-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	30	Well depth:	486

Solid casing Depth:	422	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	28	Water Top Elev:	31
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	24.2
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-456	bot_solid depth:	-392
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	24.2	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1894 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

G35
North
1/4 - 1/2 Mile
Higher

HI WELLS **3-1851-054**

Wid:	3-1851-054	Island Code:	3
Island Name:	Oahu	Well no:	1851-54
Well name:	Queens Hospital	Old name:	Not Reported
Yr drilled:	1958	Driller:	PACIFIC DRLG
Quad_map:	13	Latitude:	211842
Longitude:	1575122	UTM:	Y
Gps:	N	Owner/user:	Queens Med Ctr
Old number:	98-1	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	10
Ground Elev:	34	Well depth:	460
Solid casing Depth:	356	Perf casing Depth:	Not Reported
Use:	MUN	Use Desc:	Municipal
Use year:	81	Water Top Elev:	28.5
Chloride value:	41	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	750
Annual Draft:	244	Static Water Lvl:	26.7
Geology:	RTSP	Geology desc:	Round Top cinder (?) (QTF)
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-426	bot_solid depth:	-322
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	1.080	Draft (mgd):	0.7
Tax map key:	2-1-035:003	Aquifer code:	30102
Latest head mmt:	26.7	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1958 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

I36
West
1/4 - 1/2 Mile
Lower

HI WELLS **3-1851-065**

Wid:	3-1851-065	Island Code:	3
Island Name:	Oahu	Well no:	1851-65
Well name:	Queen St	Old name:	Not Reported
Yr drilled:	1967	Driller:	ROSCOE MOSS
Quad_map:	13	Latitude:	211821
Longitude:	1575141	UTM:	Y
Gps:	N	Owner/user:	K&Y Service
Old number:	95-1	Well_type:	PER
Type:	Percussion Drill	Casing dia:	8
Ground Elev:	7	Well depth:	80
Solid casing Depth:	12	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	1.5
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	275	Drop in water Lvl:	0.7
Chloride Test:	2100	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-73	bot_solid depth:	-5
Bot_perf depth:	Not Reported	Well Capacity:	393
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1967 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

J37
NW
1/4 - 1/2 Mile
Higher

HI WELLS **3-1851-051**

Wid:	3-1851-051	Island Code:	3
Island Name:	Oahu	Well no:	1851-51
Well name:	Iolani Palace	Old name:	Not Reported
Yr drilled:	1952	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211835
Longitude:	1575138	UTM:	Y
Gps:	N	Owner/user:	State Of Haw
Old number:	99-1	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	18	Well depth:	71

Solid casing Depth:	24	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	3.6
Chloride value:	966	Test date:	Not Reported
Pumping Test rate:	300	Drop in water Lvl:	1.6
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RTSP	Geology desc:	Round Top cinder (?) (QTF)
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	04/01/1988 00:00:00	Min Cl year:	Not Reported
Bot_hole depth:	-53	bot_solid depth:	-6
Bot_perf depth:	Not Reported	Well Capacity:	188
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1952 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

K38
ESE
1/4 - 1/2 Mile
Higher

HI WELLS **3-1851-028**

Wid:	3-1851-028	Island Code:	3
Island Name:	Oahu	Well no:	1851-28
Well name:	Young St	Old name:	Not Reported
Yr drilled:	1913	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211818
Longitude:	1575103	UTM:	Y
Gps:	N	Owner/user:	Med Arts Bldg
Old number:	Not Reported	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	18	Well depth:	505
Solid casing Depth:	476	Perf casing Depth:	Not Reported
Use:	UNU	Use Desc:	Unused
Use year:	74	Water Top Elev:	30.3
Chloride value:	41	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	36	Static Water Lvl:	22.0
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-487	bot_solid depth:	-458
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	0.1
Tax map key:	2-4-002:006	Aquifer code:	30102
Latest head mmt:	22	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1913 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

H39
WNW
1/4 - 1/2 Mile
Higher

HI WELLS **3-1851-003**

Wid:	3-1851-003	Island Code:	3
Island Name:	Oahu	Well no:	1851-03
Well name:	King St	Old name:	Not Reported
Yr drilled:	1882	Driller:	Not Reported
Quad_map:	13	Latitude:	211830
Longitude:	1575141	UTM:	Y
Gps:	N	Owner/user:	State Of Haw
Old number:	97-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	5
Ground Elev:	14	Well depth:	769
Solid casing Depth:	715	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	77	Water Top Elev:	30.8
Chloride value:	55	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	36	Static Water Lvl:	24.8
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-755	bot_solid depth:	-701
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	0.1
Tax map key:	2-1-025:003	Aquifer code:	30102
Latest head mmt:	24.8	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1882 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

K40
ESE
1/4 - 1/2 Mile
Higher

HI WELLS **3-1851-006**

Wid:	3-1851-006	Island Code:	3
Island Name:	Oahu	Well no:	1851-06
Well name:	Young St	Old name:	Not Reported
Yr drilled:	1883	Driller:	Not Reported
Quad_map:	13	Latitude:	211818
Longitude:	1575101	UTM:	Y
Gps:	N	Owner/user:	Vida Villa
Old number:	79-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	17	Well depth:	503

Solid casing Depth:	234	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	27	Water Top Elev:	19.2
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	17.8
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-486	bot_solid depth:	-217
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	17.8	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1883 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

I41
West
1/4 - 1/2 Mile
Lower

HI WELLS **3-1851-018**

Wid:	3-1851-018	Island Code:	3
Island Name:	Oahu	Well no:	1851-18
Well name:	American Brewery	Old name:	Not Reported
Yr drilled:	1900	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211822
Longitude:	1575144	UTM:	Y
Gps:	N	Owner/user:	Haw Comm Dev
Old number:	95-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	8	Well depth:	806
Solid casing Depth:	774	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	94	Water Top Elev:	27.7
Chloride value:	89	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	26.5
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-798	bot_solid depth:	-766
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-031:021	Aquifer code:	30102
Latest head mmt:	26.5	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/02/1900 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

J42
NW
1/4 - 1/2 Mile
Higher

HI WELLS **3-1851-004**

Wid:	3-1851-004	Island Code:	3
Island Name:	Oahu	Well no:	1851-04
Well name:	Iolani Palace	Old name:	Not Reported
Yr drilled:	1882	Driller:	Not Reported
Quad_map:	13	Latitude:	211838
Longitude:	1575140	UTM:	Y
Gps:	N	Owner/user:	State Of Haw
Old number:	99-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	14
Ground Elev:	18	Well depth:	752
Solid casing Depth:	748	Perf casing Depth:	Not Reported
Use:	UNU	Use Desc:	Unused
Use year:	74	Water Top Elev:	25.2
Chloride value:	43	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	26.7
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-734	bot_solid depth:	-730
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-025:002	Aquifer code:	30102
Latest head mmt:	26.7	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1882 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

L43
NW
1/4 - 1/2 Mile
Higher

HI WELLS **3-1851-066**

Wid:	3-1851-066	Island Code:	3
Island Name:	Oahu	Well no:	1851-66
Well name:	Beretania	Old name:	Not Reported
Yr drilled:	1967	Driller:	LAYNE INT
Quad_map:	13	Latitude:	211842
Longitude:	1575137	UTM:	Y
Gps:	N	Owner/user:	State Of Haw
Old number:	99-3	Well_type:	ROT
Type:	Rotary Drill	Casing dia:	Not Reported
Ground Elev:	20	Well depth:	100

Solid casing Depth:	Not Reported	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	1500	Drop in water Lvl:	40.0
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RTSP	Geology desc:	Round Top cinder (?) (QTF)
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-80	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	38
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-024:011	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1967 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

L44
NW
1/4 - 1/2 Mile
Higher

HI WELLS **3-1851-061**

Wid:	3-1851-061	Island Code:	3
Island Name:	Oahu	Well no:	1851-61
Well name:	State Capitol	Old name:	Not Reported
Yr drilled:	1963	Driller:	SAMSON-ZERBE
Quad_map:	13	Latitude:	211841
Longitude:	1575139	UTM:	Y
Gps:	N	Owner/user:	State Dags
Old number:	99-2	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	16
Ground Elev:	20	Well depth:	77
Solid casing Depth:	25	Perf casing Depth:	71
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	30
Chloride value:	4030	Test date:	Not Reported
Pumping Test rate:	1655	Drop in water Lvl:	27.0
Chloride Test:	7500	Temperature:	24.4
Units:	C	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RTSP	Geology desc:	Round Top cinder (?) (QTF)
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-57	bot_solid depth:	-5
Bot_perf depth:	-51	Well Capacity:	61
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-024:011	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1963 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

45
North
1/4 - 1/2 Mile
Higher

HI WELLS **3-1851-007**

Wid:	3-1851-007	Island Code:	3
Island Name:	Oahu	Well no:	1851-07
Well name:	Pacific Club	Old name:	Not Reported
Yr drilled:	1884	Driller:	ASHLEY
Quad_map:	13	Latitude:	211849
Longitude:	1575127	UTM:	Y
Gps:	N	Owner/user:	Pacific Club
Old number:	108-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	3
Ground Elev:	28	Well depth:	560
Solid casing Depth:	498	Perf casing Depth:	Not Reported
Use:	DOM	Use Desc:	Domestic
Use year:	74	Water Top Elev:	23.2
Chloride value:	35	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	35
Annual Draft:	7	Static Water Lvl:	26.5
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	85	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-532	bot_solid depth:	-470
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	.050	Draft (mgd):	0.0
Tax map key:	2-1-019:014	Aquifer code:	30102
Latest head mmt:	26.5	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1884 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

M46
SE
1/4 - 1/2 Mile
Lower

HI WELLS **3-1850-028**

Wid:	3-1850-028	Island Code:	3
Island Name:	Oahu	Well no:	1850-28
Well name:	Mckinley Aqua 1	Old name:	Not Reported
Yr drilled:	1990	Driller:	PR DRILLING
Quad_map:	13	Latitude:	211810
Longitude:	1575059	UTM:	Y
Gps:	N	Owner/user:	Mckinley H S
Old number:	Not Reported	Well_type:	ROT
Type:	Rotary Drill	Casing dia:	4
Ground Elev:	Not Reported	Well depth:	35

Solid casing Depth:	10	Perf casing Depth:	20
Use:	OTH	Use Desc:	Other
Use year:	92	Water Top Elev:	0
Chloride value:	0	Test date:	07/09/1990 00:00:00
Pumping Test rate:	50	Drop in water Lvl:	4.5
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	11
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-3-009:001	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	07/10/1990 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

N47
NW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-005**

Wid:	3-1851-005	Island Code:	3
Island Name:	Oahu	Well no:	1851-05
Well name:	Alakea St	Old name:	Not Reported
Yr drilled:	1882	Driller:	Not Reported
Quad_map:	13	Latitude:	211845
Longitude:	1575141	UTM:	Y
Gps:	N	Owner/user:	Cooper K M
Old number:	106-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	20	Well depth:	636
Solid casing Depth:	Not Reported	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	25	Water Top Elev:	26
Chloride value:	48	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	26.5
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-616	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	26.5	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1882 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

N48
NW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-056**

Wid:	3-1851-056	Island Code:	3
Island Name:	Oahu	Well no:	1851-56
Well name:	Alakea St	Old name:	Not Reported
Yr drilled:	1958	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211846
Longitude:	1575140	UTM:	Y
Gps:	N	Owner/user:	Am Mutual Ins
Old number:	106-1B	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	24
Ground Elev:	16	Well depth:	30
Solid casing Depth:	3	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	1
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	75	Drop in water Lvl:	1.0
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RTSP	Geology desc:	Round Top cinder (?) (QTF)
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-14	bot_solid depth:	13
Bot_perf depth:	Not Reported	Well Capacity:	75
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1958 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

N49
NW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-055**

Wid:	3-1851-055	Island Code:	3
Island Name:	Oahu	Well no:	1851-55
Well name:	Alakea St	Old name:	Not Reported
Yr drilled:	1958	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211846
Longitude:	1575140	UTM:	Y
Gps:	N	Owner/user:	Am Mutual Ins
Old number:	106-1A	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	24
Ground Elev:	16	Well depth:	40

Solid casing Depth:	3	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	1
Chloride value:	967	Test date:	Not Reported
Pumping Test rate:	250	Drop in water Lvl:	4.0
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RTSP	Geology desc:	Round Top cinder (?) (QTF)
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-24	bot_solid depth:	13
Bot_perf depth:	Not Reported	Well Capacity:	63
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1958 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

M50
SE
1/2 - 1 Mile
Lower

HI WELLS **3-1850-009**

Wid:	3-1850-009	Island Code:	3
Island Name:	Oahu	Well no:	1850-09
Well name:	Makiki	Old name:	Not Reported
Yr drilled:	1882	Driller:	COOKE-PEDDLER
Quad_map:	13	Latitude:	211808
Longitude:	1575058	UTM:	Y
Gps:	N	Owner/user:	State Of Haw
Old number:	77-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	6	Well depth:	620
Solid casing Depth:	Not Reported	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	38	Water Top Elev:	29.6
Chloride value:	62	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	27.3
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-614	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	27.3	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1882 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

M51
ESE
1/2 - 1 Mile
Lower

HI WELLS **3-1850-029**

Wid:	3-1850-029	Island Code:	3
Island Name:	Oahu	Well no:	1850-29
Well name:	Mckinley Aqua 2	Old name:	Not Reported
Yr drilled:	1993	Driller:	ROSCOE MOSS
Quad_map:	13	Latitude:	211809
Longitude:	1575057	UTM:	Y
Gps:	N	Owner/user:	Mckinley H S
Old number:	Not Reported	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	10	Well depth:	65
Solid casing Depth:	45	Perf casing Depth:	65
Use:	OTH	Use Desc:	Other
Use year:	93	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-55	bot_solid depth:	-35
Bot_perf depth:	-55	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-3-009:001	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	08/17/1993 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

52
ESE
1/2 - 1 Mile
Higher

HI WELLS **3-1850-017**

Wid:	3-1850-017	Island Code:	3
Island Name:	Oahu	Well no:	1850-17
Well name:	Makiki	Old name:	Not Reported
Yr drilled:	1887	Driller:	Not Reported
Quad_map:	13	Latitude:	211817
Longitude:	1575053	UTM:	Y
Gps:	N	Owner/user:	Heco
Old number:	78-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	16	Well depth:	510

Solid casing Depth:	Not Reported	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	24	Water Top Elev:	27.6
Chloride value:	63	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	9.1
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-494	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	9.1	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1887 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

O53
WNW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-046**

Wid:	3-1851-046	Island Code:	3
Island Name:	Oahu	Well no:	1851-46
Well name:	Merchant&Richard	Old name:	Not Reported
Yr drilled:	1939	Driller:	MULLIN
Quad_map:	13	Latitude:	211836
Longitude:	1575150	UTM:	Y
Gps:	N	Owner/user:	Not Reported
Old number:	103-1B	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	Not Reported	Well depth:	75
Solid casing Depth:	8	Perf casing Depth:	Not Reported
Use:	UNU	Use Desc:	Unused
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	QLS	Geology desc:	Quaternary limestone deposits
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1939 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

O54
WNW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-045**

Wid:	3-1851-045	Island Code:	3
Island Name:	Oahu	Well no:	1851-45
Well name:	Merchant&Richard	Old name:	Not Reported
Yr drilled:	1939	Driller:	MULLIN
Quad_map:	13	Latitude:	211836
Longitude:	1575150	UTM:	Y
Gps:	N	Owner/user:	Not Reported
Old number:	103-1A	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	Not Reported	Well depth:	80
Solid casing Depth:	21	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	1040	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	QLS	Geology desc:	Quaternary limestone deposits
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1939 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

O55
WNW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-042**

Wid:	3-1851-042	Island Code:	3
Island Name:	Oahu	Well no:	1851-42
Well name:	Merchant St	Old name:	Not Reported
Yr drilled:	1939	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211837
Longitude:	1575150	UTM:	Y
Gps:	N	Owner/user:	Wilcox Dev
Old number:	90-1A	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	10	Well depth:	50

Solid casing Depth:	22	Perf casing Depth:	40
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	2100	Test date:	Not Reported
Pumping Test rate:	125	Drop in water Lvl:	2.3
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	QLS	Geology desc:	Quaternary limestone deposits
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-40	bot_solid depth:	-12
Bot_perf depth:	-30	Well Capacity:	54
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1939 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

O56
WNW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-043**

Wid:	3-1851-043	Island Code:	3
Island Name:	Oahu	Well no:	1851-43
Well name:	Merchant St	Old name:	Not Reported
Yr drilled:	1939	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211837
Longitude:	1575150	UTM:	Y
Gps:	N	Owner/user:	Wilcox Dev
Old number:	90-1B	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	10	Well depth:	40
Solid casing Depth:	17	Perf casing Depth:	37
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	125	Drop in water Lvl:	3.1
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	QLS	Geology desc:	Quaternary limestone deposits
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-30	bot_solid depth:	-7
Bot_perf depth:	-27	Well Capacity:	40
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1939 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

N57
NW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-030**

Wid:	3-1851-030	Island Code:	3
Island Name:	Oahu	Well no:	1851-30
Well name:	Alakea St	Old name:	Not Reported
Yr drilled:	1915	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211846
Longitude:	1575143	UTM:	Y
Gps:	N	Owner/user:	Hon Mdse Mart
Old number:	105-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	10
Ground Elev:	18	Well depth:	810
Solid casing Depth:	706	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	89	Water Top Elev:	28.4
Chloride value:	44	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	36	Static Water Lvl:	26.8
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-792	bot_solid depth:	-688
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	0.1
Tax map key:	2-1-010:005	Aquifer code:	30102
Latest head mmt:	26.8	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1915 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

O58
WNW
1/2 - 1 Mile
Lower

HI WELLS **3-1851-027**

Wid:	3-1851-027	Island Code:	3
Island Name:	Oahu	Well no:	1851-27
Well name:	Queen St	Old name:	Not Reported
Yr drilled:	1910	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211834
Longitude:	1575153	UTM:	Y
Gps:	N	Owner/user:	Heco
Old number:	103-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	12
Ground Elev:	2	Well depth:	1145

Solid casing Depth:	805	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	63	Water Top Elev:	27.2
Chloride value:	55	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	28.0
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-1143	bot_solid depth:	-803
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	28	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1910 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

P59
NW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-023**

Wid:	3-1851-023	Island Code:	3
Island Name:	Oahu	Well no:	1851-23
Well name:	Bishop St	Old name:	Not Reported
Yr drilled:	1901	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211843
Longitude:	1575148	UTM:	Y
Gps:	N	Owner/user:	A Young Hotel
Old number:	104-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	10
Ground Elev:	15	Well depth:	960
Solid casing Depth:	850	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	71	Water Top Elev:	26.5
Chloride value:	67	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	109	Static Water Lvl:	23.4
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-945	bot_solid depth:	-835
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	0.3
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	23.4	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1901 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

60
WSW
1/2 - 1 Mile
Lower

HI WELLS **3-1851-017**

Wid:	3-1851-017	Island Code:	3
Island Name:	Oahu	Well no:	1851-17
Well name:	Pohukaina	Old name:	Not Reported
Yr drilled:	1900	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211817
Longitude:	1575154	UTM:	Y
Gps:	N	Owner/user:	Hon Iron Works
Old number:	Not Reported	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	5	Well depth:	1007
Solid casing Depth:	803	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	40	Water Top Elev:	27.8
Chloride value:	98	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	28.4
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-1002	bot_solid depth:	-798
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	28.4	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/02/1900 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

61
WNW
1/2 - 1 Mile
Lower

HI WELLS **3-1851-019**

Wid:	3-1851-019	Island Code:	3
Island Name:	Oahu	Well no:	1851-19
Well name:	Halekauwila St	Old name:	Not Reported
Yr drilled:	1900	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211832
Longitude:	1575155	UTM:	Y
Gps:	N	Owner/user:	Heco
Old number:	102-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	1
Ground Elev:	6	Well depth:	1053

Solid casing Depth:	1043	Perf casing Depth:	Not Reported
Use:	OBS	Use Desc:	Observation
Use year:	74	Water Top Elev:	27.2
Chloride value:	67	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	11.7
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-1047	bot_solid depth:	-1037
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-016:015	Aquifer code:	30102
Latest head mmt:	11.7	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/02/1900 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

P62
WNW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-048**

Wid:	3-1851-048	Island Code:	3
Island Name:	Oahu	Well no:	1851-48
Well name:	King St	Old name:	Not Reported
Yr drilled:	1939	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211841
Longitude:	1575152	UTM:	Y
Gps:	N	Owner/user:	Walston & Co
Old number:	103-2B	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	Not Reported	Well depth:	40
Solid casing Depth:	34	Perf casing Depth:	Not Reported
Use:	UNU	Use Desc:	Unused
Use year:	74	Water Top Elev:	3.6
Chloride value:	1360	Test date:	Not Reported
Pumping Test rate:	75	Drop in water Lvl:	0.3
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	QLS	Geology desc:	Quaternary limestone deposits
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	250
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1939 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

P63
WNW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-047**

Wid:	3-1851-047	Island Code:	3
Island Name:	Oahu	Well no:	1851-47
Well name:	King St	Old name:	Not Reported
Yr drilled:	1939	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211841
Longitude:	1575152	UTM:	Y
Gps:	N	Owner/user:	Walston & Co
Old number:	103-2A	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	Not Reported	Well depth:	41
Solid casing Depth:	22	Perf casing Depth:	Not Reported
Use:	UNU	Use Desc:	Unused
Use year:	74	Water Top Elev:	3.7
Chloride value:	3290	Test date:	Not Reported
Pumping Test rate:	75	Drop in water Lvl:	0.3
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	QLS	Geology desc:	Quaternary limestone deposits
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	250
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1939 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

64
NNW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-016**

Wid:	3-1851-016	Island Code:	3
Island Name:	Oahu	Well no:	1851-16
Well name:	Central School	Old name:	Not Reported
Yr drilled:	1889	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211855
Longitude:	1575135	UTM:	Y
Gps:	N	Owner/user:	C&C Honolulu
Old number:	107-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	28	Well depth:	1007

Solid casing Depth:	Not Reported	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	39	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	26.9
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-979	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	26.9	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1889 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

P65
WNW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-052**

Wid:	3-1851-052	Island Code:	3
Island Name:	Oahu	Well no:	1851-52
Well name:	King St	Old name:	Not Reported
Yr drilled:	1952	Driller:	SAMSON-SMOCK
Quad_map:	13	Latitude:	211843
Longitude:	1575152	UTM:	Y
Gps:	N	Owner/user:	Bank Of Haw
Old number:	104-1	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	Not Reported	Well depth:	100
Solid casing Depth:	100	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	89	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	148	Drop in water Lvl:	0.6
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	QLS	Geology desc:	Quaternary limestone deposits
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	247
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1952 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

66
West
1/2 - 1 Mile
Lower

HI WELLS **3-1851-022**

Wid:	3-1851-022	Island Code:	3
Island Name:	Oahu	Well no:	1851-22
Well name:	Ala Moana Blvd	Old name:	Not Reported
Yr drilled:	1901	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211828
Longitude:	1575158	UTM:	Y
Gps:	N	Owner/user:	U S G S
Old number:	101-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	4	Well depth:	1152
Solid casing Depth:	1125	Perf casing Depth:	Not Reported
Use:	OBS	Use Desc:	Observation
Use year:	82	Water Top Elev:	22.5
Chloride value:	194	Test date:	12/16/1982 00:00:00
Pumping Test rate:	38	Drop in water Lvl:	6.2
Chloride Test:	Not Reported	Temperature:	22.8
Units:	C	Pump Capacity:	0
Annual Draft:	219	Static Water Lvl:	17.0
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-1148	bot_solid depth:	-1121
Bot_perf depth:	Not Reported	Well Capacity:	6
Pump Capacity:	Not Reported	Draft (mgd):	0.6
Tax map key:	2-1-001:061	Aquifer code:	30102
Latest head mmt:	17	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1901 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Q67
NW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-041**

Wid:	3-1851-041	Island Code:	3
Island Name:	Oahu	Well no:	1851-41
Well name:	Ft St Mall	Old name:	Not Reported
Yr drilled:	1938	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211850
Longitude:	1575146	UTM:	Y
Gps:	N	Owner/user:	Fronk & Wynn
Old number:	105-1	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	21	Well depth:	46

Solid casing Depth:	22	Perf casing Depth:	42
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	1.5
Chloride value:	139	Test date:	Not Reported
Pumping Test rate:	40	Drop in water Lvl:	2.3
Chloride Test:	150	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RTSP	Geology desc:	Round Top cinder (?) (QTF)
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-25	bot_solid depth:	-1
Bot_perf depth:	-21	Well Capacity:	17
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1938 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Q68
NW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-050**

Wid:	3-1851-050	Island Code:	3
Island Name:	Oahu	Well no:	1851-50
Well name:	Ft St Mall	Old name:	Not Reported
Yr drilled:	1940	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211852
Longitude:	1575145	UTM:	Y
Gps:	N	Owner/user:	Ramsey W A
Old number:	105-2	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	3
Ground Elev:	Not Reported	Well depth:	25
Solid casing Depth:	6	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RTSP	Geology desc:	Round Top cinder (?) (QTF)
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1940 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

R69
WSW
1/2 - 1 Mile
Lower

HI WELLS **3-1851-029**

Wid:	3-1851-029	Island Code:	3
Island Name:	Oahu	Well no:	1851-29
Well name:	Ala Moana Blvd	Old name:	Not Reported
Yr drilled:	1913	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211817
Longitude:	1575159	UTM:	Y
Gps:	N	Owner/user:	InterisInd Nv
Old number:	93-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	12
Ground Elev:	7	Well depth:	1009
Solid casing Depth:	911	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	38	Water Top Elev:	30.2
Chloride value:	103	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	6	Static Water Lvl:	25.4
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-1002	bot_solid depth:	-904
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	0.0
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	25.4	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1913 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

S70
WNW
1/2 - 1 Mile
Lower

HI WELLS **3-1851-053**

Wid:	3-1851-053	Island Code:	3
Island Name:	Oahu	Well no:	1851-53
Well name:	Queen St	Old name:	Not Reported
Yr drilled:	1956	Driller:	SAMSON-SMOCK
Quad_map:	13	Latitude:	211840
Longitude:	1575156	UTM:	Y
Gps:	N	Owner/user:	Alex&Baldwin
Old number:	90-7	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	12
Ground Elev:	8	Well depth:	122

Solid casing Depth:	22	Perf casing Depth:	30
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	.4
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	400	Drop in water Lvl:	13.1
Chloride Test:	19	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	QLS	Geology desc:	Quaternary limestone deposits
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-114	bot_solid depth:	-14
Bot_perf depth:	-22	Well Capacity:	31
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1956 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

S71
WNW
1/2 - 1 Mile
Lower

HI WELLS **3-1851-068**

Wid:	3-1851-068	Island Code:	3
Island Name:	Oahu	Well no:	1851-68
Well name:	Ft St Mall	Old name:	Not Reported
Yr drilled:	1968	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211837
Longitude:	1575158	UTM:	Y
Gps:	N	Owner/user:	Amfac
Old number:	90-8A	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	24
Ground Elev:	7	Well depth:	36
Solid casing Depth:	8	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	440	Drop in water Lvl:	4.5
Chloride Test:	16750	Temperature:	26.1
Units:	C	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-29	bot_solid depth:	-1
Bot_perf depth:	Not Reported	Well Capacity:	98
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-013:006	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1968 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

S72
WNW
1/2 - 1 Mile
Lower

HI WELLS **3-1851-069**

Wid:	3-1851-069	Island Code:	3
Island Name:	Oahu	Well no:	1851-69
Well name:	Ft St Mall	Old name:	Not Reported
Yr drilled:	1968	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211837
Longitude:	1575158	UTM:	Y
Gps:	N	Owner/user:	Amfac
Old number:	90-8B	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	24
Ground Elev:	7	Well depth:	40
Solid casing Depth:	9	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	.3
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	425	Drop in water Lvl:	11.2
Chloride Test:	17300	Temperature:	25.6
Units:	C	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-33	bot_solid depth:	-2
Bot_perf depth:	Not Reported	Well Capacity:	38
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-013:006	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1968 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

S73
WNW
1/2 - 1 Mile
Lower

HI WELLS **3-1851-070**

Wid:	3-1851-070	Island Code:	3
Island Name:	Oahu	Well no:	1851-70
Well name:	Ft St Mall	Old name:	Not Reported
Yr drilled:	1968	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211837
Longitude:	1575158	UTM:	Y
Gps:	N	Owner/user:	Amfac
Old number:	90-8C	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	24
Ground Elev:	7	Well depth:	30

Solid casing Depth:	Not Reported	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	.3
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	550	Drop in water Lvl:	1.9
Chloride Test:	17800	Temperature:	25.6
Units:	C	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	QLS	Geology desc:	Quaternary limestone deposits
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-23	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	289
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-013:006	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1968 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

T74
NW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-040**

Wid:	3-1851-040	Island Code:	3
Island Name:	Oahu	Well no:	1851-40
Well name:	Ft St Mall	Old name:	Not Reported
Yr drilled:	1938	Driller:	HOBART
Quad_map:	13	Latitude:	211845
Longitude:	1575154	UTM:	Y
Gps:	N	Owner/user:	Easy Applianc
Old number:	90-3	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	Not Reported	Well depth:	42
Solid casing Depth:	8	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	QLS	Geology desc:	Quaternary limestone deposits
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1938 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

75
WNW
1/2 - 1 Mile
Lower

HI WELLS **3-1852-006**

Wid:	3-1852-006	Island Code:	3
Island Name:	Oahu	Well no:	1852-06
Well name:	Ala Moana Blvd	Old name:	Not Reported
Yr drilled:	1953	Driller:	SAMSON-SMOCK
Quad_map:	13	Latitude:	211833
Longitude:	1575200	UTM:	Y
Gps:	N	Owner/user:	Heco
Old number:	102-1	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	24
Ground Elev:	Not Reported	Well depth:	94
Solid casing Depth:	Not Reported	Perf casing Depth:	Not Reported
Use:	UNU	Use Desc:	Unused
Use year:	89	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	QLS	Geology desc:	Quaternary limestone deposits
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-016:015	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1953 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

S76
WNW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-038**

Wid:	3-1851-038	Island Code:	3
Island Name:	Oahu	Well no:	1851-38
Well name:	Ft St Mall	Old name:	Not Reported
Yr drilled:	1937	Driller:	MULLIN
Quad_map:	13	Latitude:	211843
Longitude:	1575156	UTM:	Y
Gps:	N	Owner/user:	Brewer C & Co
Old number:	90-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	Not Reported	Well depth:	100

Solid casing Depth:	20	Perf casing Depth:	Not Reported
Use:	UNU	Use Desc:	Unused
Use year:	88	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	130	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	PLS	Geology desc:	Consolidated calcareous marine sediments
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1937 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Q77
NW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-037**

Wid:	3-1851-037	Island Code:	3
Island Name:	Oahu	Well no:	1851-37
Well name:	Nuuanu Ave	Old name:	Not Reported
Yr drilled:	1936	Driller:	HOBART
Quad_map:	13	Latitude:	211854
Longitude:	1575147	UTM:	Y
Gps:	N	Owner/user:	Cons Amus Co
Old number:	100-1	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	24	Well depth:	52
Solid casing Depth:	40	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	.4
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	3	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	PLS	Geology desc:	Consolidated calcareous marine sediments
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-28	bot_solid depth:	-16
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1936 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

T78
NW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-049**

Wid:	3-1851-049	Island Code:	3
Island Name:	Oahu	Well no:	1851-49
Well name:	King St	Old name:	Not Reported
Yr drilled:	1940	Driller:	MULLIN
Quad_map:	13	Latitude:	211846
Longitude:	1575155	UTM:	Y
Gps:	N	Owner/user:	Royal Amusemt
Old number:	90-2	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	Not Reported
Ground Elev:	Not Reported	Well depth:	60
Solid casing Depth:	21	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	QLS	Geology desc:	Quaternary limestone deposits
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1940 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

U79
SSW
1/2 - 1 Mile
Lower

HI WELLS **3-1751-002**

Wid:	3-1751-002	Island Code:	3
Island Name:	Oahu	Well no:	1751-02
Well name:	Ala Moana	Old name:	Not Reported
Yr drilled:	1949	Driller:	MULLIN
Quad_map:	13	Latitude:	211751
Longitude:	1575142	UTM:	Y
Gps:	N	Owner/user:	Haw Tuna Pack
Old number:	92-2	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	12
Ground Elev:	Not Reported	Well depth:	150

Solid casing Depth:	62	Perf casing Depth:	Not Reported
Use:	IND	Use Desc:	Industrial
Use year:	74	Water Top Elev:	0
Chloride value:	15700	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	1400
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	2.016	Draft (mgd):	Not Reported
Tax map key:	2-1-058:002	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1949 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

U80
SSW
1/2 - 1 Mile
Lower

HI WELLS **3-1751-001**

Wid:	3-1751-001	Island Code:	3
Island Name:	Oahu	Well no:	1751-01
Well name:	Ala Moana	Old name:	Not Reported
Yr drilled:	1939	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211751
Longitude:	1575142	UTM:	Y
Gps:	N	Owner/user:	Haw Tuna Pack
Old number:	92-1	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	12
Ground Elev:	Not Reported	Well depth:	142
Solid casing Depth:	7	Perf casing Depth:	Not Reported
Use:	IND	Use Desc:	Industrial
Use year:	74	Water Top Elev:	0
Chloride value:	16100	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	700
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	1.008	Draft (mgd):	Not Reported
Tax map key:	2-1-058:002	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1939 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

S81
WNW
1/2 - 1 Mile
Lower

HI WELLS **3-1851-072**

Wid:	3-1851-072	Island Code:	3
Island Name:	Oahu	Well no:	1851-72
Well name:	Ft St Mall 2	Old name:	Not Reported
Yr drilled:	1973	Driller:	ROSCOE MOSS
Quad_map:	13	Latitude:	211841
Longitude:	1575159	UTM:	Y
Gps:	N	Owner/user:	Center Prop
Old number:	Not Reported	Well_type:	PER
Type:	Percussion Drill	Casing dia:	16
Ground Elev:	7	Well depth:	45
Solid casing Depth:	10	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	07/12/1973 00:00:00
Pumping Test rate:	950	Drop in water Lvl:	8.5
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	QLS	Geology desc:	Quaternary limestone deposits
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-38	bot_solid depth:	-3
Bot_perf depth:	Not Reported	Well Capacity:	112
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-013:001	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	07/01/1973 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

S82
WNW
1/2 - 1 Mile
Lower

HI WELLS **3-1851-071**

Wid:	3-1851-071	Island Code:	3
Island Name:	Oahu	Well no:	1851-71
Well name:	Ft St Mall 1	Old name:	Not Reported
Yr drilled:	1973	Driller:	ROSCOE MOSS
Quad_map:	13	Latitude:	211841
Longitude:	1575159	UTM:	Y
Gps:	N	Owner/user:	Center Prop
Old number:	Not Reported	Well_type:	PER
Type:	Percussion Drill	Casing dia:	16
Ground Elev:	7	Well depth:	45

Solid casing Depth:	10	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	07/02/1973 00:00:00
Pumping Test rate:	850	Drop in water Lvl:	8.2
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	QLS	Geology desc:	Quaternary limestone deposits
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-38	bot_solid depth:	-3
Bot_perf depth:	Not Reported	Well Capacity:	104
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-013:001	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	07/01/1973 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

83
NW
1/2 - 1 Mile
Higher

HI WELLS **3-1851-039**

Wid:	3-1851-039	Island Code:	3
Island Name:	Oahu	Well no:	1851-39
Well name:	Hawaii Theatre	Old name:	Not Reported
Yr drilled:	1937	Driller:	MULLIN
Quad_map:	13	Latitude:	211851
Longitude:	1575152	UTM:	Y
Gps:	N	Owner/user:	Cons Amus Co
Old number:	100-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	Not Reported	Well depth:	60
Solid casing Depth:	20	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	92	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	50	Drop in water Lvl:	0.8
Chloride Test:	181	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	PLS	Geology desc:	Consolidated calcareous marine sediments
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	63
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-003:014	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1937 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

R84
WSW
1/2 - 1 Mile
Lower

HI WELLS **3-1852-007**

Wid:	3-1852-007	Island Code:	3
Island Name:	Oahu	Well no:	1852-07
Well name:	Immigration Sta	Old name:	Not Reported
Yr drilled:	1955	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211816
Longitude:	1575203	UTM:	Y
Gps:	N	Owner/user:	State Of Haw
Old number:	93-2	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	10
Ground Elev:	8	Well depth:	95
Solid casing Depth:	28	Perf casing Depth:	Not Reported
Use:	Not Reported	Use Desc:	Not Reported
Use year:	Not Reported	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	600	Drop in water Lvl:	3.1
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	QLS	Geology desc:	Quaternary limestone deposits
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-87	bot_solid depth:	-20
Bot_perf depth:	Not Reported	Well Capacity:	194
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-028:003	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1955 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

85
ESE
1/2 - 1 Mile
Higher

HI WELLS **3-1850-015**

Wid:	3-1850-015	Island Code:	3
Island Name:	Oahu	Well no:	1850-15
Well name:	Makiki	Old name:	Not Reported
Yr drilled:	1884	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211808
Longitude:	1575043	UTM:	Y
Gps:	N	Owner/user:	Wilcox G N
Old number:	76-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	17	Well depth:	656

Solid casing Depth:	455	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	27	Water Top Elev:	19
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	8.0
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-639	bot_solid depth:	-438
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	8	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1884 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

86
WNW
1/2 - 1 Mile
Lower

HI WELLS **3-1852-003**

Wid:	3-1852-003	Island Code:	3
Island Name:	Oahu	Well no:	1852-03
Well name:	Ala Moana Blvd	Old name:	Not Reported
Yr drilled:	1947	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211844
Longitude:	1575200	UTM:	Y
Gps:	N	Owner/user:	Castle & Cooke Hawaii, Inc. [03]
Old number:	90-4	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	Not Reported	Well depth:	52
Solid casing Depth:	16	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	150	Drop in water Lvl:	2.3
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	QLS	Geology desc:	Quaternary limestone deposits
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	65
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-001:006	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1947 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

87
ESE
1/2 - 1 Mile
Higher

HI WELLS **3-1850-027**

Wid:	3-1850-027	Island Code:	3
Island Name:	Oahu	Well no:	1850-27
Well name:	Makiki	Old name:	Not Reported
Yr drilled:	1914	Driller:	Not Reported
Quad_map:	13	Latitude:	211802
Longitude:	1575042	UTM:	Y
Gps:	N	Owner/user:	Meadow Gold
Old number:	75-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	10
Ground Elev:	8	Well depth:	552
Solid casing Depth:	486	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	63	Water Top Elev:	27
Chloride value:	75	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-544	bot_solid depth:	-478
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1914 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

88
East
1/2 - 1 Mile
Higher

HI WELLS **3-1850-007**

Wid:	3-1850-007	Island Code:	3
Island Name:	Oahu	Well no:	1850-07
Well name:	Makiki	Old name:	Not Reported
Yr drilled:	1882	Driller:	FESSLER
Quad_map:	13	Latitude:	211826
Longitude:	1575035	UTM:	Y
Gps:	N	Owner/user:	Babcock
Old number:	72-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	7
Ground Elev:	37	Well depth:	375

Solid casing Depth:	Not Reported	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	26	Water Top Elev:	42
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	21.7
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-338	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	3-9-010:001	Aquifer code:	30102
Latest head mmt:	21.7	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1882 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

89
East
1/2 - 1 Mile
Higher

HI WELLS **3-1850-008**

Wid:	3-1850-008	Island Code:	3
Island Name:	Oahu	Well no:	1850-08
Well name:	Makiki	Old name:	Not Reported
Yr drilled:	1882	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211821
Longitude:	1575035	UTM:	Y
Gps:	N	Owner/user:	Bank Of Haw
Old number:	73-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	7
Ground Elev:	34	Well depth:	358
Solid casing Depth:	Not Reported	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	33	Water Top Elev:	11.8
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	31.9
Geology:	TKB	Geology desc:	Tertiary Koolau basalt
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-324	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	31.9	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1882 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

V90
WNW
1/2 - 1 Mile
Lower

HI WELLS **3-1852-005**

Wid:	3-1852-005	Island Code:	3
Island Name:	Oahu	Well no:	1852-05
Well name:	Aloha Tower	Old name:	Not Reported
Yr drilled:	1951	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211836
Longitude:	1575207	UTM:	Y
Gps:	N	Owner/user:	Podmore J W
Old number:	90-6	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	Not Reported	Well depth:	40
Solid casing Depth:	14	Perf casing Depth:	Not Reported
Use:	UNU	Use Desc:	Unused
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	90	Drop in water Lvl:	3.4
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	QLS	Geology desc:	Quaternary limestone deposits
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	26
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-001:001	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1951 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

V91
WNW
1/2 - 1 Mile
Lower

HI WELLS **3-1852-004**

Wid:	3-1852-004	Island Code:	3
Island Name:	Oahu	Well no:	1852-04
Well name:	Aloha Towers	Old name:	Not Reported
Yr drilled:	1947	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211837
Longitude:	1575207	UTM:	Y
Gps:	N	Owner/user:	Castle & Cooke Hawaii, Inc. [03]
Old number:	90-5	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	Not Reported	Well depth:	64

Solid casing Depth:	34	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	150	Drop in water Lvl:	1.5
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	QLS	Geology desc:	Quaternary limestone deposits
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	100
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-001:001	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1947 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

92
SSW
1/2 - 1 Mile
Lower

HI WELLS **3-1751-003**

Wid:	3-1751-003	Island Code:	3
Island Name:	Oahu	Well no:	1751-03
Well name:	Ala Moana	Old name:	Not Reported
Yr drilled:	1959	Driller:	SAMSON-SMOCK
Quad_map:	13	Latitude:	211742
Longitude:	1575138	UTM:	Y
Gps:	N	Owner/user:	State Of Haw
Old number:	92-3	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	Not Reported	Well depth:	92
Solid casing Depth:	79	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	18000	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-058:064	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1959 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

93
South
1/2 - 1 Mile
Lower

HI WELLS **3-1751-005**

Wid:	3-1751-005	Island Code:	3
Island Name:	Oahu	Well no:	1751-05
Well name:	Ala Moana	Old name:	Not Reported
Yr drilled:	1968	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211740
Longitude:	1575130	UTM:	Y
Gps:	N	Owner/user:	U Of Hawaii
Old number:	Not Reported	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	Not Reported
Ground Elev:	Not Reported	Well depth:	Not Reported
Solid casing Depth:	Not Reported	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	600	Drop in water Lvl:	Not Reported
Chloride Test:	17070	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	1000
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RF	Geology desc:	Artificial fill
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-058:060	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1968 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

94
North
1/2 - 1 Mile
Higher

HI WELLS **3-1951-004**

Wid:	3-1951-004	Island Code:	3
Island Name:	Oahu	Well no:	1951-04
Well name:	Liliha	Old name:	Not Reported
Yr drilled:	1939	Driller:	MULLIN
Quad_map:	13	Latitude:	211911
Longitude:	1575129	UTM:	Y
Gps:	N	Owner/user:	Chun Hoon Mkt
Old number:	Not Reported	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	Not Reported	Well depth:	53

Solid casing Depth:	28	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	69	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RA	Geology desc:	Recent alluvium (unconsolidated non-calcareous deposits)
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1939 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

95
SSE
1/2 - 1 Mile
Lower

HI WELLS **3-1751-004**

Wid:	3-1751-004	Island Code:	3
Island Name:	Oahu	Well no:	1751-04
Well name:	Ala Moana	Old name:	Not Reported
Yr drilled:	1967	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211740
Longitude:	1575103	UTM:	Y
Gps:	N	Owner/user:	1350 Ala Moana
Old number:	76-1	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	Not Reported
Ground Elev:	5	Well depth:	Not Reported
Solid casing Depth:	Not Reported	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RF	Geology desc:	Artificial fill
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-3-006:001	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1967 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

96
NW
1/2 - 1 Mile
Higher

HI WELLS **3-1852-001**

Wid:	3-1852-001	Island Code:	3
Island Name:	Oahu	Well no:	1852-01
Well name:	Ala Moana Blvd	Old name:	Not Reported
Yr drilled:	1937	Driller:	MULLIN
Quad_map:	13	Latitude:	211854
Longitude:	1575202	UTM:	Y
Gps:	N	Owner/user:	Chun Hoon Mkt
Old number:	110-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	Not Reported	Well depth:	60
Solid casing Depth:	20	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	PLS	Geology desc:	Consolidated calcareous marine sediments
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	1-7-018:011	Aquifer code:	30103
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1937 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

97
ESE
1/2 - 1 Mile
Higher

HI WELLS **3-1850-016**

Wid:	3-1850-016	Island Code:	3
Island Name:	Oahu	Well no:	1850-16
Well name:	Makiki	Old name:	Not Reported
Yr drilled:	1886	Driller:	Not Reported
Quad_map:	13	Latitude:	211813
Longitude:	1575031	UTM:	Y
Gps:	N	Owner/user:	C&C Honolulu
Old number:	74-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	6
Ground Elev:	22	Well depth:	442

Solid casing Depth:	400	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	40	Water Top Elev:	25.8
Chloride value:	53	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	27.8
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-420	bot_solid depth:	-378
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	27.8	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1886 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

98
NNW
1/2 - 1 Mile
Higher

HI WELLS **3-1951-001**

Wid:	3-1951-001	Island Code:	3
Island Name:	Oahu	Well no:	1951-01
Well name:	Botanic Garden	Old name:	Not Reported
Yr drilled:	1883	Driller:	Not Reported
Quad_map:	13	Latitude:	211911
Longitude:	1575138	UTM:	Y
Gps:	N	Owner/user:	C&C Pks&Rec
Old number:	109-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	35	Well depth:	767
Solid casing Depth:	Not Reported	Perf casing Depth:	Not Reported
Use:	UNU	Use Desc:	Unused
Use year:	74	Water Top Elev:	31.4
Chloride value:	55	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	27.2
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-732	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	1-7-008:002	Aquifer code:	30102
Latest head mmt:	27.2	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1883 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID
Direction
Distance
Elevation

Database EDR ID Number

99
ESE
1/2 - 1 Mile
Lower

HI WELLS **3-1750-009**

Wid:	3-1750-009	Island Code:	3
Island Name:	Oahu	Well no:	1750-09
Well name:	Ala Moana	Old name:	Not Reported
Yr drilled:	1964	Driller:	NAT WHITON
Quad_map:	13	Latitude:	211757
Longitude:	1575036	UTM:	Y
Gps:	N	Owner/user:	Pagoda Hotel
Old number:	63-1	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	16
Ground Elev:	7	Well depth:	53
Solid casing Depth:	21	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	550	Drop in water Lvl:	2.9
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	-46	bot_solid depth:	-14
Bot_perf depth:	Not Reported	Well Capacity:	190
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-3-017:016	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	03/01/1964 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

100
WSW
1/2 - 1 Mile
Lower

HI WELLS **3-1852-002**

Wid:	3-1852-002	Island Code:	3
Island Name:	Oahu	Well no:	1852-02
Well name:	Ft Armstrong	Old name:	Not Reported
Yr drilled:	1939	Driller:	MULLIN
Quad_map:	13	Latitude:	211805
Longitude:	1575212	UTM:	Y
Gps:	N	Owner/user:	State Of Haw
Old number:	93-1	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	Not Reported	Well depth:	102

Solid casing Depth:	40	Perf casing Depth:	Not Reported
Use:	UNU	Use Desc:	Unused
Use year:	74	Water Top Elev:	0
Chloride value:	14500	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	RF	Geology desc:	Artificial fill
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	0
Min chlorides:	Not Reported	Min Cl year:	0
Bot_hole depth:	Not Reported	bot_solid depth:	Not Reported
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-057:004	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1939 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

101
SSW
1/2 - 1 Mile
Lower

HI WELLS **3-1751-006**

Wid:	3-1751-006	Island Code:	3
Island Name:	Oahu	Well no:	1751-06
Well name:	Ala Moana	Old name:	Not Reported
Yr drilled:	1970	Driller:	ROSCOE MOSS
Quad_map:	13	Latitude:	211740
Longitude:	1575149	UTM:	Y
Gps:	N	Owner/user:	U Of Hawaii
Old number:	Not Reported	Well_type:	PER
Type:	Percussion Drill	Casing dia:	16
Ground Elev:	5	Well depth:	151
Solid casing Depth:	46	Perf casing Depth:	Not Reported
Use:	OTH	Use Desc:	Other
Use year:	74	Water Top Elev:	0
Chloride value:	0	Test date:	Not Reported
Pumping Test rate:	179	Drop in water Lvl:	8.0
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	Not Reported
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-146	bot_solid depth:	-41
Bot_perf depth:	Not Reported	Well Capacity:	22
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	2-1-058:041	Aquifer code:	30102
Latest head mmt:	0	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1970 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

Map ID Direction Distance Elevation	Database	EDR ID Number
102 **ESE** **1/2 - 1 Mile** **Higher**	**HI WELLS**	**3-1850-020**

Wid:	3-1850-020	Island Code:	3
Island Name:	Oahu	Well no:	1850-20
Well name:	Makiki	Old name:	Not Reported
Yr drilled:	1891	Driller:	MCCANDLESS
Quad_map:	13	Latitude:	211803
Longitude:	1575032	UTM:	Y
Gps:	N	Owner/user:	Plews&Wichman
Old number:	63-	Well_type:	Not Reported
Type:	Not Reported	Casing dia:	8
Ground Elev:	16	Well depth:	437
Solid casing Depth:	377	Perf casing Depth:	Not Reported
Use:	SLD	Use Desc:	Sealed
Use year:	53	Water Top Elev:	31
Chloride value:	56	Test date:	Not Reported
Pumping Test rate:	Not Reported	Drop in water Lvl:	Not Reported
Chloride Test:	Not Reported	Temperature:	Not Reported
Units:	Not Reported	Pump Capacity:	0
Annual Draft:	Not Reported	Static Water Lvl:	26.0
Geology:	Not Reported	Geology desc:	Not Reported
Installed:	Not Reported	Last Measured:	Not Reported
Max chlorides:	Not Reported	Max Cl year:	Not Reported
Min chlorides:	Not Reported	Min Cl year:	Not Reported
Bot_hole depth:	-421	bot_solid depth:	-361
Bot_perf depth:	Not Reported	Well Capacity:	Not Reported
Pump Capacity:	Not Reported	Draft (mgd):	Not Reported
Tax map key:	Not Reported	Aquifer code:	30102
Latest head mmt:	26	Cur head mmt:	Not Reported
Current Cl mmt:	Not Reported	Const. Date:	01/01/1891 00:00:00
Pump Inst. Date:	Not Reported	Surveyor:	Not Reported
Transmissivity:	0	Pump intake elev:	Not Reported
Pump depth:	Not Reported		

GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for HONOLULU County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 96813

Number of sites tested: 3

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.067 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	0.350 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Ground Water Wells
Source: Department of Land and Natural Resources
Telephone: 808-587-0242

OTHER STATE DATABASE INFORMATION

RADON

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

STREET AND ADDRESS INFORMATION

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APPENDIX IV
Sanborn® Map Report

"Linking Technology with Tradition"®

Sanborn® Map Report

Ship To: Sharla Horiuchi
Enviro Srvcs. and Trng.
2850 Paa Street
Honolulu, HI 96819

Order Date: 4/25/2006 **Completion Date:** 4/26/2006
Inquiry #: 1662115.3s
P.O. #: 06-1005
Site Name: Alapai Transit Center
Address: 710 S. King Street
City/State: Honolulu, HI 96813
Cross Streets:

Customer Project: NA
1015180BRU 808-533-7222

Based on client-supplied information, fire insurance maps for the following years were identified

1914 - 1 Map	1976 - 1 Map
1927 - 1 Map	1977 - 1 Map
1950 - 1 Map	1986 - 1 Map
1955 - 1 Map	1991 - 1 Map
1956 - 1 Map	1993 - 1 Map
1962 - 1 Map	
1972 - 1 Map	
1975 - 1 Map	

Limited Permission to Photocopy Total Maps: 13

Enviro Srvcs. and Trng. Center (the client) is permitted to make up to THREE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

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USER'S GUIDE

This User's Guide provides guidelines for accessing Sanborn Map® images and for transferring them to your Word Processor.

Reading Sanborn Maps

- Sanborn Maps document historical property use by displaying property information through words, abbreviations, and map symbols. The Sanborn Map Key provides information to help interpret the symbols and abbreviations used on Sanborn Maps. The Key is available from EDR's Web Site at: http://www.edrnet.com/reports/samples/key.pdf

Organization of Electronic Sanborn Image File

- Sanborn Map Report, listing years of coverage
- User's Guide
- Oldest Sanborn Map Image
- Most recent Sanborn Map Image

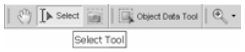
Navigating the Electronic Sanborn Image File

1. Open file on screen.
2. Identify TP (Target Property) on the most recent map.
3. Find TP on older printed images.
4. Using Acrobat® Reader®, zoom to 250% in order to view more clearly. (200-250% is the approximate equivalent scale of hardcopy Sanborn Maps.)
   A. On the menu bar, click "View" and then "Zoom to..."
   B. Or, use the magnifying tool and drag a box around the TP

Printing a Sanborn Map From the Electonic File

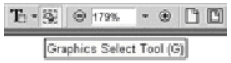
- EDR recommends printing images at 300 dpi (300 dpi prints faster than 600 dpi)
- To print only the TP area, cut and paste from Acrobat to your word processor application.

Acrobat Versions 6 and 7



1. Go to the menu bar
2. Click the "Select Tool"
3. Draw a box around the area selected
4. "Right click" on your mouse
5. Select "Copy Image to Clipboard"
6. Go to Word Processor such as Microsoft Word, paste and print.

Acrobat Version 5



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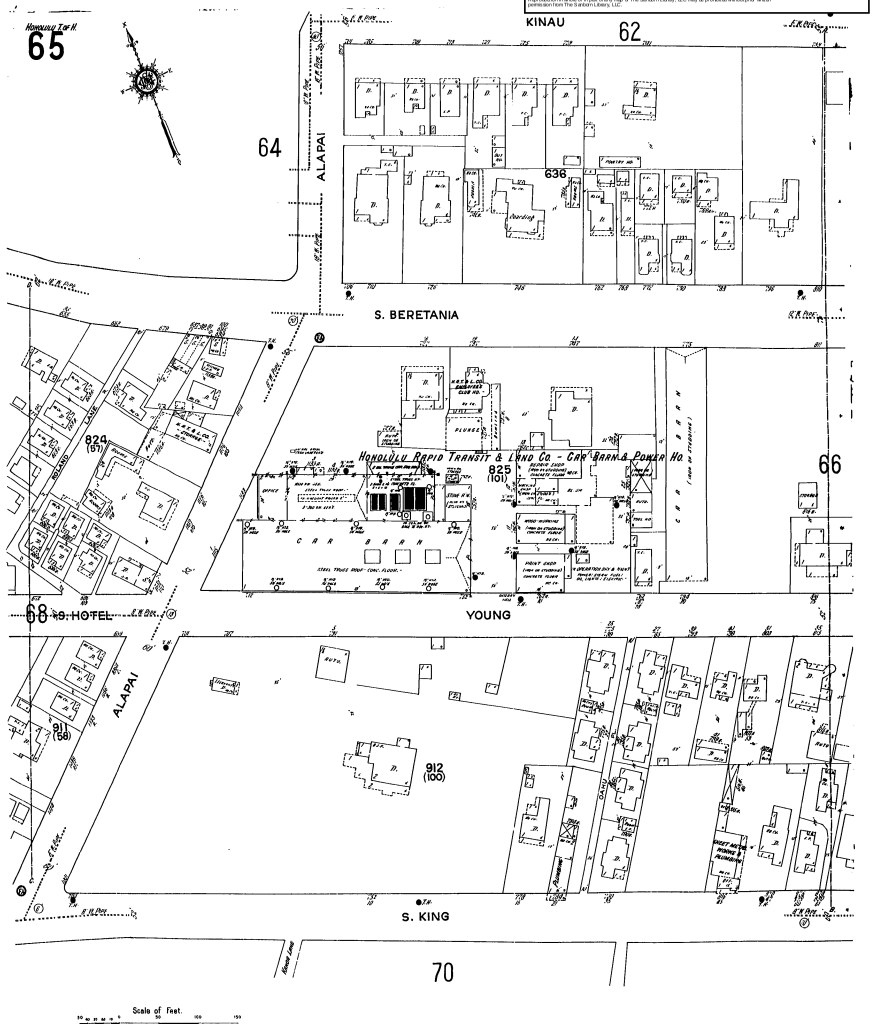

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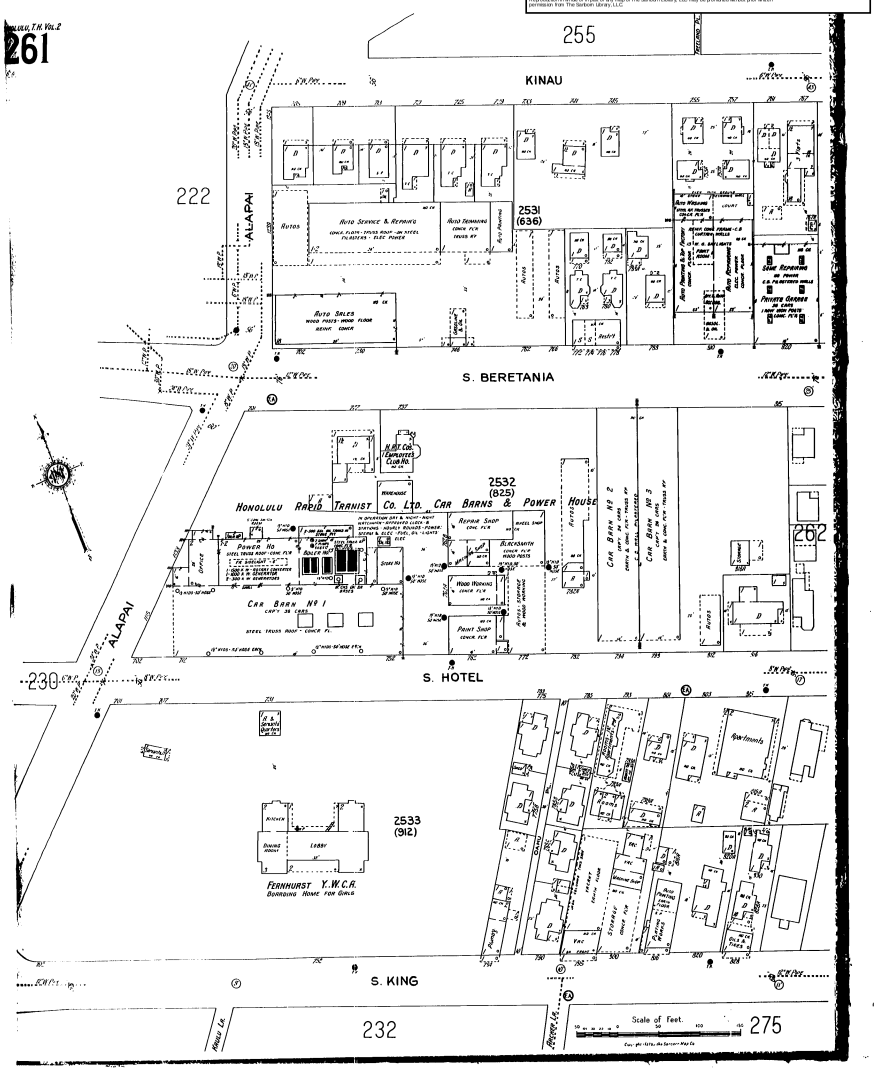

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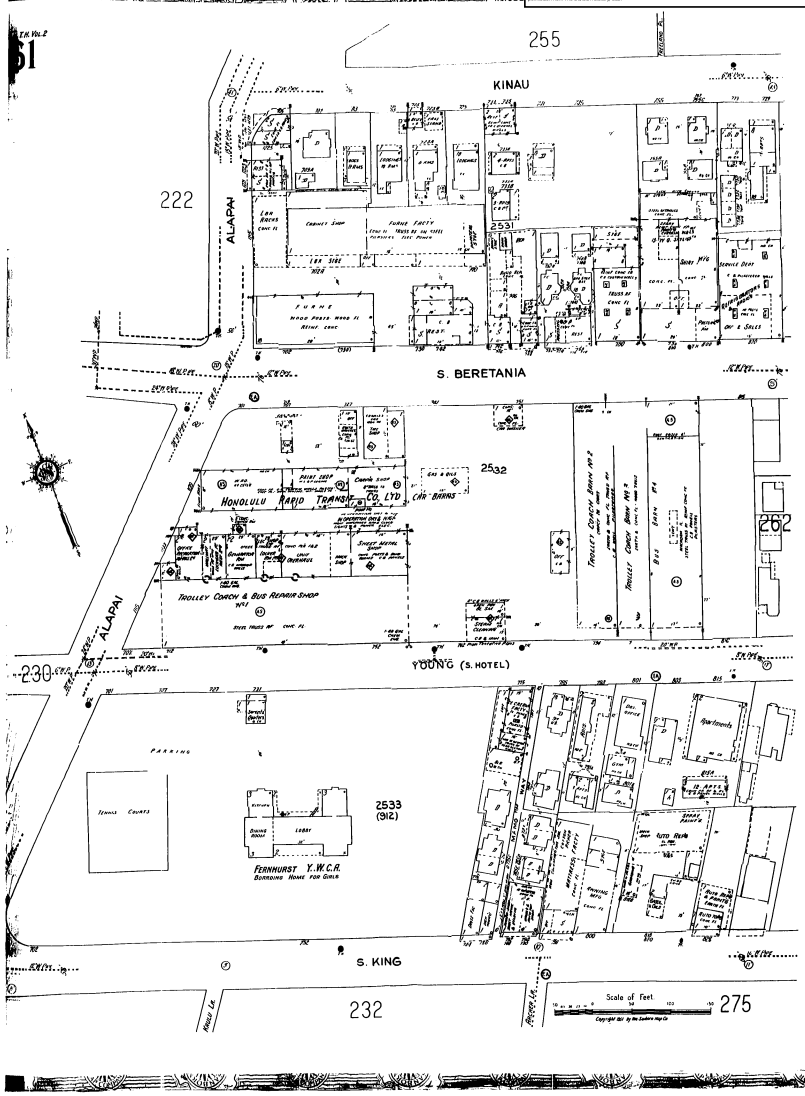

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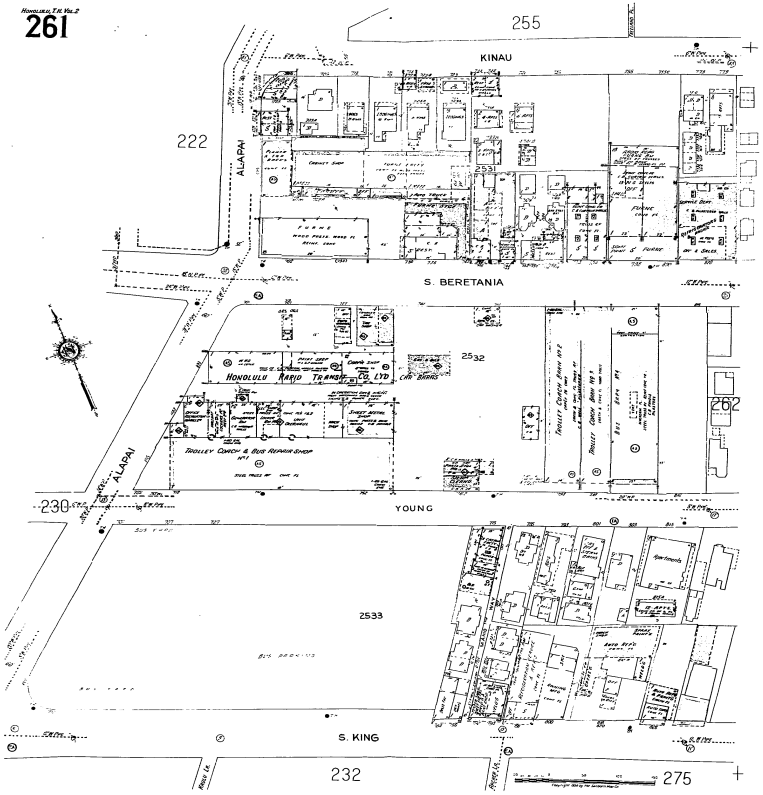

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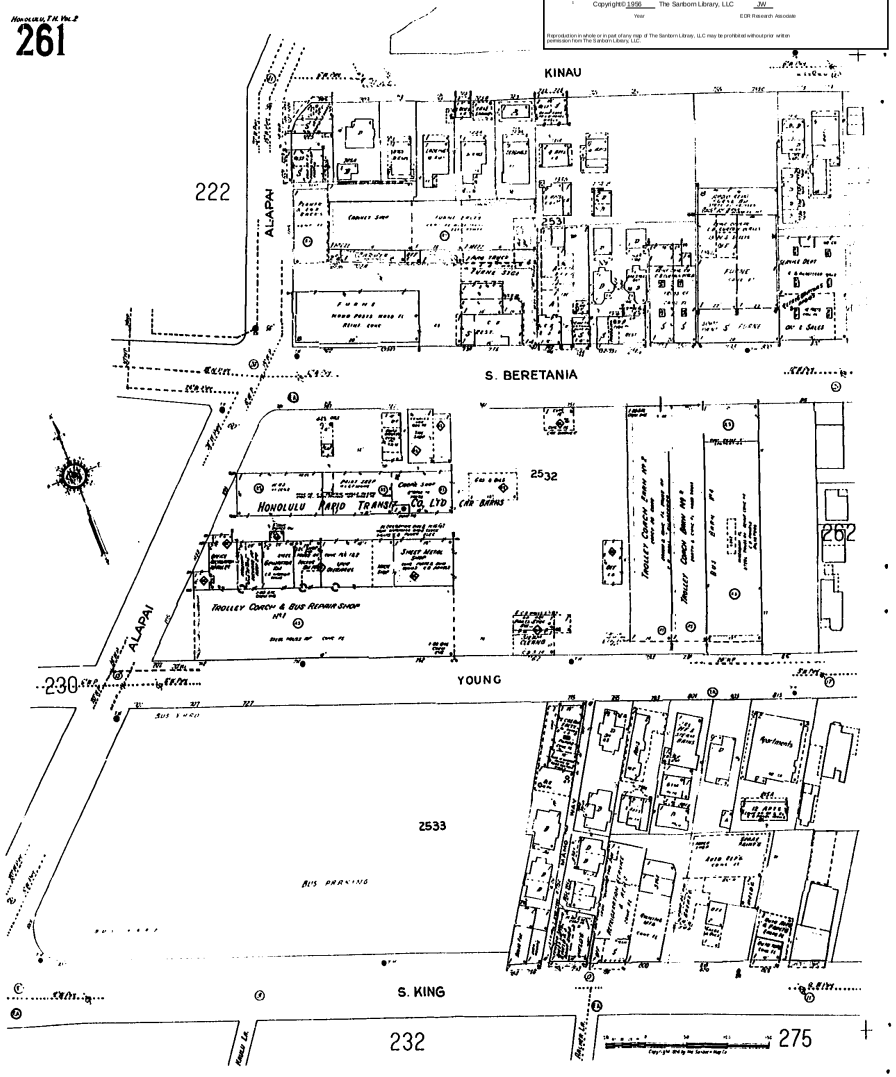

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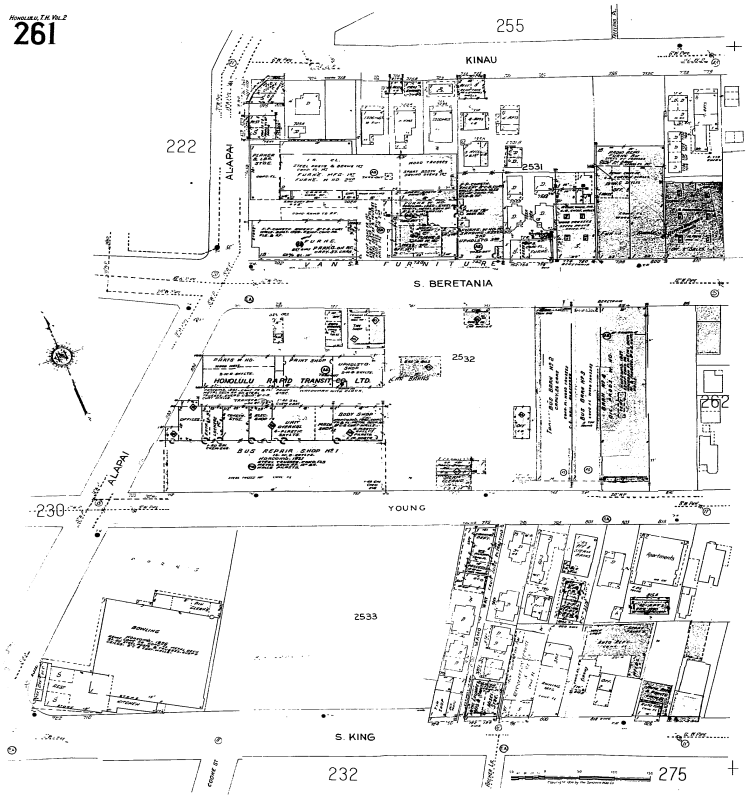

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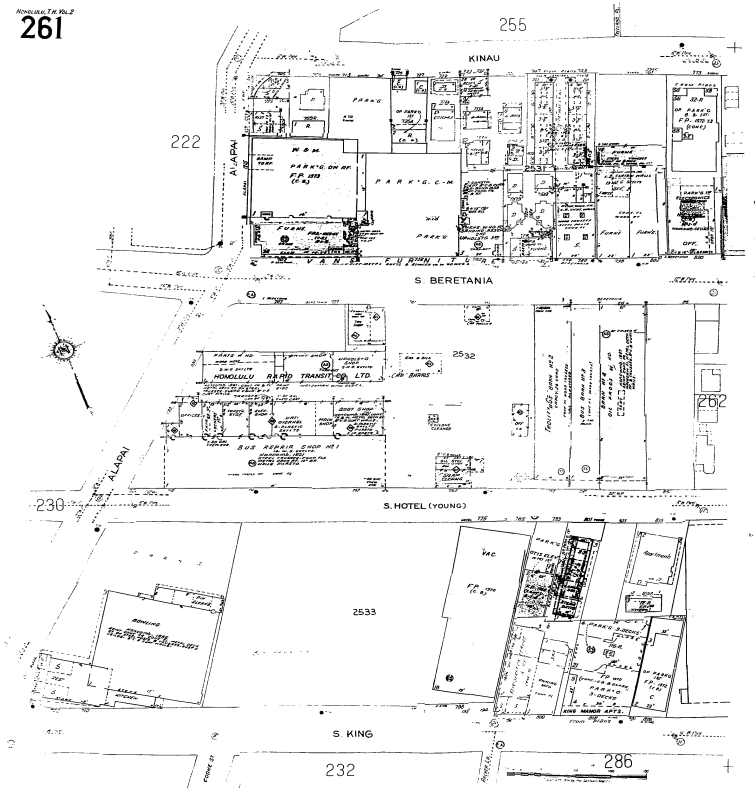

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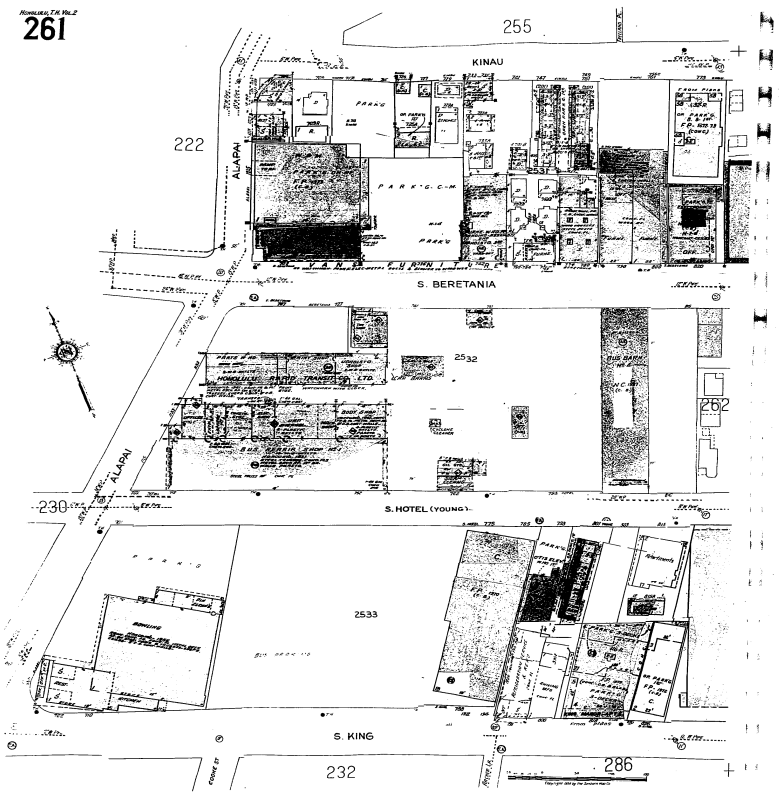

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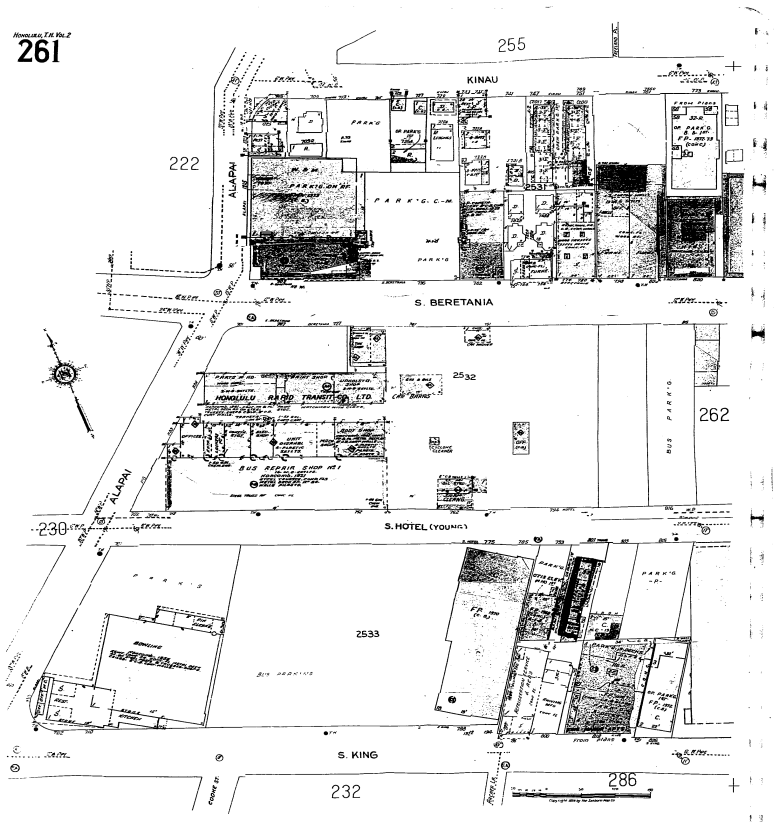

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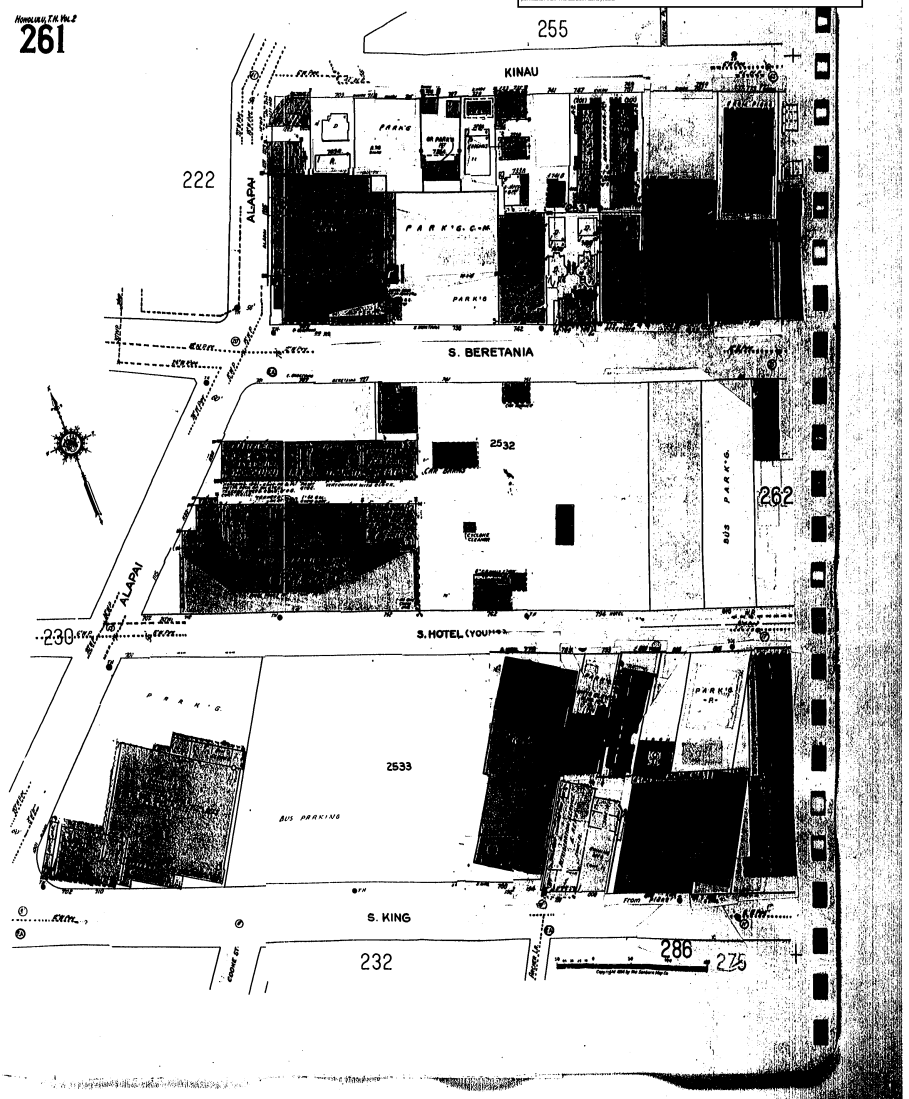

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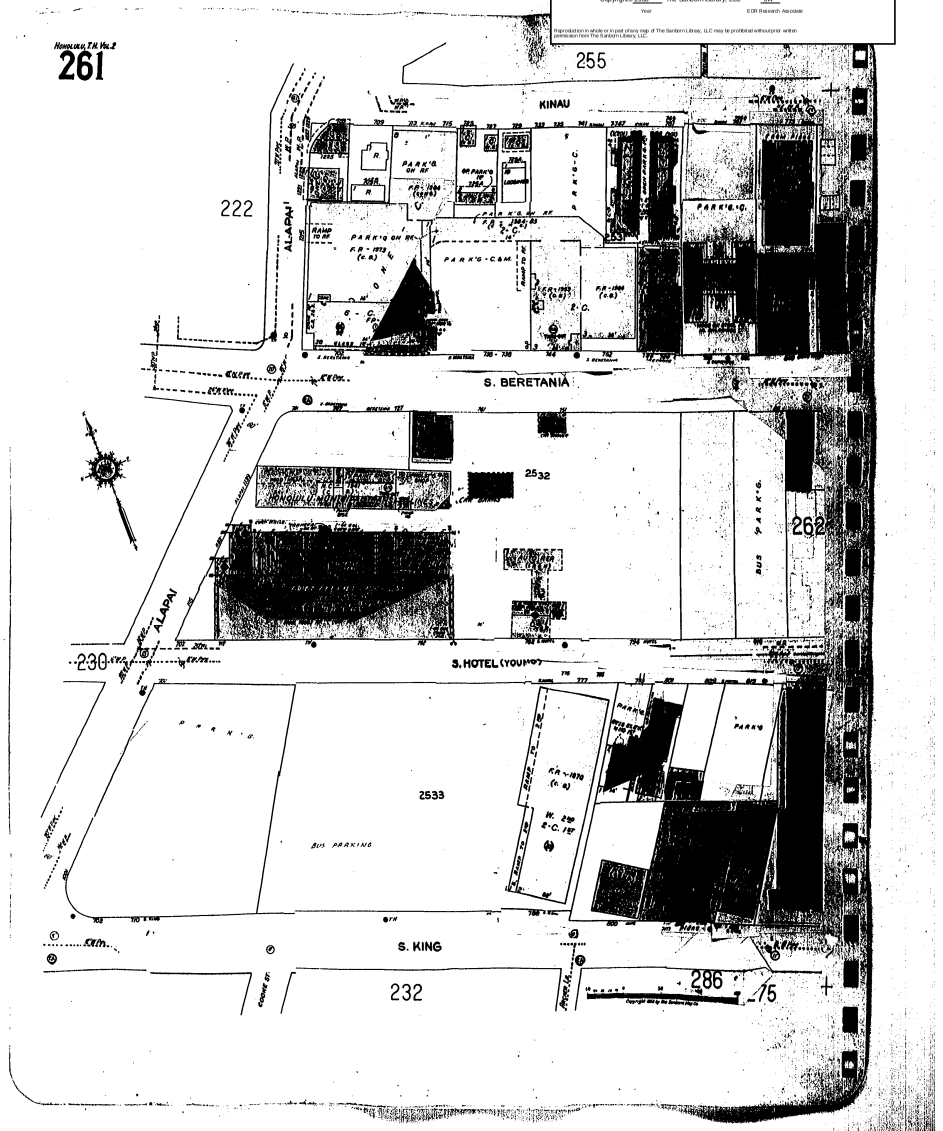

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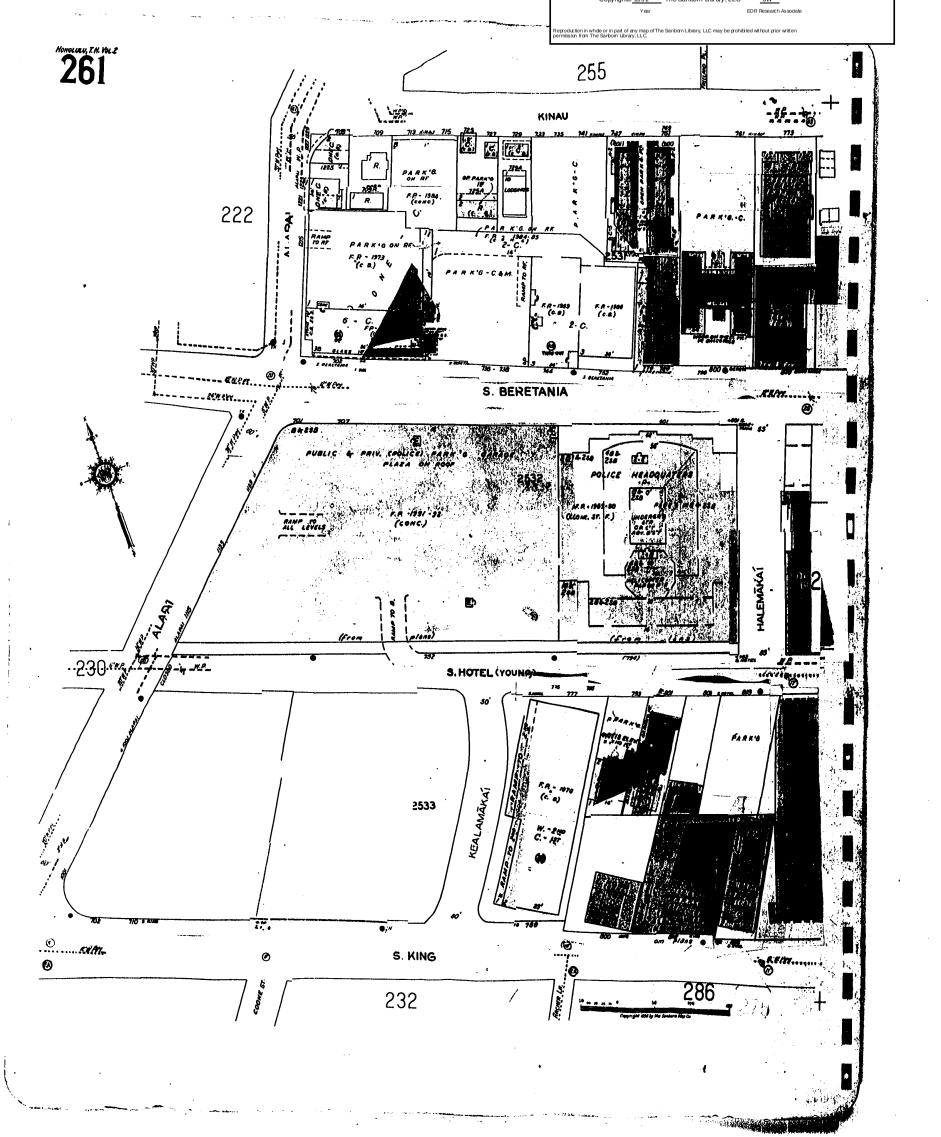

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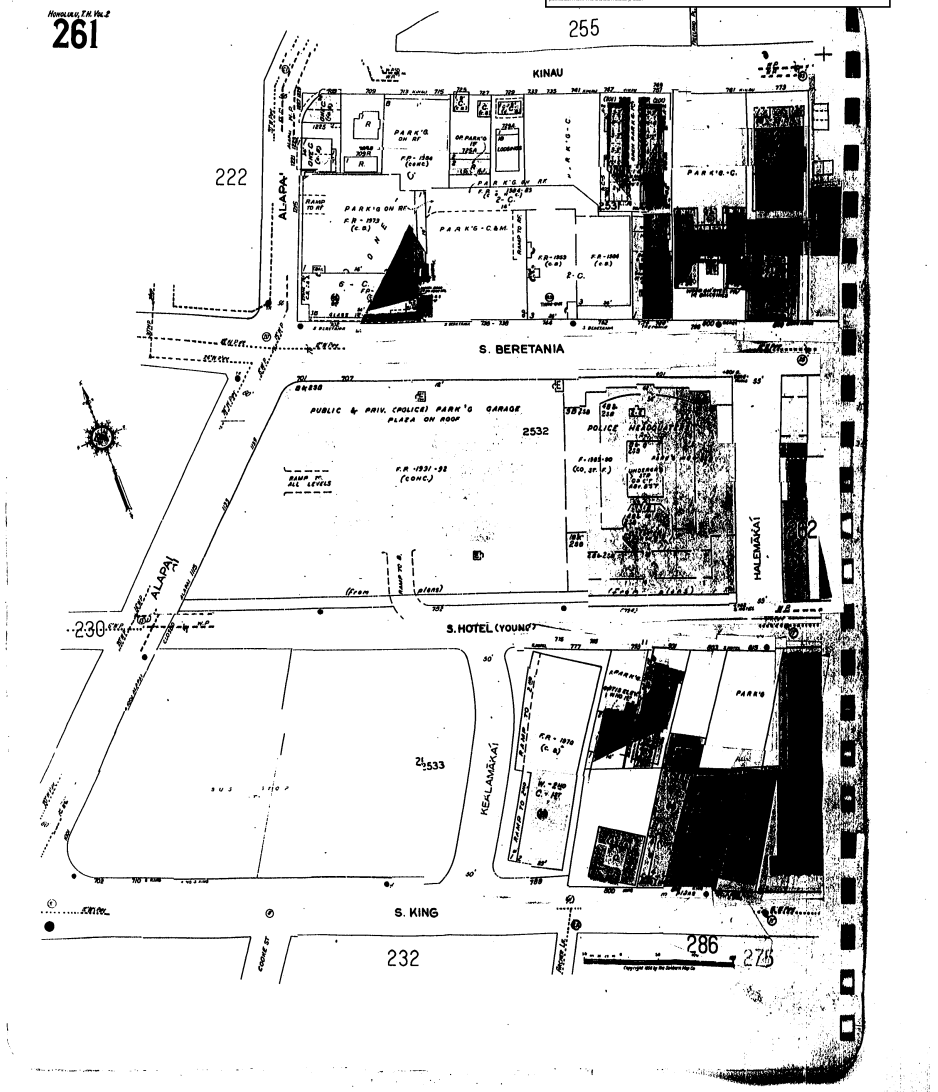

APPENDIX I. PHASE II ENVIRONMENTAL SITE ASSESSMENT

LIMITED PHASE II
ENVIRONMENTAL SITE ASSESSMENT

Alapai Transit Center
and
Joint Traffic Management Center
710 S. King Street, Honolulu, Hawaii
TMK (1) 2-1-42: Parcels 4 and 13

Prepared For:
GROUP 70 INTERNATIONAL
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Prepared By:
ENVIROSERVICES & TRAINING CENTER, LLC
2850 Paa Street, Suite 150
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ETC Project No. 06-1005

August 2006

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1.0 CERTIFICATIONS AND LIMITATIONS

EnviroServices & Training Center (ETC), LLC has completed this Limited Phase II Environmental Site Assessment (ESA) for the project site. ETC's findings and conclusions presented in this report are professional opinions based solely upon visual observations of the project site, government regulations, and upon interpretation of the laboratory data and field measurements gathered at the time and location of the study.

This report is intended for the sole use of ETC's Client, exclusively for the project site indicated. The scope of services performed in execution of this Limited Phase II ESA may not be appropriate for satisfying the needs of other users, and any use or reuse of this report or the findings and conclusions presented herein is unauthorized and at the sole risk of said user.

ETC makes no guarantee or warranty; either expressed or implied, except that our services are consistent with good commercial or customary practices designed to conform to acceptable industry standards and governmental regulations. No warranty or representation, expressed or implied, is included or intended in its proposal, contracts, or reports. Opinions stated in this report apply only to the site as outlined and apply to the conditions present at the time of Limited Phase II ESA activities. Moreover, these opinions do not apply to site changes that occur after the Limited Phase II ESA activities.

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Date: August 31, 2006

Reviewed By: _____

Sharla Horiuchi
Environmental Scientist
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Date: August 31, 2006

2.0 EXECUTIVE SUMMARY

EnviroServices & Training Center (ETC), LLC was contracted by Group 70 International to perform a Limited Phase II Environmental Site Assessment (ESA) at 710 S. King Street, Honolulu, Oahu, Hawaii. The subject property is identified as Tax Map Key (TMK): 2-1-42: Parcel 4 and 13 herein after referred to as Property.

ETC's investigation included identification of potential areas of contamination based on a concurrent Phase I Environmental Site Assessment, field screening of surface and subsurface soils, installation of two temporary monitoring wells, and laboratory analyses of soil and groundwater samples for the presence of petroleum hydrocarbons.

ETC contracted Hawaii Geophysical Services to identify potential underground utilities in the vicinity of the proposed boring location. ETC contracted Environmental Services Network – Pacific (ESN) to utilize a direct push method to advance three soil borings and construct two 1-inch diameter temporary monitoring wells. Boring B-1 was located on the southern portion of the Property near King Street. Boring B-2 was located on the northern portion of the Property near Hotel Street and boring B-3 was located in the northwest corner of the Property approximately 50 feet south of the underground storage tank (UST). Three soil samples and two groundwater samples were collected at the Property.

Analytical data from the soil and groundwater samples indicated that total petroleum hydrocarbons were not detected above method detection limits in either the soil or groundwater sample collected from the site. Therefore, based on field screening and analytical data under the scope and limitations of this project, ETC believes that the Property has not been significantly impacted by petroleum migration from the former MTL Bus Facility and the Honolulu Police Department USTs.

3.0 SCOPE OF WORK

This report presents the results of ETC's findings during Limited Phase II Environmental Site Assessment (ESA) activities for the subject property (hereinafter referred to as Property) located at 710 S. King Street, Honolulu, Oahu, Hawaii.

The purpose of this investigation was to provide the Client, Group 70 International, Inc., with information regarding areas of concern identified in ETC's concurrent Phase I Environmental Site Assessment for the property. Such concerns included potential migration of petroleum contamination from the MTL Bus Facility and potential impacts from the Honolulu Police Department's currently in-use USTs. The activities were performed in general accordance with the Technical Guidance Manual for the Implementation of the Hawaii State Contingency Plan, DOH, October 1997 (Technical Guidance Manual). Specifically, ETC completed the following tasks:

- Determined the optimum location of three soil borings and two temporary monitoring wells based on information provided in the Phase I ESA;
- Contracted Hawaii Geophysical Services (HGS) to conduct limited utilities toning at the boring locations;
- Contracted Environmental Services Network – Pacific (ESN) to utilize a direct-push method for collecting subsurface soil samples and installing two temporary groundwater monitoring wells;
- Observed and documented the advancement of three (3) soil borings on the Property;
- Examined soil samples for visual or olfactory signs of contamination;
- Monitored the organic vapor concentration in the soil headspace using a photoionization detector (PID);
- Collected one (1) subsurface soil sample from the capillary fringe (just above the groundwater table) within each boring;
- Preserved, labeled, and submitted the soil samples to ESN for laboratory analysis of total petroleum hydrocarbons (TPH) as gasoline, as diesel, and as oil (fuel scan) on a 5 day turn around time;
- Observed and documented the installation of two (2) temporary monitoring wells;
- Examined groundwater for visual and olfactory signs of contamination;
- Measured and purged the temporary monitoring wells;
- Collected, labeled, and transported two (2) groundwater samples to ESN for a fuel scan laboratory analysis on a standard 5 day turn around time; and
- Prepared this report documenting the field activities and the results of the investigation including maps, photographs, and analytical results.

4.0 SITE BACKGROUND

4.1 Site Description and Land Area

The Property, located at 710 S. King Street is comprised of approximately 161,499 square feet of land in Honolulu, Hawaii, on the southern portion of the island of Oahu (Figure 1). Groundcover at the Property consisted of concrete and asphalt. The Property is bordered by King Street to the south, Hotel Street to the north, Alapai Street to the west, and Kealamakai Street to the east.

The Property appeared relatively flat. The nearest surface water body is the Kewalo Basin located approximately 5,500 feet southwest of the Property. The Property is situated at an elevation of approximately 10 feet above mean sea level (msl). The Site Location Map is included in Figure 1, Appendix I.

4.2 Geology and Hydrogeology

4.2.1 Regional Geology

Oahu is formed by the erosional remnants of two shield volcanoes. These are the Waianae range to the west and the Koolau range to the east. The Waianae volcano is estimated to have formed 2.4 to 3.6 million years before present. It consists of a tholeiitic lava shield with a thick cap of transitional to alkalic rock. Rejuvenation-stage volcanics of undifferentiated age occur in Kolekole Pass and on the south flank of the Waianae shield. Dike orientations define northwest and southwest rift zones (Macdonald, et al., 1983).

The Koolau volcano is estimated to have formed 1.8 to 2.6 million years before the present (Macdonald, et al., 1983). It consists of a tholeiitic lava shield and lacks an alkalic cap. It has well defined major dike complex trending northwest-southwest. A third, minor rift zone referred to as the Kaau rift trends southward from Kaau crater, near the upland crest of the Koolau Ridge. After a long dormant period and periods of deep erosion, the Koolau volcano developed abundant and scattered rejuvenation-stage vents, typically aligned on northeast-striking fissures (Macdonald, et al., 1983).

4.2.2 Site Geology

The soil at the Subject Property is mapped as Makiki clay loam, 0 to 2 percent slopes (MkA). The Makiki Series consists of well-drained soils formed in alluvium mixed with volcanic ash and cinders. The Makiki clay loam, 0 to 2 percent slopes overlays smooth fans and terraces and exhibits small stony areas and small areas of Kaena soils. A representative profile includes a dark brown clay loam, underlain by a dark brown clay loam subsoil that has subangular blocky structures and includes cinders and rock fragments. Underlying the subsoil is a material that is similar to the subsoil and below this are volcanic cinders. Acidity of the soil ranges from medium to strong, permeability is moderately rapid, runoff is slow and the erosion hazard is no more than slight. These soils are generally used for urban purposes (USDA, 1972).

4.2.3 Regional Hydrogeology

The primary drinking water in the Hawaiian Islands is drawn from basal groundwater. Basal groundwater is formed by rainwater percolating down through the residual soils and permeable volcanic rock. All of the island situated below sea level, except within rift zones of the volcanoes, is saturated with ocean salt water and thus forms a basal lens called the "Ghyben-Herzberg" lens. A zone of transition between the fresh groundwater and the ocean salt water occurs due to the constant movement of the interface as a result of tidal fluctuations, seasonal fluctuations in recharge and discharge and aquifer development (Macdonald, et al., 1983).

Downward percolation of rainwater may be stopped by impermeable layers such as dense lava flows, alluvial clay layers and volcanic ash. The groundwater then forms a perched or high level aquifer, which is not in contact with salt water. Recharge of the aquifer occurs in areas of high rainfall, which are the interior mountainous areas. The groundwater flows from the recharge areas to the areas of discharge along the shoreline. Frictional resistance to groundwater flow causes it to pile up within the island until it attains sufficient hydraulic head to overcome friction. Thus, basal groundwater tends to slope toward the shoreline.

4.2.4 Site Hydrogeology

The Subject Property is underlain by the Nuuanu Aquifer System, which is part of the Honolulu Aquifer Sector on the island of Oahu. The aquifer is classified by Mink and Lau, 1990, with the system identification number 30102116 (13321). This system includes an unconfined basal aquifer in sedimentary (nonvolcanic) lithology. The groundwater in this aquifer is described as being currently used, but is neither a drinking water source nor ecologically important. The groundwater contains a moderate salinity (1,000 to 5,000 mg/l Cl^-) and is described as replaceable with a high vulnerability to contamination (Mink and Lau, 1990). The site is further underlain by a second aquifer of the same system. The aquifer is a confined, basal aquifer in flank compartments, and is classified with the system identification number 30102121 (11113). The groundwater in this aquifer is described as a currently used drinking water source with a fresh salinity (<250 mg/l Cl^-). The groundwater is also described as irreplaceable with a low vulnerability to contamination (Mink and Lau, 1990).

5.0 LIMITED PHASE II ESA PROCESS

5.1 Limited Phase II ESA

This Limited Phase II ESA was conducted to evaluate the presence of potential petroleum contamination in subsurface soils and groundwater at the Property. The approach of this Limited Phase II ESA was to investigate potential environmental concerns identified during ETC's Phase I ESA for the Property by collecting a limited number of soil and groundwater samples from the Property. The locations of the samples were positioned within the closest proximity to the former MTL Bus Facility and current Honolulu Police Department USTs. Note that since the Subject Property is currently occupied and used, ETC's investigation activities were limited to one (1) day of drilling (between 8:30 a.m. and 3:00 p.m.); and only those areas accessible to ESN's drill rig.

5.2 Sampling Methodology

5.2.1 Field Sampling Objectives

The purpose of the Limited Phase II ESA was to determine if the project site had been affected by offsite migration of petroleum contamination. ETC identified three boring locations in an area of the property most likely to have been impacted based on assumed groundwater flow direction.

Both soil and groundwater samples were collected and analyzed for TPH-fuel scan. The analytical results were compared to Hawaii Department of Health (DOH) Environmental Action Levels (EALs) for soil and groundwater in areas where groundwater is a current or potential drinking water source and where the nearest surface water body is more than 150 meters from the site.

5.2.2 Field Screening Procedures

Based on the Phase I ESA, potential "hot spot" (areas impacted by petroleum hydrocarbons) locations were pre-determined based on their proximity to potential off-site sources. The sampling approach was based on the findings in ETC's Phase I ESA of the Property. The Phase I ESA discussed potential petroleum impacts to the Property from the Honolulu Police Department's currently in-use USTs and potential contaminant migration from the former MTL Bus Facility. This approach was coupled with field measurement techniques and direct-push technology (DPT) sampling methods. The DPT sampling method was chosen because it allowed for rapid soil sample collection and minimized investigation-derived waste.

Soil obtained in ESN's 4-foot core sampler with an acetate sleeve was screened for visual or olfactory indications of petroleum contamination. A RAE Systems MiniRAE 2000 Portable VOC Monitor (Model PGM-7600) photoionization detector (PID) was used to field screen soil samples for volatile organic compounds (VOCs) in the soil vapor headspace.

5.2.3 Field Equipment Calibration

All field instruments were calibrated at the beginning of the work day or as recommended by the manufacturer. Calibration served as a quality assurance (QA) check on the equipment. Instruments that failed calibration standards were not used. Calibration procedures for the field equipment were performed according to specifications provided in the equipment operation manuals.

ETC used the following field equipment for this investigation:

- RAE Systems MiniRAE 2000 Portable VOC Monitor (Model PGM-7600) photoionization detector (PID) calibrated using 100-ppm isobutylene standard.
- Horiba U-10 Water Quality Checker – calibrated using Calitech™ Auto Cal Solution (pH = 4.0, turbidity = 0.0 NTU, conductivity = 4.49 mS/cm).
- Solinst Canada Ltd. Water Level Indicator Model 101 – no calibration necessary.

5.3 Decontamination

All sample collection equipment (i.e., 4-foot sampler) was decontaminated between samples by washing with a brush and Alconox™ solution and triple rinsing with potable water. Sample containers were new or precleaned by the laboratory, and were kept in their original packaging to avoid contamination prior to use.

5.4 Investigation-Derived Waste (IDW)

IDW included soil excavated during direct push sampling, disposable personal protective equipment (PPE), disposable sampling equipment, decontamination fluids, purge water, and any other material that may have come in contact with potentially contaminated materials. IDW generated on-site were handled as follows:

- Used PPE and disposable sampling equipment (i.e., latex gloves, bailers) were disposed as solid waste.
- Soils from borings were returned to the source after sampling.
- Decontamination fluids and groundwater purged from the monitoring wells were left to evaporate on-site.

6.0 LIMITED PHASE II FIELD INVESTIGATION

6.1 Preparation and Mobilization Efforts

6.1.1 Site Access and Subcontractor Coordination

Site access was coordinated with Mr. Pearson Koike of the City and County of Honolulu, Department of Transportation Services (DTS). ETC subcontracted Hawaii Geophysical Services to perform underground utilities toning, and ESN to perform DPT subsurface soil sampling and temporary monitoring well installation activities. In addition, ESN was also subcontracted to perform laboratory analyses of soil and groundwater samples.

6.1.2 Initial Site Reconnaissance and Utilities Clearance

On August 1, 2006, ETC met Mr. Mike Bell (Hawaii Geophysical Services), who used electromagnetic instrumentation to scan for underground utilities in the vicinity of the proposed boring locations. Suspected underground utility lines were marked with spray paint.

6.2 Soil Sampling Activities

Three (3) soil borings were advanced at the Property. The boring locations were identified during visual reconnaissance of the Property and were selected based on the proximity and location of off-site contaminant sources identified in the Phase I ESA that posed a potential threat to the native soil and groundwater at the Property. The boring locations are shown in Figure 2, Appendix I.

ESN collected continuous soil cores with 4-foot long core samplers with acetate sleeve from ground surface to various depths. ETC personnel screened the soil for visual and olfactory indications of hydrocarbon contamination. Soil headspace readings were collected with the PID at various depths, typically every 2-feet. Following screening of the soil, a soil sample was collected from each boring, at the capillary fringe (just above the groundwater table).

The soil samples were collected directly from the 4-foot long core samplers with acetate sleeve using a 4 ounce glass jar. The glass jars were sealed with a plastic cap. The glass jars were then labeled with the client name, sample ID number, date/time of sampling and analyses. The samples were placed in a designated sample cooler with chemical ice pending delivery to the laboratory.

Each sample was submitted to ESN for TPH-fuel scan analysis via EPA Method 8015mod.

Each sample was extracted and analyzed within the recommended maximum allowable holding time. The chain-of-custody together with the corresponding laboratory reports are presented in Appendix III.

Soil was analyzed for VOCs in the soil vapor headspace using a PID during boring advancement. In addition, visual and olfactory observations were made to determine the presence or absence of petroleum hydrocarbons in the subsurface soils. Table 1 presents the results of field screening data. The boring log(s) are presented in Appendix II.

Table 1: Field Screening Results – Soil

Sample Location	Depth (feet)	PID (ppm)	Visual Observation	Olfactory Observation	Soil Description
B1	2.0	0.0	no staining	no odor	Brown Clayey Silt
B1	4.0	3.5	no staining	no odor	Volcanic Cinder
B1	8.0	0.0	no staining	no odor	Volcanic Cinder
B1	10.0	0.0	no staining	no odor	Tan, moist, silty sand with coralline gravel, and moderate cementation
B2	5.0	17.3	no staining	no odor	Brown Clayey Silt
B2	7.0	8.3	no staining	no odor	Volcanic Cinder
B2	10.0	8.2	no staining	no odor	Volcanic Cinder
B2	12.0	13.5	no staining	no odor	Tan, moist, silty sand with coralline gravel, and moderate cementation
B2	14.0	10.7	no staining	no odor	Tan, moist, silty sand with coralline gravel, and moderate cementation
B3	6.0	3.4	no staining	no odor	Brown Clayey Silt
B3	8.0	7.2	no staining	no odor	Volcanic Cinder
B3	10.0	3.9	no staining	no odor	Tan, moist, silty sand with coralline gravel, and moderate cementation

6.3 Monitoring Well Installation / Groundwater Sampling

Two 1-inch diameter temporary monitoring wells were installed at a depth of approximately 15 feet below ground surface (bgs). Details of the construction of the temporary monitoring well are displayed in the table below.

Table 2: Temporary Monitoring Well Construction Material

Material	Type	Amount
Casing	Schedule 40 PVC	~10 feet
Sand	N/A	~8 feet
Screen	.02 inch	5 feet
Bentonite	N/A	~2 feet

Notes:
N/A= Not Applicable

Upon completion of temporary monitoring wells construction, ETC developed the wells using a disposable polyethylene bailer. Purged groundwater was collected and left to evaporate on-site.

During well development, ETC monitored and documented pH, temperature, and conductivity using a Horiba U-10 Water Quality Checker. A groundwater sample was collected from the temporary monitoring wells after water quality parameters were relatively stable and a minimum of three well volumes was removed to ensure that the sample was representative of groundwater in the vicinity of the monitoring wells. Although the first encountered groundwater was measured at a depth of 14-feet bgs, measurements taken from the temporary monitoring well indicated that the depth to groundwater was 12.2-feet bgs within B2/TW2. Water quality data are presented in Table 3.

Table 3: Physical Observations/Water Quality Data - Groundwater

Well ID	Depth to GW (ft)	Well Depth (ft)	Volume Purged (gal)	Temp. (°C)	Conductivity (mS/cm)	pH	Notes
B2/TW2	12.2	15.5	1.0	32.6	1.18	7.25	No visual or olfactory signs of petroleum contamination.
			1.5	30.7	0.90	6.78	
			2.0	30.6	0.89	6.71	
			2.5	30.3	0.84	6.83	
B3/TW3	11.0	15.0	1.0	32.5	1.23	6.65	No visual or olfactory signs of petroleum contamination.
			1.5	31.2	1.18	6.61	
			2.0	31.2	1.21	6.59	
			2.5	30.4	1.20	6.63	

The groundwater samples were collected using a new, disposable, polyethylene bailer. The groundwater samples were placed into three (3) 40-milliliter glass vials (VOAs). The sample containers were capped and labeled with the client name, sample ID number, date/time of sampling, analyses, and preservation technique. The samples were stored in a cooler with chemical ice and delivered to ESN along with the completed chain-of-custody documentation.

Each sample was extracted and analyzed within the recommended maximum allowable holding time. The chain-of-custody together with the corresponding laboratory report is presented in Appendix III.

7.0 LIMITED PHASE II ESA FINDINGS

7.1 Analytical Data – Soil

Three (3) soil samples were analyzed for TPH-fuel scan on a 5 day turn around time.

Analytical results indicated that the fuel scans were not detected above method detection limits in all three soil samples. Results are presented in Table 4.

Table 4: Analytical Data – Soil

Sample ID	Depth (feet)	TPH-G	TPH-D	TPH-O
06.1005.1	10.5	ND	ND	ND
06.1005.2	14.0	ND	ND	ND
06.1005.3	10.0	ND	ND	ND
PQL		20	20	40
Method Detection Limit		18	14	20
DOH EAL		100	500	500

Notes: Results reported in mg/kg
ND= not detected
PQL= practical quntitation limit
DOH EAL = May 2005 Hawaii Department of Health (DOH) default Environmental Action Level (EAL) for soil in areas where groundwater is a current or potential drinking water source and where the nearest surface water body is more than 150 meters from the site

7.2 Analytical Data – Groundwater

As shown in Table 5, analytical results indicated TPH-fuel scan concentrations were not detected above method detection limits. However, method detection limits for TPH-G, TPH-D, and TPH-O are higher than the lowest DOH Tier 1 EALs, which pertain to drinking water (toxicity).

Table 5: Analytical Data – Groundwater

Sample ID	TPH-G	TPH-D	TPH-O
06.1005.TW.2	ND	ND	ND
06.1005TW.3	ND	ND	ND
PQL	0.61	0.61	1.00
Method Detection Limit	0.55	0.42	0.61
DOH Tier 1 EAL	0.1	0.1	0.1

Notes: All values presented in mg/L
ND= not detected
PQL= practical quantitation limits
DOH EAL = May 2005 Hawaii Department of Health (DOH) default Environmental Action Level (EAL) for groundwater in areas where groundwater is a current or potential drinking water source and where the nearest surface water body is more than 150 meters from the site

8.0 CONCLUSIONS

Analytical data from the soil and groundwater samples indicated that total petroleum hydrocarbons were not detected above method detection limits in either the soil or groundwater sample collected from the site. However, the method detection limits for groundwater samples were higher than the lowest DOH Tier 1 EALs for drinking water (toxicity).

According to the DOH's May 2005 Interim Final *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* (DOH, 2005), regulatory drinking water standards for TPH and petroleum in general have not been developed. The TPH-diesel taste and odor threshold of 100 µg/L referenced in the California EPA technical document *A Compilation of Water Quality Goals (RWQCBCV 2000)* was used as the drinking water screening level for all categories of TPH. In cases such as this, a more appropriate screening level would likely be the freshwater chronic goals described in Appendix I of the DOH's May 2005 Interim Final document of 500 µg/L, 640 µg/L, and 640 µg/L for TPH-G, TPH-D, and TPH-O respectively. The TPH-G screening level is based on a summary of eco-toxicity compiled for use at the Presidio of San Francisco. The TPH-D and TPH-O screening levels are based on action levels developed for use at the San Francisco Airport.

Furthermore, in cases such as this where EALs are lower than the laboratory method reporting limit, the DOH may allow the use of the laboratory method reporting limits in place of the screening levels. Since the laboratory method reporting limits were greater than the lowest screening level concentrations, ETC contacted ESN to determine if TPH concentrations could be detected at lower levels. According to ESN, these detection limits were the lowest their instrumentation could reliably report. Considering that no detectable concentrations of TPH were found in the soil collected from within the capillary fringe where such contaminants would be expected (since petroleum is a light, non-aqueous phase liquid), ETC believes that the potential presence of TPH between the lowest EALs and the method detection limit would not be a significant concern. Therefore, based on field screening and analytical data under the scope and limitations of this project, ETC believes that the Property has not been significantly impacted by petroleum migration from the former MTL Bus Facility and the Honolulu Police Department USTs.

9.0 REFERENCES

- American Society for Testing and Materials (ASTM). 2000. Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. E 1527-00.
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- State of Hawaii. December 1996. Technical Guidance Manual for the Implementation of the Hawaii State Contingency Plan.
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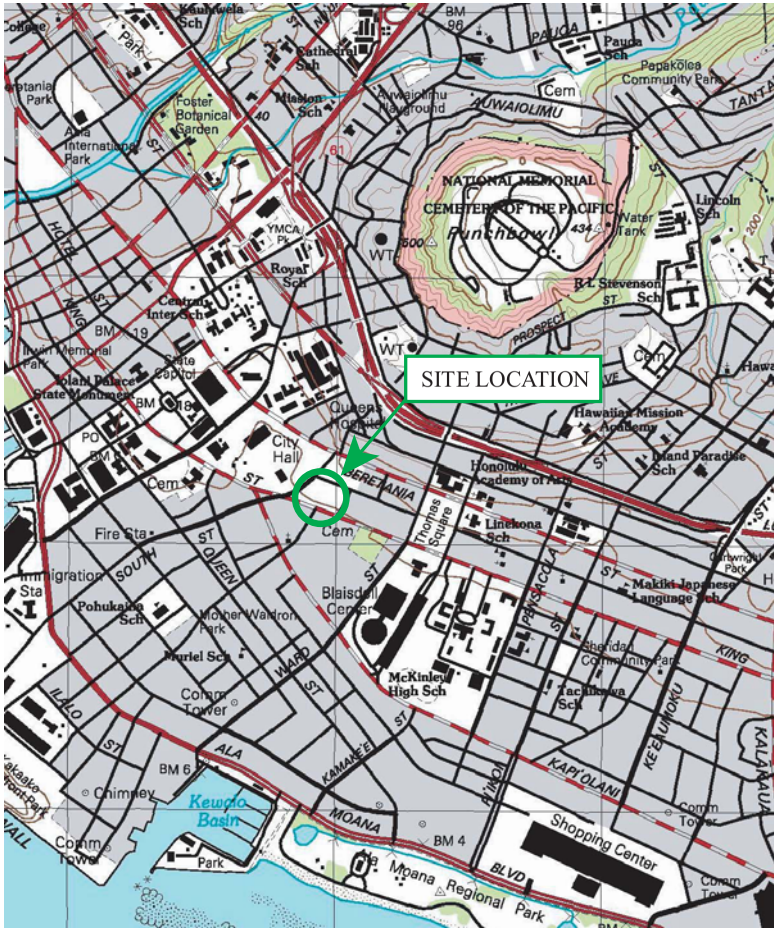
- United States Department of Agriculture, Soil Conservation Service. August 1972. Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii.
- US Department of Interior Geological Survey. 1983. Honolulu Quadrangle, Island of Oahu, 7.5 Minute Series (Topographic Map).

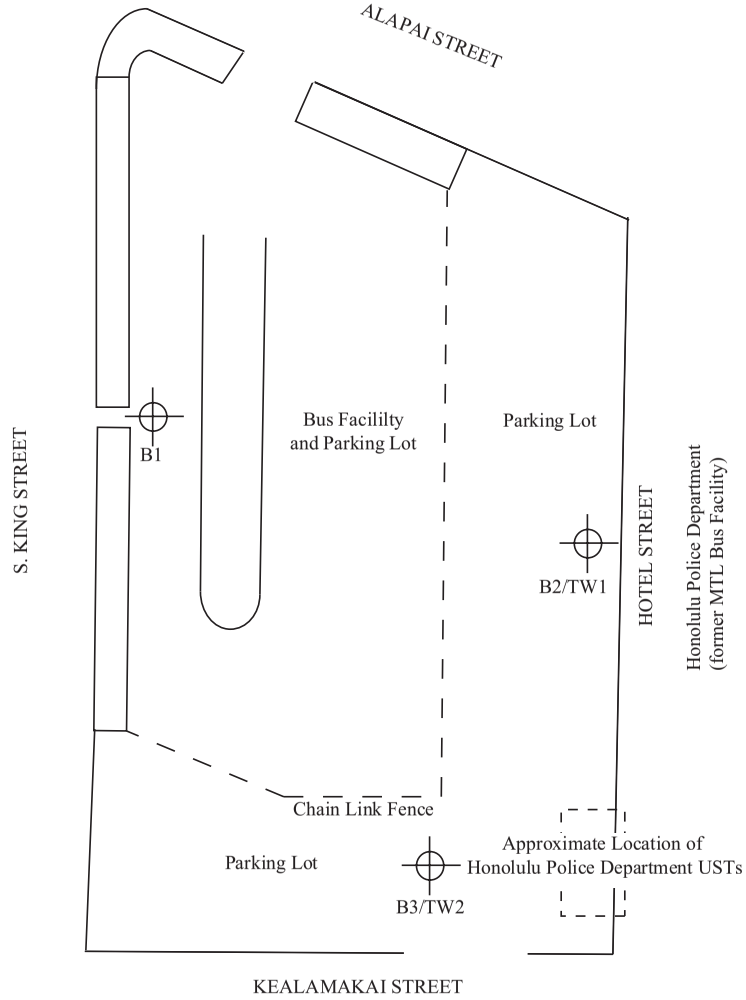
APPENDIX I

Figures



Source:
Image Peak Systems Corporation 2003
U.S. Department Of Geological Services
Honolulu Quadrangle
Island of Oahu, 7.5 Minute Series
1998

	EnviroServices & Training Center, LLC	Project: 06-1005 August 2006	**Limited Phase II Environmental Site Assessment** **Figure 1** - Site Location Map 710 S. King Street, Honolulu, Hawaii



	EnviroServices & Training Center, LLC	Project No. 06-1005 Figure Not Drawn to Scale August 2006	**Limited Phase II Environmental Site Assessment** **Figure 2** - Site Plan 710 S. King Street, Honolulu, Hawaii

APPENDIX II

Boring Logs and Monitoring Well Diagrams

Time	Sample ID	PID (ppmv)	Sample Location	Boring Completion (B1)	Depth (feet)	Boring Log of B1 — Lithological Description	Drilling Method: Direct Push; Sample Method: Open Core — Observations and Remarks
						Asphalt 4" / Topsoil 6"	No visual/olfactory indications of petroleum
0915		0.0	2		2	Clayey Silt with weathered cinder	
0920		3.5	4		4		
					6	Volcanic Cinder	
0925		0.0	8		8		
0935	06.1005.1	0.0	10		10	Silty Coralline Sand with coralline gravel and moderate cementation Groundwater encountered at 11'	
					12	Boring depth: 1 1.5'	
					14		
					16		
					18		
					20		
					22		
					24		
					26		
					28		
					30		
					32		

EnviroServices & Training Center LLC

Location: 710 S. King Street
ETC Project Number: 06-1005
Drilled by: ESN
Date: 8/03/06

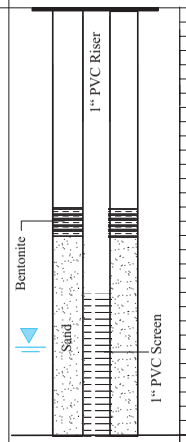
Boring Log of B2/TW2

Drilling Method: Direct Push

Sample Method: Open Core

Time	Sample ID	PID (ppmv)	Sample Location
1045	06.1005.2	17.3	5
1055		8.3	7
1115		8.2	10
1120		13.5	12
1135		10.7	14

Temporary Monitoring Well Completion (B2/TW2)



Depth (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32

Lithological Description	Observations and Remarks
Asphalt 4" / Topsoil 6"	No visual/olfactory indications of petroleum
Clayey Silt with weathered cinder	
Volcanic Cinder	
Silty Coralline Sand with coralline gravel and moderate cementation	
Measured depth of groundwater in well	
Well depth: 15.5'	

EnviroServices & Training Center LLC

Location: 710 S. King Street
ETC Project Number: 06-1005
Drilled by: ESN
Date: 8/03/06

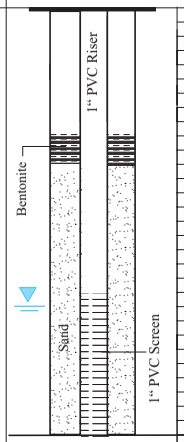
Boring Log of B3/TW3

Drilling Method: Direct Push

Sample Method: Open Core

Time	Sample ID	PID (ppmv)	Sample Location
1330	06.1005.3	3.4	6
1340		7.2	8
1350		3.9	10

Temporary Monitoring Well Completion (B3/TW3)



Depth (feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32

Lithological Description	Observations and Remarks
Asphalt 4" / Topsoil 6"	No visual/olfactory indications of petroleum
Clayey Silt with weathered cinder	
Volcanic Cinder	
Silty Coralline Sand with coralline gravel and moderate cementation	
Measured depth of groundwater in well	
Well depth: 15'	

EnviroServices & Training Center LLC

Location: 710 S. King Street
ETC Project Number: 06-1005
Drilled by: ESN
Date: 8/03/06

APPENDIX III

Laboratory Reports

ESN
PACIFIC

August 15, 2006

Tim Tybuszewski
EnviroServices & Training Center
2850 Paa St., Suite 150
Honolulu, HI 96819-4441

SUBJECT: DATA REPORT - #06-1005 / 715 King St. Project

ESN Project #F60803D

Mr. Tybuszewski:

Please find enclosed a data report for the samples analyzed from the above referenced project for EnviroServices & Training Center. The samples were collected by ESN personnel using the Direct-Push & SSA system and analyzed in ESN's laboratory. ESN conducted the following tests:

- 5 quantitative analyses for TPH fuel scan (C5-C40) by EPA 8015 mod.

The results of the analyses are summarized in the enclosed table. Applicable detection limits and QA/QC data are included on the table.

Also enclosed is a brief description of the abbreviations, data qualifiers and a summary of our analytical procedures. Direct-Push boring logs are also included as an addendum.

ESN appreciates the opportunity to have provided analytical services to EnviroServices & Training Center on this project. If you have any further questions relating to the data or report, please do not hesitate to contact us.

Sincerely,

Dave Davis
General Manager
ESN Pacific

Environmental Services Network
1818 Kahai St., Honolulu, HI 96819 Phone: (808) 847-0067 Fax: (808) 847-0917

ESN PACIFIC

ETC - EnviroServices Training Center PROJECT #06.1005
710 King Street

ESN Project #F60803D

TPH ANALYSES OF SOILS BY EPA 8015-MOD.

SAMPLE NUMBER	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	TPH-GAS C5-C12 (mg/kg)	TPH-DIESEL C12-C24 (mg/kg)	TPH-OIL C20-C40 (mg/kg)	SURROGATE RECOVERY (%)	FLAGS
Method Blank	-	8/7/2006	8/7/2006	nd	nd	nd	102%	
06.1005.1	8/3/2006	8/7/2006	8/7/2006	nd	nd	nd	100%	
06.1005.1-Dup	8/3/2006	8/7/2006	8/7/2006	nd	nd	nd	94%	
06.1005.2	8/3/2006	8/7/2006	8/7/2006	nd	nd	nd	104%	
06.1005.3	8/3/2006	8/7/2006	8/7/2006	nd	nd	nd	96%	
PQL				20	20	40		
MDL				18	14	20		
2005 HI DOH EAL (Nuisance/Potential Leachate Concerns)				100/2000	500/5000	500/5000		

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-FBP/4-BFB): 65% TO 135%

QA/QC DATA - LABORATORY CONTROL SPIKE ANALYSES

Spike Added	500	500	500
Measured Conc.	482	444	428
% Recovery	96.5%	88.8%	85.6%

QA/QC DATA - MATRIX SPIKE ANALYSES

Sample Name: 06.1005.1
*Any hits in sample spiked for MS/MSD are subtracted before reported as measured concentration.

Spike Added	500	500	500
Measured Conc.	491	474	435
% Recovery	98.3%	94.9%	87.0%
Spike Added	500	500	500
Measured Conc.	430	436	438
% Recovery	86.1%	87.1%	87.5%
RPD	13.3%	8.5%	0.6%

% Recovery LIMITS: 85% TO 115%
RPD LIMIT: 20%

ANALYSES PERFORMED BY : B. Capps
DATA REVIEWED BY: K. Combs KC

Environmental Services Network

ESN PACIFIC

ETC - EnviroServices Training Center PROJECT #06.1005
710 King Street

ESN Project #F60803D

TPH ANALYSES OF WATERS BY EPA 8015-MOD.

SAMPLE NUMBER	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	TPH-GAS C5-C12 (mg/L)	TPH-DIESEL C12-C24 (mg/L)	TPH-OIL C20-C40 (mg/L)	SURROGATE RECOVERY (%)	FLAGS
Method Blank	-	8/7/2006	8/7/2006	nd	nd	nd	67%	
06.1005TW.2	8/3/2006	8/7/2006	8/7/2006	nd	nd	nd	76%	
06.1005TW.2 Dup	8/3/2006	8/7/2006	8/7/2006	nd	nd	nd	105%	
06.1005TW.3	8/3/2006	8/7/2006	8/7/2006	nd	nd	nd	89%	
PQL				0.61	0.61	1.00		
MDL				0.55	0.42	0.61		

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-FBP/4-BFB): 65% TO 135%

QA/QC DATA - LABORATORY CONTROL SPIKE ANALYSES

Spike Added	15.15	15.15	15.15
Measured Conc.	13.35	13.00	15.96
% Recovery	88.1%	85.8%	105.3%

QA/QC DATA - MATRIX SPIKE ANALYSES

Sample Name: 06.1005TW.3
*Any hits in sample spiked for MS/MSD are subtracted before reported as measured concentration.

Spike Added	15.15	15.15	15.15
Measured Conc.	13.64	13.37	14.09
% Recovery	90.0%	88.3%	93.0%
Spike Added	15.15	15.15	15.15
Measured Conc.	15.02	13.69	14.17
% Recovery	99.1%	90.4%	93.5%
RPD	9.6%	2.4%	0.6%

% Recovery LIMITS: 85% TO 115%
RPD LIMIT: 20%

ANALYSES PERFORMED BY : B. Capps
DATA REVIEWED BY: K. Combs KC

Environmental Services Network

CHAIN-OF-CUSTODY RECORD

CLIENT: ETC
ADDRESS: 2850 Pac. St. #150
PHONE: 839-7222 FAX: 839-4455
EMAIL: tim@getetc.com
CLIENT PROJECT #: 06.1005 Project Manager: Tim Tyburczuski

TAT (circle one): 24-hr. 48-hr. (5-day) or Other:
DATE: 8/3/06 PAGE 1 OF 1
ESN PROJECT #: F608031
LOCATION/PROJECT NAME: 710 King St.
COLLECTOR: Tim Tyburczuski DATE COLLECTED: 8/3/06

	Sample ID#	Depth	Time	Sample Type	Container Type	8021b HVOC	8021b VOC	8021b BTEX	8021b MtBE	8015 Fuel Scan	8015 TPH-Gas	8015 TPH-Diesel	8015 TPH-Oil	8081 Pest.	8082 PCB	8100 PAH	8270 PAH	1010 FlashPoint	RCRA 8 Metals	Total: Pb Cd Cr As Hg or TCLP					Comments	# of Containers
1	06.1005.1			soil	4oz					X																1
2	06.1005.2			soil	4oz					X																1
3	06.1005.3			soil	4oz					X																1
4	06.1005TW.2			water	VOAs					X																3
5	06.1005TW.3			water	VOAs					X																3
6																										
7																										
8																										
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12																										
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14																										
15																										
16																										
17																										
18																										
19																										
20																										

RELINQUISHED BY:(Signature) DATE/TIME RECIEVED BY (Signa DATE/TIME
8/3/06 1520 Kim Cut 8/3/06 1520

RELINQUISHED BY:(Signature) DATE/TIME RECIEVED BY (Signa DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS: ____ ESN Dispose @ $2.00/sample or ____ Return to Client

SAMPLE RECEIPT:
TOTAL # OF CONTAINERS 9
COC SEALS Y / N / NA
SEALS INTACT Y / N / NA
RECEIVED TEMP: 5°C

LABORATORY NOTES:

Appendix IV

Photographic Documentation

Photgraph 1: ESN personnel drilling boring B-1.

Photograph 2: ETC personnel purging groundwater.

Photograph 3: ESN personnel backfilling and resurfacing soil B-3.

	EnviroServices & Training Center, LLC	Projet: 06-1005 August 2006	**Photographic Documentation** **Limited Phase II** **Environmental Site Assessment** 710 S. King Street, Honolulu, Hawaii

		Agencies	Contact Person	Address Line 1	City	State	Zip Code
1	1	Federal Highway Administration (FHWA) Hawaii Federal-Aid Division	Richelle Takara	300 Ala Moana Blvd, Rm 3-306 Box 50206	Honolulu	HI	96850
2	3	USDOT Federal Transit Authority (FTA), Region 9	Ted Matley	FTA Region IX 201 Mission Street Suite 1650	San Francisco	CA	94105
3	1	Department of Business, Economic Development and Tourism (DBEDT), Office of Planning	Ms. Laura Thielen, Director	235 South Beretania St., 6th Floor	Honolulu	HI	96813
4	1	Department of Land and Natural Resources (DLNR)	Ms. Laura Thielen, Director	P.O. Box 621	Honolulu	HI	96809
5	1	Department of Land and Natural Resources, State Historic Preservation Division (SHPD)	Teresa Davan, Oahu Archaeologist	Kākuhihewa Building 601 Kamōkila Boulevard Room 555	Kapolei	HI	96707
6	1	Oahu Island Burial Council (OIBC), C/O State Historic Preservation Division-Burial Sites Program	Jace McQuivey, Chair	Kākuhihewa Building 601 Kamōkila Blvd. Room 555	Kapolei	HI	96707
7	2	Office of Environmental Quality Control (OEQC)	Laurence Lau, Chair	235 South Beretania St., Suite 702	Honolulu	HI	96813
8	1	Office of Hawaiian Affairs (OHA)	Clyde Namuʻo, Administrator	711 Kapiolani Blvd, Suite 1250	Honolulu	HI	96813
9	1	Hawaii Department of Transportation (HDOT)	Benson Chow	869 Punchbowl St, Room 509	Honolulu	HI	96813
10	4	Hawaii State Library	Hawaii Documents Center	478 South King St.	Honolulu	HI	96813
11	1	Department of Health, Environmental Planning Offices		919 Ala Moana Blvd., Room 312	Honolulu	HI	96814
12	1	Department of Planning and Permitting (DPP)	Henry Eng, Director	650 South King Street	Honolulu	HI	96813
13	1	Honolulu Police Department (HPD)	Boisse Correa, Chief	801 South Beretania Street	Honolulu	HI	96813
14	1	Honolulu Fire Department (HFD)	Kenneth Silva	636 South Street	Honolulu	HI	96813
15	1	Department of Design and Construction (DDC)	Eugene Lee, Director	650 South King Street	Honolulu	HI	96813
16	1	Department of Environmental Services (DES)	Eric Takamura	1000 Uluohia Street, Suite 308	Kapolei	HI	96707
17	1	Emergency Medical Services (EMS)	Wayne Kruse	3375 Koapaka Street, Suite H-450	Honolulu	HI	96819
18	3	Department of Transportation Services (DTS)	Wayne Yoshioka, Director	869 Punchbowl Street	Honolulu	HI	96813
19	1	Department of Emergency Management (DEM) (formerly Oahu Civil Defense Agency)	Mel Kaku, Director	650 South King Street	Honolulu	HI	96813
20	1	Board of Water Supply	Chief Engineer	630 South Beretania Street	Honolulu	HI	96813
21	1	Department of Facility Maintenance (DFM)	Craig Nishimura, Acting Director	650 South King St.	Honolulu	HI	96813
22	1	State Senator	Gordon Trimble	415 Beretania Street Hawaiian State Capitol, Room 203	Honolulu	HI	96813
23	1	State House Representative, 28th District	Karl Rhoads	P.O. Box 27811	Honolulu	HI	96827
24	1	Council District Representative	Rod Tam	530 South King Street, Room 202	Honolulu	HI	96813
25	1	Makiki/Lower Punchbowl/Tantalus Neighborhood Board No. 10 c/o NCO	Charles Carole, Chair	530 South King Street, Room 400	Honolulu	HI	96813
26	1	Ala Moana/Kakaako Neighborhood Board No. 11 c/o NCO	Anne Stevens, Chair	530 South King Street, Room 400	Honolulu	HI	96813
27	1	Downtown Neighborhood Board No. 13 c/o NCO	Tom Smyth, Chair	530 South King Street, Room 400	Honolulu	HI	96813
28	1	Scan Design and Scan Line	Brian Pederson, Manager	788 S. King Street	Honolulu	HI	96813
29	1	HECO	T. Michael May, President and Director	P.O. Box 2750	Honolulu	HI	96740
30	1	Hawaiian Telcom	Michael S. Ruley, Chief Executive Officer, President, and Director	P.O. Box 2200	Honolulu	HI	96841