DEPARTMENT OF DESIGN AND CONSTRUCTION

CITY AND COUNTY OF HONOLULU

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ASSISTANT DIRECTOR

AH-24

January 24, 2003

Ms. Genevieve Salmonson, Director
State of Hawaii
Office of Environmental Quality Control
State Office Tower
235 South Beretania Street, 7th Floor
Honolulu, Hawaii 96813-2437

Dear Ms. Salmonson:

Subject: Final Environmental Assessment/Determination of Finding of No Significant Impact (FONSI), Collection System Maintenance Baseyard, Halawa Corporation Yard Site
Aiea, Oahu, Hawaii
Tax Map Key: 9-9-73: 27

The City and County of Honolulu, Department of Design and Construction's Facilities Division has reviewed the Draft Environmental Assessment (EA) for the Collection System Maintenance Baseyard project at the Halawa Corporation Yard site and has determined a Finding of No Significant Impact (FONSI). The basis of this determination is attached and follows the significance criteria set forth in Hawaii Administrative Rules, Title 11, State of Hawaii Department of Health Chapter 200, Environmental Impact Statement Rules, Section 12.

Please publish the notice of availability of the Final EA in the February 8, 2003 issue of the Environmental Notice.

Should you have any questions, please call Clifford Lau of our office at 527-6373 or John Sakaguchi of Wilson Okamoto and Associates, our consultant, at 946-2277.

Very truly yours,

RAE M. LOUI, P. E.
Director

RML:ln
Attach.
cc: Wilson Okamoto & Assoc. - John Sakaguchi
w/ attach.
DDC - Alex Ho w/ attach.

2003-02-08-DA-FEA

FEB 8 2003

FILE COPY

(HALAWA COLLECTION SYSTEM)

FINAL
ENVIRONMENTAL ASSESSMENT
COLLECTION SYSTEM MAINTENANCE BASEYARD

Halawa Corporation Yard Site
Aiea, Oahu, Hawaii

Prepared for:

CITY AND COUNTY OF HONOLULU
DEPARTMENT OF DESIGN AND CONSTRUCTION

Prepared by:

Wilson Okamoto Corporation

January 2003

SUMMARY

Proposing Agency:	City and County of Honolulu Department of Design and Construction 650 South King Street Honolulu, Hawaii 96813
Accepting Agency:	City and County of Honolulu Department of Design and Construction 650 South King Street Honolulu, Hawaii 96813
EA Preparer:	Wilson Okamoto Corporation 1907 South Beretania Street, Suite 400 Honolulu, Hawaii 96826 Contact: John L. Sakaguchi, Senior Planner Tel: 808.946.2277; Fax: 808.946.2253
Project Location:	Halawa, Aiea, Hawaii
Recorded Fee Owner:	City and County of Honolulu
Tax Map Key:	9-9-73:27
Area:	2.10 acres (approximately)
State Land Use Classification:	Urban
PUC Development Plan Land Use Map:	Public and Quasi-Public
County Zoning:	I-2, Intensive Industrial
Special Management Area:	Not located within the SMA
Proposed Action:	Construction of a baseyard including a facility for trades shops, operations, administration, material storage and City-owned vehicle and equipment parking for the City and County Honolulu Department of Environmental Services Collection System Maintenance Division.
Impacts:	No significant adverse impacts were determined from construction and operation of the Collection System Maintenance Baseyard.

FINAL
ENVIRONMENTAL ASSESSMENT

Collection System Maintenance Baseyard
Halawa Corporation Yard Site
Aiea, Oahu, Hawaii

Prepared for:

City and County of Honolulu
Department of Design and Construction
Facilities Design and Engineering (FDE)
650 South King Street
Honolulu, Hawaii 96813
Consultant Contract No. F-86732

Prepared by:

Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
WOA: 6635-01

Under Contract to:

SSFM International
501 Sumner Street, Suite 502
Honolulu, Hawaii 96817

January 2003

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PREFACE

Chapter 343, Hawaii Revised Statues (HRS), as amended, Environmental Impact Statements, requires that a government agency or a private developer proposing to undertake a project consider the potential environmental impacts of the proposed project by preparing an assessment. Use of public funds for a project. is among the criteria set forth in Chapter 343, HRS which requires preparation of an environmental assessment. The Collection System Maintenance Baseyard will be constructed and operated with funds provided by the City and County of Honolulu.

This Environmental Assessment (EA) has been prepared to meet the requirements of Chapter 343, HRS, as amended, and Hawaii Administrative Rules Title 11, State of Hawaii Department of Health, Chapter 200, Environmental Impact Statement Rules. A Finding of No Significant Impact (FONSI) has been determined for this project as shown in Chapter 5.

1. INTRODUCTION

1.1 Project Background

Since the late 1980s, the City and County of Honolulu has planned to relocate its various maintenance, trades, storage, and operational functions from the Kewalo basin area to other site(s). A consolidated yard (the Honolulu Corporation Yard) was considered on Sand Island, adjacent to the City's Sand Island Wastewater Treatment Plant, on lands set aside by a State of Hawaii executive order. This area encompassed 25.878 acres and was to include facilities for a number of City maintenance, trades, and operational functions from the Kewalo basin area and other locations in urban Honolulu. The initial plan for the Honolulu Corporation Yard included the following City department/functions: Department of Public Works (Refuse Collection Division, Division of Road Maintenance, Automotive Equipment Services (AES) Division, and Engineering Division), Department of Parks and Recreation (Maintenance Support Services and Automotive Services), Department of Transportation Services (DTS) (Electrical Maintenance Service), Honolulu Fire Department (Vehicle Maintenance), and Honolulu Police Department (Vehicle Maintenance and Radio Shop) and the Department of Wastewater Management (Collection System Maintenance). On October 2, 1989, the Governor accepted the Final Environmental Impact Statement for the Honolulu Corporation Yard.

Starting in February 1994, major planning, architectural and engineering design, debris and hazardous waste site clearance, and site preparation work was re-initiated to facilitate the relocation to Sand Island. However, due to a variety of factors, including those related to the need for various City Council approvals, the cost of development, and the need to construct improvements for about 45 acres of land for the continuation of Sand Island State Park, no action was undertaken to effectuate the relocation to the Sand Island site. (It should be noted that the executive order that set aside the land for the Honolulu Corporation Yard at Sand Island required the City to vacate the Kewalo basin lands and occupy the Sand Island site within two years.) Since the two-year time period set forth in the executive order has lapsed, the Sand Island site is no longer available to the City for a corporation yard. In December 1995, at the time the planning and design work ended, architectural and engineering plans had been completed, reviewed, and approved by the users to approximately 35 percent.

Subsequently, the Department of Parks and Recreation (DPR) has undertaken development of its own facilities at the City's Manana properties and the Honolulu Fire Department has relocated to its maintenance functions to facilities in Waipahu. Further, the Department of Transportation Services Electrical Maintenance Services has also relocated to an area near the DPR at the City's Manana properties and the Department of Environmental Services Refuse Collection Branch has selected a site near the City's Keehi transfer station to relocate their Honolulu District operations.

As a result of these actions, it became necessary to locate a site for the Department of Facility Maintenance (Automotive Equipment Services Division and Road Maintenance Division). The selected site for these functions was the City's former Halawa bus maintenance facility (Tax Map Key: 9-9-73:27) and the adjacent parcel (TMK: 9-9-73:23), both now owned by the City and County of Honolulu. These combined parcels have a total of area of about 23 acres, with the former bus facility accounting for about 10 acres and the other parcel about 13 acres. The construction and operation of City functions on these two parcels was included in the Final EA for the Halawa Corporation Yard which was accepted by the City and County of Honolulu Department of Design and Construction and filed with Office of Environmental Quality Control on February 23, 2000.

Based on relocation of the bus maintenance facilities from Halawa to the City's Manana properties, it became necessary to relocate the existing DTS, Oahu Transit Services Handi-Van operations, administration, and vehicle maintenance facilities from the future bus maintenance site at Manana. Thus, the Handi Van functions were relocated to the City's bus repair facilities on Middle Street.

Lastly, after all of these relocations and moves, the Department of Environmental Services Collection System Maintenance (CSM) Division remained as the last function within the Kewalo basin area which needed to relocate.

1.2 Previous Site

A previous site was selected for the CSM Baseyard. This previous site was the right-of-way under the H-3 Freeway and an adjacent parcel of land owned by the Queen Emma Foundation located along Halawa Valley Street near the State of Hawaii Animal Quarantine Facility. However, although a Draft EA was prepared and circulated for

comment on June 8, 2002, the City found the H-3 Freeway/Queen Emma Foundation site to be no longer viable. Thus, on July 26, 2002, the City and County of Honolulu Department of Design and Construction, the City's accepting agency for the EA, issued a letter to withdraw the Draft EA. On August 8, 2002, the Office of Environmental Quality Control published the notice of withdrawal in the *Environmental Notice*.

1.3 Project Location and Conditions

1.3.1 Project Site

The CSM Baseyard project site is located within the former Halawa bus facility yard (TMK: 9-9-73:27) which has been designated as the Halawa Corporation Yard Phase 2 area. The CSM Baseyard will occupy an area of approximately 2.10 acres in the area that has been previously paved and was formerly used to park the City's bus fleet. The project site is located between Iwaena Street and North Halawa Stream, makai of the former bus maintenance and fueling facilities. This project site lies approximately north of the previous H-3 Freeway/Queen Emma site with North Halawa Stream separating the two sites.

The area to be occupied by CSM Baseyard project site was to have been used to park Handi-Van vehicles, as discussed in the Halawa Corporation Yard Final EA. Since the Handi-Van function relocated to the City's bus facility located on Middle Street, the project site was available for the CSM Baseyard. Figure 1.1 shows the project location map. Figure 1.2 shows the project site map. Figure 1.3 shows the tax map. Figure 1.4 shows the project site topographic map. Figure 1.5 shows site photographs.

1.3.2 Existing Project Site Conditions

As previously stated, the project site is located in the paved area which was used to park the City's bus fleet. The entire 2.1-acre CSM Baseyard project site has been paved since the late 1970's when the bus repair and maintenance facility was constructed with partial participation provide by the US Federal Transit Administration (FTA). At this time, the City is working with the FTA to allow a public facility on the former Halawa bus facility.

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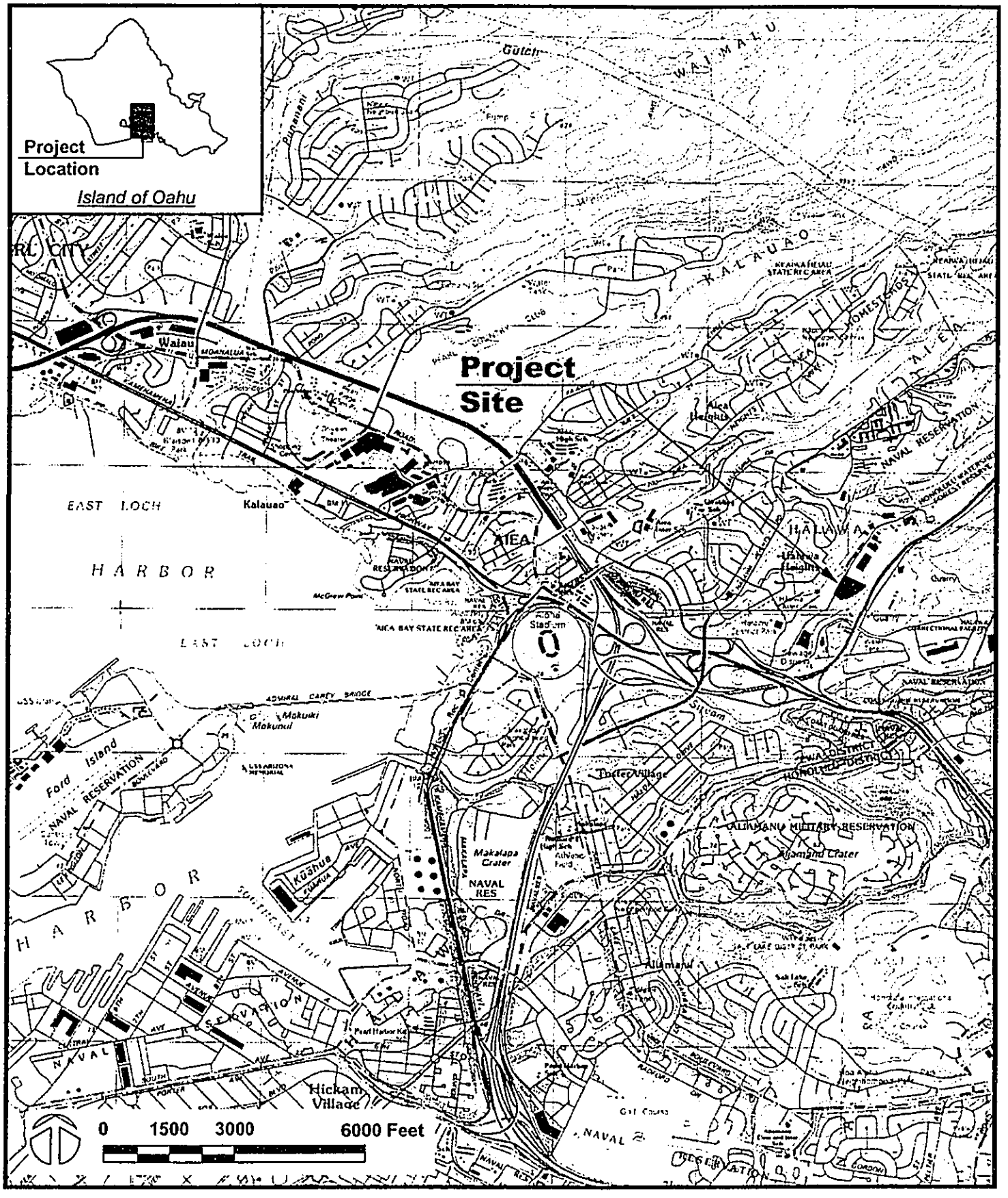

Wilson Okamoto CORPORATION

COLLECTION SYSTEM MAINTENANCE BASEYARD HALAWA CORPORATION YARD

Project Location Map

Figure No. 1.1

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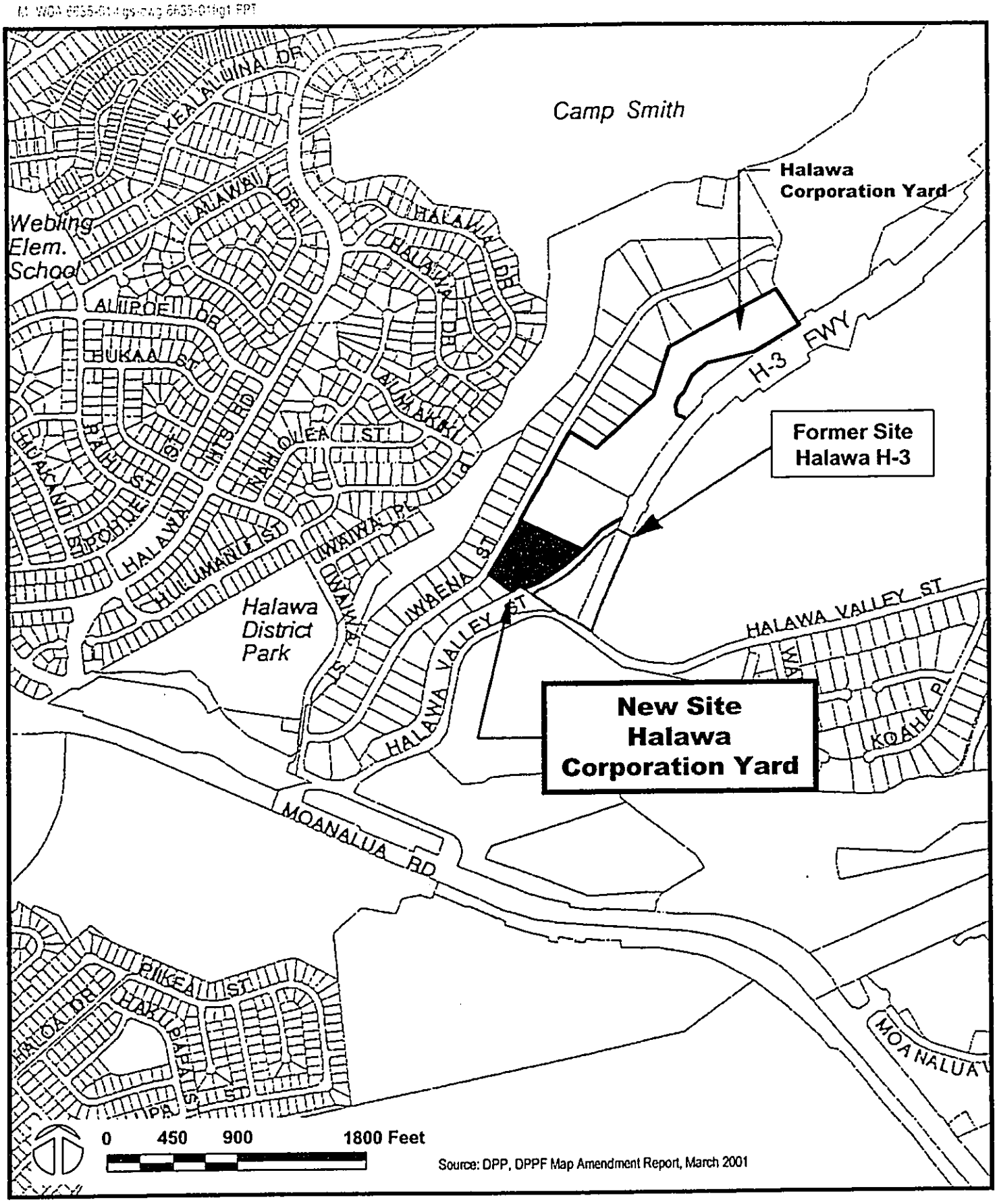

COLLECTION SYSTEM MAINTENANCE BASEYARD HALAWA CORPORATION YARD

Project Site Map

Figure No. 1.2

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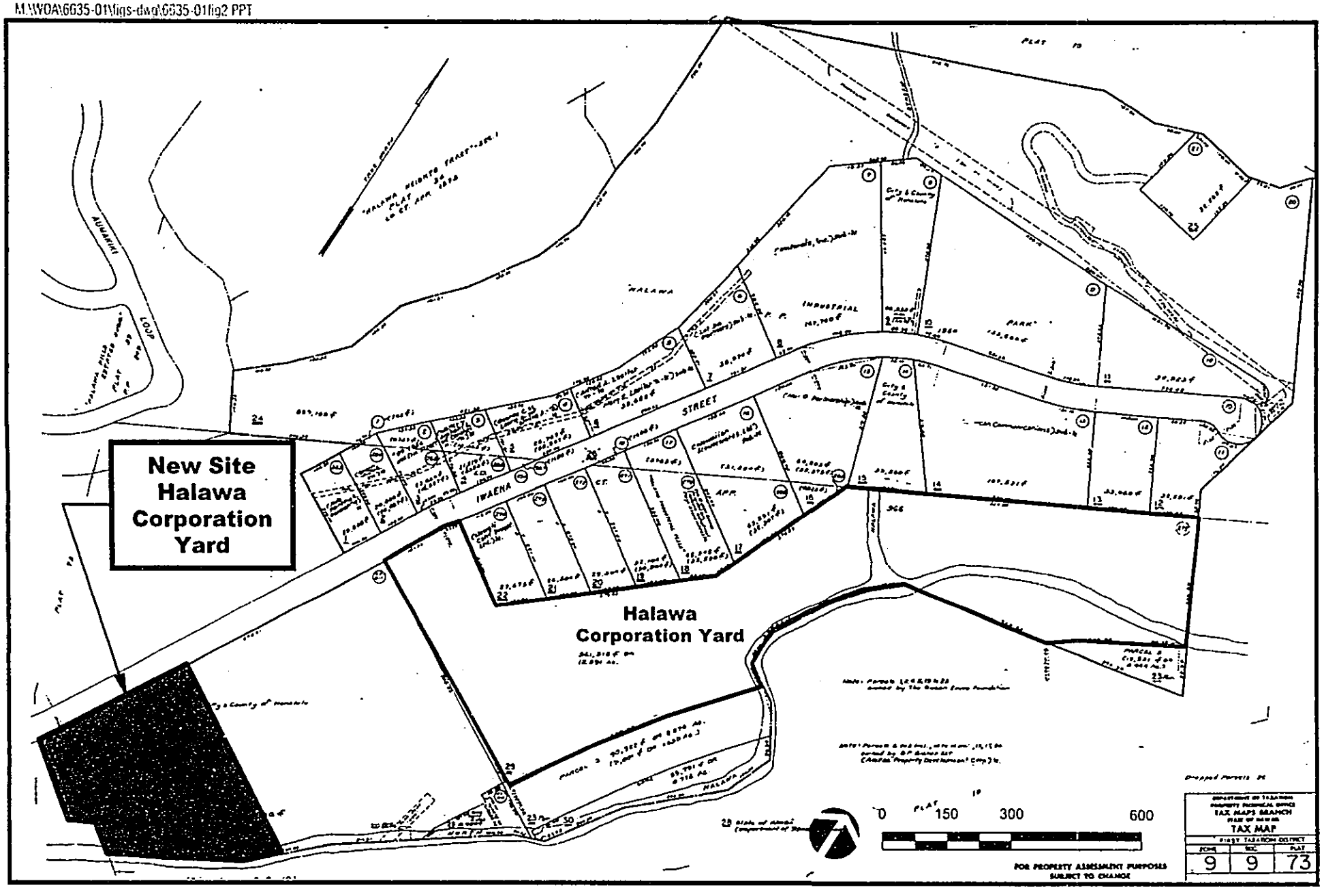

COLLECTION SYSTEM MAINTENANCE BASEYARD HALAWA CORPORATION YARD

Tax Map Key: 9-9-73: 27

Figure No.

1.3

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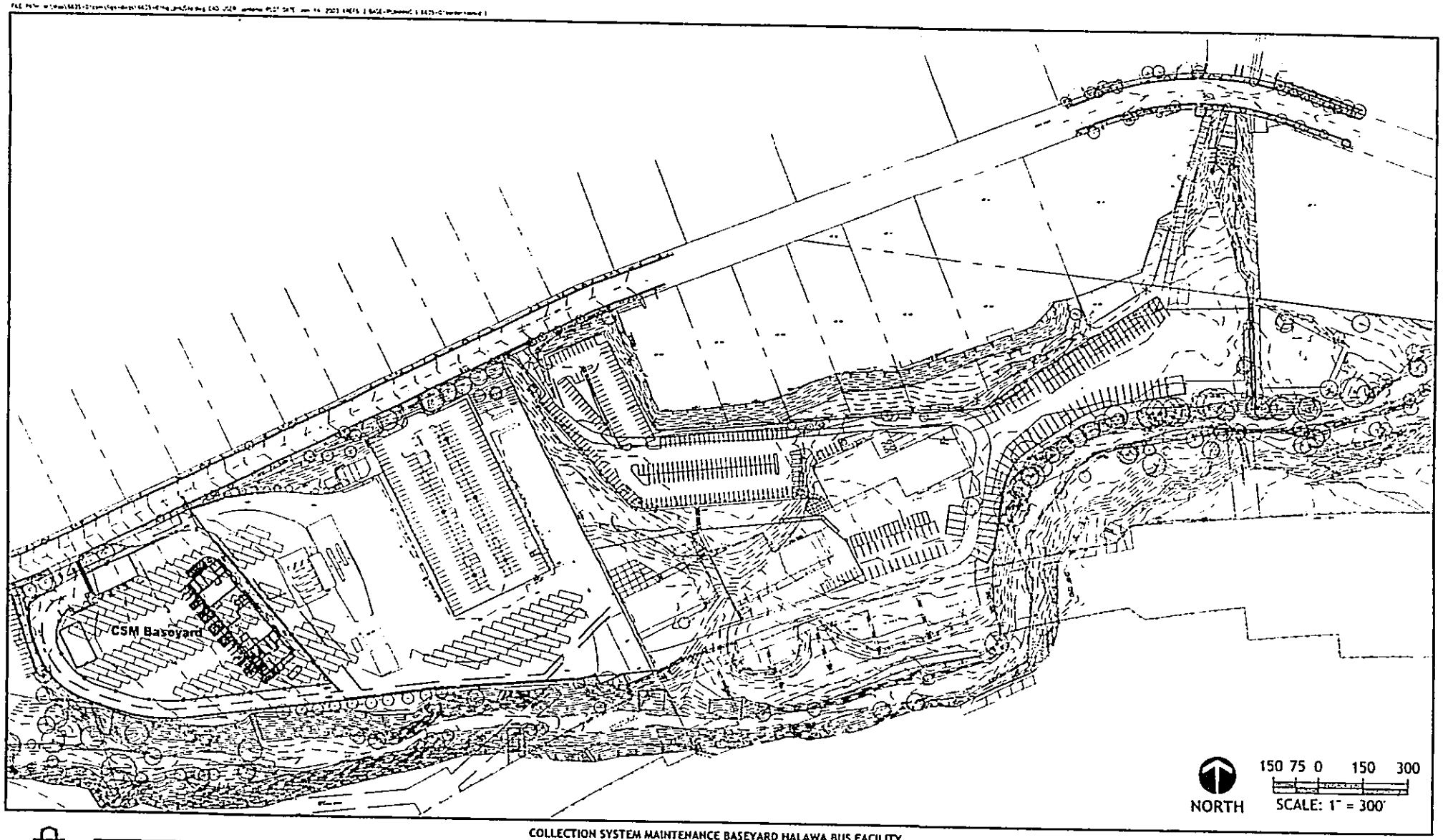
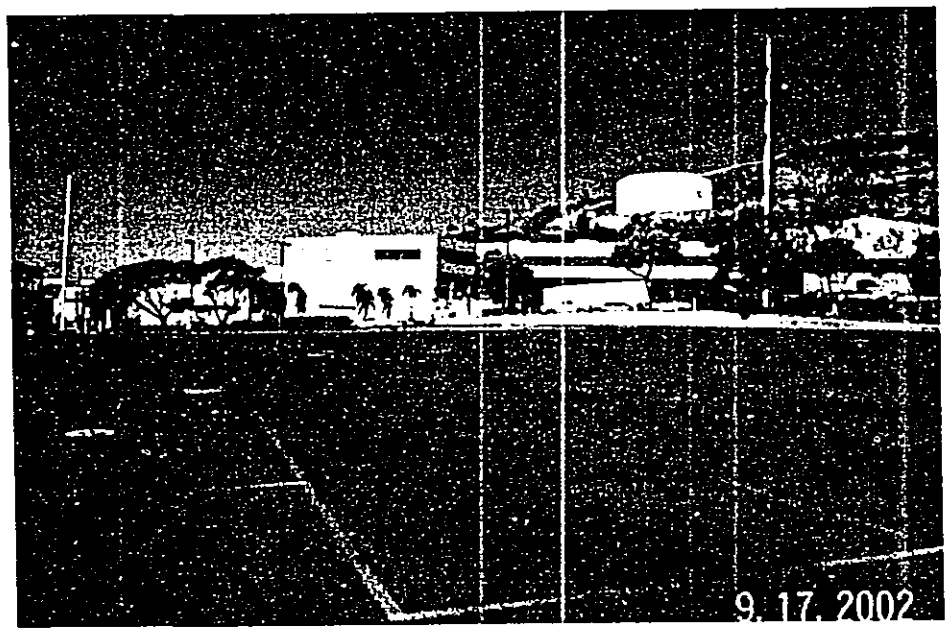


COLLECTION SYSTEM MAINTENANCE BASEYARD HALAWA BUS FACILITY

Project Site Topographic Map

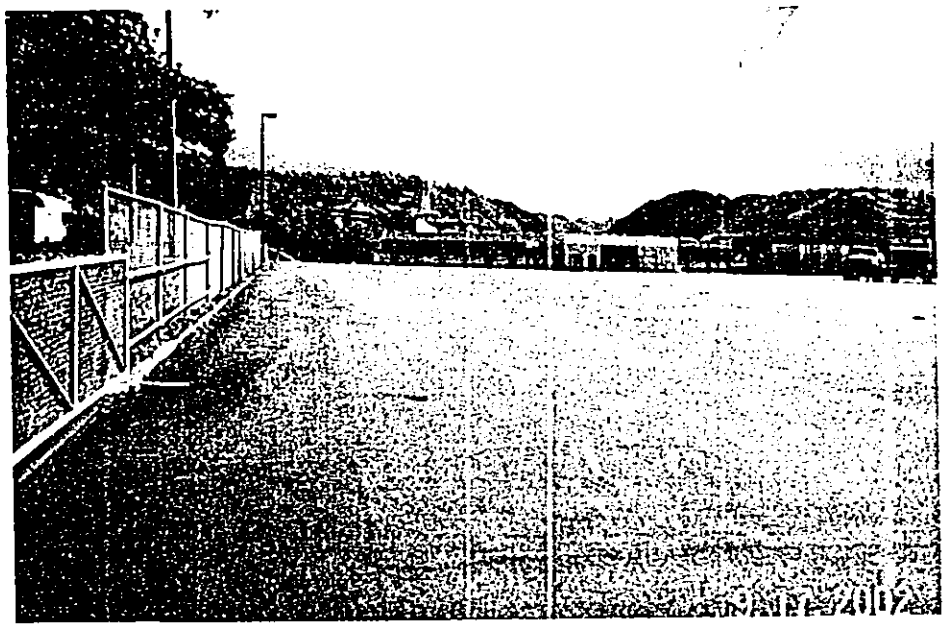
Figure No.
1.4

Makai view to southwest



Mauka view of former bus facility

Makai view to southwest



Mauka view of future shed site

FIGURE 1.5

1.3.3 Other Project Site Data

The project site is located in the Primary Urban Center (PUC) of the City and County of Honolulu. On June 9, 1999, Ordinance 98-23 (97PUC-1001C) was approved in conjunction with the Halawa Corporation Yard project. Ordinance 98-23 designated the project site and adjacent areas as an amendment to the Development Plan Public Facilities (DPPF) Map to add corporation yard modification/expansion (publicly funded site determined within 6 years).

The project site is designated Public and Quasi-Public on the PUC Development Plan Land Use Map and Urban by the State Land Use Commission.

The City and County of Honolulu zoning designation for the project site is I-2, Intensive Industrial District.

1.4 Project Need

The Department of Environmental Services (ENV) Collection System Maintenance (CSM) Division currently occupies an area of about 3.0 acres within the Kewalo Corporation Yard area. CSM repairs and maintains the City's sewer collection system for all areas of Oahu, with the exception of sewer treatment plants and pump stations, replaces sewer lines under certain conditions, and performs preventative maintenance functions. Besides these functions, CSM also responds to emergencies, flushes lines, repairs breaks, and installs new lines. In addition, although not assigned to the Kewalo Corporation Yard site, CSM also provides cesspool pumping services to the outlying areas along the Leeward and Windward coasts.

The existing Kewalo Corporation Yard facilities used by the CSM Division were originally constructed during the mid-1950's and consist primarily of metal-frame buildings with metal siding and roofs. Over the years, improvements have been made to the buildings and the operating systems, including the addition of new computer and other electrical systems. CSM personnel have also modified some of the equipment used in the shops to meet specific requirements. Recently, the CSM Division has purchased electrical–powered equipment which cannot be used since the shops lack the proper electrical service for their operation.

The number of office and administrative staff assigned to the CSM Division has increased over the years. As a result, the office and storage spaces are not adequate to accommodate the new office systems and equipment typically used in City offices. Further, the office functions have been split into three separate areas within yard including placement of functions in a trailer which makes communication and coordination difficult.

Relocation to the Halawa Corporation Yard Phase 2 project site would provide the CSM Division with modern shop and office facilities specifically designed for their intended uses. The new facilities would improve operational efficiency and effectiveness in providing City services to the public.

Lastly, relocation from the existing site would vacate the land and provide the State of Hawaii, Hawaii Community Development Authority (HCDA) with the land necessary to proceed with its planned uses in the Kewalo basin area. The HCDA has planned future development of the area currently occupied by the CSM Division in the Kewalo basin area and cannot proceed with its plans until the CSM Division vacates the existing project site.

1.5 Project Description

1.5.1 Building Plan

For design purposes, the CSM Baseyard will be considered an extension of the Halawa Corporation Yard, Phase 1 project which was recently constructed mauka of the project site. The construction type and appearance of the CSM building would be similar to those buildings.

The CSM Baseyard will have one pre-engineered rigid-frame metal building with a footprint of 12,000 square feet (60 feet by 200 feet) and total area of about 18,000 square feet (SF) with a 10-foot roof overhang along the front and 6-foot roof overhang along the rear. The first (1^{st}) floor (12,000 SF) will contain spaces for various shops, offices, storage, lockers, showers, and toilets. The second (2^{nd}) floor will partially cover the 1^{st} floor and will contain 6,000 SF (60 feet by 100 feet) for offices, meeting and conference rooms, and other administrative functions. An interior staircase and hydraulic elevator will be provided to the 2^{nd} floor. All areas of the facility will meet the

Americans with Disability Act (ADA) requirements for access. See Figure 1.6 First Floor Plan and Figure 1.7 Second Floor Plan. Figure 1.8 shows the elevations.

The shops and storage functions and the toilets/locker/shower rooms will be located on the 1st floor. The shops will be provided with full height roll-up doors and personnel doors as necessary to meet codes. The full height doors will face the front of the building. For security purposes, openings on the back of the building will only be provided as necessary to meet codes.

The exterior perimeter walls will be concrete block for the lower about 7 feet with metal siding above. The 1st floor height of the eave will be 17 feet, 6 inches above the ground. The 2nd floor height at the roof line will be about 33 feet above the ground. The metal roof will be sloped at a 1 in 12 pitch from the center. There will be metal awnings supported by specially designed steel support structures over the windows, certain doors, and special areas. The roof drainage system will consist of gutters, downspouts, and splash blocks.

The building height limit is 25 feet for the CSM Baseyard project site. A building height waiver from the City and County of Honolulu Department of Planning and Permitting (DPP) will be required to construct the CSM maintenance building.

The building will have green color for metal siding and roof with white metal trim, similar to the Halawa Corporation Yard, Phase 1 color scheme. The final color scheme will be made as part of the design phase.

Preliminary plans show the 1st floor spaces include the following:

• Carpentry shop	1,550 SF
• Mechanical/small tool shop	2,000 SF
• Storeroom	2,700 SF
• Chemical storage	500 SF
• Flammable storage	300 SF
• TV Clean room	220 SF
• Emergency crew room	250 SF
• Locker/showers/toilets	3,000 SF
• Other uses	1,480 SF

The final space allocation for the 1st floor will be determined during the design phase.

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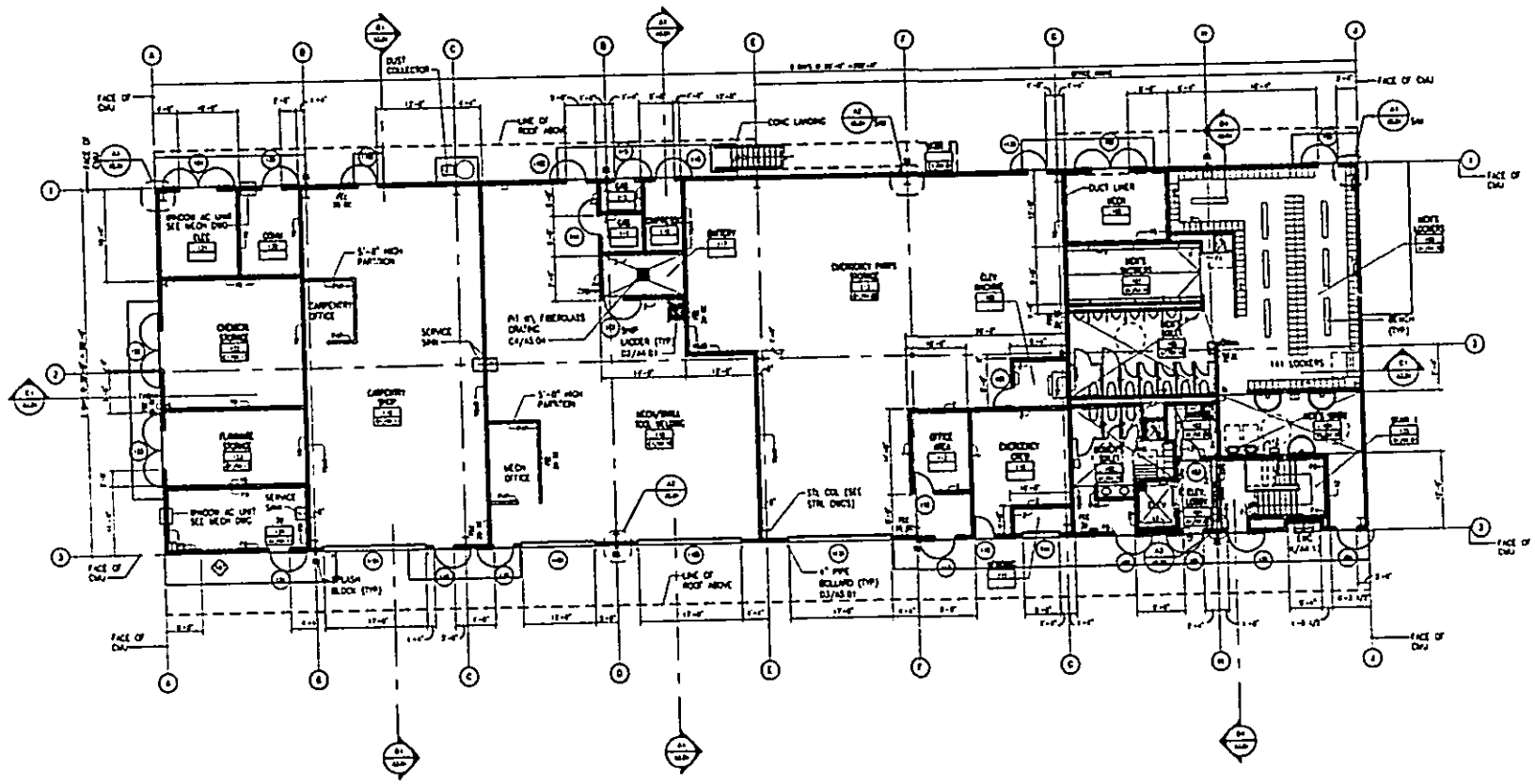

SCALE: 1" = 40'

COLLECTION SYSTEM MAINTENANCE BASEYARD HALAWA BUS FACILITY

Figure No.

GROUND FLOOR PLAN

1.6

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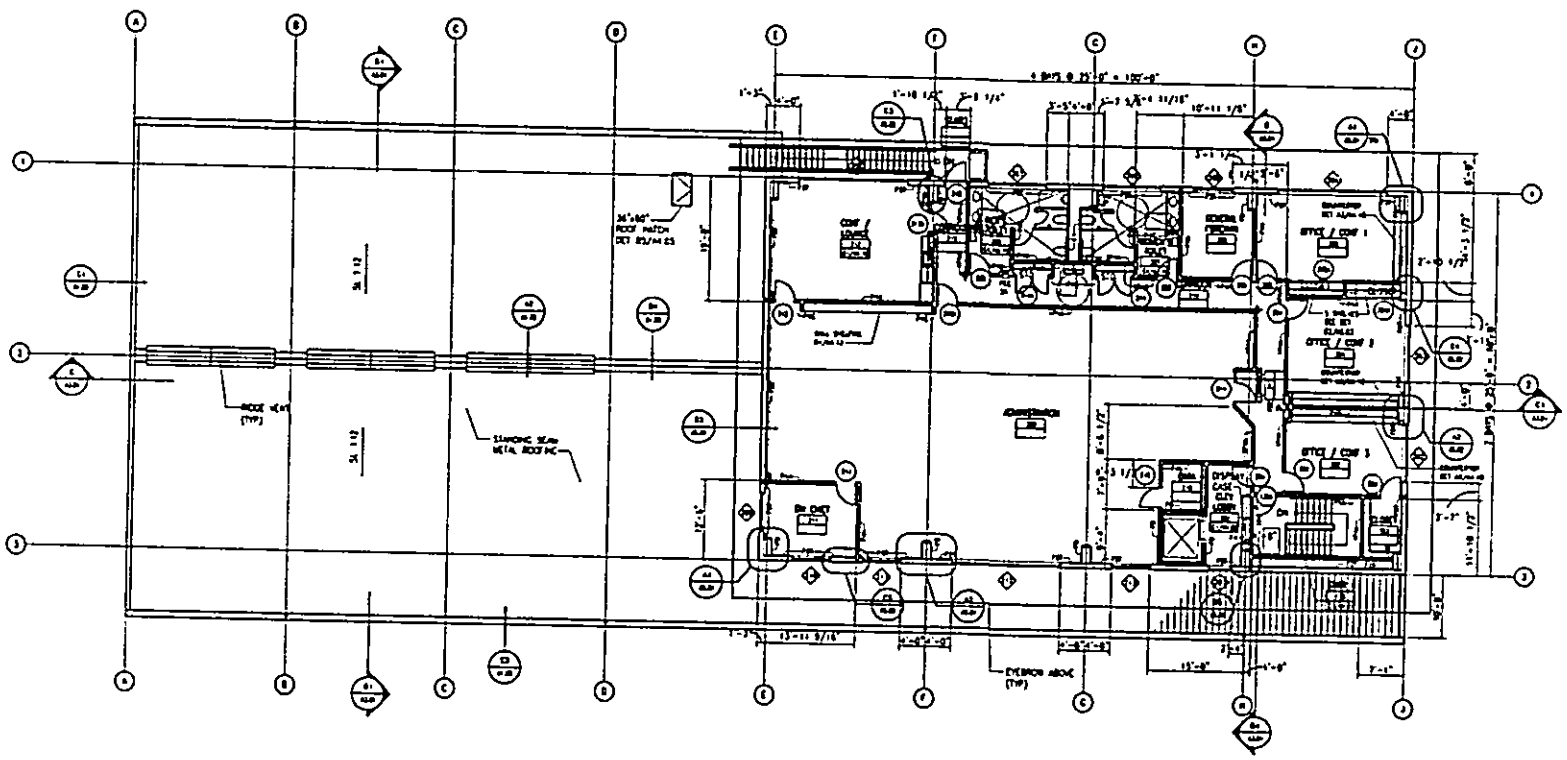

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COLLECTION SYSTEM MAINTENANCE BASEYARD HALAWA BUS FACILITY

SECOND FLOOR PLAN

Figure No.

1.7

Wilson Okamoto Corporation

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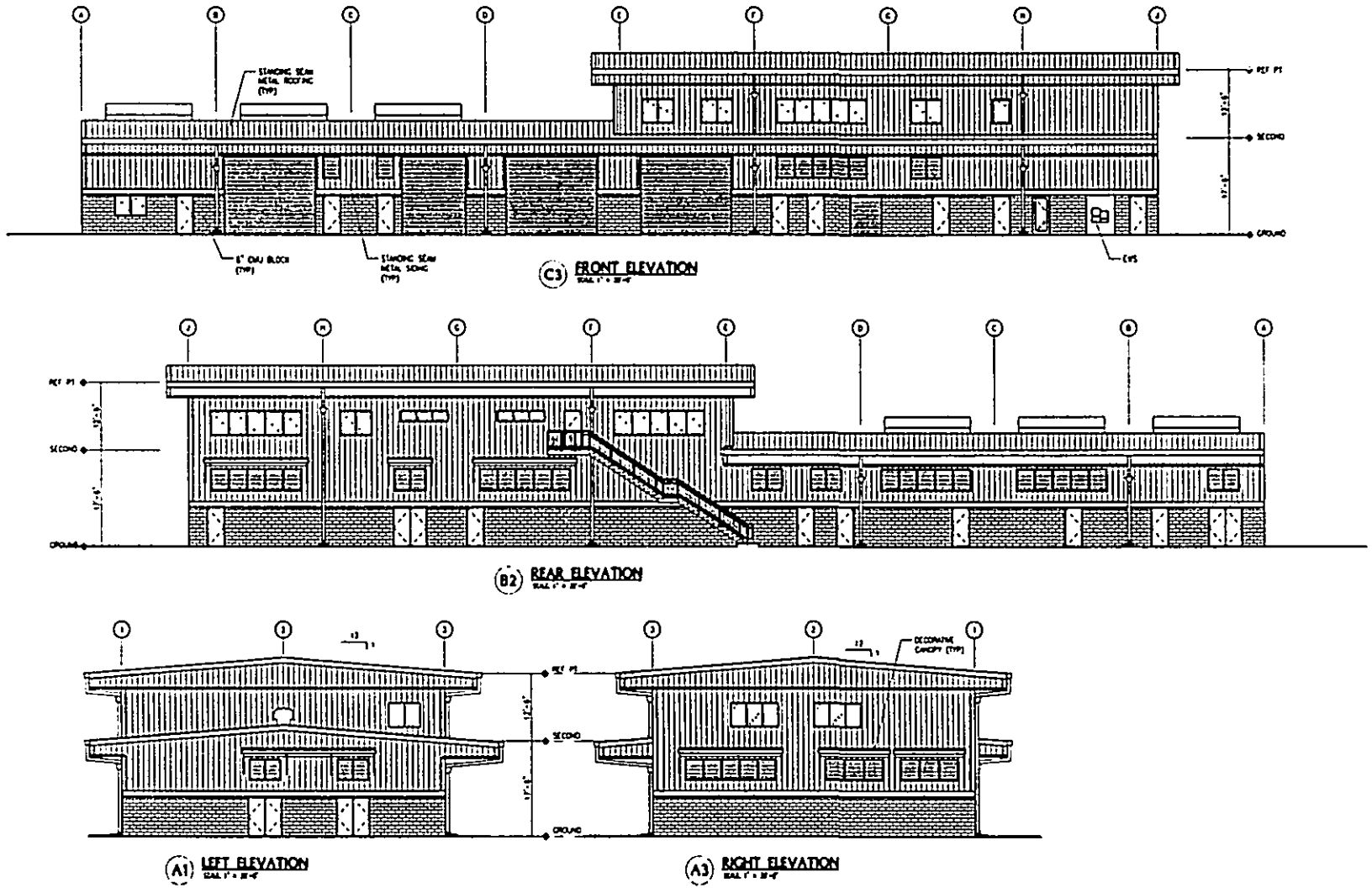

(C3) FRONT ELEVATION

(B2) REAR ELEVATION

(A1) LEFT ELEVATION

(A3) RIGHT ELEVATION

SCALE: 1" = 40'

COLLECTION SYSTEM MAINTENANCE BASEYARD HALAWA BUS FACILITY

BUILDING ELEVATION

Figure No.

1.8

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Preliminary plans show the 2nd floor spaces include the following:

- Offices/conference rooms 11,000 SF
- Other uses 1,000 SF

In addition to the building, an open-sided storage shed (40 feet by 80 feet) will be constructed on the project site. The shed will be used to store large pieces of equipment used by the CSM crews and to hold materials which can be held in an open-air environment. Figure 1.9 shows the shed floor plan. Figure 1.10 shows the shed elevations.

1.5.2 Site Access

The access to the project site will be from Iwaena Street through an existing driveway which was constructed and used by the bus facility. This driveway will also be used to provide access to the Halawa Corporation Yard Phase 1 facilities, as was previously discussed in the Final EIS for the Halawa Corporation Yard. The other existing driveway constructed by the bus facility will be used to access the Halawa Corporation Yard Phase 2 area. The CSM Baseyard project will continue to use the existing access driveway with no improvements or changes. Thus, the access driveway will not be constructed as a drop driveway. Figure 1.11 shows the site plan.

There is no public bus service in the immediate vicinity of the project site. The nearest public bus service is provided at the Ulune Street Extension and the Moanalua Road intersection, about 3,500 feet (0.7 miles) away from the project site. (Note, Ulune Street Extension is at the end of the exit ramp from the Moanalua Freeway.)

1.5.3 Site Plan

Two structures will be constructed on the project site, the building for shops, storage, office areas, and lockers, showers, and toilets and the open-sided storage shed. In addition, space for open material storage bins will be placed on a 38' x 70' reinforced concrete pad to accommodate stored material. The storage bins will be used to store various grades of sand and gravel for CSM operations. The concrete pad will allow space for storage of the materials and for loading material onto trucks. "Jersey barriers" can be placed on the concrete pad to separate the types of materials.

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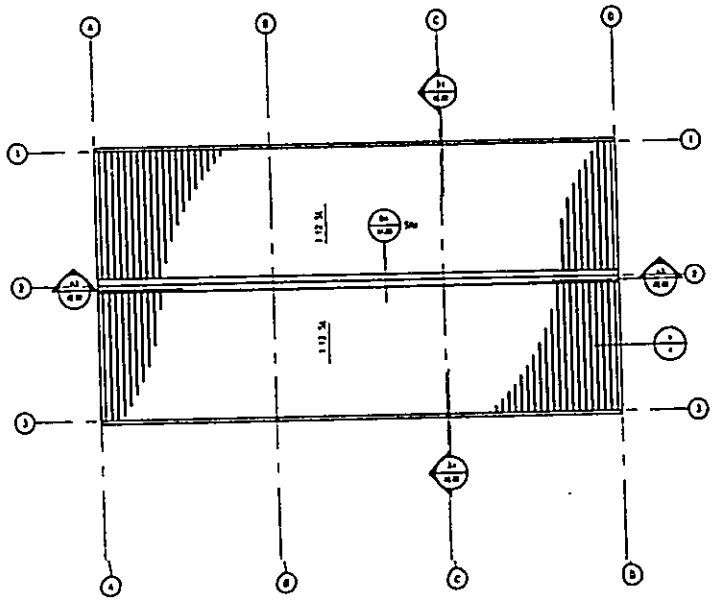
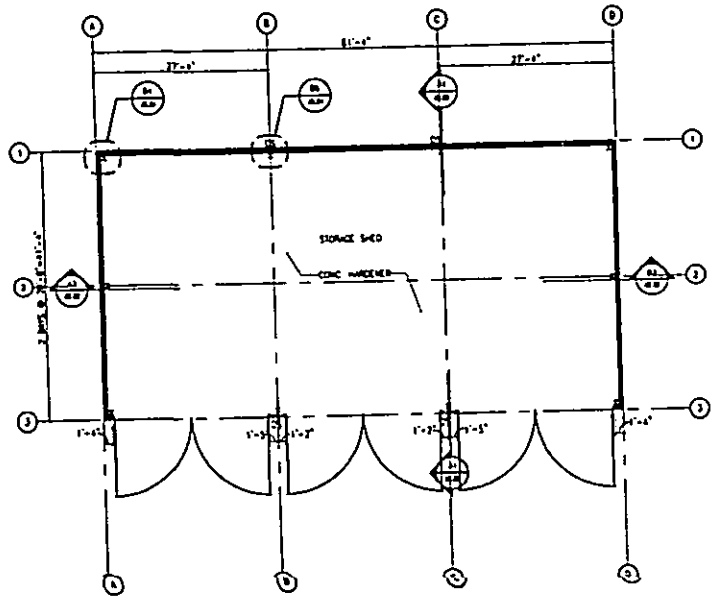


B1 ROOF PLAN - STORAGE SHED



B3 FLOOR PLAN - STORAGE SHED

SCALE: 1" = 40'

COLLECTION SYSTEM MAINTENANCE BASEYARD HALAWA BUS FACILITY

SHED FLOOR PLAN

Figure No.

1.9

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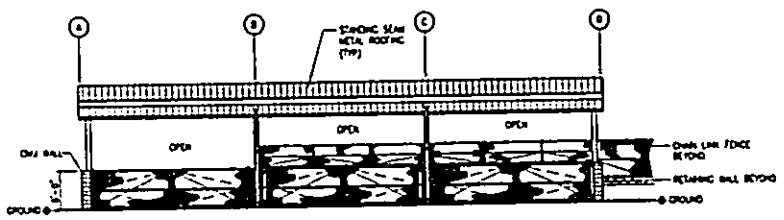

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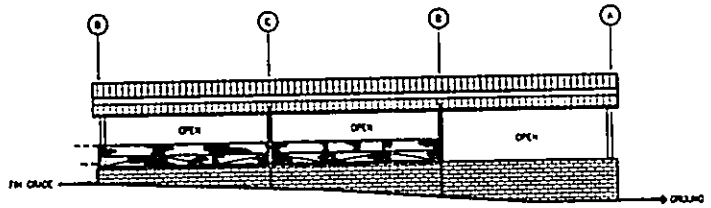

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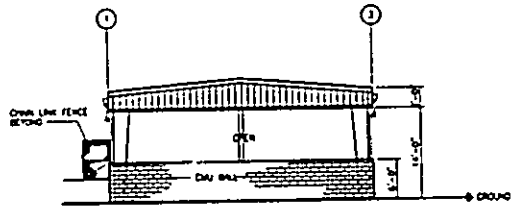

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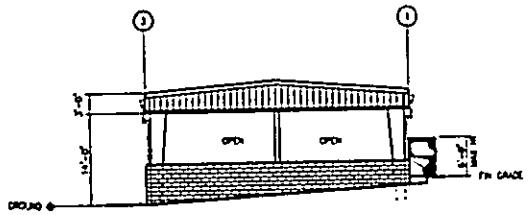

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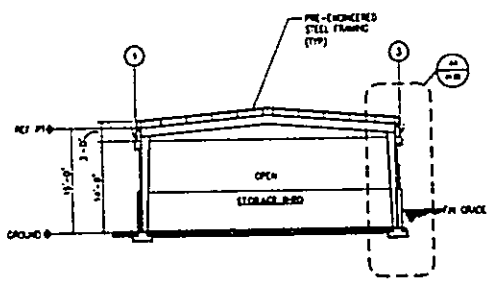
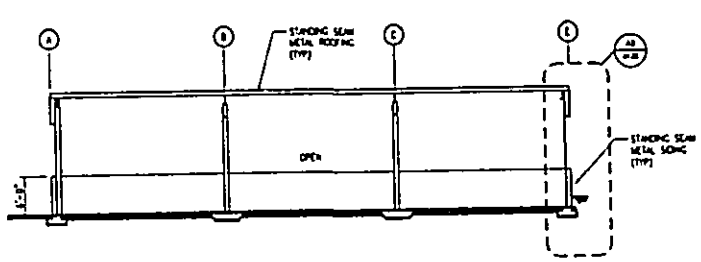


(A1) SECTION- STORAGE SHED



(A3) SECTION- STORAGE SHED

SCALE: 1" = 40'

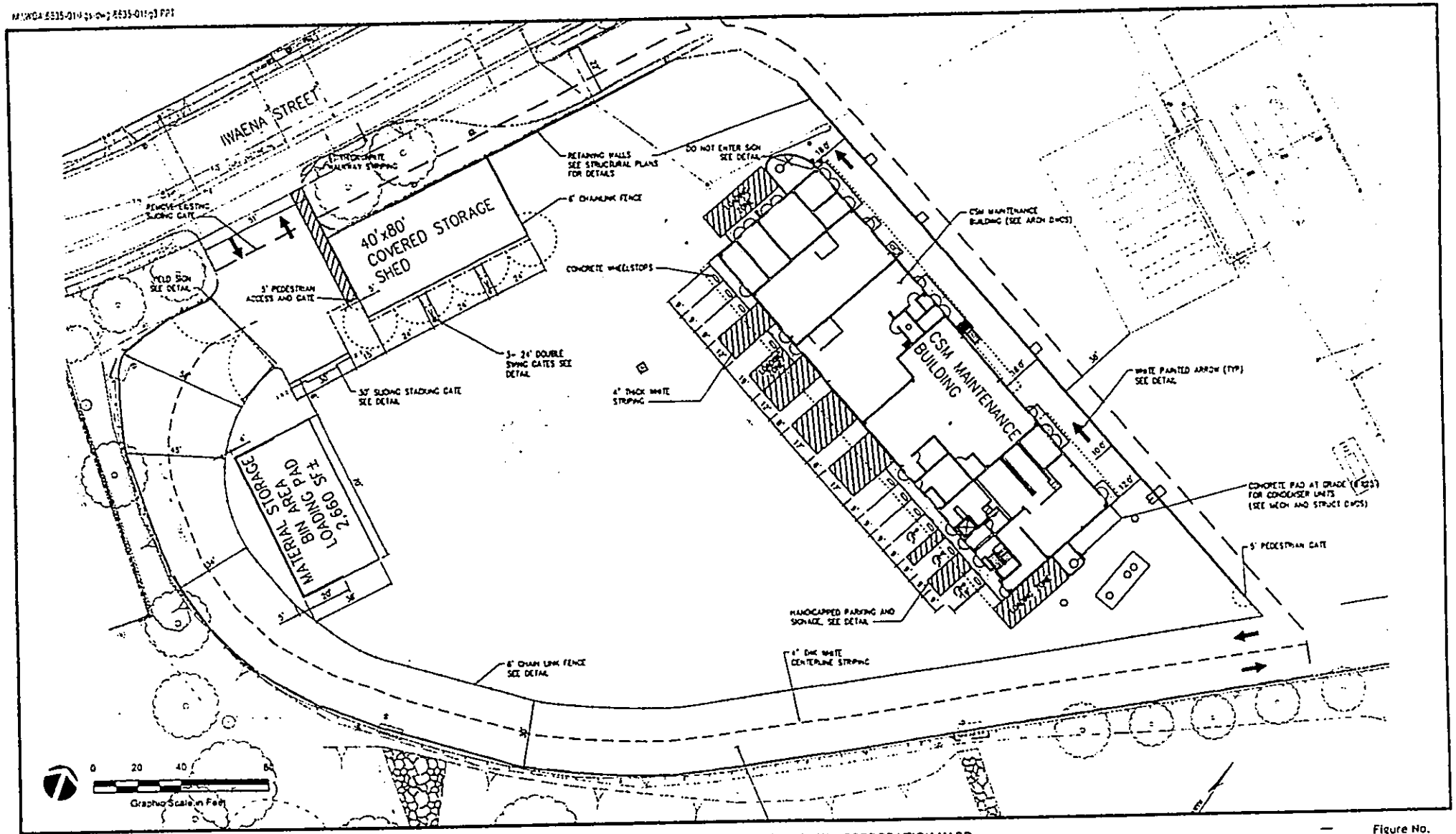
Wilson Okamoto Corporation

COLLECTION SYSTEM MAINTENANCE BASEYARD HALAWA BUS FACILITY

SHED SECTIONS & ELEVATIONS

Figure No.

1.10



COLLECTION SYSTEM MAINTENANCE BASEYARD HALAWA CORPORATION YARD

Site Plan

Figure No.

1.11

Wilson Okamoto Corporation

The project site slopes downward from north to south (mauka to makai) and slightly from Iwaena Street toward North Halawa Stream. One retaining wall will be needed to create a pad for the building. The wall will be placed along the mauka boundary to create a pad for the building. The CMU walls for the storage shed will also act as a retaining wall.

The yard area will be graded to allow vehicle access to the building and storage shed and to park City-owned vehicles and equipment assigned to CSM. Table 1.1 shows the number and types of vehicles assigned to the CSM Baseyard.

Table 1.1
Number and Type of Vehicles

Item	Vehicle Type	No. of Vehicles
1	Small Vehicles (1)	74
2	Large Vehicles (2)	32
	Total	106

(1) Sedans, pick ups, and crew cabs.
(2) All other types of vehicles, including dump trucks and high velocity trucks.

Electrical service will be via a new underground ductline for the 12.47 KV primary service line that will be connected to an existing Hawaiian Electrical Co. (HECO) handhole located along Iwaena Street. The underground ductline will terminate at a new concrete transformer pad located adjacent to the CSM Baseyard building. A new transformer will be mounted on the concrete pad by HECO. From the transformer, the new 408Y/277 volt, 3-phase, service will run underground to the new electrical service equipment in the electrical room.

There is HECO service to the existing former bus maintenance facility which originates from the electrical substation located at the original CSM Baseyard site. However, due to the long distance from the new building to the existing electric service location, the shortest distance to obtain HECO service is from Iwaena Street.

An all-weather surface will be provided to areas used for traffic circulation, vehicle and equipment parking, material handling, and the storage shed. The areas of new

construction will be paved with a new layer of asphalt concrete and aggregate base course with adequate thickness to handle the loadings. The entire project site, including the undisturbed areas of the existing pavement, will be sealed with a diesel fuel resistant seal coat.

No vehicle fueling, washing, or maintenance facilities will be located at the CSM Baseyard. These functions will occur in the Halawa Corporation Yard for the CSM vehicles. The Final EA for the Halawa Corporation Yard, issued in February 2000, addressed these functions. Installation of underground storage tanks (UST's) is not part of the CSM Baseyard project.

An existing 16-inch Board of Water Supply (BWS) water line is located along Iwaena Street. Connection will be made to this water line to provide service the new building and the yard area. The estimated water demand based on the floor plan will be about 85 gallons per minute with 3-inch water line.

An existing sewer manhole and lateral are located on the project site. The lateral is connected to an existing sewer line located along Iwaena Street. A service lateral from the new building will be connected to the existing manhole. The estimated sewer demand based on the floor plan will be about 85 gallons per minutes with 4-inch line. On October 2, 2002, the Department of Planning and Permitting (DPP) approved the Sewer Connection application for the CSM Baseyard project.

The front of the building will be provided with a 10' overhang to protect the interior of the shop from rain and to provide cover while loading equipment and material onto vehicles. Yard lighting will be provided to the area under the overhang plus an additional 10' beyond the overhang. The back of the building will be provided with security lighting.

The project site currently contains one grated drainage inlet located near the center of the project site and three catch basin curb inlets located on the makai and stream-side perimeter of the project site. The inlets collect surface runoff from the project site, which is discharged directly to North Halawa Stream without treatment through four discharge outlets.

Four grated inlets will be placed along the mauka retaining wall to collect runoff which comes from upstream of the project site. One grated inlet will be placed along the

bottom on the retaining wall to collect surface runoff from the mauka side of the building. Runoff from other areas of the project site will sheet flow to the existing catch basins located along the perimeter of the project site. A storm drain filter system will be placed within the new grated inlets and existing catch basins to collect sediments, oil, and grease in the runoff. The storm drain lines will outlet the flow to the existing stream outlets in North Halawa Stream.

Use of oil water separators in the drainage system was initially considered during the drainage system design. However, since only vehicle parking will occur and no vehicle maintenance will take place on the CSM Baseyard project site, use of the filter system was considered appropriate for the drainage system.

Wastewater will not be discharged into North Halawa Stream.

1.6 Project Operation

1.6.1 Total Personnel

A total of 161 office and field positions will be assigned to CSM Baseyard. Currently, there are a total of 143 employees assigned to the CSM Baseyard. Table 1.1 shows the assigned and active positions.

Table 1.1
No. of CSM Positions

Function	No. Positions	Vacant Positions	No. Employees
Office	24	11	13
Field	137	10	127
Total	161	21	140

1.6.2 Hours of Operation

The CSM Baseyard normal hours of operation are:

Monday to Friday	7:00 am to 3:30 pm
Monday to Friday	3:30 pm to 11:30 pm; one crew (4 positions)

Saturday and Sunday 7:00 am to 3:30 pm, one crew (4 positions)
Saturday and Sunday 3:30 pm to 11:30 pm; one crew (4 positions)

In addition, crews from the Baseyard will respond to emergencies on a 24 hours per day/7 days per week basis.

Most employees will arrive at the Baseyard starting around 6:30am to 6:45am. Starting at around 7:00 am, the District Supervisors and field crew supervisors will meet to establish work assignments and the field crews will load equipment and materials into City vehicles. From about 7:30 am to 8:00am, the field crews will depart the Baseyard for various project sites throughout Oahu. From about 2:30 pm to 3:00 pm, the field crews will return to the Baseyard to unload and store equipment. Most personnel will depart the Baseyard starting at around 3:30 pm.

As previously discussed, field crews will come to the Baseyard, establish work assignments, load equipment and material, and then depart for the various project sites. On a daily basis, an average of about 80 percent of the City-owned vehicles will be used to transport personnel, equipment, and material to project sites.

1.7 Employee Parking

On daily average, about 90 percent of the personnel report to the CSM Baseyard. Thus, based on the total number of positions, about 145 parking spaces will be needed on a daily basis.

CSM personnel will park on the existing roof-top parking at the former Halawa bus facility and at the Halawa Corporation Yard Phase 1 parking lot. There are a total of 405 parking spaces in these two locations which will be a sufficient number of spaces such that CSM and other Halawa Corporation Yard personnel will not park along Iwaena Street.

1.8 Preliminary Cost Estimate

The preliminary cost estimate for construction of improvements is approximately $5.3 million.

1.9 Project Schedule

The project schedule is to start construction around the early part of 2003 and require about 6 to 9 months to complete.

2. DESCRIPTION of EXISTING ENVIRONMENT, IMPACTS and MITIGATION MEASURES

2.1 Geology and Soils

2.1.1 Existing Environment

The island of Oahu is a volcanic doublet formed by the Waianae Range to the west and the younger Koolau Range to the east. Both are remnants of great shield volcanoes, but the term "range" indicates that they have lost most of the original shield outlines and are now long narrow ridges shaped largely by erosion. Typical of the southwest side of the Koolau Range, North Halawa Valley is an amphitheater headed valley formed by stream erosion. The lower portion of the valley is relatively flat and overlays ancient marine sediments from a time when the oceans were much higher.

In August 2002, soil borings were made at four locations within the project site. Three of the soil borings were drilled to depths of 31.5 feet at the building site. These borings generally encountered fills to depths ranging from 24 to 26 feet which were underlain by residual clayey silts. The fills generally consisted of surface layers of dense granular fill, underlain by reddish brown clayey silts which appear to be compacted, interlayered with gravel and construction debris.

The fourth soil boring was drilled to a depth of 21.5 feet at the storage shed site. This boring encountered a surface of dense gravel (base course) underlain by highly variable fills including compacted clayey silt, gravel, boulders, and construction debris to depth of 15 feet, underlain by residual clayey silts.

2.1.2 Impacts and Mitigation Measures

The construction of the CSM Baseyard, including the excavation required for the foundations and footings of the proposed building and storage shed, will not adversely impact the geology and soils of the project site or surrounding areas.

2.2 Drainage and Flood Hazard

2.2.1 Existing Environment

According to the U.S. Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map (FIRM), Community Panel Number 150030C 245E effective November 20, 2000, almost all of the project site is located in Zone X (defined by FEMA as areas determined to be outside the 500-year flood plain). A small portion of the northwest corner is located in Zone D (defined as areas in which flood hazards are undetermined). The southern-eastern boundary of the project site follows along North Halawa Stream which is designated Zone AE defined as special flood hazard areas inundated by 100-year flood, base flood elevations determined. The CSM Baseyard project site will be located above the top of bank of North Halawa Stream. The top of bank elevation is at approximately 121.32± near the CSM maintenance building which will have a finished floor elevation of 125.67. Although it is difficult to tell with certainty, the FEMA map appears to show Zone AE to be confined to the channel of North Halawa Stream. See Figure 2.1.

The project site currently contains one grated drainage inlet located near the center of the project site and three catch basin curb inlets located on the makai and stream-side perimeter of the project site. The inlets collect surface runoff from the project site which discharged directly to North Halawa Stream without treatment through four discharge outlets.

2.2.2 Impacts and Mitigation Measures

The CSM building will be constructed in Zone X, areas outside the 500-year flood plain. The building will be setback approximately 90 feet from the top bank of North Halawa Stream. Since development will not take place within the flood hazard area, the proposed project is not expected to impact, or be affected by flooding.

Four grated inlets will be placed along the mauka retaining wall to collect runoff which comes from upstream of the project site. One grated inlet will be placed along the bottom on the retaining wall to collect surface runoff from the mauka side of the building. Runoff from other areas of the project site will sheet flow to the existing catch basins located along the perimeter of the project site. A storm drain filter system will be placed

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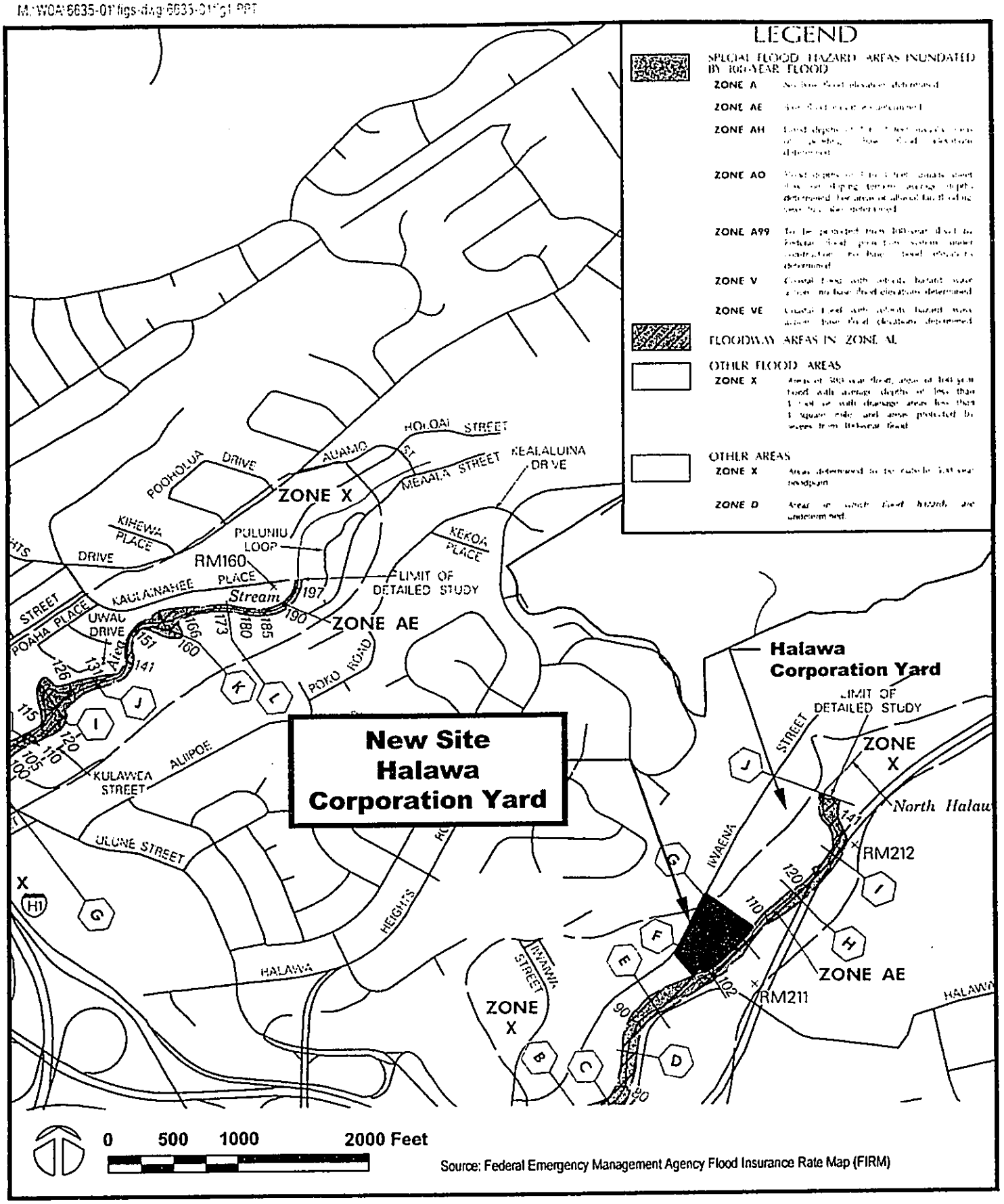


Wilson Okamoto CORPORATION

COLLECTION SYSTEM MAINTENANCE BASEYARD HALAWA CORPORATION YARD

Flood Map

Figure No.

2.1

within the new grated inlets and existing catch basins to collect sediments, oil, and grease in the runoff. The storm drain lines will outlet the flow to the existing stream outlets in North Halawa Stream. Use of the storm drain filter system will prevent adverse impacts to the water quality of North Halawa Stream. In addition, the CSM Baseyard project should not have an adverse impact to the City's municipal separate storm sewer system (MS4) permit.

2.3 Hazardous Waste

2.3.1 Existing Environment

The entire 2.1-acre CSM Baseyard project site has been paved since the late 1970's when the Halawa bus repair and maintenance facility was constructed. Petroleum products would have leaked onto the paved surface over the years. The surface has been relatively well maintained and showed minimal areas of cracks or other disturbance to the surface which could accumulate petroleum products.

The soil borings drilled at the building and storage shed sites did not detect the presence of petroleum products.

The City and County of Honolulu will be undertaking a project to remediate the Halawa Corporation Yard Phase 2 area which showed the presence of total petroleum hydrocarbons (TPH) as gasoline, TPH as diesel, TPH as oil, benzene, toluene, ethylbenzene, and xylenes (BETX), polynuclear aromatic hydrocarbons (PAH), and total lead. The Halawa Corporation Yard Phase 2 remediation project will include removal of the twelve UST's on the site in the Phase 2 area.

Flammable and hazardous materials will be stored within the designated storage rooms with the building. The rooms will be designed to meet the requirements of applicable building and fire codes for storage of these types of materials which include vehicle batteries, paints, solvents, gasoline, lubricants, and sewer line cleaning agents. Most of these items are stored in 1-gallon or 5-gallon containers. The solvent is used to clean equipment and parts in the mechanical/small tool shop.

2.3.2 Impacts and Mitigation Measures

The CSM Baseyard will not include vehicle maintenance operations nor will fueling of City-owned vehicles occur on the project site. Thus, there will be no adverse effects to the environment from vehicle maintenance or fueling operations.

Hazardous materials and flammable items will be used within the shops inside the building. Storage and use of these materials is guided by Federal (Occupation Health and Safety Administration), State (Hawaii Occupational Safety and Health) and City regulations, rules, polices, and procedures. Adherence to these rules and procedures will prevent adverse impacts to the environment.

CSM personnel assigned to use these materials are provided specific training regarding handling and use of the materials, including application methods and precautions to be taken in the event of a spill. To maintain control of the materials, field personnel must submit a work order to the storekeeper to withdraw materials to be used in the field. In addition, Material Safety Data Sheets (MSDS) are maintained by each crew and the Safety Specialist for each type of hazardous and chemical material used by CSM personnel.

2.4 Biological Resources

2.4.1 Existing Environment

Flora

As previously discussed, the entire 2.1-acre CSM Baseyard project site has been paved since the late 1970's when the bus repair and maintenance facility was constructed. The paving work removed the vegetation from the project site. Thus, the CSM Baseyard project site would not contain U.S. Department of the Interior Fish and Wildlife Service or State of Hawaii Department of Land and Natural Resources listed or candidate threatened or endangered botanical species.

Fauna

The CSM Baseyard project site was developed as part of the Halawa bus facility and subsequently used to park buses. Vegetation has been removed from the project site to accommodate these uses. Thus, habitat for various wildlife species is no longer available and no U.S. Department of the Interior Fish and Wildlife Service or State of Hawaii Department of Land and Natural Resources listed or candidate threatened or endangered biological species would be found on the project site.

Water Quality and Stream Resources

In December 2001, a biological reconnaissance survey was undertaken for North Halawa Stream which forms the southern boundary of the project site. The reconnaissance survey was undertaken as part of the EA for the previous CSM H-3 Freeway site which lies south of this project site and adjacent to North Halawa Stream. Since North Halawa Stream is a common boundary for the project site and the previous site, the findings of the reconnaissance survey show the existing environment of the stream.

Biological observations and water quality samples were taken in North Halawa Stream as part of the reconnaissance survey. Stream flow was relatively rapid at the time of the survey and a variety of habitats were present in the stream including riffles, runs, and slower flowing pools. See Appendix A.

Water quality samples were taken above, below, and adjacent to the previous site. The results of the analysis indicate North Halawa Stream appear to meet or exceed all of the State water quality criteria, although the number of samples taken to measure particulates and nutrients are not comparable to the State's criteria.

Halawa Stream is currently listed under Section 303(d) of the Clean Water Act as being impaired by nutrients and turbidity. The impaired status of the Halawa Stream and Pearl Harbor require that the State of Hawaii Department of Health (D)H) establish Total Maximum Daily Loads (TMDLs) to suggest how much the existing pollutant loads should be reduced to attain water quality standards in the stream and coastal waters.

Field observations showed, although a variety aquatic habitats were present, North Halawa Steam was devoid of most native or introduced fish species. This occurs as the middle reach of North Halawa Stream near the project site dries up during part of the year, particularly during the dry summer months. The only fish observed during the reconnaissance was the introduced guppy. The survey also noted numbers of tadpoles of the marine toad. See Appendix A.

2.4.2 Impacts and Mitigation Measures

Flora

Development of the CSM Baseyard will not result in the removal of vegetation from the previously paved project site. Thus, construction of the CSM Baseyard will not have a significant adverse effect to U.S. Department of the Interior Fish and Wildlife Service or State of Hawaii Department of Land and Natural Resources listed or candidate threatened or endangered botanical species. Construction of the CSM Baseyard will not have a significant adverse effect to the botanical character of this area of Oahu.

Fauna

Previous removal of the vegetation has also removed habitat for bird species and other fauna which could be present in the area. Some bird species may occasionally visit the surrounding areas. Given the project site conditions and the developed character of the surrounding areas, the project site would not provide habitat for U.S. Department of the Interior Fish and Wildlife Service or State of Hawaii Department of Land and Natural Resources listed or candidate threatened or endangered bird species. Construction of the CSM Baseyard will not have a significant adverse effect to the bird species on Oahu.

Water Quality and Stream Resources

Downstream from the project site, North Halawa Stream eventually flows through a concrete lined channel near the H-3 Freeway and Moanalua Freeway interchange, then under the Aloha Stadium parking lot to an estuary that opens into the East Loch of Pearl Harbor. Runoff of sediments could clog the stream bed and reduce water clarity.

As previously discussed, four grated inlets will be placed along the mauka retaining wall to collect runoff which comes from upstream of the project site and one grated inlet will be placed along the bottom on the retaining wall to collect surface runoff from the mauka side of the building. Runoff from other areas of the project site will sheet flow to the existing catch basins located along the perimeter of the project site. A storm drain filter system will be placed within the new grated inlets and in each of the existing catch basins to collect sediments, oil, and grease in the runoff. The storm drain filter will reduce the flow of particulates and sediment into North Halawa Stream. This will minimize significant adverse effects to the stream. Construction of the storm drain filter system will improve the quality of the runoff discharge to North Halawa Stream, when compared to the existing system and the CSM Baseyard project should not have an adverse impact to the City's municipal separate storm sewer system (MS4) permit.

2.5 Climate

2.5.1 Existing Environment

The project site and surrounding areas are characterized by moderate temperatures and rainfall. Average high and low temperatures range between a low of about 60° F to a high of around 85-88° F over the course of a year. Median annual rainfall is approximately 45 inches per year in the upper reaches of Halawa Valley near the Koolau Mountain Range.

2.5.2 Impacts and Mitigation Measures

Construction of the CSM Baseyard will be confined to the approximately 2.1-acre project site. Operations will involve activities such as carpentry and small-scale repair work performed almost exclusively within the building. The level of activity and the scale of the project site will not create adverse affects to the climate of this area of Oahu.

2.6 Traffic

2.6.1 Existing Environment

A field investigation of existing traffic conditions was conducted on October 10, 2001 and consisted of manual turning movement count surveys at three intersections:

- Iwaiwa Street/Halawa Valley Street,
- Halawa Valley Street/Ulune Extension/Moanalua Road ramps; and
- Kahuapaani Street/Ulune Street.

The traffic count surveys were conducted between the morning hours of 5:30 AM and 8:30 AM, and the afternoon hours of 3:00 PM and 6:00 PM. Appendix B shows the counts and the traffic study.

An additional manual turning movement survey of TheBus movements was conducted concurrently with the traffic counts at the intersection of Halawa Valley Street/Ulune Extension/Moanalua Road ramps. Since the CSM Baseyard will occupy a portion of the former Halawa bus facility, this traffic count was performed to account for the relocation of the City's Pearl City Bus Facility to Manana which was completed in November 2001.

Traffic counts were previously performed in the spring of 1998 at the intersection of Iwaiwa Street and Iwaena Street for the Halawa Corporation Yard Traffic Impact Report. The 2001 traffic volumes at the Iwaiwa Street/Halawa Valley Street intersection were used to derive 2001 traffic volumes for the Iwaiwa Street and Iwaena Street intersection. The 1998 study was used to derive the directional distribution of the traffic at the intersection. See Appendix B.

The traffic count data show the morning (AM) peak hour of traffic generally occurs between 6:30 AM and 7:30 AM and the afternoon (PM) peak hour of traffic generally occurs between the hours of 4:30 PM and 5:30 PM at the four study intersections. The traffic count also shows that traffic within the Halawa Industrial area tends to be highly directional. During the morning peak, the split of vehicles entering/exiting the industrial area is approximately 70 percent/30 percent. During the afternoon peak, the opposite travel pattern occurs.

The intersection capacity analysis performed in the traffic study was based upon procedures presented in the "Highway Capacity Manual 2000", issued by the Transportation Research Board, and the "Highway Capacity Software", developed by the Federal Highway Administration. The analysis was based on the concept of Level of Service (LOS).

LOS is a quantitative and qualitative assessment of traffic operations. Levels of Service are defined by LOS "A" through "F". LOS "A" representing an ideal or free-flow operating conditions and LOS "F" unacceptable operating conditions. A more detailed definition of LOS is included in Appendix B. LOS worksheets for existing conditions are also contained in Appendix B.

The traffic survey count data showed the following existing AM and PM peak conditions for the critical movements at the four studied intersections by lane group.

Table 3.1
Existing Intersection Level of Service Summary

Intersection/Movement	**AM Peak LOS (Delay)**	**PM Peak LOS (Delay)**
Halawa Valley Street/Iwaiwa Street[1]		
Diamond Head-bound Left (Halawa)	LOS A (8.4 sec)	LOS A (9.3 sec)
Makai-bound Left (Iwaiwa)	LOS D (32.1 sec)	LOS D (25.2 sec)
Makai-bound Right (Iwaiwa)	LOS B (10.1 sec)	LOS C (20.4 sec)
Iwaena Street/Iwaiwa Street[1]		
Ewa-bound (Iwaena)	LOS B (11.3 sec)	LOS B (14.6 sec)
Makai-bound Left (Iwaiwa)	LOS A (8.0 sec)	LOS A (7.8 sec)
Ulune Ext./Halawa Valley Street	***LOS C (32.1 sec)***	***LOS D (36.0 sec)***
Diamond Head-bound (Ulune Ext.)	LOS D (41.9 sec)	LOS D (42.6 sec)
Ewa-bound (Moanalua ramp)	LOS C (27.5 sec)	LOS C (34.4 sec)
Makai-bound (Halawa)	LOS D (37.5 sec)	LOS D (38.4 sec)
Ulune Ext./Kahuapaani Street	***LOS D (39.1 sec)***	***LOS D (54.7 sec)***
Diamond Head-bound (Ulune)	LOS D (47.4 sec)	LOS E (59.5 sec)
Ewa-bound (Ulune Ext.)	LOS C (34.8 sec)	LOS D (51.1 sec)
Mauka-bound (Kahuapaani)	LOS D (43.2 sec)	LOS D (37.0 sec)
Makai-bound (Halawa Hts)	LOS D (36.4 sec)	LOS E (75.8 sec)

[1]unsignalized intersection

The table shows that when compared to the existing AM peak period, the four intersections operate at the same or lower LOS during the existing PM peak period.

2.6.2 Impacts and Mitigation Measures

A traffic impact analysis was conducted to determine the effect of the CSM Baseyard activities on these four nearby intersections. This analysis considered both conditions with and without the CSM Baseyard project. Since the City and County of Honolulu would construct a traffic signal at the intersection of Halawa Valley Street and Iwaiwa Street as part of the Halawa Corporation Yard Phase 2 project, this analysis assumed an operating traffic signal at the intersection.

The traffic impact analysis indicated that for the AM peak period, except for the Iwaiwa Street and Halawa Valley Street intersection, the LOS would remain unchanged or deteriorate from existing conditions. The AM peak critical movement LOS at the Iwaiwa Street and Halawa Valley Street intersection would improve from LOS "D" without the project to LOS "B" with the project. This improvement results from installation of the traffic signal at this intersection by the Halawa Corporation Yard Phase 2 project. See the table below.

In the PM peak period, with the CSM Baseyard project, compared to the 2003 without the project conditions, the LOS critical movement would remain unchanged at three intersections and would deteriorate at one intersection. See the table below.

Table 3.2

2003 Intersection Level of Service Summary Without and With CSM Yard

	Without Project		With Project	
Intersection/Movement	**AM Peak LOS (Delay)**	**PM Peak LOS (Delay)**	**AM Peak LOS (Delay)**	**PM Peak LOS (Delay)**
Halawa Valley St/Iwaiwa Street	***LOS B (11.5 sec)***	***LOS B (17.9 sec)***	***LOS B (14.8 sec)***	***LOS B (17.9 sec)***
Diamond Head-bound (Halawa)	LOS A (9.5 sec)	LOS B (18.4 sec)	LOS B (13.9 sec)	LOS B (18.4 sec)
Ewa-bound (Halawa)	LOS B (18.1 sec)	LOS B (17.6 sec)	LOS B (18.1 sec)	LOS B (17.6 sec)
Makai-bound (Iwaiwa)	LOS C (20.3 sec)	LOS C (20.9 sec)	LOS C (20.3 sec)	LOS C (20.9 sec)
Iwaena St/Iwaiwa Street				
Ewa-bound (Iwaena)	LOS B (13.6 sec)	LOS C (15.4 sec)	LOS C (15.8 sec)	LOS C (16.3 sec)
Makai-bound (Iwaiwa)	LOS A (8.0 sec)	LOS A (7.8 sec)	LOS A (8.4 sec)	LOS A (7.8 sec)
Ulune Ext./Halawa Valley Street	***LOS C (34.2 sec)***	***LOS D (36.4 sec)***	***LOS D (40.0 sec)***	***LOS D (36.7 sec)***
Diamond Head-bound (Ulune Ext.)	LOS D (46.2 sec)	LOS D 42.7 sec)	LOS D (48.0 sec)	LOS D (42.7 sec)
Ewa-bound (Moanalua ramp)	LOS C (27.5 sec)	LOS C (35.0 sec)	LOS C (35.4 sec)	LOS C (35.0 sec)
Makai-bound (Halawa)	LOS D (42.8 sec)	LOS D (38.8 sec)	LOS D (44.5 sec)	LOS D (39.7 sec)

Intersection/Movement	Without Project		With Project	
	AM Peak LOS (Delay)	PM Peak LOS (Delay)	AM Peak LOS (Delay)	PM Peak LOS (Delay)
Ulune Ext./Kahuapaani Street	***LOS D (42.4 sec)***	***LOS E (58.4 sec)***	***LOS D (45.2 sec)***	***LOS E (59.7 sec)***
Diamond Head-bound (Ulune)	LOS D (49.5 sec)	LOS E (62.7 sec)	LOS D (50.0 sec)	LOS E (62.7 sec)
Ewa-bound (Ulune Ext.)	LOS D (39.5 sec)	LOS E (56.4 sec)	LOS D (43.0 sec)	LOS E (58.9 sec)
Mauka-bound (Kahuapaani)	LOS D (47.0 sec)	LOS D (37.2 sec)	LOS D (51.7 sec)	LOS D (37.2 sec)
Makai-bound (Halawa Hts)	LOS D (36.4 sec)	LOS E (78.4 sec)	LOS D (35.7 sec)	LOS E (78.4 sec)

Based on the results of the Traffic Impact Study, the LOS at nearby critical intersections would remain unchanged as a result of the CSM Baseyard project. Thus, overall the CSM Baseyard project should not have an adverse impact to traffic conditions at nearby critical intersections.

2.7 Air Quality

2.7.1 Existing Environment

Air quality in the vicinity of the CSM Baseyard project site is affected primarily by emissions from vehicular traffic along Iwaena Street and the H-3 Freeway. However, as traffic operates generally well along these roadways throughout the day, the associated vehicular emissions do not significantly affect ambient air quality in the area. The project site is located in an industrial area and not in the immediate vicinity of sensitive receptor locations (residential areas).

The State of Hawaii Department of Health (DOH) Clean Air Branch operates a network of air quality monitoring stations located at various sites around the State. The Pearl City monitoring station, located atop the Leeward Medical Center, is the nearest station to the CSM project site. The 2000 Annual Summary, Hawaii Air Quality Data reports on data collected at the stations for the calendar year 2000 for six criteria pollutants promulgated by the US Environmental Protection Agency (EPA): carbon monoxide, nitrogen oxide, sulfur dioxide, lead, ozone, and particulate matter less than or equal to 10 micrometers. (The 2000 report is the most recent information.) The DOH also has a standard for hydrogen sulfide.

The 2000 annual data for the Pearl City station show that, with the exception of particulate matter, there were no measurements above the EPA established standards

for the other five EPA criteria pollutants and hydrogen sulfide. The DOH report indicates the measurements for highest values for particulate matter occurred on January 1, 2000 and December 31, 2000, probably due to fireworks. Thus, air quality is good in the vicinity of the project site.

2.7.2 Impacts and Mitigation Measures

Potential short-term adverse air-quality impacts during the construction phase include: 1) generation of fugitive dust from vehicle movement and soil excavation; and 2) exhaust emissions from on-site construction equipment and from construction workers' vehicles traveling to and from the project site. These adverse impacts will be short-term during the period of construction.

Construction activities must comply with provisions of Chapter 11-60.1, Hawaii Administrative Rules (DOH), "Air Pollution Control" and, with respect to fugitive dust, Section 11-60.1-33. In addition, the entire project site is approximately 2.1 acres and the limits of grading will be about ± 1.5 acres which will mean a relatively small area of disturbance. The City and County of Honolulu contract specifications include a standard Environmental Controls section with specific reference to Chapter 11-60. Under air pollution control, the Environmental Controls specifications include the provision that the contractor must maintain the areas within and without the project limits free from dust which would cause hazards to the work and to other persons or property. The specifications also state the contractor will be permitted to use accepted methods for dust control such as enclosure and filtering. It is expected that the contractor will comply with State regulations and provide adequate means to control dust during the various phases of construction.

Once construction has been completed, operation of the CSM Baseyard will involve the movement of vehicles and equipment within the project site, as well as trips to and from the project site. It is anticipated that the traffic conditions will remain unchanged without or with the CSM Baseyard project. Since air quality in the area is primarily affected by vehicular traffic emissions, the unchanged traffic conditions would indicate air quality is not expected to deteriorate from existing conditions.

2.8 Noise

2.8.1 Existing Environment

The CSM Baseyard is located in an industrial area of Honolulu. As such, ambient noise levels at the project site would be affected primarily by vehicle traffic and large-scale outdoor industrial uses, including the adjacent Honolulu Corporation Yard and the overhead H-3 Freeway. Vehicle traffic to the Halawa Industrial Park would travel on Iwaena Street which forms the northern border of the project site. All of these sources would contribute to the ambient noise in the area near the CSM Baseyard project site.

Zoning for the CSM Baseyard project site is Intensive Industrial (I-2) which, according to Title 11 Hawaii Administrative Rules, Department of Health, Chapter 46, Community Noise Control, is a Class C district and permits sound levels of 70 dBA.

2.8.2 Impacts and Mitigation Measures

The operations at the CSM Baseyard would include the movement of City-owned vehicles and equipment within the project site. In addition, there would be the movement of City-owned vehicles as they are driven to and from the project site. The movement of vehicles and equipment would create noise as they are maneuvered on the project site and as they travel on streets approaching the Baseyard.

As shown in the traffic analysis, the CSM Baseyard would not significantly change traffic conditions. Since vehicle traffic is one of the major sources of noise, the CSM Baseyard project would result in the noise levels which would affect nearby areas. In addition, for the most part, the noise impacts would occur during the daytime hours when noise from other nearby sources would also occur.

2.9 Archaeological and Cultural Resources

2.9.1 Existing Environment

The entire CSM Baseyard project site has been previously disturbed by construction of the former Halawa bus facility starting in the early 1980s and by subsequent use as a parking lot for City buses.

Documentation from the State of Hawaii Department of Land Natural Resources State Historic Preservation Division (SHPD) shows that the clearing, grading, and improvements have altered the project site. See Appendix C.

2.9.2 Impacts and Mitigation Measures

The SHPD documentation stated that "no historic properties will be affected" by the CSM Baseyard project. Thus, the CSM Baseyard will have no adverse impacts to historic sites or cultural sites. See Appendix C.

2.10 Infrastructure

2.10.1 Water

Existing Conditions

An existing 16-inch Board of Water Supply (BWS) water line is located along Iwaena Street. Connection will be made to this water line to provide service the new building, the yard area, and to provide fire protection. The estimated water demand based on the floor plan will be about 85 gallons per minute with 3-inch water line. Currently, the capacity of this line is sufficient to meet the domestic and fire flow needs of the users along Iwaena Street.

Impacts and Mitigation Measures

Potable water for CSM Baseyard shop/office building will be provided via a meter and a 3-inch line connected to the BWS 16-inch line located along Halawa Valley Street.

Fire protection for the building and project site will be provided using a new line from Iwaena Street. The existing BWS system has the capacity to meet these requirements.

2.10.2 Sewer

Existing Conditions

An existing sewer manhole and lateral are located on the project site. The lateral is connected to an existing sewer line located along Iwaena Street. A service lateral from

the new building will be connected to the existing manhole. The estimated sewer demand based on the floor plan will be about 85 gallons per minutes with a 4-inch line.

Impacts and Mitigation Measures

Sewer service to the building will be provided using a new 4-inch line which will be connected to the line on Iwaena Street. The City and County system has the capacity to collect, treat, and dispose the estimated sewer demand. On October 2, 2002, the City and County of Honolulu Department of Planning and Permitting approved the Sewer Connection application for the CSM Baseyard project.

2.10.3 Electrical

Existing Conditions

Electrical service to this area of the Halawa Industrial Park is provided by an underground 12 KV circuit located along Iwaena Street. Electrical service to the project site will be via a new underground ductline for the 12.47 KV primary service line that will be connected to an existing Hawaiian Electrical Co. (HECO) handhole located along Iwaena Street. The underground ductline will terminate at a new concrete transformer pad located adjacent to the CSM Baseyard building. A new transformer will be mounted on the concrete pad by HECO. From the transformer, the new 408Y/277 volt, 3-phase, service will run underground to the new electrical service equipment in the electrical room.

Impacts and Mitigation Measures

The primary electrical services for the CSM Baseyard will be provided via a new pad mounted transformer served from HECO's primary underground 12.47KV circuit. The new 12.47KV transformer will be located near the back of the new building and will service the building and yard areas. Service to the new transformer will be via an underground ductline. The HECO service is adequate to meet the needs of the CSM Baseyard.

2.11 Visual Considerations

2.11.1 Existing Conditions.

The CSM Baseyard project site is located within Halawa Industrial Park which has been intensely developed with industrial and industrial/commercial uses, including a number of uses with yard areas used for vehicle parking and exterior storage. For the most part, the exterior walls of the buildings within Halawa Industrial Park are concrete block or metal siding with a range of colors, including greens, blues, and tans/light browns. The buildings are primarily single or two-story with sloped roofs.

2.11.2 Impacts and Mitigation Measures

The exterior walls of the CSM Baseyard maintenance building will be concrete block for the lower about 7 feet with metal siding above. The concrete block, metal siding, and roof will be green, similar to the color scheme used for the Halawa Corporation Yard Phase 1 buildings. Thus, the design of the CSM Baseyard building will be compatible with the existing surrounding buildings and will not have an adverse impact to the visual character of Halawa Industrial Park. In addition, the design plans for the CSM Baseyard, include retention of the existing planted landscape material and new plantings of hibiscus and grass along the fence on Iwaena Street south the access driveway. Overall, the design of the building and the addition of the new landscape material will ensure that the CSM Baseyard project will be visually compatible with the surrounding Industrial Park areas.

3. RELATIONSHIP to PLANS, POLICIES and CONTROLS

3.1 Hawaii State Plan

The Hawaii State Plan, adopted in 1978 and revised in 1988, establishes the overall theme, goals, objectives, and priority guidelines to guide the future long-range development of the State. The CSM Baseyard supports and is consistent with the following State Plan objectives and policies:

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

(b) (6) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.

The CSM Baseyard will involve construction of new facilities at a new site. The Baseyard will increase the level of construction activity on Oahu during the period of construction.

Section 226-11 Objectives and policies for the physical environment - land-based, shoreline, and marine resources.

(b) (3) Take into account the physical attributes of areas when planning and designing activities and facilities.

The CSM Baseyard is located adjacent to the Halawa Corporation Yard and within Halawa Industrial Park. The CSM Baseyard project site has been used as a bus parking lot for a number of years. The CSM building to be constructed has been designed to consider the existing topographic conditions on the project site to minimize excavation or grading.

Section 226-13 Objectives and policies for the physical environment - land, air, and water quality.

(b) (7) Encourage urban developments in close proximity to existing services and facilities.

The CSM Baseyard is located within Halawa Industrial Park, a well developed area with other industrial-type businesses and public services which can support the existing level of development. Construction of the CSM Baseyard in this location will be consistent with the developed status of the area.

3.2 Land Use Plans and Policies

3.2.1 State Land Use District

The Hawaii Land Use Law of Chapter 205, Hawaii Revised Statutes, classifies all land in the State into four land use districts: Urban, Agriculture, Conservation, and Rural. The CSM Baseayrd project site is located in the Urban District classification. The CSM Baseyard is consistent with the Urban classification.

3.2.2 City and County of Honolulu General Plan

The City and County of Honolulu General Plan (adopted 1977) has been amended by the City Council a number of times, most recently in 1992. The plan is a statement of long-range social, economic, environmental and design objectives for the general welfare and prosperity of the people of Oahu. The plan is also a statement of broad policies which facilitate the attainment of the objectives of the plan. Eleven subject areas provide the framework for the City's expression of public policy concerning the needs of the people and the functions of government. These areas include population; economic activity; the natural environment; housing; transportation and utilities; energy; physical development and urban design; public safety; health and education; culture and recreation; and government operations and fiscal management.

The relationship of the proposed project to the relevant objectives and policies of the General Plan are as follows:

VII. Physical Development and Urban Design

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

Policy 6 Encourage the clustering of developments to reduce the cost of providing utilities and other public services.

The CSM Baseyard is located within the Halawa Industrial Park and adjacent to the Halawa Corporation Yard. Halawa Industrial Park is a well-developed area with other industrial-type businesses and public services which can support the existing level of development. Construction of the CSM Baseyard in this location will be consistent with the developed status of the area.

Government Operations and Fiscal Management

Objective A To promote increased efficiency, effectiveness, and responsiveness in the provision of government services by the City and County of Honolulu.

Policy 1 Promote consolidation of State and City and County functions whenever more efficient and effective delivery of government programs and services can be achieved.

The CSM Baseyard will be located adjacent to the Halawa Corporation Yard which will consolidate common facilities and functions needed to support the various City agencies at a site reasonably close to the Honolulu urban area. The consolidation of functions and facilities will result in a reduction in management costs and access to specialized facilities.

3.2.3 City and County of Honolulu Development Plan Land Use Map

The CSM Baseyard will be located in the area designated "Public and Quasi-Public " on the PUC Development Plan Land Use Map. Thus, the CSM Baseyard will be compatible with the draft PUC DP.

In addition, the CSM Baseyard supports the PUC DP Infrastructure and Public Facilities policies and guidelines as it will be used by the City's Department of Environmental Services as the facility from which to service the existing wastewater collection system in the PUC and other areas of Oahu. A new and modern facility designed to CSM's needs will be an important factor in maintaining the wastewater collection system within the PUC.

3.2.4 City and County of Honolulu Development Plan Public Facilities Map

Construction of the Halawa Corporation Yard, which includes the CSM Baseyard project site, required an amendment to the Primary Urban Center Development Plan Public Facilities (DPPF) Map to add a publicly funded corporation yard modification/expansion symbol. On March 7, 1997, the DPPF Map amendment was set forth as 97/PUC-1001C. On June 8, 1998, Ordinance 98-23 to amend the Primary Urban Center DPPF Map was approved by the City Council and was signed by the Mayor on June 9, 1998.

An amendment to the existing PUC DPPF map will not be required as the CSM Baseyard project site is located within the former Halawa bus maintenance facility, now called the Halawa Corporation Yard, which was approved by Ordinance 98-23. On July 2, 2001, the previous site for the CSM Baseyard (H-3 Freeway/Queen Emma Foundation site) was approved by Ordinance 01-37. The DP Common Provisions indicate that the project boundaries shown on the public facilities map indicate approximate locations and shall be interpreted flexibly to allow reasonable implementation.

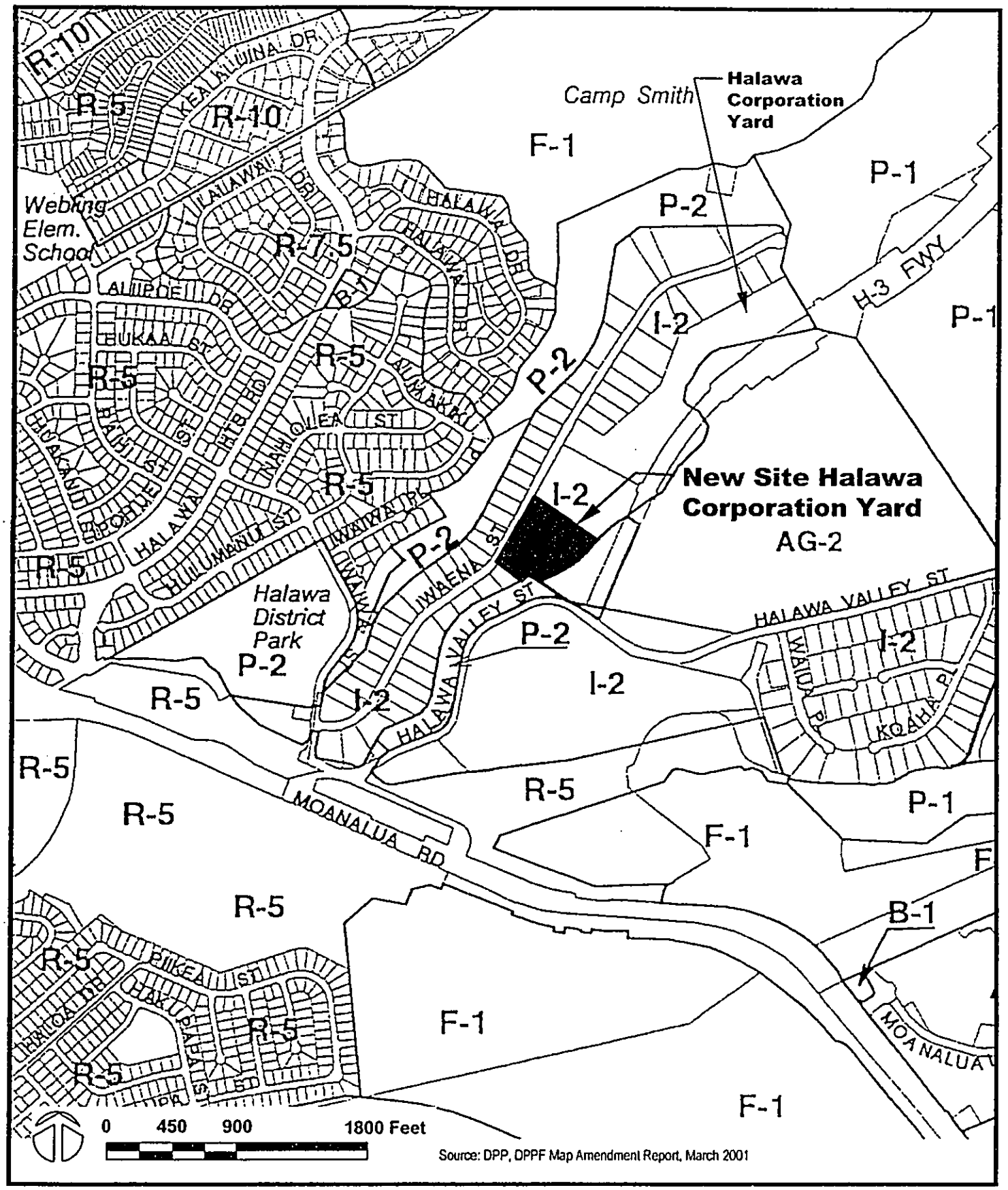
3.2.5 City and County of Honolulu Zoning

The zoning designation for the project site is I-2, Intensive Industrial District. The CSM Baseyard is considered a public facility which is a permitted use in an I-2, Intensive Industrial District. The areas surrounding the CSM Baseyard project site are generally zoned I-2, Intensive Industrial District. Most other nearby areas are zoned I-2, including the Halawa Industrial Park and the State's Animal Quarantine Station. Figure 3.1 shows the zoning map.

3.2.6 City and County of Honolulu Special Management Area

The Coastal Zone Management Act contains the general objectives and policies upon which all counties within the State have structured specific legislation which created Special Management Areas (SMA). Any development within the Special Management Area boundary requires a SMA Use permit which is administered by the City Council.

The CSM Baseyard project site is not located within the City's SMA.



Wilson Okamoto CORPORATION

COLLECTION SYSTEM MAINTENANCE BASEYARD HALAWA CORPORATION YARD

Zoning

Figure No.

3.1

4. ALTERNATIVES TO THE PROPOSED ACTION

4.1 No Action Alternative

The No Action alternative would continue the CSM Division baseyard functions near Kewalo basin. CSM would continue to use facilities that lack adequate space for their assigned functions. City employees would have to continue to use facilities with poor functional layouts which results in inefficient working conditions and adds to the time and effort required for City employees to perform assigned tasks.

The No Action alternative would also preclude the use of the existing site for its planned future use as envisioned by the State of Hawaii, Hawaii Community Development Authority (HCDA) for the existing CSM Division Kewalo basin site. Based on these considerations, the No Action alternative is not a reasonable alternative.

4.2 Honolulu Corporation Yard at Sand Island

As previously discussed, the Honolulu Corporation Yard was proposed for State-owned land on Sand Island, adjacent to Sand Island State Park. The Honolulu Corporation Yard was to have provided space for a number of City agencies including the CSM function plus several other City agencies. New facilities similar to those proposed for the CSM Baseyard would have been constructed at the Sand Island Honolulu Corporation Yard site. In addition, to meet the requirements set forth by the State, it would have been necessary to use City funds to construct a 45-acre extension to the Sand Island State Park.

The Honolulu Corporation Yard was intended to consolidate the maintenance and shop functions for a number of City agencies into a single location to reduce redundancy of material purchases and storage and to improve efficiency of operations. However, this meant the City would have to fund construction of a number of new facilities at one time and, given the terms of the Executive Order, develop 45 acres of Sand Island State Park. Based on these considerations and the lack of the City funding, the Honolulu Corporation Yard is not a feasible alternative to meet the City's need for a maintenance facility.

5. DETERMINATION

Short-term construction impacts include disruption of traffic near the project site, decline in air quality from construction activities, and increase in noise levels. Once construction has been completed, the short-term adverse impacts will no longer occur.

Based on analysis of the anticipated impacts, a Finding of No Significant Impact (FONSI) has been determined for the proposed CSM Baseyard project. The significance criteria to make this determination are set forth below and in Hawaii Administrative Rules Title 11, State of Hawaii Department of Health, Chapter 200, Environmental Impact Statement Rules.

1) *Involve an irrevocable commitment to loss or destruction of any natural or cultural resources*;

The CSM Baseyard project site does not provide habitat for Federal or State of Hawaii listed or candidate threatened or endangered species of flora or fauna. The project site has been fully developed and used as a parking area for the former Halawa bus facility for a number years. Thus, the CSM Baseyard will not result in the loss or destruction of natural resources.

The State of Hawaii Department of Land and Natural Resources Historic Preservation Division has indicated "no historic properties will be affected" by development of the CSM Baseyard.

2) *Curtail the range of beneficial uses of the environment*;

Since the late 1970's, the CSM Baseyard project site has been developed and used as a bus parking lot as part of the former Halawa bus facility. The CSM Baseyard project site and the adjacent Halawa Corporation Yard along with the Halawa Industrial Park are intended for industrial uses. Construction of the CSM Baseyard is consistent with the intended use of the industrial park. Thus, the CSM Baseyard will not curtail the beneficial uses of the environment.

3) *Conflict with the State's long-term environmental policies or goals as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders*;

The CSM Baseyard project will not involve actions or activities which would adversely affect natural resources of the project site. The CSM Baseyard project will be consistent with the guidelines of Chapter 344, HRS, as it will provide a public facility to support the maintenance functions assigned to the City and County of Honolulu. As such, the CSM Baseyard will not conflict with the State's long-term environmental policies or goals as expressed in Chapter 344, HRS.

4) *Substantially affect the economic or social welfare of the community or state*;

The CSM Baseyard will be used by the City and County of Honolulu agency assigned to maintain the City's sewer system, an integral part of the infrastructure needed to maintain the health and welfare of the community. The CSM Baseyard will have not have an adverse effect to the economic or social welfare of the community.

5) *Substantially affect public health*;

An efficient and well-maintained sewer system is needed to protect the public health of the residents and visitors on Oahu. The CSM Baseyard will serve as the facility for the City and County of Honolulu agency to conduct its assigned function. Thus, the CSM Baseyard project will not have an adverse effect on public health.

6) *Involve substantial secondary impacts, such as population changes or effects on public facilities*;

The CSM Baseyard is a public facility which will be used by the City and County of Honolulu agency assigned to maintain the City's sewer system. The CSM Baseyard will replace the existing facility located in the Kewalo basin area of Oahu. The City and County of Honolulu workers to be assigned to the CSM Baseyard already reside on Oahu. Thus, construction of the CSM Baseyard will not create secondary impacts, such as population changes or effects on public facilities.

7) *Involve a substantial degradation of environmental quality;*

The CSM Baseyard is anticipated to result in short-term impacts to noise, air quality and traffic in the immediate vicinity of the project site. The CSM Baseyard project site does not contain Federal or State listed or candidate threatened or endangered species of flora or fauna. Further, the State of Hawaii Department of Land and Natural Resources Historic Preservation Division has indicated "no historic properties will be affected" by development of the CSM Baseyard. Thus, there will be no loss or destruction of cultural resources. As a result, the CSM Baseyard project will not result in a substantial degradation of environmental quality.

8) *Have a cumulative effect upon the environment or involves a commitment for larger actions;*

The CSM Baseyard does not involve a commitment to further actions to other City and County of Honolulu related projects. As a result, the CSM Baseyard will not have a cumulative effect upon the environment or involve a commitment by the City to larger actions.

9) *Affect a rare, threatened or endangered species;*

The CSM Baseyard project site does not contain Federal or State listed or candidate threatened or endangered species of flora or fauna. Thus, the CSM Baseyard project will not affect a threatened or endangered species.

10) *Detrimentally affect air or water quality or ambient noise levels;*

Operation of construction equipment would increase noise and exhaust emission levels in the immediate vicinity of the CSM Bseyard project site. Operation of the CSM Baseyard will contribute low levels of additional noise to the area. However, the CSM Baseyard project site is located in an location surrounded by industrial zoned lands, which normally allow higher ambient noise levels than in residential or commercial areas.

11) *Affects or likely to suffer damage by being located in an environmentally sensitive area such as a floodplain, tsunami zone, beach, erosion-prone area, geographically hazardous land, estuary, fresh water or coastal water;*

According to the Flood Insurance Rate Map (FIRM), the CSM Baseyard is located in Zone X which is not designated as a hazardous floodplain or tsunami zone. The CSM Baseyard project site is also not within the City and County of Honolulu Special Management Area. In addition, the CSM Baseyard is not within the coastal shoreline area. Thus, the CSM Baseyard project site is not located in an environmentally sensitive area.

12) *Substantially affect scenic vistas and viewplanes identified in county or state plans or studies;*

The CSM Baseyard will include a maintenance building and yard areas to park vehicles and equipment and to store materials. The CSM Baseyard will use a site which has been used as a bus parking lot. Thus, there will be no change to the visual setting of this area of Oahu.

13) *Require substantial energy consumption.*

The CSM Baseyard is a replacement facility for the existing functions located in the Kewalo basin area. Thus, the CSM Baseyard will not create a substantial increase in energy consumption over existing levels of usage.

Based on these findings and the assessment of potential impacts from the Corporation Yard project, a Finding of No Significant Impact (FONSI) has been determined.

6. CONSULTED PARTIES

6.1 Pre-Assessment Consultation

The following agencies were consulted during the pre-assessment phase of the Draft Environmental Assessment. Each agency was sent a copy of a project summary and a request for their written comments on the project. Comments and responses (✓) are reproduced in Appendix D.

US Fish and Wildlife Service
✓ State of Hawaii Department of Transportation
✓ State of Hawaii Department of Land and Natural Resources
✓ State of Hawaii Department of Land and Natural Resources, Historic Preservation Division
State of Hawaii Department of Hawaiian Home Lands
Office of Hawaiian Affairs
✓ City and County of Honolulu Department of Planning and Permitting
✓ City and County of Honolulu Department of Transportation Services

6.2 Agencies and Organizations Consulted on the Draft EA

The following is a list of agencies and organizations that will be consulted during the preparation of the Draft Environmental Assessment. Copies of the comments (▲), substantive comments (✖) and responses received are included in the Appendix E. Comment

Federal

U.S. Department of Agriculture Natural Resource Conservation Service
▲ U.S. Army Corps of Engineers Pacific Ocean Division
U.S. Department of the Interior Fish and Wildlife Service
▲ U.S. Department of the Interior Geological Survey
U.S. Department of Transportation, Federal Highway Administration
Federal Emergency Management Agency, Region IX

State Agencies

- ▲ Department of Accounting and General Services
- Department of Agriculture
- Department of Business, Economic Development and Tourism
- ✖ DBED&T - State Energy Office
- Department of Hawaiian Home Lands
- ✖ Department of Health
- Department of Health, Environmental Management Division
- ✖ Department of Land and Natural Resources
- ✖ Department of Land and Natural Resources, State Historic Preservation Division
- ✖ Department of Land and Natural Resources, Water Resource Management
- ✖ State of Hawaii Department of Transportation
- University of Hawaii Water Resources Research Center
- University of Hawaii Environmental Center
- Aiea Public Library

City and County of Honolulu Agencies

- ✖ Department Planning and Permitting
- ▲ Department of Parks and Recreation
- ✖ Department of Transportation Services
- Department of Facility Maintenance
- ▲ Board of Water Supply

Organizations

- Hawaiian Electric Company
- ✖ Queen Emma Foundation
- Central Park Community Association
- Hui Malama I Na Kupuna O Hawaii

Other

- Councilmember Gary Okino
- ✖ Aiea Neighborhood Board No. 20

7. REFERENCES

Contract Documents for Halawa Corporation Yard, Phase II-C, Existing Building Improvements at Iwaena Street, Honolulu, Oahu, Hawaii. City and County of Honolulu, Department of Design and Construction. November 2, 2002.

Final Environmental Impact Statement Halawa Corporation Yard. City and County of Honolulu Department of Design and Construction. February 2000.

Final Environmental Impact Statement for Proposed Honolulu Corporation Yard, Sand Island and Sand Island Park Extension. City and County of Honolulu Building Department. July 1989.

Land Use Ordinance. City and County of Honolulu Department of Land Utilization. August 1997.

Master Plan Honolulu Corporation Yard, Volume 1, Sand Island. City and County of Honolulu Building Department. May 1989.

Master Plan Sand Island Park Extension, Volume 2, Sand Island. City and County of Honolulu Building Department. July 1993.

Master Plan Update Honolulu Corporation Yard, Sand Island. City and County of Honolulu Department of Public Works. August 1994.

Revised Final Environmental Impact Statement for Halawa Medium Security Facility. State of Hawaii Department of Accounting and General Services. June 1983.

Title 11 Hawaii Administrative Rules, Department of Health, Chapter 46, Community Noise Control. State of Hawaii Department of Health. Effective September 23, 1996.

APPENDIX B

TRAFFIC IMPACT REPORT

FOR THE

City and County of Honolulu
Department of Environmental Services
Wastewater Collection System Maintenance Division

Collection System Maintenance Baseyard

Prepared for:

City and County of Honolulu
Department of Design and Construction
Facilities Design and Engineering (FDE)
650 South King Street
Honolulu, Hawaii 96813

Consultant Contract No. F-86732

Prepared by:

Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
WOC: 6635-01

October 2002
January 2003 (Rev)

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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 construction and operation of the City and County of Honolulu, Department of Environmental Services Wastewater Collection System Maintenance (CSM) Division's proposed Collection System Maintenance (CSM) Baseyard, and to recommend mitigation measures to minimize traffic impacts where necessary. The CSM Baseyard will be located within the Halawa Corporation Yard Phase 2 area in the area formerly occupied by the Halawa bus facility.

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 operations without the proposed project.
4. Trip generation and distribution characteristics of the proposed project.
5. Analysis of future traffic operations with the proposed project.
6. The identification of traffic impacts resulting from the proposed project.
7. Recommendation of improvements, if appropriate, that would mitigate the traffic impacts resulting from the proposed project.

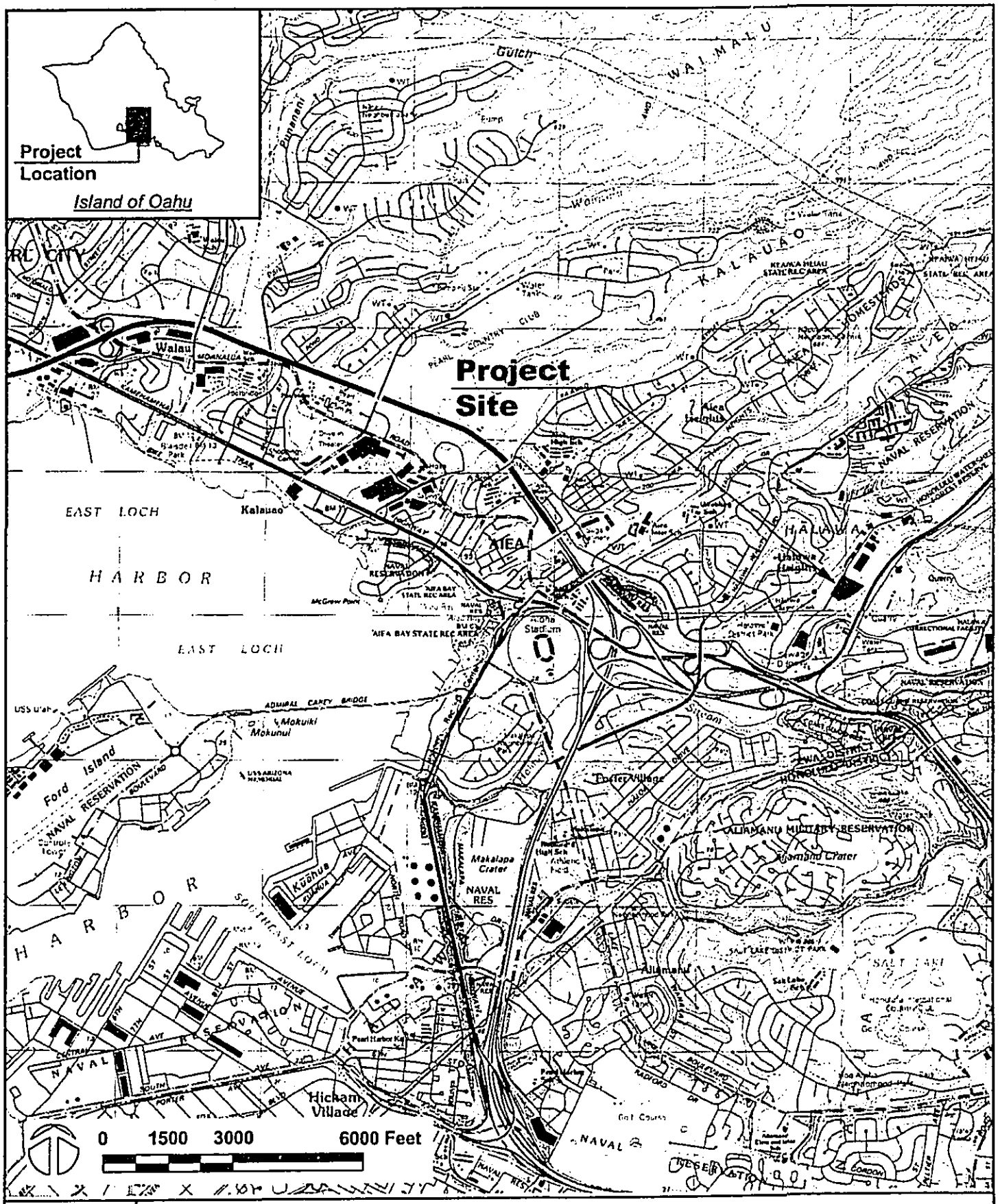
II. PROJECT DESCRIPTION

A. Location

The Collection System Maintenance (CSM) Baseyard will be located in the Halawa Industrial Park area (see Figure 1) and will occupy 2.10 acres of the Halawa Corporation Yard Phase 2 area (TMK 9-9-73: 27). Access to the Baseyard will occur via Iwaena Street.

A. Project Characteristics

The site plan for the CSM Yard is shown as Figure 2. The CSM yard will be used by the City and County of Honolulu Department of Environmental Services Wastewater Collection System Maintenance Division for the following:

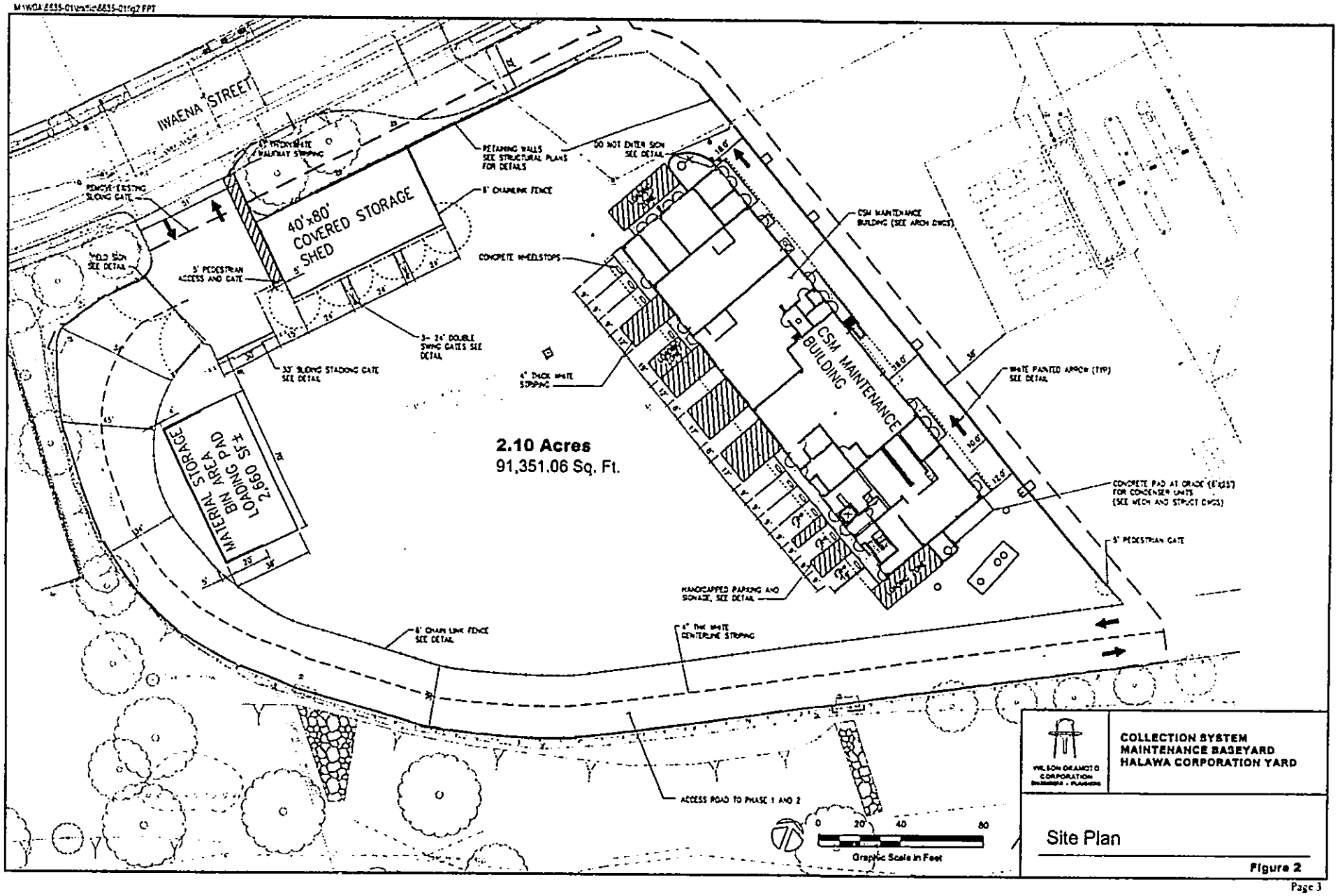


WILSON OKAMOTO CORPORATION
ENGINEERS • PLANNERS

COLLECTION SYSTEM MAINTENANCE BASEYARD HALAWA CORPORATION YARD

Vicinity Map

Figure 1


IWAENA STREET
40'x80' COVERED STORAGE SHED
RETAINING WALLS SEE STRUCTURAL PLANS FOR DETAILS
DO NOT ENTER SIGN SEE DETAIL
REMOVE EXISTING SLIDING GATE
8' CHAINLINK FENCE
CSM MAINTENANCE BUILDING (SEE ARCH DWGS)
CONCRETE WHEELSTOPS
3' PEDESTRIAN ACCESS AND GATE
3- 24' DOUBLE SWING GATES SEE DETAIL
33' SLIDING STADIUM GATE SEE DETAIL
6" THICK WHITE STRIPING
CSM MAINTENANCE BUILDING
WHITE PAINTED ARROW (TYP) SEE DETAIL
MATERIAL STORAGE BIN AREA LOADING PAD 2,960 SF±
2.10 Acres
91,351.06 Sq. Ft.
CONCRETE PAD AT GRADE (8'x15') FOR CONDENSER UNITS (SEE MECH AND STRUCT DWGS)
5' PEDESTRIAN GATE
HANDICAPPED PARKING AND SIGNAGE, SEE DETAIL
6" THK WHITE CENTERLINE STRIPING
8' CHAIN LINK FENCE SEE DETAIL
ACCESS ROAD TO PHASE 1 AND 2
0 20 40 80
Graphic Scale in Feet
WILSON OKAMOTO CORPORATION
COLLECTION SYSTEM
MAINTENANCE BASEYARD
HALAWA CORPORATION YARD
Site Plan
Figure 2

- Office and administrative space,
- Shops and interior storage
- Yard storage;
- City vehicle and equipment parking.

Facilities for washing, fueling, and maintaining vehicles will be located within the Halawa Corporation Yard Phase 2 area. Employee parking will also be provided within the Halawa Corporation Yard Phase 2 area on the roof of the former bus maintenance facility adjacent to the CSM Baseyard. This will allow the CSM Baseyard employees to walk to the Baseyard. The proposed project is expected to be in operation by the Year 2003.

III. EXISTING CONDITIONS

A. General

The CSM Baseyard project site is located in the Halawa Industrial area, which consists of a mixture of retail, office space and industrial uses. The roadways providing access to the project area are described in the following section.

B. Area Roadway System

Iwaiwa Street is primarily a two-lane, two-way facility. The roadway is a public street characterized by sidewalk, curb/gutter and on-street parking on both sides of the street. Iwaiwa Street services both business and recreational land uses. It also provides access to Iwaena Street and the Halawa Corporation Yard. The speed limit on the roadway is 25 miles per hour (mph).

Iwaena Street is a two-lane, two-way facility. The roadway is characterized by sidewalk, curb/gutter and on-street parking on both sides of the roadway. Iwaena Street services primarily light industrial type businesses. The speed limit on Iwaena Street is 25 mph. Access to the CSM Baseyard will be from Iwaena Street.

Generally, Halawa Valley Street is a two-lane, two-way facility. Halawa Valley Street provides access to office and industrial uses. It also connects the Halawa area with regional facilities including the Moanalua Freeway and the H-3 Freeway. Ewa of Iwaiwa Street, Halawa Valley Street is a two-way, three-lane roadway. The facility consists of intermittent sidewalks, curbs and gutters. The speed limit is 25 mph.

Ulune Street Extension is a two-way, five-lane facility. The Ulune Street Extension primarily functions as a connector to Moanalua Freeway and the Halawa Industrial area.

The roadway consists of curb/gutter and sidewalk on the mauka-side of the intersection. Ulune Street has a 25 mph speed limit.

Kahuapaani Street at the intersection with Ulune Street/Ulune Street extension is a two-way, six-lane roadway. Kahuapaani Street provides access to Moanalua Road, and is a major connector providing access over the freeway. The posted speed limit is 35 mph.

C. Traffic Volumes and Operations

1. Traffic Counts

A field investigation was conducted on October 10, 2001 and consisted of manual turning movement count surveys at three intersections:

- Iwaiwa Street/Halawa Valley Street,
- Halawa Valley Street/Ulune Extension/Moanalua Road ramps and
- Kahuapaani Street/Ulune Street.

Sketches of the intersections are shown in Figure 3.

The traffic count surveys on were conducted between the morning hours of 5:30 AM and 8:30 AM, and the afternoon hours of 3:00 PM and 6:00 PM.

An additional manual turning movement survey of TheBus movements was conducted concurrently with the traffic counts at the intersection of Halawa Valley Street/Ulune Extension/Moanalua Road ramps. Since the CSM Baseyard will occupy a portion of the former Halawa bus facility, this traffic count was performed to account for the relocation of the City's Bus Facility to Manana which was completed in November 2001.

Traffic counts were previously performed in the spring of 1998 at the intersection of Iwaiwa Street and Iwaena Street for the Halawa Corporation Yard Traffic Impact Report. The 2001 traffic volumes at the Iwaiwa Street/Halawa Valley Street intersection were used to derive 2001 traffic volumes for the Iwaiwa Street and Iwaena Street intersection. The 1998 study was used to derive the directional distribution of the traffic at the intersection.

The traffic count data is included in Appendix A.

2. Peak Hour Traffic Volumes

Figures 4 and 5 show the existing AM and PM peak hour traffic volumes at the study intersections. The peak traffic condition generally extends for two hour during both the morning and afternoon. However, capacity analysis was performed for the peak hour to capture the highest volumes of vehicles and thus the most congested traffic conditions

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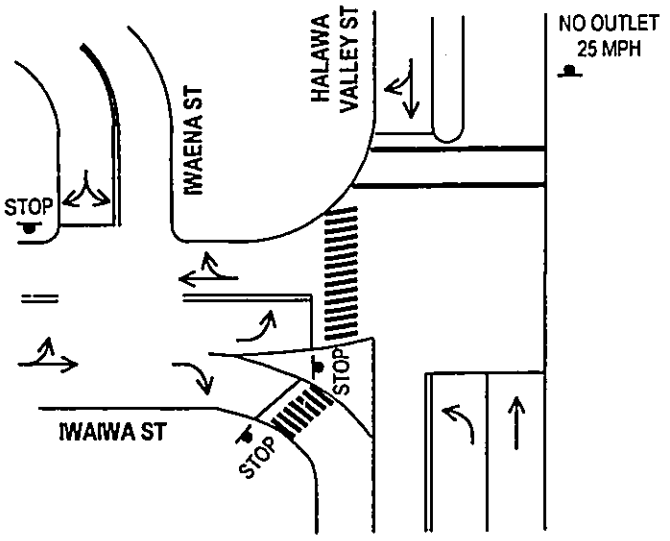
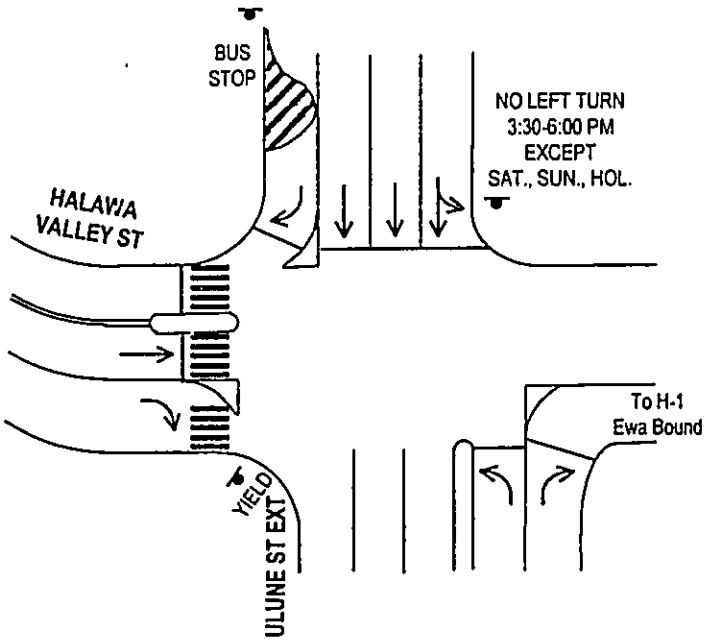
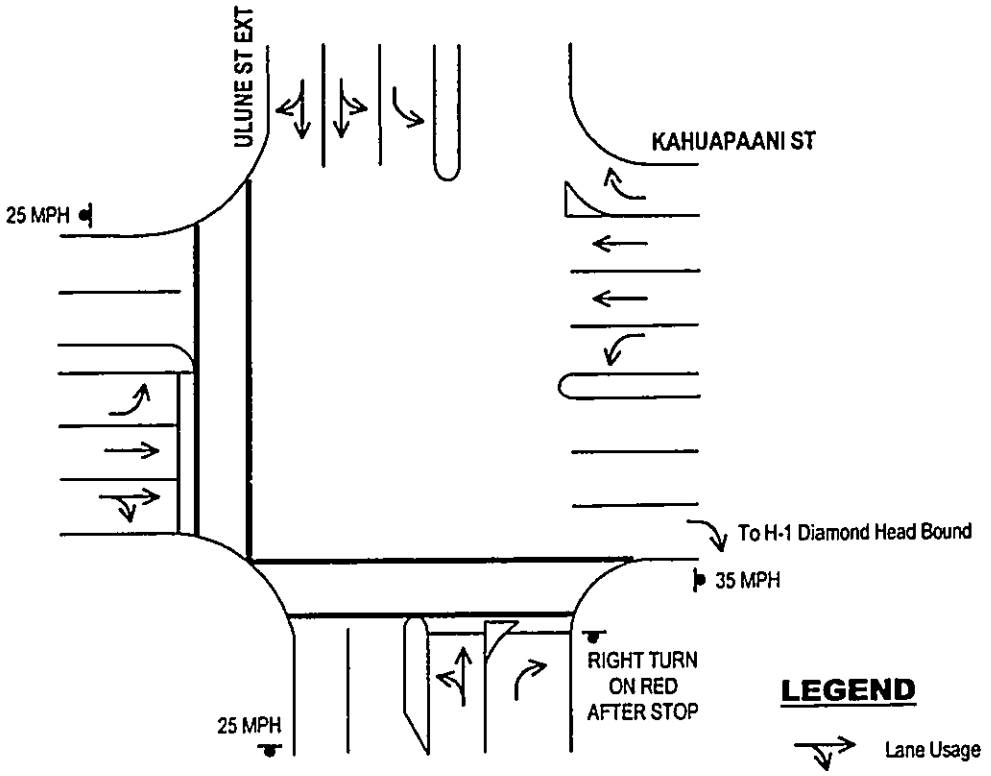
IWAIWA ST/HALAWA VALLEY ST



ULUNE ST/HALAWA VALLEY ST



ULUNE ST/KAHUAPAANI ST



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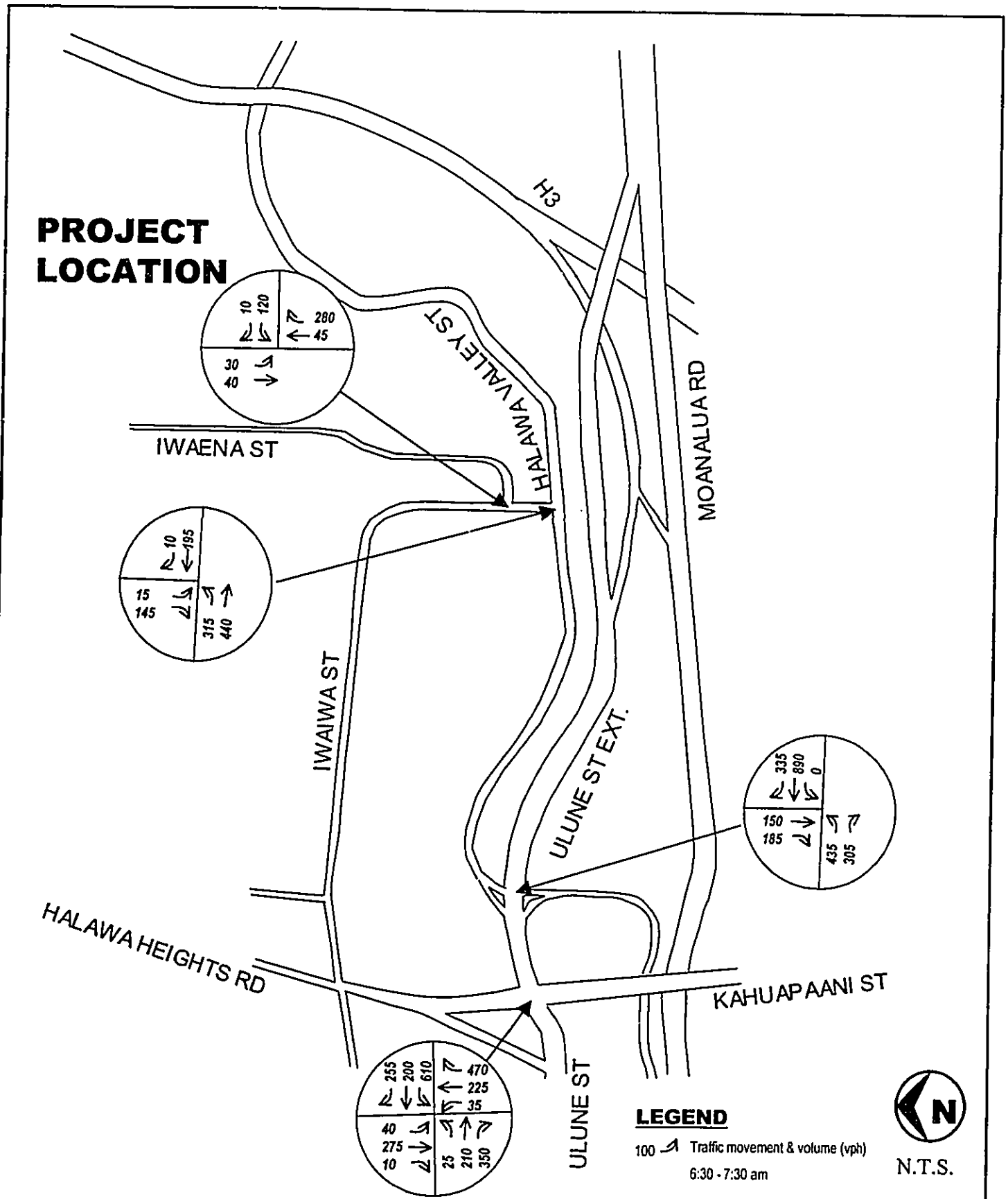
Study Intersections

Figure 3



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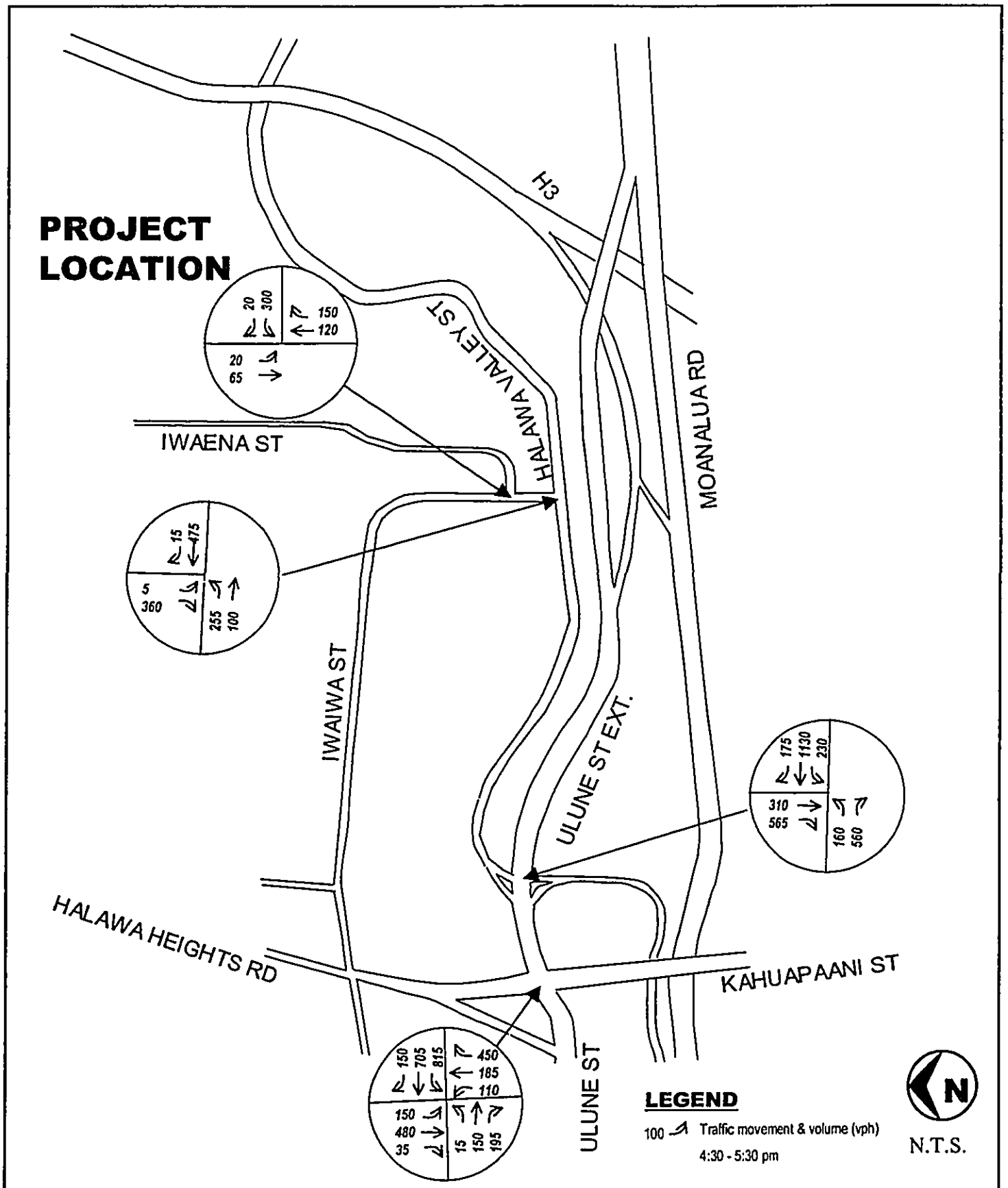
Existing AM Peak Hour Traffic Volumes **Figure 4**



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Existing PM Peak Hour Traffic Volumes

Figure 5

expected during typical morning and afternoon peak periods. The AM peak hour of traffic occurs between 6:30 AM and 7:30 AM. The PM peak hour of traffic occurs between the hours of 4:30 PM and 5:30 PM. Traffic within the Halawa Industrial area tends to be highly directional. During the morning peak, the split of vehicles entering/exiting the industrial area is approximately 70%/30%. During the afternoon the opposite travel pattern occurs.

3. Capacity Analysis

The intersection capacity analysis performed in this study was based upon procedures presented in the "Highway Capacity Manual 2000", Transportation Research Board, and the "Highway Capacity Software", developed by the Federal Highway Administration. The analysis was based on the concept of Level of Service (LOS). LOS is a quantitative and qualitative assessment of traffic operations. Levels of Service are defined by LOS "A" through "F"; LOS "A" representing an ideal or free-flow operating conditions and LOS "F" unacceptable operating conditions. A detailed definition of LOS is included in Appendix B. LOS worksheets for existing conditions are contained in Appendix C

a. Iwaiwa Street/Halawa Valley Street

The Iwaiwa Street/Halawa Valley Street T-intersection operates well, with minimal vehicle delay during both the AM and PM Peak hours. The traffic movement that experiences the longest delays is the Iwaiwa Street left turn movement onto Halawa Valley Street. During both peaks, this movement operates at LOS D. The demand for this movement is minimal, thus the overall Iwaiwa Street approach operates at LOS B and LOS C during the AM Peak and PM Peak, respectively. Halawa Valley Street operates at LOS A during both peaks.

b. Iwaiwa Street/Iwaena Street

The Iwaiwa Street/Iwaena Street T-intersection operates well, with minimal vehicle delay during both the AM and PM Peak hours. Iwaena Street, which is the stop-controlled leg operates at LOS B.

c. Halawa Valley Street/Ulune Street Extension/Moanalua Road Ramps

The Halawa Valley Street/Ulune Street Extension/Moanalua Road ramps intersection operates at LOS C during the AM Peak, and LOS D during the PM Peak. The ewa-bound approach (Moanalua Road off-ramp) has the highest traffic demand, and operates at an LOS C during both peak hours. All other approaches to the intersection operate at LOS D.

It should be noted that a significant number of vehicles were observed making illegal left-turns from Ulune Street Extension onto the H-1 westbound on-ramp. The number of illegal left-turn movements during the peak hours of traffic is shown on Figures 4 and 5.

d. Kahuapaani Street/Ulune Street/Ulune Street Extension

The intersection of Kahuapaani Street/Ulune Street/Ulune Street Extension operates at LOS D during both peak hours. Due to the lane geometry on the ewa-bound approach, the Ulune Street traffic requires two separate phases, which decreases available green time for other movements. Consequently, during the afternoon peak, the Diamond Head bound and makai bound approaches operate at LOS E. Intermittently during both of the peak hours, a solid vehicle queue formed between Halawa Valley Street and Kahuapaani Street.

Table 1
Existing Intersection Level of Service Summary

Intersection/Movement	AM Peak LOS (Delay)	PM Peak LOS (Delay)
Halawa Valley Street/Iwaiwa Street[1]		
Diamond Head-bound Left (Halawa)	LOS A (8.4 sec)	LOS A (9.3 sec)
Makai-bound Left (Iwaiwa)	LOS D (32.1 sec)	LOS D (25.2 sec)
Makai-bound Right (Iwaiwa)	LOS B (10.1 sec)	LOS C (20.4 sec)
Iwaena Street/Iwaiwa Street[1]		
Ewa-bound (Iwaena)	LOS B (11.3 sec)	LOS B (14.6 sec)
Makai-bound Left (Iwaiwa)	LOS A (8.0 sec)	LOS A (7.8 sec)
Ulune Ext./Halawa Valley Street	***LOS C (32.1 sec)***	***LOS D (36.0 sec)***
Diamond Head-bound (Ulune Ext.)	LOS D (41.9 sec)	LOS D (42.6 sec)
Ewa-bound (Moanalua ramp)	LOS C (27.5 sec)	LOS C (34.4 sec)
Makai-bound (Halawa)	LOS D (37.5 sec)	LOS D (38.4 sec)
Ulune Ext./Kahuapaani Street	***LOS D (39.1 sec)***	***LOS D (54.7 sec)***
Diamond Head-bound (Ulune)	LOS D (47.4 sec)	LOS E (59.5 sec)
Ewa-bound (Ulune Ext.)	LOS C (34.8 sec)	LOS D (51.1 sec)
Mauka-bound (Kahuapaani)	LOS D (43.2 sec)	LOS D (37.0 sec)
Makai-bound (Halawa Hts)	LOS D (36.4 sec)	LOS E (75.8 sec)

[1]unsignalized intersection

4. Field Observations

Heavy traffic volumes were observed during the morning and afternoon peak periods. In general, afternoon traffic was heavier than morning traffic. Vehicle arrivals were observed to occur in platoons. Ulune Street Extension and Ulune Street westbound traffic was the predominant movement within the study area. Intermittently during both peak hours, a solid vehicle queue formed between Halawa Valley Street and Kahuapaani Street.

IV. PROJECTED TRAFFIC CONDITIONS

A. Year 2003 Base Traffic Conditions

1. Traffic Forecast

The travel forecast is based upon historical traffic count data obtained from the State Department of Transportation at a survey station at the Kahuapaani Street and Ulune Street intersection. The historical data was analyzed by linear regression techniques to obtain an average annual growth rate of approximately 1.2 percent. The 1.2 percent growth factor was applied to the existing traffic volumes for each successive year to the Year 2003 to estimate growth in background traffic volumes.

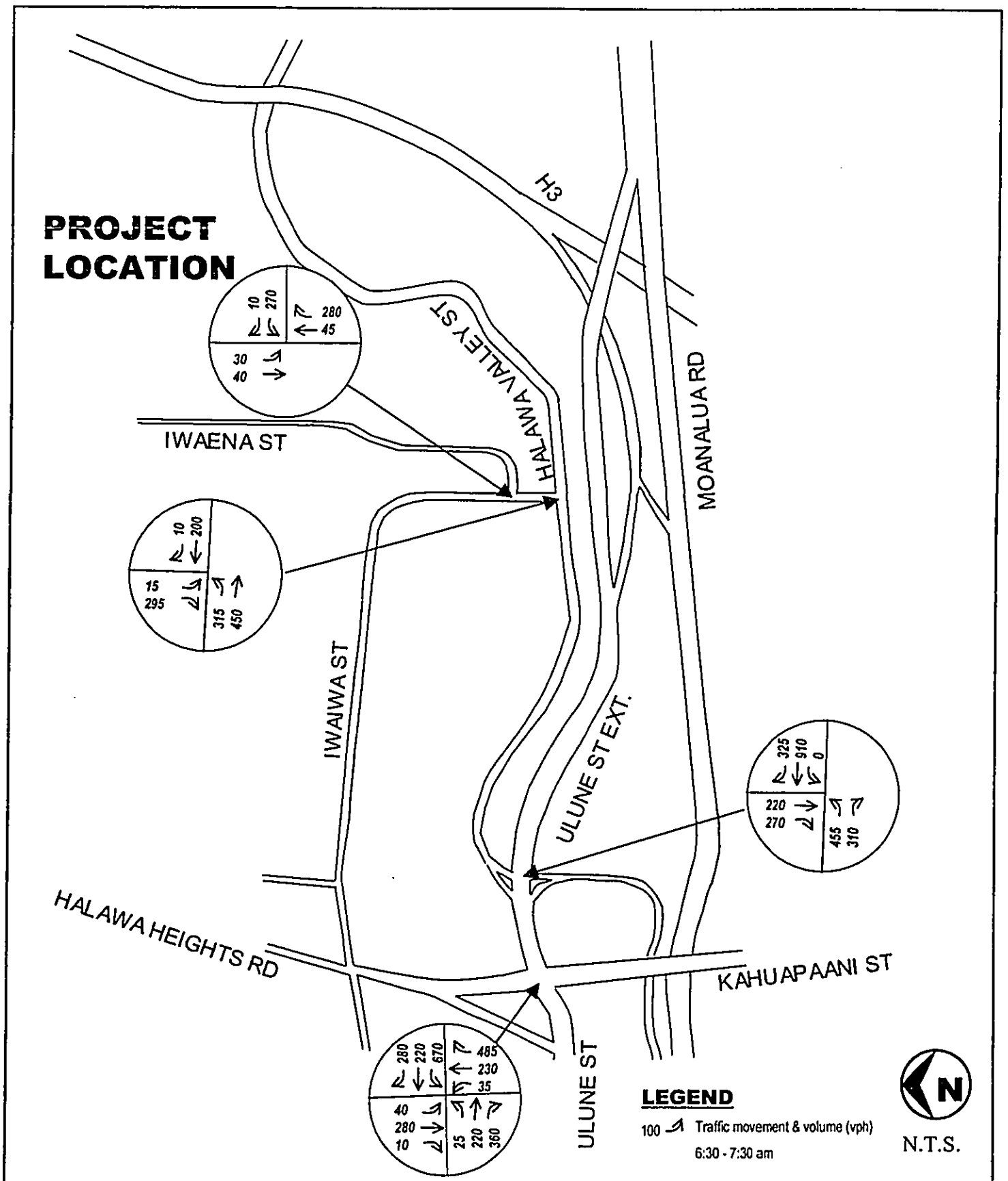
The CSM Baseyard and the Halawa Corporation Yard Phase 2 project are to occupy the former bus facility site. The bus operations which formerly occupied the CSM Baseyard project site on Iwaena Street relocated to the Pearl City Bus Facility in November 2001. Based on the October 10, 2001 counts, bus traffic associated with the former facility was removed from the 2003 background volumes to account for the relocation.

The Halawa Corporation Yard Phase 2 project will be completed in 2003. Traffic volumes from development of Halawa Corporation Yard Phase 1 and Phase 2, as defined in the Traffic Impact Report for the Halawa Corporation Yard, October 1999, were added to the 2003 background volumes. The trips associated with the Handi-Van operations were removed from the Corporation Yard trips as the CSM Baseyard has displaced the Handi-Van facility. Additionally, a traffic signal is to be constructed as part of the Halawa Corporation Yard Phase 2 project at the Halawa Valley Street/Iwaiwa Street intersection in 2003.

Figures 6 and 7 show the projected AM peak hour and PM peak hour traffic volumes and operating conditions in 2003, without the proposed project.

2. Capacity Analysis

The 2003 intersection capacity analysis performed in this study is based upon procedures presented in the "Highway Capacity Manual 2000", Transportation Research Board, and the "Highway Capacity Software", developed by the Federal Highway Administration.



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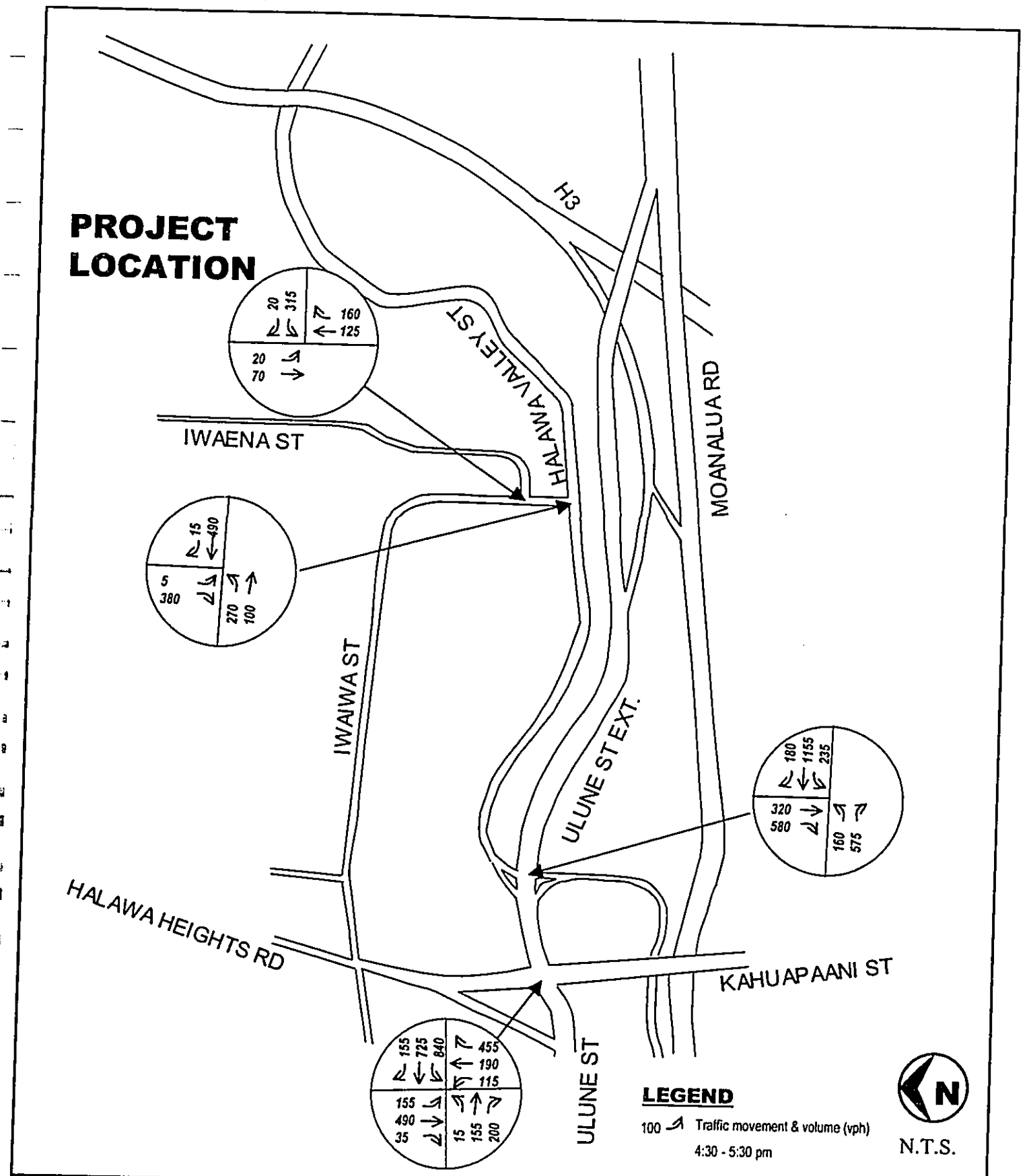
2003 AM Peak Hour Traffic Volumes Without Project **Figure 6**



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2003 PM Peak Hour Traffic Volumes Without Project **Figure 7**

Table 2 shows future traffic operations without the project. Appendix D contains the LOS worksheets.

Table 2
2003 Base Intersection Level of Service Summary

Intersection/Movement	AM Peak LOS (Delay)	PM Peak LOS Delay
Halawa Valley Street/Iwaiwa Street[2]	***LOS B (11.5 sec)***	***LOS B (17.9 sec)***
Diamond Head-bound (Halawa)	LOS A (9.5 sec)	LOS B (18.4 sec)
Ewa-bound (Halawa)	LOS B (18.1 sec)	LOS B (17.6 sec)
Makai-bound (Iwaiwa)	LOS C (20.3 sec)	LOS C (20.9 sec)
Iwaena Street/Iwaiwa Street[1]		
Ewa-bound (Iwaena)	LOS B (13.6 sec)	LOS C (15.4 sec)
Makai-bound Left (Iwaiwa)	LOS A (8.0 sec)	LOS A (7.8 sec)
Ulune Ext./Halawa Valley Street	***LOS C (34.2 sec)***	***LOS D (36.4 sec)***
Diamond Head-bound (Ulune Ext.)	LOS D (46.2 sec)	LOS D (42.7 sec)
Ewa-bound (Moanalua ramp)	LOS C (27.5 sec)	LOS C (35.0 sec)
Makai-bound (Halawa)	LOS D (42.8 sec)	LOS D (38.8 sec)
Ulune Ext./Kahuapaani Street	***LOS D (42.4 sec)***	***LOS E (58.4 sec)***
Diamond Head-bound (Ulune)	LOS D (49.5 sec)	LOS E (62.7 sec)
Ewa-bound (Ulune Ext.)	LOS D (39.5 sec)	LOS E (56.4 sec)
Mauka-bound (Kahuapaani)	LOS D (47.0 sec)	LOS D (37.2 sec)
Makai-bound (Halawa Hts)	LOS D (36.4 sec)	LOS E (78.4 sec)

[1]unsignalized intersection

[2]Traffic signal installed

a. Iwaiwa Street/Halawa Valley Street

Currently, the left-turn movement from Iwaiwa Street to Halawa Valley Street is stop-controlled and operates at LOS D. In 2003, this intersection is projected to operate at LOS B and all approaches are projected to operate at LOS C or better during both peak hours after construction of the traffic signal.

b Iwaiwa Street/Iwaena Street

The Iwaiwa Street/Iwaena Street intersection is projected to operate well at LOS A/B during the morning peak hour and LOS A/C during the afternoon peak hour.

c. Halawa Valley Street/Ulune Street Extension/Moanalua Road Ramps

The Halawa Valley Street/Ulune Street Extension/Moanalua Road ramps intersection is projected to operate similarly to existing conditions. LOS grades on all approaches would remain the same as existing conditions. Due to expected developments in the area, the morning peak hour is expected to have increased delay of approximately 5 seconds per vehicle on the Ulune Street extension Diamond Head bound approach and the Halawa Valley Street makaibound approach.

d. Kahuapaani Street/Ulune Street/Ulune Street Extension

The intersection of Kahuapaani Street/Ulune Street/Ulune Street Extension is projected to operate similarly to existing conditions during the morning peak. LOS would remain the same as existing conditions. Due to expected developments in the area, the ewa-bound approach to the intersection is expected to have increased delay of approximately 5 seconds per vehicle during the morning peak. During the afternoon peak, overall intersection operations and the ewabound Ulune Street extension decreases to LOS E conditions due to increases in background traffic.

B. Project Traffic

1. Trip Generation

The trip generation estimation used in this study is based upon employment data and operational characteristics provided by the City and County of Honolulu, Department of Environmental Services Collection System Maintenance (CSM) Division. Tables 3-5 summarize the hours of operation, employment data and vehicle fleet of the proposed CSM Baseyard.

Table 3
CSM Baseyard
Hours of Operation

Monday to Friday	7:00am to 3:30pm
Monday to Friday	3:30pm to 11:30pm; one crew
Saturday and Sunday	7:00am to 3:30pm; one crew
Saturday and Sunday	3:30 to 11:30pm; one crew

Source: C&C of Honolulu, Dept of Environmental Services

Table 4 CSM Baseyard Staff Positions			
	Office	**Field**	**Total**
Administration	11	4	15
Systems Analysis Branch	9	9	18
Field Services Branch	1	11	12
Field Services, Metro District	1	45	46
Field Services, Leeward District	1	39	40
Field Services, Windward District	1	29	30
CSM Total	**24**	**137**	**161**

Source: C&C of Honolulu, Dept of Environmental Services

Table 5 CSM Baseyard Vehicle Fleet	
Small Vehicles	74
Large Vehicles	32
CSM Total	106

Source: C&C of Honolulu, Dept of Environmental Services

The vehicle trips generated by the proposed CSM yard were determined by evaluating the proposed number of employees, and corresponding work shifts. Based upon this information, vehicle trips were projected for the AM and PM peak hours of traffic. Table 6 shows the project traffic generation applied to the peak hours.

Appendix F shows a more detailed breakdown of staffing and operations assumptions used to generate vehicle trips.

Table 6 CSM Baseyard Trip Generation				
	AM Peak		PM Peak	
	Arrive	Depart	Arrive	Depart
Employee vehicles	145	0	0	30
City Vehicles	0	20	0	0

Throughout the day, the proposed project would generate additional vehicle trips. For the purposes of this study, only the trips generated during the peak hours of the adjacent roadway system were analyzed. Additional traffic during the morning and afternoon peak hours was deemed to have the greatest impact.

2. Trip Distribution

The directional distribution of traffic at the study intersections was assumed to remain the same as existing conditions.

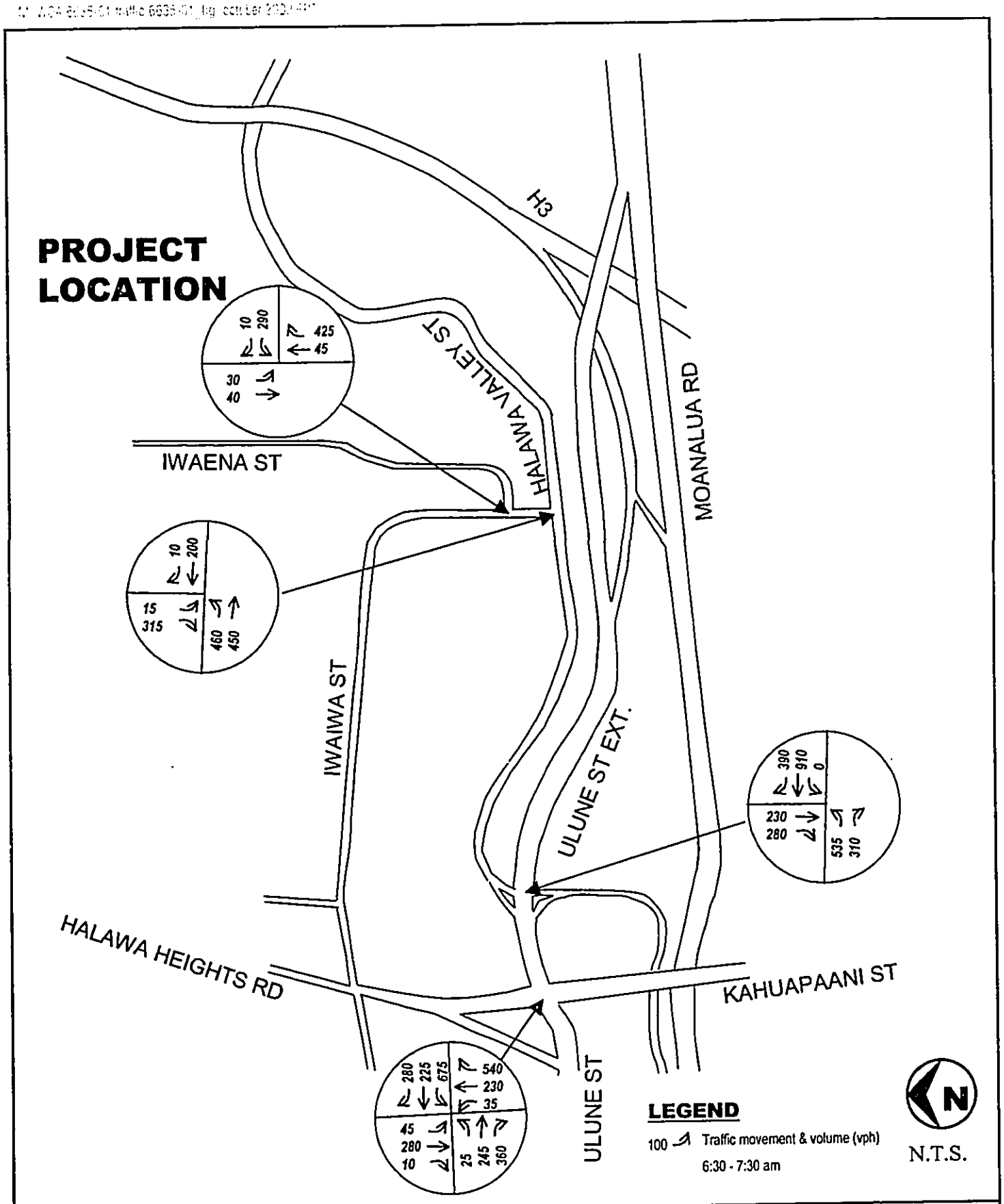
C. 2003 Traffic Conditions With Project

1. Traffic Forecast

Figures 8 and 9 show the cumulative AM and PM peak hour traffic conditions resulting from the projected external traffic and the development of CSM yard. The cumulative volumes consist of site-generated traffic superimposed over Year 2003 projected traffic demands. The traffic impacts resulting from the proposed project are addressed in the following section.

2. Capacity Analysis

The Year 2003 AM and PM peak hour traffic conditions with the development of the CSM Yard consist of site-generated traffic superimposed over the 2003 background traffic. Vehicle delays and LOS for 2003 conditions with and without the project are summarized in Table 7. Level-of-service worksheets are included in Appendix E.



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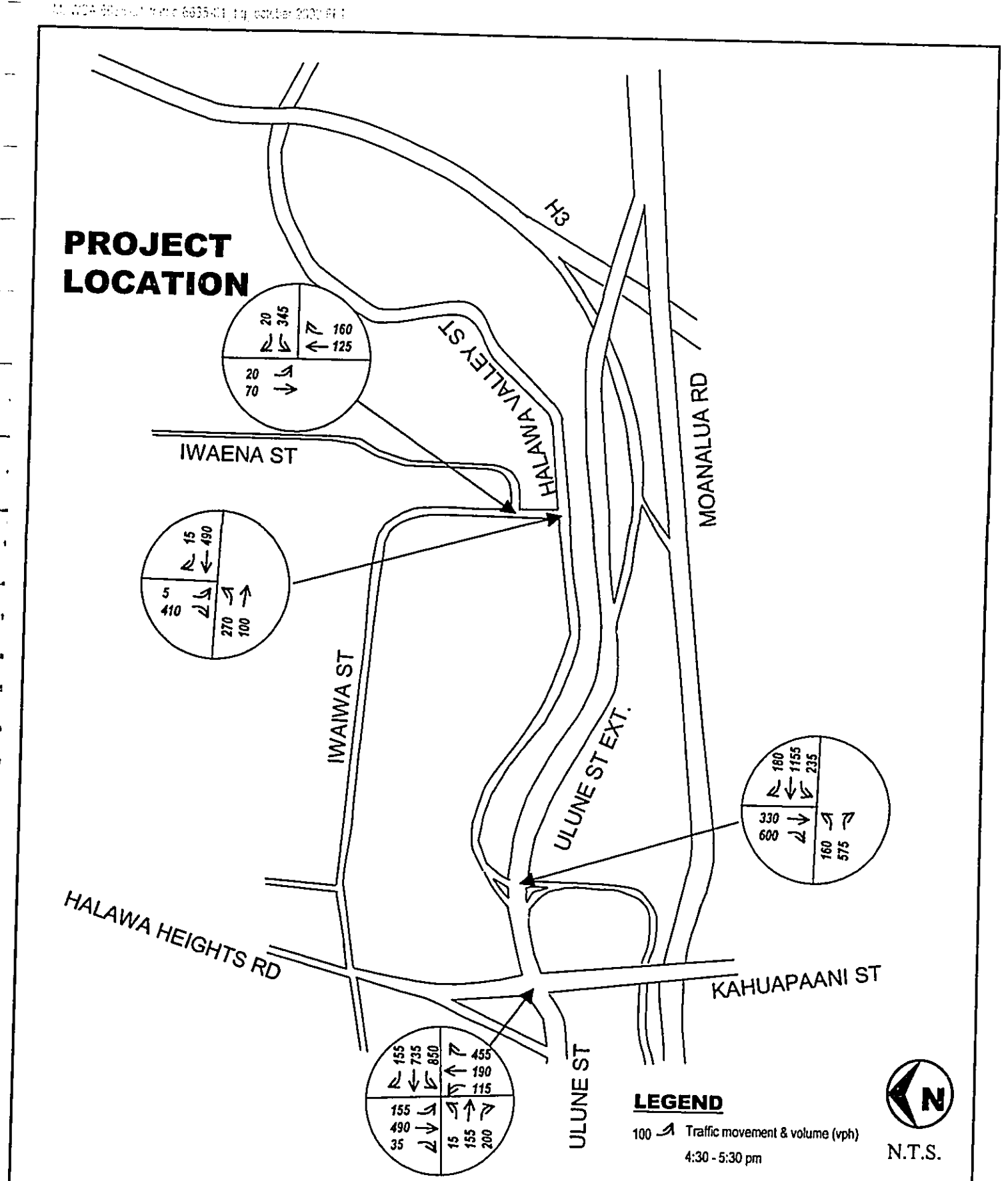
2003 AM Peak Hour Traffic Volumes With Project

Figure 8



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COLLECTION SYSTEM MAINTENANCE BASEYARD HALAWA CORPORATION YARD

2003 PM Peak Hour Traffic Volumes With Project **Figure 9**

Table 7
2003 Intersection Level of Service Summary Without and With CSM Baseyard

Intersection/Movement	Without Project		With Project	
	AM Peak LOS (Delay)	PM Peak LOS (Delay)	AM Peak LOS (Delay)	PM Peak LOS (Delay)
Halawa Valley St/Iwaiwa Street	***LOS B (11.5 sec)***	***LOS B (17.9 sec)***	***LOS B (14.8 sec)***	***LOS B (17.9 sec)***
Diamond Head-bound (Halawa)	LOS A (9.5 sec)	LOS B (18.4 sec)	LOS B (13.9 sec)	LOS B (18.4 sec)
Ewa-bound (Halawa)	LOS B (18.1 sec)	LOS B (17.6 sec)	LOS B (18.1 sec)	LOS B (17.6 sec)
Makai-bound (Iwaiwa)	LOS C (20.3 sec)	LOS C (20.9 sec)	LOS C (20.3 sec)	LOS C (20.9 sec)
Iwaena St/Iwaiwa Street				
Ewa-bound (Iwaena)	LOS B (13.6 sec)	LOS C (15.4 sec)	LOS C (15.8 sec)	LOS C (16.3 sec)
Makai-bound (Iwaiwa)	LOS A (8.0 sec)	LOS A (7.8 sec)	LOS A (8.4 sec)	LOS A (7.8 sec)
Ulune Ext./Halawa Valley Street	***LOS C (34.2 sec)***	***LOS D (36.4 sec)***	***LOS D (40.0 sec)***	***LOS D (36.7 sec)***
Diamond Head-bound (Ulune Ext.)	LOS D (46.2 sec)	LOS D (42.7 sec)	LOS D (48.0 sec)	LOS D (42.7 sec)
Ewa-bound (Moanalua ramp)	LOS C (27.5 sec)	LOS C (35.0 sec)	LOS C (35.4 sec)	LOS C (35.0 sec)
Makai-bound (Halawa)	LOS D (42.8 sec)	LOS D (38.8 sec)	LOS D (44.5 sec)	LOS D (39.7 sec)
Ulune Ext./Kahuapaani Street	***LOS D (42.4 sec)***	***LOS E (58.4 sec)***	***LOS D (45.2 sec)***	***LOS E (59.7 sec)***
Diamond Head-bound (Ulune)	LOS D (49.5 sec)	LOS E (62.7 sec)	LOS D (50.0 sec)	LOS E (62.7 sec)
Ewa-bound (Ulune Ext.)	LOS D (39.5 sec)	LOS E (56.4 sec)	LOS D (43.0 sec)	LOS E (58.9 sec)
Mauka-bound (Kahuapaani)	LOS D (47.0 sec)	LOS D (37.2 sec)	LOS D (51.7 sec)	LOS D (37.2 sec)
Makai-bound (Halawa Hts)	LOS D (36.4 sec)	LOS E (78.4 sec)	LOS D (35.7 sec)	LOS E (78.4 sec)

a. Iwaiwa Street/Halawa Valley Street

The Iwaiwa Street/Halawa Valley Street intersection would continue to operate at LOS B during both the morning and afternoon peak hours.

b. Iwaiwa Street/Iwaena Street

The Iwaiwa Street/Iwaena Street intersection would continue to operate well at LOS C or better during the peak periods.

c. Halawa Valley Street/Ulune Street Extension/Moanalua Road Ramps

The Halawa Valley Street/Ulune Street Extension/Moanalua Road ramps intersection is would have a slight increase in delay during the morning peak hour due to the project traffic. Overall intersection delay would increase by approximately 6 seconds per vehicle, and LOS would fall from LOS C to LOS D. Afternoon operations would be similar to 2003 base conditions.

d. Kahuapaani Street/Ulune Street/Ulune Street Extension

The intersection of Kahuapaani Street/Ulune Street/Ulune Street Extension is projected to operate similarly to 2003 base conditions during the both peak hours.

The distance between Ulune Street/Halawa Valley Street and Ulune Street/Kahuapaani Street is approximately 650 feet. Thus, storage for approximately 26 vehicles is available between the intersections. The estimated vehicle queue with the project includes five additional vehicles for an operational average of 20 vehicles. The available storage length should accommodate the operational average amount of five additional vehicles. However, the available left-turn storage length may be inadequate on occasions, similar to existing peak hour conditions.

V. RECOMMENDATIONS

Based upon the analysis of the traffic data, the following are the recommendations of this study:

1. Maintain adequate sight distances for motorists to safely enter and exit all project driveways and roadways.

2. Provide sufficient driveway width to accommodate safe vehicle ingress and egress.

3. Coordinate with the State of Hawaii Department of Transportation and Oahu Transit Services (TheBus) to re-configure the bus stop/right turn on the Moanalua Road off-ramp to Halawa Valley Street to allow for a longer storage area. This would allow more vehicles to turn-right on red, thus relieving some of the demand on this leg of the intersection.

VI. CONCLUSION

The proposed CSM yard would not have significant impacts to the area roadway network during the peak hours of traffic. Slight increases in delay would occur, however, LOS conditions will generally remain the same as conditions without the project. Lengthening of the Moanalua Road off-ramp right turn pocket would relieve some of the traffic congestion in the area.

Due to the specified work shifts, much of the vehicular activity for the CSM yard would occur during the off-peak hours.

APPENDIX A

TRAFFIC COUNT DATA

Wilson Okamoto & Associates
1907 S. Beretania St., Suite 400
Honolulu, HI 96826

Counter No.: D1-0525/D1-0527
Counted By: Kim/Des (M/S)
Weather: Sprinkles
Other:

File Name : KUam
Site Code : 00000000
Start Date : 10/10/2001
Page No : 1

Groups Printed- 1 - Unshifted

	Kahuapaani Street Southbound					Ulune Street Westbound					Kahuapaani Street Northbound					Ulune Street Eastbound					
Start Time	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
05:30 AM	2	45	2	0	49	40	19	90	0	149	111	52	1	0	164	65	26	8	0	99	461
05:45 AM	3	75	12	0	90	54	20	128	0	202	94	42	8	0	144	70	34	7	0	111	547
Total	5	120	14	0	139	94	39	218	0	351	205	94	9	0	308	135	60	15	0	210	1008
06:00 AM	0	89	10	0	99	65	33	122	0	220	109	59	1	0	169	117	38	7	0	162	650
06:15 AM	4	111	11	0	126	64	33	157	0	254	104	60	2	0	166	109	39	14	0	162	708
06:30 AM	1	75	10	0	86	80	37	148	0	265	111	71	8	0	190	114	49	11	0	174	715
06:45 AM	5	84	14	0	103	63	50	155	0	268	120	58	5	0	183	83	53	4	0	140	694
Total	10	359	45	0	414	272	153	582	0	1007	444	248	16	0	708	423	179	36	0	638	2767
07:00 AM	2	64	8	0	74	65	51	136	0	252	113	50	10	0	173	85	44	7	0	136	635
07:15 AM	3	52	8	0	63	48	61	171	0	280	124	47	12	0	183	69	65	4	0	138	664
07:30 AM	4	47	12	0	63	29	56	169	0	254	155	48	12	0	215	81	51	9	0	141	673
07:45 AM	4	43	8	0	55	52	41	164	0	257	118	51	8	0	177	57	40	1	0	98	587
Total	13	206	36	0	255	194	209	640	0	1043	510	196	42	0	748	292	200	21	0	513	2559
08:00 AM	2	50	9	0	61	39	67	155	0	261	130	27	5	0	162	57	34	6	0	97	581
08:15 AM	0	0	0	0	0	16	32	95	0	143	84	37	36	0	157	0	0	0	0	0	300
Grand Total	30	735	104	0	869	615	500	1690	0	2805	1373	602	108	0	2083	907	473	78	0	1458	7215
Apprch %	3.5	84.6	12.0	0.0		21.9	17.8	60.2	0.0		65.9	28.9	5.2	0.0		62.2	32.4	5.3	0.0		
Total %	0.4	10.2	1.4	0.0	12.0	8.5	6.9	23.4	0.0	38.9	19.0	8.3	1.5	0.0	28.9	12.6	6.6	1.1	0.0	20.2	

Wilson Okamoto & Associates
1907 S. Beretania St., Suite 400
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Counter No.: D1-0525/D1-0527
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Page No : 1

Groups Printed- 1 - Unshifted

		Kahuapaani Street Southbound				Ulune Street Westbound					Kahuapaani Street Northbound					Ulune Street Eastbound					
Start Time	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
03:00 PM	6	77	24	0	107	23	76	188	0	287	131	40	14	0	185	55	39	3	0	97	676
03:15 PM	11	66	26	0	103	23	102	145	0	270	159	30	15	0	204	49	33	5	0	87	664
03:30 PM	5	67	29	0	101	39	129	214	0	382	175	23	15	0	213	43	46	4	0	93	789
03:45 PM	8	70	29	0	107	26	109	205	0	340	131	46	20	0	197	43	33	5	0	81	725
Total	30	280	108	0	418	111	416	752	0	1279	596	139	64	0	799	190	151	17	0	358	2854
04:00 PM	10	80	49	0	139	36	137	203	0	376	152	40	29	0	221	49	22	3	0	74	810
04:15 PM	7	98	33	0	138	30	148	166	0	344	121	37	22	0	180	51	22	4	0	77	739
04:30 PM	9	121	49	0	179	31	162	197	0	390	135	45	28	0	208	43	45	3	0	91	868
04:45 PM	15	126	32	0	173	56	178	187	0	421	121	36	26	0	183	48	25	3	0	76	853
Total	41	425	163	0	629	153	625	753	0	1531	529	158	105	0	792	191	114	13	0	318	3270
05:00 PM	8	98	40	0	146	33	181	216	0	430	97	48	25	0	170	61	49	5	0	115	861
05:15 PM	5	137	30	0	172	32	183	215	0	430	98	58	32	0	188	44	29	3	0	76	866
05:30 PM	8	65	26	0	99	37	176	185	0	398	119	36	17	0	172	55	39	4	0	98	767
05:45 PM	11	76	24	0	111	22	128	164	0	314	105	44	27	0	176	47	32	7	0	86	687
Total	32	376	120	0	528	124	668	780	0	1572	419	186	101	0	706	207	149	19	0	375	3181
Grand Total	103	1081	391	0	1575	388	1709	2285	0	4382	1544	483	270	0	2297	588	414	49	0	1051	9305
Apprch %	6.5	68.6	24.8	0.0		8.9	39.0	52.1	0.0		67.2	21.0	11.8	0.0		55.9	39.4	4.7	0.0		
Total %	1.1	11.6	4.2	0.0	16.9	4.2	18.4	24.6	0.0	47.1	16.6	5.2	2.9	0.0	24.7	6.3	4.4	0.5	0.0	11.3	

Wilson Okamoto & Associates
1907 S. Beretania St., Suite 400
Honolulu, HI 96826

Counter No.: D1-0528/D1-0526
Counted By: Phil/Brent (M/S)
Weather: Sprinkles
Other:

File Name : Hlam
Site Code : 00000000
Start Date : 10/10/2001
Page No : 1

Groups Printed- 1 - Unshifted

	Iwa Iwa Street Southbound					Halawa Crusher Rd Westbound					Iwa Iwa Street Northbound					Halawa Crusher Rd Eastbound					
Start Time	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
05:30 AM	46	0	7	0	53	0	18	0	0	18	0	0	0	0	0	0	117	69	0	186	257
05:45 AM	33	0	1	0	34	4	39	0	0	43	0	0	0	0	0	0	89	68	0	157	234
Total	79	0	8	0	87	4	57	0	0	61	0	0	0	0	0	0	206	137	0	343	491
06:00 AM	36	0	0	0	36	2	52	0	0	54	0	0	0	0	0	0	105	60	0	165	255
06:15 AM	29	0	2	0	31	4	31	0	0	35	0	0	0	0	0	0	88	60	0	148	214
06:30 AM	36	0	3	0	39	1	29	0	0	30	0	0	0	0	0	0	116	54	0	170	239
06:45 AM	20	0	3	0	23	1	53	0	0	54	0	0	0	0	0	0	127	63	0	190	267
Total	121	0	8	0	129	8	165	0	0	173	0	0	0	0	0	0	436	237	0	673	975
07:00 AM	50	0	3	0	53	4	56	0	0	60	0	0	0	0	0	0	96	88	0	184	297
07:15 AM	38	0	4	0	42	5	55	0	0	60	0	0	0	0	0	0	100	109	0	209	311
07:30 AM	51	0	3	0	54	9	50	0	0	59	0	0	0	0	0	0	135	98	0	233	346
07:45 AM	50	0	8	0	58	2	46	0	0	48	0	0	0	0	0	0	130	143	0	273	379
Total	189	0	18	0	207	20	207	0	0	227	0	0	0	0	0	0	461	438	0	899	1333
08:00 AM	62	0	2	0	64	4	67	0	0	71	0	0	0	0	0	0	113	111	0	224	359
08:15 AM	88	0	9	0	97	6	54	0	0	60	0	0	0	0	0	0	113	113	0	226	383
Grand Total	539	0	45	0	584	42	550	0	0	592	0	0	0	0	0	0	1329	1036	0	2365	3541
Apprch %	92.3	0.0	7.7	0.0		7.1	92.9	0.0	0.0		0.0	0.0	0.0	0.0		0.0	56.2	43.8	0.0		
Total %	15.2	0.0	1.3	0.0	16.5	1.2	15.5	0.0	0.0	16.7	0.0	0.0	0.0	0.0	0.0	0.0	37.5	29.3	0.0	66.8	

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Honolulu, HI 96826

Counter No.: D1-0528/D1-0526
Counted By: (M/S)
Weather: Sprinkles
Other:

File Name : Hlpm
Site Code : 00000000
Start Date : 10/10/2001
Page No : 1

Groups Printed- Unshifted

	Iwa Iwa Street Southbound					Halawa Crusher Road Westbound					Iwa Iwa Street Northbound					Halawa Crusher Road Eastbound					
Start Time	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
03:00 PM	106	0	4	0	110	4	97	0	0	101	0	0	0	0	0	0	78	74	0	152	363
03:15 PM	114	0	5	0	119	5	90	0	0	95	0	0	0	0	0	0	70	98	0	168	382
03:30 PM	123	0	1	0	124	5	165	0	0	170	0	0	0	0	0	0	69	94	0	163	457
03:45 PM	86	0	2	0	88	1	111	0	0	112	0	0	0	0	0	0	60	63	0	123	323
Total	429	0	12	0	441	15	463	0	0	478	0	0	0	0	0	0	277	329	0	606	1525
04:00 PM	131	0	6	0	137	1	117	0	0	118	0	0	0	0	0	0	55	59	0	114	369
04:15 PM	88	0	1	0	89	2	117	0	0	119	0	0	0	0	0	0	50	50	0	100	308
04:30 PM	109	0	0	0	109	3	132	0	0	135	0	0	0	0	0	0	36	65	0	101	345
04:45 PM	65	0	1	0	66	5	115	0	0	120	0	0	0	0	0	0	22	56	0	78	264
Total	393	0	8	0	401	11	481	0	0	492	0	0	0	0	0	0	163	230	0	393	1286
05:00 PM	113	0	0	0	113	4	140	0	0	144	0	0	0	0	0	0	21	53	0	74	331
05:15 PM	75	0	4	0	79	2	89	0	0	91	0	0	0	0	0	0	19	82	0	101	271
05:30 PM	98	0	0	0	98	4	72	0	0	76	0	0	0	0	0	0	15	75	0	90	264
05:45 PM	71	0	1	0	72	0	66	0	0	66	0	0	0	0	0	0	15	67	0	82	220
Total	357	0	5	0	362	10	367	0	0	377	0	0	0	0	0	0	70	277	0	347	1086
Grand Total	1179	0	25	0	1204	36	1311	0	0	1347	0	0	0	0	0	0	510	836	0	1346	3897
Apprch %	97.9	0.0	2.1	0.0		2.7	97.3	0.0	0.0		0.0	0.0	0.0	0.0		0.0	37.9	62.1	0.0		
Total %	30.3	0.0	0.6	0.0	30.9	0.9	33.6	0.0	0.0	34.6	0.0	0.0	0.0	0.0	0.0	0.0	13.1	21.5	0.0	34.5	

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Honolulu, HI 96826

Counter No.: D1-0769/D1-0768
Counted By: Wilma/Kathy
Weather: Sprinkles
Other:

File Name : HU_am
Site Code : 00000000
Start Date : 10/10/2001
Page No : 1

Groups Printed- 1 - Unshifted

	Halawa Crusher Road Southbound					Ulune Street Westbound					H-1 On-ramp Northbound					Ulune Street Eastbound					
Start Time	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
05:30 AM	40	19	0	0	59	61	108	1	0	170	0	0	0	0	0	24	0	147	0	171	400
05:45 AM	43	33	0	0	76	66	150	0	0	216	0	0	0	0	0	46	0	95	0	141	433
Total	83	52	0	0	135	127	258	1	0	386	0	0	0	0	0	70	0	242	0	312	833
06:00 AM	50	39	0	0	89	57	164	0	0	221	0	0	0	0	0	64	0	99	0	163	473
06:15 AM	56	44	0	0	100	77	201	0	0	278	0	0	0	0	0	82	0	103	0	185	563
06:30 AM	34	32	0	0	66	90	238	0	0	328	0	0	0	0	0	79	0	101	0	180	574
06:45 AM	46	48	0	0	94	69	195	0	0	264	0	0	0	0	0	64	0	117	0	181	539
Total	186	163	0	0	349	293	798	0	0	1091	0	0	0	0	0	289	0	420	0	709	2149
07:00 AM	55	36	0	0	91	85	236	0	0	321	0	0	0	0	0	76	0	100	0	176	588
07:15 AM	50	36	0	0	86	90	220	1	0	311	0	0	0	0	0	84	0	117	0	201	598
07:30 AM	48	35	0	0	83	106	183	0	0	289	0	0	0	0	0	69	0	175	0	244	616
07:45 AM	67	38	0	0	105	133	194	0	0	327	0	0	0	0	0	51	0	144	0	195	627
Total	220	145	0	0	365	414	833	1	0	1248	0	0	0	0	0	280	0	536	0	816	2429
08:00 AM	66	30	0	0	96	111	166	0	0	277	0	0	0	0	0	50	0	126	0	176	549
08:15 AM	86	43	0	0	129	91	142	2	0	235	0	0	0	0	0	45	0	96	0	141	505
Grand Total	641	433	0	0	1074	1036	2197	4	0	3237	0	0	0	0	0	734	0	1420	0	2154	6465
Apprch %	59.7	40.3	0.0	0.0		32.0	67.9	0.1	0.0		0.0	0.0	0.0	0.0		34.1	0.0	65.9	0.0		
Total %	9.9	6.7	0.0	0.0	16.6	16.0	34.0	0.1	0.0	50.1	0.0	0.0	0.0	0.0	0.0	11.4	0.0	22.0	0.0	33.3	

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Honolulu, HI 96826

Counter No.: D1-0769/D1-0768
Counted By: Wilma/Kathy (M/S)
Weather: Sprinkles
Other:

File Name : HU_pm
Site Code : 00000000
Start Date : 10/10/2001
Page No : 1

Groups Printed- 1 - Unshifted

	Halawa Crusher Road Southbound					Ulune Street Westbound					H-1 On-Ramp Northbound					Ulune Street Eastbound					
Start Time	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
03:00 PM	121	92	0	0	213	86	188	0	0	274	0	0	0	0	0	138	0	49	0	187	674
03:15 PM	117	85	0	0	202	76	181	3	0	260	0	0	0	0	0	154	0	77	0	231	693
03:30 PM	176	109	0	0	285	75	217	2	0	294	0	0	0	0	0	186	0	61	0	247	826
03:45 PM	128	80	0	0	208	54	242	10	0	306	0	0	0	0	0	118	0	77	0	195	709
Total	542	366	0	0	908	291	828	15	0	1134	0	0	0	0	0	596	0	264	0	860	2902
04:00 PM	158	101	0	0	259	59	220	32	0	311	0	0	0	0	0	185	0	58	0	243	813
04:15 PM	134	82	0	0	216	52	255	43	0	350	0	0	0	0	0	156	0	45	0	201	767
04:30 PM	170	87	0	0	257	47	249	61	0	357	0	0	0	0	0	149	0	37	0	186	800
04:45 PM	112	68	0	0	180	42	291	52	0	385	0	0	0	0	0	150	0	34	0	184	749
Total	574	338	0	0	912	200	1015	188	0	1403	0	0	0	0	0	640	0	174	0	814	3129
05:00 PM	172	91	0	0	263	39	295	62	0	396	0	0	0	0	0	150	0	36	0	186	845
05:15 PM	113	66	0	0	179	47	297	53	0	397	0	0	0	0	0	109	0	52	0	161	737
05:30 PM	110	75	0	0	185	35	235	54	0	324	0	0	0	0	0	143	0	53	0	196	705
05:45 PM	94	51	0	0	145	37	204	58	0	299	0	0	0	0	0	102	0	51	0	153	597
Total	489	283	0	0	772	158	1031	227	0	1416	0	0	0	0	0	504	0	192	0	696	2884
Grand Total	1605	987	0	0	2592	649	2874	430	0	3953	0	0	0	0	0	1740	0	630	0	2370	8915
Apprch %	61.9	38.1	0.0	0.0		16.4	72.7	10.9	0.0		0.0	0.0	0.0	0.0		73.4	0.0	26.6	0.0		
Total %	18.0	11.1	0.0	0.0	29.1	7.3	32.2	4.8	0.0	44.3	0.0	0.0	0.0	0.0	0.0	19.5	0.0	7.1	0.0	26.6	

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Honolulu, HI 96826

Counter: T-1841
Counted By: Penny (M/S)
Weather: Sprinkles
Other:

File Name : busam
Site Code : 00000000
Start Date : 10/10/2001
Page No : 1

Groups Printed- Unshifted

	Halawa Crusher Road Southbound					Ulune Street Westbound					Northbound					Ulune Street Eastbound					
Start Time	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
05:30 AM	13	6	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
05:45 AM	9	5	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
Total	22	11	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33
06:00 AM	2	4	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
06:15 AM	2	2	0	0	4	1	1	0	0	2	0	0	0	0	0	0	0	1	0	1	7
06:30 AM	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	4
06:45 AM	1	0	0	0	1	5	1	0	0	6	0	0	0	0	0	0	0	0	0	0	7
Total	5	6	0	0	11	7	5	0	0	12	0	0	0	0	0	0	0	1	0	1	24
07:00 AM	0	0	0	0	0	8	2	0	0	10	0	0	0	0	0	0	0	0	0	0	10
07:15 AM	1	0	0	0	1	5	2	0	0	7	0	0	0	0	0	0	0	0	0	0	8
07:30 AM	0	0	0	0	0	8	2	0	0	10	0	0	0	0	0	0	0	0	0	0	10
07:45 AM	0	1	0	0	1	7	1	0	0	8	0	0	0	0	0	0	0	0	0	0	9
Total	1	1	0	0	2	28	7	0	0	35	0	0	0	0	0	0	0	0	0	0	37
08:00 AM	0	1	0	0	1	9	2	0	0	11	0	0	0	0	0	0	0	1	0	1	13
08:15 AM	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	1	0	1	6
Grand Total	28	19	0	0	47	49	14	0	0	63	0	0	0	0	0	0	0	3	0	3	113
Apprch %	59.6	40.4	0.0	0.0		77.8	22.2	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0		
Total %	24.8	16.8	0.0	0.0	41.6	43.4	12.4	0.0	0.0	55.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	2.7	

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1907 S. Beretania St., Suite 400
Honolulu, HI 96826

Counter No.: T-1841
Counted By: Penny (M/S)
Weather: Sprinkles
Other:

File Name : Buspm
Site Code : 00000000
Start Date : 10/10/2001
Page No : 1

Groups Printed- Unshifted

	Halawa Crusher Road Southbound					Ulune Street Westbound					H-1 On-ramp Northbound					Ulune Street Eastbound					
Start Time	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	RT	TH	LT	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
03:00 PM	6	0	0	0	6	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	8
03:15 PM	9	1	0	0	10	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	12
03:30 PM	9	0	0	0	9	0	5	0	0	5	0	0	0	0	0	0	0	1	0	1	15
03:45 PM	7	0	0	0	7	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	9
Total	31	1	0	0	32	1	10	0	0	11	0	0	0	0	0	0	0	1	0	1	44
04:00 PM	8	0	0	0	8	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	9
04:15 PM	3	0	0	0	3	2	3	0	0	5	0	0	0	0	0	0	0	2	0	2	10
04:30 PM	2	0	0	0	2	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	4
04:45 PM	2	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	2	0	2	5
Total	15	0	0	0	15	3	6	0	0	9	0	0	0	0	0	0	0	4	0	4	28
05:00 PM	0	0	0	0	0	1	5	0	0	6	0	0	0	0	0	0	0	5	0	5	11
05:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	5	0	5	6
05:30 PM	0	0	0	0	0	5	3	0	0	8	0	0	0	0	0	0	0	9	0	9	17
05:45 PM	0	0	0	0	0	4	3	0	0	7	0	0	0	0	0	0	0	4	0	4	11
Total	0	0	0	0	0	10	12	0	0	22	0	0	0	0	0	0	0	23	0	23	45
Grand Total	46	1	0	0	47	14	28	0	0	42	0	0	0	0	0	0	0	28	0	28	117
Apprch %	97.9	2.1	0.0	0.0		33.3	66.7	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0		
Total %	39.3	0.9	0.0	0.0	40.2	12.0	23.9	0.0	0.0	35.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.9	0.0	23.9	

APPENDIX B

LEVEL OF SERVICE DEFINITIONS

Level-of-Service Definition

Level-of-Service (LOS) is a qualitative measurement used to characterize traffic operations. LOS describes operational conditions within a traffic stream, generally in terms of service measures such as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.

Control delay is the principal service measure for evaluating LOS at signalized and unsignalized intersections. Control delay quantifies the time that drivers are required to reduce their speed and/or stop due to traffic controls.

Six LOS are defined for each type of facility. Letter designations of A through F define each of the levels, with LOS A representing the best operating conditions, and LOS F, the worst.

Unsignalized Intersection Level-of-Service

At an unsignalized intersection, control delay is the total elapsed time from a vehicle joining a queue until its departure from the stopped position at the head of the queue. Control delay also includes the time required to decelerate to a stop and to accelerate to the free-flow speed. LOS is defined for each minor traffic movement (minor street movements and left turns from the major street of a two-way stopped controlled intersection). LOS is not defined for the intersection as a whole.

Level of Service	Average Control Delay (Sec/veh)
A	**0-10**
B	**>10-15**
C	**>15-25**
D	**>25-35**
E	**>35-50**
F	**>50**

Signalized Intersection Level-of-Service

At a signalized intersection, control delay is the delay attributed to traffic signal operations. Control delay includes delay due to deceleration, queue move-up time, stopped time and acceleration. The average control delay per vehicle is estimated for each lane group and aggregated for each approach as well as the entire intersection.

Level of Service	Average Control Delay (Sec/veh)
A	0-10
B	>10-20
C	>20-35
D	>35-55
E	>55-80
F	>80

Criteria for an unsignalized intersection are slightly different from a signalized intersection due to driver perception. Drivers perceive a signalized intersection to carry higher traffic volumes and experience greater delay than an unsignalized intersection.

Source: Transportation Research Board, Highway Capacity Manual (HCM 2000), 2000.

APPENDIX C

CAPACITY ANALYSIS CALCULATIONS
EXISTING PEAK HOUR TRAFFIC ANALYSIS

HCS2000: Unsignalized Intersections Release 4.1

TWO-WAY STOP CONTROL SUMMARY

Analyst: cey
Agency/Co.: Wilson Okamoto & Assoc.
Date Performed: 10/23/01
Analysis Time Period: AM Peak
Intersection: 6525-01
Jurisdiction:
Analysis Year: Existing 2001
Project ID: Halawa Baseyard
East/West Street: Halawa Valley Street
North/South Street: Iwa Iwa Street

Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	314	439			193	11
Peak-Hour Factor, PHF	1.00	1.00			1.00	1.00
Hourly Flow Rate, HFR	314	439			193	11
Percent Heavy Vehicles	0	--	--		--	--
Median Type	Undivided					
RT Channelized?						
Lanes	1	1			1	0
Configuration	L	T				TR
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume				13		144
Peak Hour Factor, PHF				1.00		1.00
Hourly Flow Rate, HFR				13		144
Percent Heavy Vehicles				0		0
Percent Grade (%)		0			0	
Median Storage						
Flared Approach: Exists?						
Storage						
RT Channelized?						Yes
Lanes				1		1
Configuration				L		R

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		R
v (vph)	314					13		144
C(m) (vph)	1380					146		848
v/c	0.23					0.09		0.17
95% queue length	0.88					0.29		0.61
Control Delay	8.4					32.1		10.1
LOS	A					D		B
Approach Delay							11.9	
Approach LOS							B	

HCS2000: Unsignalized Intersections Release 4.1

TWO-WAY STOP CONTROL SUMMARY

Analyst:	cey
Agency/Co.:	Wilson Okamoto & Assoc.
Date Performed:	10/23/01
Analysis Time Period:	PM Peak
Intersection:	6525-01
Jurisdiction:	
Analysis Year:	Existing 2001
Project ID:	Halawa Baseyard
East/West Street:	Halawa Valley Street
North/South Street:	Iwa Iwa Street

Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	256	98			476	14
Peak-Hour Factor, PHF	1.00	1.00			1.00	1.00
Hourly Flow Rate, HFR	256	98			476	14
Percent Heavy Vehicles	0	--	--		--	--
Median Type	Undivided					
RT Channelized?						
Lanes	1	1			1	0
Configuration	L	T				TR
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume				5		362
Peak Hour Factor, PHF				1.00		1.00
Hourly Flow Rate, HFR				5		362
Percent Heavy Vehicles				0		0
Percent Grade (%)		0			0	
Median Storage						
Flared Approach: Exists?						
Storage						
RT Channelized?						Yes
Lanes				1		1
Configuration				L		R

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		R
v (vph)	256					5		362
C(m) (vph)	1084					183		588
v/c	0.24					0.03		0.62
95% queue length	0.92					0.08		4.19
Control Delay	9.3					25.2		20.4
LOS	A					D		C
Approach Delay							20.5	
Approach LOS							C	

HCS2000: Unsignalized Intersections Release 4.1b

TWO-WAY STOP CONTROL SUMMARY

Analyst: cey
Agency/Co.: Wilson Okamoto & Assoc.
Date Performed: 5/22/02
Analysis Time Period: AM Peak
Intersection: 6525-01
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2001
Project ID: Halawa Baseyard
East/West Street: Iwaena Street
North/South Street: Iwaiwa Street
Intersection Orientation: NS
Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street:	Approach	Northbound			Southbound		
	Movement	1 L	2 T	3 R	4 L	5 T	6 R
Volume			45	280	30	40	
Peak-Hour Factor, PHF			1.00	1.00	1.00	1.00	
Hourly Flow Rate, HFR			45	280	30	40	
Percent Heavy Vehicles			--	--	0	--	--
Median Type		Undivided					
RT Channelized?				0		0	1
Lanes			1	0			
Configuration				TR		LT	
Upstream Signal?			No			No	

Minor Street:	Approach	Westbound			Eastbound		
	Movement	7 L	8 T	9 R	10 L	11 T	12 R
Volume		120		10			
Peak Hour Factor, PHF		1.00		1.00			
Hourly Flow Rate, HFR		120		10			
Percent Heavy Vehicles		0		0			
Percent Grade (%)			0			0	
Median Storage							
Flared Approach:	Exists?		No				
	Storage						
RT Channelized?				0			
Lanes		0		0			
Configuration			LR				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		30		130				
C(m) (vph)		1246		704				
v/c		0.02		0.18				
95% queue length		0.07		0.67				
Control Delay		8.0		11.3				
LOS		A		B				
Approach Delay				11.3				
Approach LOS				B				

HCS2000: Unsignalized Intersections Release 4.1b

TWO-WAY STOP CONTROL SUMMARY

Analyst: cey
Agency/Co.: Wilson Okamoto & Assoc.
Date Performed: 5/22/02
Analysis Time Period: PM Peak
Intersection: 6525-01
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2001
Project ID: Halawa Baseyard
East/West Street: Iwaena Street
North/South Street: Iwaiwa Street
Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		120	150	20	65	
Peak-Hour Factor, PHF		1.00	1.00	1.00	1.00	
Hourly Flow Rate, HFR		120	150	20	65	
Percent Heavy Vehicles		--	--	0	--	--
Median Type	Undivided					
RT Channelized?						
Lanes		1 0		0 1		
Configuration		TR		LT		
Upstream Signal?		No			No	

Minor Street: Approach	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	300		20			
Peak Hour Factor, PHF	1.00		1.00			
Hourly Flow Rate, HFR	300		20			
Percent Heavy Vehicles	0		0			
Percent Grade (%)		0			0	
Median Storage						
Flared Approach: Exists?		No				
Storage						
RT Channelized?						
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		20		320				
C(m) (vph)		1305		693				
v/c		0.02		0.46				
95% queue length		0.05		2.45				
Control Delay		7.8		14.6				
LOS		A		B				
Approach Delay				14.6				
Approach LOS				B				

HCS2000: Signalized Intersections Release 4.1

Analyst: cey
Agency: Wilson Okamoto & Assoc.
Date: 10/23/01
Period: AM Peak
Project ID: Halawa Baseyard
E/W St: Ulune Street

Inter.: 6525-01
Area Type: All other areas
Jurisd:
Year : Existing 2001

N/S St: Halawa Valley Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	0	0	0	3	1	0	0	0	0	1	1
LGConfig	L				LT	R					T	R
Volume	435			1	889	334					152	185
Lane Width	12.0				12.0	12.0					12.0	12.0
RTOR Vol						0						90

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A							
Thru								
Right								
Peds								
WB Left		A						
Thru		A						
Right		A						
Peds								
NB Right								
SB Right								
Green	32.0	35.0			18.0			
Yellow	4.0	4.0			4.0			
All Red	1.0	1.0			1.0			

NB Left
NB Thru
NB Right
NB Peds
SB Left
SB Thru A
SB Right A
SB Peds
EB Right
WB Right

Cycle Length: 100.0 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								
L	578	1805	0.84	0.32	41.9	D	41.9	D
Westbound								
LT	1815	5187	0.54	0.35	26.4	C	27.5	C
R	565	1615	0.66	0.35	30.2	C		
Northbound								
Southbound								
T	342	1900	0.49	0.18	38.0	D	37.5	D
R	291	1615	0.36	0.18	36.8	D		

Intersection Delay = 32.1 (sec/veh) Intersection LOS = C

HCS2000: Signalized Intersections Release 4.1

Analyst: cey
Agency: Wilson Okamoto & Assoc.
Date: 10/23/01
Period: PM Peak
Project ID: Halawa Baseyard
E/W St: Ulune Street

Inter.: 6525-01
Area Type: All other areas
Jurisd:
Year : Existing 2001

N/S St: Halawa Valley Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	0	0	0	3	1	0	0	0	0	1	1
LGConfig	L				LT	R					T	R
Volume	159			228	1132	175					312	567
Lane Width	12.0				12.0	12.0					12.0	12.0
RTOR Vol						0						330

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4	5	6	7	8
EB	Left	A							
	Thru								
	Right								
	Peds								
WB	Left		A						
	Thru		A						
	Right		A						
	Peds								
NB	Right								
SB	Right								
Green		25.0	45.0						
Yellow		4.0	4.0						
All Red		1.0	1.0						

NB	Left								
	Thru								
	Right								
	Peds								
SB	Left								
	Thru	A							
	Right	A							
	Peds								
EB	Right								
WB	Right								
		35.0							
		4.0							
		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								
L	376	1805	0.47	0.21	42.6	D		
							42.6	D
Westbound								
LT	1929	5144	0.78	0.38	35.4	D	34.4	C
R	606	1615	0.32	0.38	26.9	C		
Northbound								
Southbound								
T	554	1900	0.63	0.29	39.1	D	38.4	D
R	471	1615	0.56	0.29	37.5	D		

Intersection Delay = 36.0 (sec/veh) Intersection LOS = D

HCS2000: Signalized Intersections Release 4.1

Analyst: cey
Agency: Wilson Okamoto & Assoc.
Date: 10/23/01
Period: AM Peak
Project ID: Halawa Baseyard
E/W St: Ulune Street

Inter.: 6525-01
Area Type: All other areas
Jurisd:
Year : Existing 2001

N/S St: Kahuapaani Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	1	2	0	1	2	1	1	2	0
LGConfig		LT	R	L	LTR		L	T	R	L	TR	
Volume	26	211	351	610	199	256	35	226	468	40	275	11
Lane Width		12.0	12.0	12.0	12.0		12.0	12.0	12.0	12.0	12.0	
RTOR Vol			175			0			235			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4	5	6	7	8
EB	Left	A				NB Left	A		
	Thru	A				Thru		A	
	Right	A				Right		A	
	Peds					Peds			
WB	Left		A			SB Left	A		
	Thru		A			Thru		A	
	Right		A			Right		A	
	Peds					Peds			
NB	Right					EB Right			
SB	Right					WB Right			
Green		18.0	32.0				10.0	20.0	
Yellow		4.0	4.0				4.0	4.0	
All Red		1.0	1.0				1.0	1.0	

Cycle Length: 100.0 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	340	1890	0.77	0.18	49.7	D	47.4	D
R	291	1615	0.67	0.18	44.3	D		
Westbound								
L	578	1805	0.82	0.32	40.7	D		
LTR	1070	3345	0.66	0.32	30.9	C	34.8	C
Northbound								
L	181	1805	0.22	0.10	42.0	D		
T	722	3610	0.35	0.20	34.7	C	43.2	D
R	323	1615	0.80	0.20	51.6	D		
Southbound								
L	181	1805	0.24	0.10	42.2	D		
TR	718	3590	0.44	0.20	35.5	D	36.4	D

Intersection Delay = 39.1 (sec/veh) Intersection LOS = D

HCS2000: Signalized Intersections Release 4.1

Analyst: cey
Agency: Wilson Okamoto & Assoc.
Date: 10/23/01
Period: PM Peak
Project ID: Halawa Baseyard
E/W St: Ulune Street

Inter.: 6525-01
Area Type: All other areas
Jurisd:
Year : Existing 2001

N/S St: Kahuapaani Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	1	2	0	1	2	1	1	2	0
LGConfig		LT	R	L	LTR		L	T	R	L	TR	
Volume	14	148	196	815	704	152	111	187	451	151	482	37
Lane Width		12.0	12.0	12.0	12.0		12.0	12.0	12.0	12.0	12.0	
RTOR Vol			100			0			225			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A							
Thru	A							
Right	A							
Peds								
WB Left		A						
Thru		A						
Right		A						
Peds								
NB Left					A	A		
Thru						A	A	
Right						A	A	
Peds								
SB Left					A			
Thru							A	
Right							A	
Peds								
NB Right								
SB Right								
Green	15.0	45.0			10.0	10.0	25.0	
Yellow	4.0	4.0			0.0	0.0	4.0	
All Red	1.0	1.0			0.0	0.0	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	237	1892	0.76	0.13	64.1	E	59.5	E
R	202	1615	0.53	0.13	51.8	D		
Westbound								
L	677	1805	0.90	0.38	50.0	D		
LTR	1311	3495	0.95	0.38	51.6	D	51.1	D
Northbound								
L	301	1805	0.41	0.17	45.6	D		
T	1053	3610	0.20	0.29	32.0	C	37.0	D
R	471	1615	0.53	0.29	36.8	D		
Southbound								
L	150	1805	1.12	0.08	164.3	F		
TR	744	3572	0.78	0.21	50.0	D	75.8	E

Intersection Delay = 54.7 (sec/veh) Intersection LOS = D

APPENDIX D

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2003 PEAK HOUR TRAFFIC
ANALYSIS WITHOUT PROJECT

HCS2000: Signalized Intersections Release 4.1

Analyst: cey
Agency: Wilson Okamoto & Assoc.
Date: 10/23/01
Period: AM Peak
Project ID: Halawa Baseyard
E/W St: Halawa Valley Street

Inter.: 6525-01
Area Type: All other areas
Jurisd:
Year : 2003 base
N/S St: Iwaiwa Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	0	0	0	0	1	0	0
LGConfig	L	T			TR					L		
Volume	315	450			200	10				15		
Lane Width	12.0	12.0			12.0					12.0		
RTOR Vol						0						

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left			
Thru	A	A			Thru			
Right					Right			
Peds					Peds			
WB Left					SB Left	A		
Thru		A			Thru			
Right		A			Right			
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	22.0	17.0				11.0		
Yellow	0.0	4.0				4.0		
All Red	0.0	1.0				1.0		

Cycle Length: 60.0 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								
L	662	1805	0.53	0.37	15.7	B		
T	1235	1900	0.40	0.65	5.2	A	9.5	A
Westbound								
TR	535	1888	0.44	0.28	18.1	B	18.1	B
Northbound								
Southbound								
L	331	1805	0.05	0.18	20.3	C		
							20.3	C

Intersection Delay = 11.5 (sec/veh) Intersection LOS = B

HCS2000: Signalized Intersections Release 4.1

Analyst: cey
Agency: Wilson Okamoto & Assoc.
Date: 10/23/01
Period: PM Peak
Project ID: Halawa Baseyard
E/W St: Halawa Valley Street

Inter.: 6525-01
Area Type: All other areas
Jurisd:
Year : 2003 base
N/S St: Iwaiwa Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	0	0	0	0	1	0	0
LGConfig	L	T			TR					L		
Volume	270	100			490	15				5		
Lane Width	12.0	12.0			12.0					12.0		
RTOR Vol						0						

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left			
Thru	A	A			Thru			
Right					Right			
Peds					Peds			
WB Left					SB Left	A		
Thru		A			Thru			
Right		A			Right			
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	15.0	25.0			10.0			
Yellow	0.0	4.0			4.0			
All Red	0.0	1.0			1.0			

Cycle Length: 60.0 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								
L	451	1805	0.67	0.25	23.9	C		
T	1267	1900	0.09	0.67	3.6	A	18.4	B
Westbound								
TR	788	1892	0.71	0.42	17.6	B	17.6	B
Northbound								
Southbound								
L	301	1805	0.02	0.17	20.9	C		
							20.9	C

Intersection Delay = 17.9 (sec/veh) Intersection LOS = B

HCS2000: Unsignalized Intersections Release 4.1b

TWO-WAY STOP CONTROL SUMMARY

Analyst: cey
Agency/Co.: Wilson Okamoto & Assoc.
Date Performed: 5/22/02
Analysis Time Period: AM Peak
Intersection: 6525-01
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2003 w/out project
Project ID: Halawa Baseyard
East/West Street: Iwaena Street
North/South Street: Iwaiwa Street
Intersection Orientation: NS
Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		45	280	30	40	
Peak-Hour Factor, PHF		1.00	1.00	1.00	1.00	
Hourly Flow Rate, HFR		45	280	30	40	
Percent Heavy Vehicles		--	--	0	--	--
Median Type	Undivided					
RT Channelized?						
Lanes		1 0		0 1		
Configuration		TR		LT		
Upstream Signal?		No			No	

Minor Street: Approach	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	270		10			
Peak Hour Factor, PHF	1.00		1.00			
Hourly Flow Rate, HFR	270		10			
Percent Heavy Vehicles	0		0			
Percent Grade (%)		0			0	
Median Storage						
Flared Approach: Exists?		No				
Storage						
RT Channelized?						
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		30		280				
C(m) (vph)		1246		698				
v/c		0.02		0.40				
95% queue length		0.07		1.94				
Control Delay		8.0		13.6				
LOS		A		B				
Approach Delay				13.6				
Approach LOS				B				

HCS2000: Unsignalized Intersections Release 4.1b

TWO-WAY STOP CONTROL SUMMARY

Analyst: cey
Agency/Co.: Wilson Okamoto & Assoc.
Date Performed: 5/22/02
Analysis Time Period: PM Peak
Intersection: 6525-01
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2003 w/out project
Project ID: Halawa Baseyard
East/West Street: Iwaena Street
North/South Street: Iwaiwa Street
Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		125	160	20	70	
Peak-Hour Factor, PHF		1.00	1.00	1.00	1.00	
Hourly Flow Rate, HFR		125	160	20	70	
Percent Heavy Vehicles		--	--	0	--	--
Median Type	Undivided					
RT Channelized?						
Lanes		1 0		0 1		
Configuration		TR		LT		
Upstream Signal?		No			No	

Minor Street: Approach	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	315		20			
Peak Hour Factor, PHF	1.00		1.00			
Hourly Flow Rate, HFR	315		20			
Percent Heavy Vehicles	0		0			
Percent Grade (%)		0			0	
Median Storage						
Flared Approach: Exists?		No				
Storage						
RT Channelized?						
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		20		335				
C(m) (vph)		1289		679				
v/c		0.02		0.49				
95% queue length		0.05		2.75				
Control Delay		7.8		15.4				
LOS		A		C				
Approach Delay				15.4				
Approach LOS				C				

HCS2000: Signalized Intersections Release 4.1

Analyst: cey
Agency: Wilson Okamoto & Assoc.
Date: 10/23/01
Period: AM Peak
Project ID: Halawa Baseyard
E/W St: Ulune Street

Inter.: 6525-01
Area Type: All other areas
Jurisd:
Year : 2003 base

N/S St: Halawa Valley Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	0	0	0	3	1	0	0	0	0	1	1
LGConfig	L				LT	R					T	R
Volume	455			1	910	325					220	270
Lane Width	12.0				12.0	12.0					12.0	12.0
RTOR Vol						0						140

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4	5	6	7	8
EB	Left	A				NB	Left		
	Thru						Thru		
	Right						Right		
	Peds						Peds		
WB	Left		A			SB	Left		
	Thru		A				Thru	A	
	Right		A				Right	A	
	Peds						Peds		
NB	Right					EB	Right		
SB	Right					WB	Right		
Green		32.0	35.0					18.0	
Yellow		4.0	4.0					4.0	
All Red		1.0	1.0					1.0	

Cycle Length: 100.0 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								
L	578	1805	0.88	0.32	46.2	D	46.2	D
Westbound								
LT	1815	5187	0.56	0.35	26.6	C	27.4	C
R	565	1615	0.64	0.35	29.6	C		
Northbound								
Southbound								
T	342	1900	0.71	0.18	45.5	D	42.8	D
R	291	1615	0.49	0.18	38.2	D		

Intersection Delay = 34.2 (sec/veh) Intersection LOS = C

HCS2000: Signalized Intersections Release 4.1

Analyst: cey
Agency: Wilson Okamoto & Assoc.
Date: 10/23/01
Period: PM Peak
Project ID: Halawa Baseyard
E/W St: Ulune Street

Inter.: 6525-01
Area Type: All other areas
Jurisd:
Year : 2003 base

N/S St: Halawa Valley Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	0	0	0	3	1	0	0	0	0	1	1
LGConfig	L				LT	R					T	R
Volume	160			235	1155	180					320	580
Lane Width	12.0				12.0	12.0					12.0	12.0
RTOR Vol						0						340

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4	5	6	7	8
EB	Left	A				NB Left			
	Thru					Thru			
	Right					Right			
	Peds					Peds			
WB	Left		A			SB Left			
	Thru		A			Thru	A		
	Right		A			Right	A		
	Peds					Peds			
NB	Right					EB Right			
SB	Right					WB Right			
Green		25.0	45.0			35.0			
Yellow		4.0	4.0			4.0			
All Red		1.0	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								
L	376	1805	0.47	0.21	42.7	D		
							42.7	D
Westbound								
LT	1929	5144	0.80	0.38	36.0	D	35.0-	C
R	606	1615	0.33	0.38	27.1	C		
Northbound								
Southbound								
T	554	1900	0.64	0.29	39.6	D	38.8	D
R	471	1615	0.57	0.29	37.7	D		

Intersection Delay = 36.4 (sec/veh) Intersection LOS = D

HCS2000: Signalized Intersections Release 4.1

Analyst: cey
Agency: Wilson Okamoto & Assoc.
Date: 10/23/01
Period: AM Peak
Project ID: Halawa Baseyard
E/W St: Ulune Street

Inter.: 6525-01
Area Type: All other areas
Jurisd:
Year : 2003 base

N/S St: Kahuapaani Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	1	2	0	1	2	1	1	2	0
LGConfig		LT	R	L	LTR		L	T	R	L	TR	
Volume	25	220	360	670	220	280	35	230	485	40	280	10
Lane Width		12.0	12.0	12.0	12.0		12.0	12.0	12.0	12.0	12.0	
RTOR Vol			175			0			235			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4	5	6	7	8
EB	Left	A				NB Left	A		
	Thru	A				Thru		A	
	Right	A				Right		A	
	Peds					Peds			
WB	Left		A			SB Left	A		
	Thru		A			Thru		A	
	Right		A			Right		A	
	Peds					Peds			
NB	Right					EB Right			
SB	Right					WB Right			
Green		18.0	32.0				10.0	20.0	
Yellow		4.0	4.0				4.0	4.0	
All Red		1.0	1.0				1.0	1.0	

Cycle Length: 100.0 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	340	1890	0.80	0.18	52.0	D	49.5	D
R	291	1615	0.71	0.18	46.2	D		
Westbound								
L	578	1805	0.90	0.32	49.8	D		
LTR	1071	3346	0.73	0.32	32.6	C	39.5	D
Northbound								
L	181	1805	0.22	0.10	42.0	D		
T	722	3610	0.35	0.20	34.7	C	47.0	D
R	323	1615	0.86	0.20	59.0	E		
Southbound								
L	181	1805	0.24	0.10	42.2	D		
TR	718	3592	0.45	0.20	35.6	D	36.4	D

Intersection Delay = 42.4 (sec/veh) Intersection LOS = D

HCS2000: Signalized Intersections Release 4.1

Analyst: cey
Agency: Wilson Okamoto & Assoc.
Date: 10/23/01
Period: PM Peak
Project ID: Halawa Baseyard
E/W St: Ulune Street

Inter.: 6525-01
Area Type: All other areas
Jurisd:
Year : 2003 base
N/S St: Kahuapaani Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	1	2	0	1	2	1	1	2	0
LGConfig		LT	R	L	LTR		L	T	R	L	TR	
Volume	15	155	200	840	725	155	115	190	455	155	490	35
Lane Width		12.0	12.0	12.0	12.0		12.0	12.0	12.0	12.0	12.0	
RTOR Vol			100			0			225			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A	A	
Thru	A				Thru		A	A
Right	A				Right		A	A
Peds					Peds			
WB Left		A			SB Left	A		
Thru		A			Thru			A
Right		A			Right			A
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	15.0	45.0				10.0	10.0	25.0
Yellow	4.0	4.0				0.0	0.0	4.0
All Red	1.0	1.0				0.0	0.0	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	236	1891	0.80	0.13	68.7	E	62.7	E
R	202	1615	0.55	0.13	52.5	D		
Westbound								
L	677	1805	0.92	0.38	54.2	D		
LTR	1311	3496	0.98	0.38	57.4	E	56.4	E
Northbound								
L	301	1805	0.43	0.17	45.8	D		
T	1053	3610	0.20	0.29	32.1	C	37.2	D
R	471	1615	0.54	0.29	37.1	D		
Southbound								
L	150	1805	1.15	0.08	173.3	F		
TR	745	3574	0.78	0.21	50.4	D	78.4	E

Intersection Delay = 58.4 (sec/veh) Intersection LOS = E

APPENDIX E

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2003 PEAK HOUR TRAFFIC
ANALYSIS WITH PROJECT

HCS2000: Signalized Intersections Release 4.1a

Analyst: cey
Agency: Wilson Okamoto & Assoc.
Date: 10/1/02
Period: AM Peak
Project ID: Halawa Baseyard
E/W St: Halawa Valley Street

Inter.: 6525-01
Area Type: All other areas
Jurisd:
Year : 2003 w/project

N/S St: Iwaiwa Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	0	0	0	0	1	0	0
LGConfig	L	T			TR					L		
Volume	460	450			200	10				15		
Lane Width	12.0	12.0			12.0					12.0		
RTOR Vol						0						

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A							
Thru	A	A						
Right								
Peds								
WB Left								
Thru		A						
Right		A						
Peds								
NB Left								
Thru								
Right								
Peds								
SB Left					A			
Thru								
Right								
Peds								
EB Right								
WB Right								
Green	22.0	17.0			11.0			
Yellow	0.0	4.0			4.0			
All Red	0.0	1.0			1.0			

Cycle Length: 60.0 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								
L	662	1805	0.77	0.37	22.4	C		
T	1235	1900	0.40	0.65	5.2	A	13.9	B
Westbound								
TR	535	1888	0.44	0.28	18.1	B	18.1	B
Northbound								
Southbound								
L	331	1805	0.05	0.18	20.3	C		
							20.3	C

Intersection Delay = 14.8 (sec/veh) Intersection LOS = B

HCS2000: Signalized Intersections Release 4.1a

Analyst: cey
Agency: Wilson Okamoto & Assoc.
Date: 10/1/02
Period: PM Peak
Project ID: Halawa Baseyard
E/W St: Halawa Valley Street

Inter.: 6525-01
Area Type: All other areas
Jurisd:
Year : 2003 w/project
N/S St: Iwaiwa Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	0	0	0	0	1	0	0
LGConfig	L	T			TR					L		
Volume	270	100			490	15				5		
Lane Width	12.0	12.0			12.0					12.0		
RTOR Vol						0						

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4	5	6	7	8
EB	Left	A				NB Left			
	Thru	A	A			Thru			
	Right					Right			
	Peds					Peds			
WB	Left					SB Left	A		
	Thru		A			Thru			
	Right		A			Right			
	Peds					Peds			
NB	Right					EB Right			
SB	Right					WB Right			
Green		15.0	25.0			10.0			
Yellow		0.0	4.0			4.0			
All Red		0.0	1.0			1.0			

Cycle Length: 60.0 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								
L	451	1805	0.67	0.25	23.9	C		
T	1267	1900	0.09	0.67	3.6	A	18.4	B
Westbound								
TR	788	1892	0.71	0.42	17.6	B	17.6	B
Northbound								
Southbound								
L	301	1805	0.02	0.17	20.9	C		
							20.9	C

Intersection Delay = 17.9 (sec/veh) Intersection LOS = B

HCS2000: Unsignalized Intersections Release 4.1a

TWO-WAY STOP CONTROL SUMMARY

Analyst: cey
Agency/Co.: Wilson Okamoto & Assoc.
Date Performed: 10/1/02
Analysis Time Period: AM Peak
Intersection: 6525-01
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2003 w/ project
Project ID: Halawa Baseyard
East/West Street: Iwaena Street
North/South Street: Iwaiwa Street
Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Northbound			Southbound		
Movement	1 L	2 T	3 R	4 L	5 T	6 R
Volume		45	425	30	40	
Peak-Hour Factor, PHF		1.00	1.00	1.00	1.00	
Hourly Flow Rate, HFR		45	425	30	40	
Percent Heavy Vehicles		--	--	0	--	--
Median Type	Undivided					
RT Channelized?						
Lanes		1	0	0	1	
Configuration		TR		LT		
Upstream Signal?		No			No	

Minor Street: Approach	Westbound			Eastbound		
Movement	7 L	8 T	9 R	10 L	11 T	12 R
Volume	290		10			
Peak Hour Factor, PHF	1.00		1.00			
Hourly Flow Rate, HFR	290		10			
Percent Heavy Vehicles	0		0			
Percent Grade (%)		0			0	
Median Storage						
Flared Approach: Exists?		No				
Storage						
RT Channelized?						
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		30		300				
C(m) (vph)		1102		630				
v/c		0.03		0.48				
95% queue length		0.08		2.57				
Control Delay		8.4		15.8				
LOS		A		C				
Approach Delay				15.8				
Approach LOS				C				

HCS2000: Signalized Intersections Release 4.1

Analyst: cey
Agency: Wilson Okamoto & Assoc.
Date: 10/23/01
Period: AM Peak
Project ID: Halawa Baseyard
E/W St: Ulune Street

Inter.: 6525-01
Area Type: All other areas
Jurisd:
Year : 2003 w/project

N/S St: Halawa Valley Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	0	0	0	3	1	0	0	0	0	1	1
LGConfig	L				LT	R					T	R
Volume	535			1	910	390					230	280
Lane Width	12.0				12.0	12.0					12.0	12.0
RTOR Vol						0						140

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4	5	6	7	8
EB	Left	A				NB Left			
	Thru					Thru			
	Right					Right			
	Peds					Peds			
WB	Left		A			SB Left			
	Thru		A			Thru A			
	Right		A			Right A			
	Peds					Peds			
NB	Right					EB Right			
SB	Right					WB Right			
Green		36.0	31.0			18.0			
Yellow		4.0	4.0			4.0			
All Red		1.0	1.0			1.0			

Cycle Length: 100.0 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								
L	650	1805	0.91	0.36	48.0	D	48.0	D
Westbound								
LT	1608	5187	0.63	0.31	30.4	C	35.4	D
R	501	1615	0.86	0.31	47.1	D		
Northbound								
Southbound								
T	342	1900	0.75	0.18	47.7	D	44.5	D
R	291	1615	0.54	0.18	39.2	D		

Intersection Delay = 40.0 (sec/veh) Intersection LOS = D

HCS2000: Unsignalized Intersections Release 4.1a

TWO-WAY STOP CONTROL SUMMARY

Analyst:	cey
Agency/Co.:	Wilson Okamoto & Assoc.
Date Performed:	10/1/02
Analysis Time Period:	PM Peak
Intersection:	6525-01
Jurisdiction:	
Units: U. S. Customary	
Analysis Year:	2003 w/ project
Project ID: Halawa Baseyard	
East/West Street:	Iwaena Street
North/South Street:	Iwaiwa Street
Intersection Orientation: NS	Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Northbound			Southbound		
Movement	1 L	2 T	3 R	4 L	5 T	6 R
Volume		125	160	20	70	
Peak-Hour Factor, PHF		1.00	1.00	1.00	1.00	
Hourly Flow Rate, HFR		125	160	20	70	
Percent Heavy Vehicles		--	--	0	--	--
Median Type	Undivided					
RT Channelized?						
Lanes		1	0	0	1	
Configuration		TR		LT		
Upstream Signal?		No			No	

Minor Street: Approach	Westbound			Eastbound		
Movement	7 L	8 T	9 R	10 L	11 T	12 R
Volume	345		20			
Peak Hour Factor, PHF	1.00		1.00			
Hourly Flow Rate, HFR	345		20			
Percent Heavy Vehicles	0		0			
Percent Grade (%)		0			0	
Median Storage						
Flared Approach: Exists?		No				
Storage						
RT Channelized?						
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		20		365				
C(m) (vph)		1289		679				
v/c		0.02		0.54				
95% queue length		0.05		3.22				
Control Delay		7.8		16.3				
LOS		A		C				
Approach Delay				16.3				
Approach LOS				C				

HCS2000: Signalized Intersections Release 4.1

Analyst: cey
Agency: Wilson Okamoto & Assoc.
Date: 10/23/01
Period: PM Peak
Project ID: Halawa Baseyard
E/W St: Ulune Street

Inter.: 6525-01
Area Type: All other areas
Jurisd:
Year : 2003 w/project

N/S St: Halawa Valley Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	0	0	0	3	1	0	0	0	0	1	1
LGConfig	L				LT	R					T	R
Volume	160			235	1155	180					330	600
Lane Width	12.0				12.0	12.0					12.0	12.0
RTOR Vol						0						340

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4	5	6	7	8
EB	Left	A							
	Thru								
	Right								
	Peds								
WB	Left		A						
	Thru		A						
	Right		A						
	Peds								
NB	Right								
SB	Right								
Green		25.0	45.0						
Yellow		4.0	4.0						
All Red		1.0	1.0						

NB	Left								
	Thru								
	Right								
	Peds								
SB	Left								
	Thru	A							
	Right	A							
	Peds								
EB	Right								
WB	Right								
		35.0							
		4.0							
		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								
L	376	1805	0.47	0.21	42.7	D		
							42.7	D
Westbound								
LT	1929	5144	0.80	0.38	36.0	D	35.0-	C
R	606	1615	0.33	0.38	27.1	C		
Northbound								
Southbound								
T	554	1900	0.66	0.29	40.3	D	39.7	D
R	471	1615	0.61	0.29	39.0	D		

Intersection Delay = 36.7 (sec/veh) Intersection LOS = D

HCS2000: Signalized Intersections Release 4.1

Analyst: cey
Agency: Wilson Okamoto & Assoc.
Date: 10/23/01
Period: AM Peak
Project ID: Halawa Baseyard
E/W St: Ulune Street

Inter.: 6525-01
Area Type: All other areas
Jurisd:
Year : 2003 w/project

N/S St: Kahuapaani Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	1	2	0	1	2	1	1	2	0
LGConfig		LT	R	L	LTR		L	T	R	L	TR	
Volume	25	245	360	675	225	280	35	230	540	45	280	10
Lane Width		12.0	12.0	12.0	12.0		12.0	12.0	12.0	12.0	12.0	
RTOR Vol			175			0			260			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru		A	
Right	A				Right		A	
Peds					Peds			
WB Left		A			SB Left	A		
Thru		A			Thru		A	
Right		A			Right		A	
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	19.0	30.0				10.0	21.0	
Yellow	4.0	4.0				4.0	4.0	
All Red	1.0	1.0				1.0	1.0	

Cycle Length: 100.0 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	359	1891	0.84	0.19	54.6	D	50.0	D
R	307	1615	0.67	0.19	43.2	D		
Westbound								
L	542	1805	0.90	0.30	51.6	D		
LTR	1006	3352	0.82	0.30	37.9	D	43.0	D
Northbound								
L	181	1805	0.22	0.10	42.0	D		
T	758	3610	0.34	0.21	33.9	C	51.7	D
R	339	1615	0.92	0.21	67.6	E		
Southbound								
L	181	1805	0.28	0.10	42.5	D		
TR	754	3592	0.43	0.21	34.7	C	35.7	D

Intersection Delay = 45.2 (sec/veh) Intersection LOS = D

HCS2000: Signalized Intersections Release 4.1

Analyst: cey
Agency: Wilson Okamoto & Assoc.
Date: 10/23/01
Period: PM Peak
Project ID: Halawa Baseyard
E/W St: Ulune Street

Inter.: 6525-01
Area Type: All other areas
Jurisd:
Year : 2003 w/project

N/S St: Kahuapaani Street

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	1	2	0	1	2	1	1	2	0
LGConfig		LT	R	L	LTR		L	T	R	L	TR	
Volume	15	155	200	850	735	155	115	190	455	155	490	35
Lane Width		12.0	12.0	12.0	12.0		12.0	12.0	12.0	12.0	12.0	
RTOR Vol			100			0			225			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left		A			NB	Left	A	A		
	Thru		A				Thru		A	A	
	Right		A				Right		A	A	
	Peds						Peds				
WB	Left			A		SB	Left	A			
	Thru			A			Thru			A	
	Right			A			Right			A	
	Peds						Peds				
NB	Right					EB	Right				
SB	Right					WB	Right				
Green			15.0	45.0				10.0	10.0	25.0	
Yellow			4.0	4.0				0.0	0.0	4.0	
All Red			1.0	1.0				0.0	0.0	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	236	1891	0.80	0.13	68.7	E	62.7	E
R	202	1615	0.55	0.13	52.5	D		
Westbound								
L	677	1805	0.93	0.38	56.1	E		
LTR	1311	3497	0.99	0.38	60.3	E	58.9	E
Northbound								
L	301	1805	0.43	0.17	45.8	D		
T	1053	3610	0.20	0.29	32.1	C	37.2	D
R	471	1615	0.54	0.29	37.1	D		
Southbound								
L	150	1805	1.15	0.08	173.3	F		
TR	745	3574	0.78	0.21	50.4	D	78.4	E

Intersection Delay = 59.7 (sec/veh) Intersection LOS = E

APPENDIX F

TRIP GENERATION

CSM Staff Positions by Organization

	Office	Field	Vacant	Total
Administration				
Division Chief	1	0	0	1
Asst Division Chief	1	0	0	1
Secretary	1	0	0	1
Cesspool Services	1	0	0	1
Safety Specialist	1	0	0	1
Staff Services, Clerical Office	6	0	0	6
Staff Services, Storekeepers	0	3	0	3
Staff Services, Custodian	0	1	0	1
Subtotal	11	4	0	15
Systems Analysis Branch				
Branch Chief	1	0	1	1
System Analysis Section	6	0	6	6
Maintenance Investigation	1	0	0	1
Maint Invest, TV Inspection	0	9	1	9
Maint Invest, Cesspool Invest	1	0	0	1
Subtotal	9	9	8	18
Field Services Branch				
Branch Chief	1	0	0	1
Equipment Operations	0	2	0	2
Repair Shop	0	2	0	2
Masonry	0	2	1	2
Gas Detection	0	2	0	2
Carpentry	0	3	0	3
Subtotal	1	11	1	12
Field Services, Metro District				
District Supervisor	1	0	0	1
Field Supervisor	0	10	0	10
Field Personnel	0	35	2	35
Subtotal	1	45	2	46
Field Services, Leeward District				
District Supervisor	1	0	0	1
Field Supervisor	0	9	0	9
Field Personnel	0	30	2	30
Subtotal	1	39	2	40
Field Services, Windward District				
District Supervisor	1	0	0	1
Field Supervisor	0	6	0	6
Field Personnel	0	23	5	23
Subtotal	1	29	5	30
CSM Total	24	137	18	161

Excludes Cesspool Services Branch field positions
Includes vacant postions

Trip Generation Assumptions

Arrivals/Departures

Employees arrive between 6:30am - 7:00am
Field crews depart between 7:30am - 8:00am
Field crews return between 2:30pm - 3:30pm
Employees depart beginning at 3:30pm

Average Use

90% of employees per day
80% of city vehicles per day

	AM Peak		PM Peak	
	Arrive	**Depart**	**Arrive**	**Depart**
Employees - 161 x 90% = 145				
Assume all arrive during the AM Peak Hour. Assume 20% leave during the PM Peak Hour. 145 x 20% = 30	145	0	0	30
City Vehicles - 106 x 80% = 85				
Assume 20% leave during the AM Peak Hour. 85 x 20% = 20	0	20	0	0
Total	**145**	**20**	**0**	**30**

APPENDIX C

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

GILBERT S. COLOMA-AGARAN, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DEPUTIES
ERIC T. HIRANO
LINNEL NISHIOKA

6635.01
9/6/02

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

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

cc: DLC, VIA FAX
9/6/02

HAWAI'I HISTORIC PRESERVATION DIVISION REVIEW

Log #: 30622
Doc #: 0208EJ07

Applicant/Agency:	John Sakaguchi, Senior Planner Wilson Okamoto & Associates, Inc.
Address:	1907 South Beretania, Suite 400 Honolulu, Hawaii 96826
SUBJECT:	Chapter 6E-8 Historic Preservation Review – Pre- Assessment Consultation Collection Maintenance System Baseyard, Halawa Corporation Yard, O'ahu
Ahupua`a:	Halawa
District, Island:	'Ewa, O'ahu
TMK:	(1) 9-9-073:027

1. We believe there are no historic properties present, because:

___ a) intensive cultivation has altered the land
✔ b) residential development/urbanization has altered the land
✔ c) previous grubbing/grading has altered the land
___ d) an acceptable archaeological assessment or inventory survey found no historic properties
✔ e) other:

2. This project has already gone through the historic preservation review process, and mitigation has been completed ___.

✔ Thus, we believe that "no historic properties will be affected" by this undertaking

Staff: Elaine Jourdane Date: 8/27/02

Title: Elaine Jourdane, Assistant Archaeologist O'ahu Phone (808) 692-8027

Post-it® Fax Note 7671	Date	# of pages ▶
To John Sakaguchi	From Jo	
Co./Dept.	Co.	
Phone #	Phone #	
Fax # 946-2253	Fax #	

APPENDIX D

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. BOX 621
HONOLULU, HAWAII 96809

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

August 15, 2002

LD-NAV
HALAWABASEYARD.CMT

L-1064
Suspense Date: 9/3/02

MEMORANDUM:

DM: ~~TO:~~ XXX Division of Aquatic Resources
XXX Division of Forestry & Wildlife
XXX Division of State Parks
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
Land Division Branches:
XXX Planning and Technical Services
XXX Engineering Branch
XXX Oahu District Land Office

T.O.' ~~FROM:~~ for Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment, Pre-Assessment Consultation, Collection Maintenance System Baseyard, Halawa Corporation Yard, Halawa, Aiea, Oahu, Hawaii

Please review the attached lette (summary) covering the subject matter and submit your written comment and recommendation (if any) on Division letterhead signed and dated on or before the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

(X) We have no comments. ( ) Comments attached.

Date: 8/22/02 Signed: pc

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. BOX 621
HONOLULU, HAWAII 96809

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

9/9/02

September 4, 2002

cc: DDC, VIA DLNR FAX
L-3035 // 9/6/02 VIA FAX

LD-NAV
HALAWABASEYARD.RCM

RECEIVED
SEP 06 2002
WILSON OKAMOTO & ASSOC., INC.

Wilson Okamoto & Associates, Inc.
John L. Sakaguchi, Senior Planner
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Sakaguchi:

SUBJECT: Pre-Assessment (Consultation) for Preparation of a Draft Environmental Assessment (EA) Covering Collection Maintenance System Baseyard, Halawa Corporation Yard, Halawa, Aiea, Island of Oahu, Hawaii - TMK: 1st/ 9-9-073: 027

Thank you for your letter dated August 9, 2002, informing us of the proposed project.

The Department of Land and Natural Resources' (DLNR) Land Division Support Services Branch distributed a copy of your letter, the project summary and project location map to the following DLNR Divisions for their review and comment:

- Division of Aquatic Resources
- Division of Forestry and Wildlife
- Division of State Parks
- Commission on Water Resource Management
- Land Division Engineering Branch
- Land Division Planning and Technical Services
- Land Division Oahu Land Office

Attached herewith is a copy of the Commission on Water Resource Management and Land Division Engineering Branch comments.

Based on the attached responses, the Department of Land and Natural Resources has no other comment to offer. Should the Land Division receive additional comments, they will be forwarded to your office at that time.

Should you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 808-587-0438.

Very truly yours,

Charlene E. Unoki
for DIERDRE S. MAMIYA
Administrator

C: Oahu District Land Office

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O BOX 621
HONOLULU, HAWAII 96809

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

August 15, 2002

LD-NAV
HALAWABASEYARD.CMT

L-1064
Suspense Date: 9/3/02

MEMORANDUM:

TO:
XXX Division of Aquatic Resources
XXX Division of Forestry & Wildlife
XXX Division of State Parks
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
Land Division Branches:
XXX Planning and Technical Services
XXX Engineering Branch
XXX Oahu District Land Office

FROM: for Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment, Pre-Assessment Consultation, Collection Maintenance System Baseyard, Halawa Corporation Yard, Halawa, Aiea, Oahu, Hawaii

Please review the attached lette (summary) covering the subject matter and submit your written comment and recommendation (if any) on Division letterhead signed and dated on or before the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

( ) We have no comments. (X) Comments attached.

Date: 8/22/02 Signed: Eric T. Yuasa

DLNR-LAND DIVISION
ENGINEERING BRANCH

COMMENTS

For your information, the proposed project site, according to FEMA Community-Panel No. 15003C0245 E, is located in Zone X. This is an area determined to be outside the 500-year flood plain.

Should you have any questions, please call Eric Yuasa of the Project Planning Section at 587-0229.

Signed: Eric T. Yuasa
for ANDREW T. MONDEN, CHIEF ENGINEER

Date: 8/22/02

N:\WLD\MAKA\DENNIS\WORD\HalawaCorpYard_DEA_com_017.doc

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. BOX 621
HONOLULU, HAWAII 96809

August 15, 2002

LD-NAV
HALAWABASEYARD.CMT

L-1064
Suspense Date: 9/3/02

MEMORANDUM:

TO:
XXX Division of Aquatic Resources
XXX Division of Forestry & Wildlife
✓XXX Division of State Parks
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
Land Division Branches:
XXX Planning and Technical Services
XXX Engineering Branch
XXX Oahu District Land Office

FROM: for Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment, Pre-Assessment Consultation, Collection Maintenance System Baseyard, Halawa Corporation Yard, Halawa, Aiea, Oahu, Hawaii

Please review the attached lette (summary) covering the subject matter and submit your written comment and recommendation (if any) on Division letterhead signed and dated on or before the suspense date.

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If this office does not receive your comments by the suspense date, we will assume there are no comments.

(✓) We have no comments. ( ) Comments attached.

Date: 8/20/02 Signed:

TO:
ADMINISTRATOR
ASST ADMIN
DEV BR
PLAN BR
RES MGT BR
CLERICAL
ADMIN ASST
INTERP BR

FOR:
ORC/POST/STAFF RM
COMMENTS & REC
DRAFT REPLY
FILE
FOLLOW UP
INFO
RUN COPIES
SEE ME
FAX/SEND COPY TO

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. BOX 621
HONOLULU, HAWAII 96809

August 15, 2002

LD-NAV
HALAWABASEYARD.CMT

L-1064
Suspense Date: 9/3/02

MEMORANDUM:

TO:
✓XXX Division of Aquatic Resources
✓XXX Division of Forestry & Wildlife
XXX Division of State Parks
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
Land Division Branches:
XXX Planning and Technical Services
XXX Engineering Branch
XXX Oahu District Land Office

FROM: for Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment, Pre-Assessment Consultation, Collection Maintenance System Baseyard, Halawa Corporation Yard, Halawa, Aiea, Oahu, Hawaii

Please review the attached lette (summary) covering the subject matter and submit your written comment and recommendation (if any) on Division letterhead signed and dated on or before the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

(✓) We have no comments. ( ) Comments attached.

Date: 8/22/02 Signed:

DOFAW Administrator

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. BOX 621
HONOLULU, HAWAII 96809

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

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

August 15, 2002

LD-NAV
HALAWABASEYARD.CMT

L-1064
Suspense Date: 9/3/02

MEMORANDUM:

TO:
XXX Division of Aquatic Resources
XXX Division of Forestry & Wildlife
√XXX Division of State Parks
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
Land Division Branches:
XXX Planning and Technical Services
XXX Engineering Branch
XXX Oahu District Land Office

FROM: for Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: Draft Environmental Assessment, Pre-Assessment Consultation, Collection Maintenance System Baseyard, Halawa Corporation Yard, Halawa, Aiea, Oahu, Hawaii

Please review the attached lette (summary) covering the subject matter and submit your written comment and recommendation (if any) on Division letterhead signed and dated on or before the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384.

( ) We have no comments.

(X) Comments attached.

Date: _____

Signed:

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

GILBERT S. COLOMA-AGARAN
CHAIRPERSON

BRUCE S. ANDERSON
MEREDITH J. CHING
CLAYTON W. DELA CRUZ
BRIAN C. NISHIDA
HERBERT M. RICHARDS, JR

LINNEL T. NISHIOKA
DEPUTY DIRECTOR

August 26, 2002

Ref.halawabaseyard dr

TO: Ms. Dede Mamiya, Administrator
Land Division

FROM: Linnel T. Nishioka, Deputy Director
Commission on Water Resource Management (CWRM)

SUBJECT: Draft Environmental Assessment, Pre-Assessment Consultation, Collection Maintenance System Baseyard, Halawa Corporation Yard, Halawa, Aiea, Oahu, Hawaii

FILE NO.: HALAWABASEYARD.CMT

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

[X] We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.

[ ] We recommend coordination with the Land Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.

[ ] We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

[ ] A Well Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.

[ ] The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.

[ ] Groundwater withdrawals from this project may affect streamflows, which may require an instream flow standard amendment

[ ] We are concerned about the potential for degradation of instream uses from development on highly erodible slopes adjacent to streams within or near the project. We recommend that approvals for this project be conditioned upon a review by the corresponding county's Building Department and the developer's acceptance of any resulting requirements related to erosion control.

[ ] If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and amend the instream flow standard for the affected stream(s).

[ ] If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit

[X] OTHER:

We recommend that the DEA disclose the proposed water supply source and projected potable and non-potable water requirements for this project.

If there are any questions, please contact Lenore Nakama at 587-0218.

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

6635.01
9/6/02

cc: DLNR Via Fax
9/6/02

HAWAI'I HISTORIC PRESERVATION
DIVISION REVIEW

Log #: 30622
Doc #: 0208EJ07

Applicant/Agency:	John Sakaguchi, Senior Planner Wilson Okamoto & Associates, Inc.
Address:	1907 South Beretania, Suite 400 Honolulu, Hawaii 96826
SUBJECT:	Chapter 6E-8 Historic Preservation Review – Pre- Assessment Consultation Collection Maintenance System Baseyard, Halawa Corporation Yard, O'ahu
Ahupua'a:	Halawa
District, Island:	'Ewa, O'ahu
TMK:	(1) 9-9-073:027

1. We believe there are no historic properties present, because:

___ a) intensive cultivation has altered the land
✔ b) residential development/urbanization has altered the land
✔ c) previous grubbing/grading has altered the land
___ d) an acceptable archaeological assessment or inventory survey found no historic properties
✔ e) other:

2. This project has already gone through the historic preservation review process, and mitigation has been completed ___.

✔ Thus, we believe that "no historic properties will be affected" by this undertaking

Staff: Elaine Jourdane Date: 8/27/02

Title: Elaine Jourdane, Assistant Archaeologist O'ahu Phone (808) 692-8027

Post-it® Fax Note 7671	Date	# of pages ▶
To John Sakaguchi	From Jo	
Co./Dept.	Co.	
Phone #	Phone #	
Fax # 946-2253	Fax #	

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4414 • FAX: (808) 527-6743 • INTERNET: www.co.honolulu.hi.us

MT HARRIS
MAYOR

RANDALL K. FUJIKI, AIA
DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

6635-01 JS

RECEIVED
SEP 11 2002 9/12/02
WILSON OKAMOTO & ASSOC., INC.

2002/ELOG-2288 (RY)

September 9, 2002

CC: DDC, SSFM > VIA FAX 9/12/02

Mr. John L. Sakaguchi, AICP
Wilson Okamoto & Associates
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Sakaguchi:

Subject: Pre-Assessment Consultation for Wastewater Collection Maintenance System Baseyard, Halawa Corporation Yard
Tax Map Key 9-9-73: 27

We have reviewed your August 9, 2002 letter regarding the above matter and have the following comments:

1. Existing and Proposed Primary Urban Center Development Plan (PUC)

   a. Existing PUC

      An amendment of the existing Primary Urban Center Development Plan Public Facilities Map will not be required. The proposed 2.7-acre CMS baseyard is within the former Halawa bus maintenance facility, now called the Halawa Corporation Yard, which was approved by Ordinance 98-23. The original site for the proposed CMS baseyard was an adjacent parcel for which a Development Plan Public Facilities (DPPF) Map amendment was processed and adopted. The Development Plan Common Provisions indicate that the project boundaries depicted on the public facilities maps indicate approximate locations and shall be interpreted flexibly to allow reasonable implementation.

   b. Proposed PUC

      The project is consistent with the proposed PUC draft plan dated May 2002. The project will address proposed policies designed to support wastewater system improvements and maintenance to provide adequate wastewater collection service and facilities for the PUC.

2. Since the site is adjacent to Halawa Stream, the draft environmental assessment should disclose potential impacts and proposed mitigation measures.

3. The DEA should also include potential visual impacts and proposed mitigation measures.

Thank you for the opportunity to comment. If you have any questions, please contact Raymond Young of our staff at 527-5839.

Sincerely yours,

RANDALL K. FUJIKI, A.I.A.
Director of Planning and Permitting

RKF:lh
Doc 174868

WILSON
OKAMOTO
& ASSOCIATES, INC.

ENGINEERS
PLANNERS
1907 S. BERETANIA ST.
SUITE 400
HONOLULU, HI 96826
PH. (808)946-2277
FAX. (808)946-2253

6635-01
October 22, 2002

Mr. Randall K. Fujiki, Director
Department of Planning & Permitting
City and County of Honolulu
650 S. King Street, 7th Floor
Honolulu, Hawaii 96813

Subject: Draft Environmental Assessment, Pre-Assessment Consultation; Collection System Maintenance Baseyard, Halawa Corporation Yard Site
Halawa, Aiea, Oahu, Hawaii; Tax Map Key: 9-9-73: 27
Response to Comment

Dear Mr. Fujiki:

Thank you for your September 9, 2002 (2002/ELOG-228(RY)) comment letter on the Collection System Maintenance Baseyard project. Our responses follow:

1. The Draft Environmental Assessment (EA) will note that an amendment to the existing Primary Urban Center (PUC) Development Plan Public Facilities Map will not be required.

2. The Draft EA will indicate that the CSM Baseyard project is consistent with the proposed PUC draft plan dated May 2002.

3. The Draft EA will address mitigation measures incorporated in the project design to prevent potential adverse impacts to North Halawa Stream.

4. The Draft EA will note that the design of the CSM Baseyard building will be similar to the previously constructed buildings in the Halawa Corporation Yard Phase 1 area.

We appreciate your participation in Draft EA process. If you have any questions, please call me at 946.2277.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

cc: C. Lau, DDC

JEREMY HARRIS
MAYOR

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 3RD FLOOR • HONOLULU, HAWAII 96813
TELEPHONE (808) 523-4529 • FAX (808) 523-4730 • INTERNET www.co.honolulu.hi.us

CHERYL D. SOON
DIRECTOR

GEORGE "KEOKI" MIYAMOTO
DEPUTY DIRECTOR

JS
6635.01
9/12/02

September 9, 2002

TPD8/02-03199R

CC: DDC, SSFM > VIA FAX 9/12/02

Mr. John L. Sakaguchi, AICP
Wilson Okamoto & Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Sakaguchi:

Subject: Collection System Maintenance Baseyard

In response to your August 9, 2002 letter, we reviewed the project information provided and have the following comments:

1. The project information states that instead of the original 3.8-acre site, a 2.7-acre site within the former Halawa bus maintenance facility is presently proposed as the baseyard site. The draft environmental assessment (EA) should discuss how this reduction in area will affect the proposed activities or services provided by the baseyard.

2. According to the project information, a total of approximately 150 City employees will be assigned to the baseyard. All of the baseyard needs, including employee parking and parking for City-owned vehicles, should be accommodated on-site and off of the City's roadway right-of-way.

3. A traffic impact study should be conducted that addresses the project's impact on area intersections, including, but not limited to, Iwaena Street at Iwaiwa Street and Iwaiwa Street at Halawa Valley Street.

4. The project site map shows the makai end of the new baseyard site to be located near a horizontal curve on Iwaena Street. Any proposed driveway, for proper sight distance, should be located as far away from this curve as possible. The draft EA should describe the frontage improvements (e.g., left-turn sac, deceleration/acceleration lane, etc.), if any, planned for Iwaena Street fronting the project site.

We look forward to reviewing the draft environmental assessment upon its completion. Should you have any questions regarding this matter, please contact Faith Miyamoto of the Transportation Planning Division at 527-6976.

Sincerely,

CHERYL D. SOON
Director

WILSON
OKAMOTO
& ASSOCIATES, INC.
ENGINEERS
PLANNERS
1907 S. BERETANIA ST.
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HONOLULU, HI 96826
PH. (808)946-2277
FAX: (808)946-2253

6635-01
October 22, 2002

Ms. Cheryl D. Soon, Director
Department of Transportation Services
City and County of Honolulu
650 S. King Street, 3RD Floor
Honolulu, Hawaii 96813

Subject: Draft Environmental Assessment, Pre-Assessment Consultation;
Collection System Maintenance Baseyard, Halawa Corporation Yard Site
Halawa, Aiea, Oahu, Hawaii; Tax Map Key: 9-9-73: 27
Response to Comment

Dear Ms. Soon:

Thank you for your September 9, 2002 (TPD8/02-03199R)) comment letter on the Collection System Maintenance (CSM) Baseyard project. Our responses follow:

1. The Draft Environmental Assessment (EA) will note that the project site is sufficient to contain the facilities and spaces required for CSM to operate efficiently.

2. The Draft EA will indicate that parking for City-owned vehicles and equipment and CSM personnel will occur within the Baseyard or within the adjacent Halawa Corporation Yard.

3. The Draft EA will include a traffic study to address the project's effects on adjacent and nearby streets and intersections.

4. The Draft EA will include a site plan for the Baseyard. Access to the Baseyard will use the same driveways as the former Halawa Bus facility.

We appreciate your participation in Draft EA process. If you have any questions, please call me at 946.2277.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

cc: C. Lau, DDC

BENJAMIN J. CAYETANO
GOVERNOR

(00-3-01)
11/12/02

BRIAN K. MINAAI
DIRECTOR

DEPUTY DIRECTORS
JADINE Y. URASAKI
GLENN M. OKIMOTO

IN REPLY REFER TO:

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

HWY-PS
2.8538

NOV 7 2002

cc: DOC, V/A FAX
11/12/02

RECEIVED
NOV 8 2002
WILSON OKAMOTO & ASSOC., INC.

Mr. John L. Sakaguchi, AICP
Senior Planner
Wilson Okamoto & Associates
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Sakaguchi:

Subject: Draft Environmental Assessment, Pre-Assessment Consultation; Collection Maintenance System Baseyard, Halawa Corporation Yard, Halawa, Aiea, Oahu, Hawaii, TMK: 9-9-73: 27

Thank you for the opportunity to review the subject summary sheet and location map.

We have the following comments:

1. Any impacts to Halawa Stream must be disclosed;

2. A site plan should show the topography of the site and the location of the proposed building and parking area in relation to Halawa Stream; and

3. We would like to review the Draft Environmental Assessment.

If you have any questions, please contact Ronald Tsuzuki, Head Planning Engineer, Highways Division, at 587-1830.

Very truly yours,

BRIAN K. MINAAI
Director of Transportation

APPENDIX E

6635.01 JS

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FORT SHAFTER, HAWAII 96858-5440

REPLY TO ATTENTION OF:

November 14, 2002

Regulatory Branch

cc: DOC, VIA Fax 11/14/02

RECEIVED

WILSON OKAMOTO & ASSOC., INC.

Mr. John L. Sakaguchi, AICP
Wilson Okamoto & Associates, Inc.
1907 S. Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Sakaguchi:

This letter responds to your request for comments on the draft Environmental Assessment (EA) for the City and County of Honolulu, Department of Environmental Services Collection System Maintenance Baseyard, Halawa Corporation Yard, dated November 8, 2002. Based on the information you provided I have determined that the project will not affect Halawa Stream or other waters of the United States including wetlands and therefore a Department of the Army (DA) permit will not be required for the project.

If you have any questions concerning this determination, please contact William Lennan of my staff at 438-6986 or FAX 438-4060, and reference File No. 200300142.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

6635.01 JS

United States Department of the Interior

U.S. GEOLOGICAL SURVEY
WATER RESOURCES
677 Ala Moana Blvd., Suite 415
Honolulu, HI 96813
Phone: (808) 587-2400/Fax: (808) 587-2401

cc: DOC, V.A Fax 11/14/02

November 14, 2002

RECEIVED
NOV 18 2002
WILSON OKAMOTO & ASSOC., INC.

Mr. John L. Sakaguchi, AICP
Senior Planner
Wilson Okamoto & Associates, Inc.
Engineers Planners
1907 S. Beretania St., Suite 400
Honolulu, Hawaii 96826

Dear Mr. Sakaguchi:

Subject: Draft Environmental Assessment, Collection System Maintenance Baseyard, Halawa Corporation Yard, Aiea, Oahu, Hawaii; Tax Map Key: 9-9-73: 27

Thank you for forwarding the subject Draft Environment Assessment for review and comment by the staff of the U.S. Geological Survey, Water Resources Discipline, Hawaii District office. We regret however, that due to prior commitments and lack of available staff, we are unable to review this document and are returning it for your future use.

We appreciate the opportunity to participate in the review process.

Sincerely,

Gordon Tribble
District Chief

Enclosure

NJAMIN J. CAYETANO
GOVERNOR

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

MARY ALICE EVANS
COMPTROLLER

DEAN H. SEKI
ACTING DEPUTY COMPTROLLER

LETTER NO. PWD02.P557

635-01 JS

cc: DDC, VIA FAX
11/14/02

NOV 15 2002

WILSON OKAMOTO & ASSOC., INC.

Mr. John L. Sakaguchi, Senior Planner
Wilson Okamoto & Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Sakaguchi:

Subject: Draft Environmental Assessment, Collection System Maintenance Baseyard, Halawa Corporation Yard, Aiea, Oahu, Hawaii
TMK (1) 9-9-73:27

Thank you for the opportunity to comment on the subject project's environmental issues pursuant the Draft Environmental Assessment (DEA). The project does not directly impact any of the Department of Accounting and General Services' projects or existing facilities. Therefore, we have no comments to offer.

If there are any questions regarding the above, please have your staff call Mr. Bruce Bennett of the Planning Branch at 586-0491.

Sincerely,

HAROLD SONOMURA
Acting Public Works Administrator

BB:jo
c: Ms. Genevieve Salmonson, OEQC
Mr. Clifford Lau, City and County of Honolulu, Department of Design and Construction

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

635-01

BENJAMIN J. CAYETAN
Gover
SELI F. NA
Direc
SHARON S. NARIMAT
Deputy Direc
DAVID W. BLA
Director, Office of Planni

12/5/02

Energy, Resources & Technology Division
235 South Beretania Street, Leiopapa A Kamehameha Bldg., 5th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, HI 96804-2359
Web site: www.hawaii.gov/dbedt/ert

Telephone: (808) 587-3
FAX: (808) 587-3

November 27, 2002

cc: DDC
SSFM
VIA FAX
12/5/02

RECEIVED
DEC 04 2002
WILSON OKAMOTO & ASSOC., INC.

John L. Sakaguchi, AICP
Senior Planner
Wilson Okamoto & Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Subject: Draft Environmental Assessment,
Collection System Maintenance Baseyard,
Halawa Corporation Yard, Aiea, Oahu, Hawaii
Tax Map Key: 9-9-73:27

Dear Mr. Sakaguchi:

Thank you for the opportunity to comment on the Draft Environmental Assessment for the Collection System Maintenance Baseyard, Halawa Corporation Yard. Our comments are addressed to: 1) State energy conservation goals, 2) Energy saving design practices and technologies, 3) Recycling and recycled-content products, and 4) Access.

1) Energy conservation goals. Project buildings, activities, and site grounds should be designed with energy saving considerations. The mandate for such consideration is found in Chapter 344, HRS ("State Environmental Policy") and Chapter 226 ("Hawaii State Planning Act"). In particular, we would like to call to your attention HRS 226 18(c)(4) which includes a State objective of promoting all cost-effective energy conservation through adoption of energy-efficient practices and technologies.

We suggest that you contact Hawaiian Electric Co., which may offer demand-side management rebates and design review for energy efficient technologies. We would also refer you to the Model Energy Code for minimum requirements.

2) Energy saving design practices and technologies. In this project, we recommend that you specifically address energy efficient design practices and technologies similar to those used in the "Built Green" energy efficient home in Waianae on Oahu. We note that there are several air-conditioning units in the plans. We recommend proper orientation of the building, appropriate overhangs, ventilation, and insulation to eliminate the need for air-conditioning in this facility.

Methods and technologies that could be considered during the design phase of the project include:

a. Use of site shading, orientation, and use of naturally ventilated areas to reduce cooling load;
b. Maximum use of day lighting;
c. Use of high efficiency compact fluorescent lighting;
d. Exceed Model Energy Code requirements;
e. Technologies such as solar water heating systems, roof insulation, radiant barriers, and energy efficient windows
f. Use of light color or "green" roofs;
g. Use of landscaping for dust control and to minimize heat gain to area; and
h. Use of photovoltaics or other renewable energy sources should they prove cost effective.

3) Recycling and recycled-content products.

a. Develop a job-site recycling plan for the construction phase of the project and recycle as much construction and demolition waste as possible;
b. Incorporate provisions for recycling into the built project – a collection system and space for bins for recyclables;
c. Specify and use products with recycled-content such as: steel, concrete, aggregate fill, drywall, carpet, and glass tile; and
d. Specify and use locally produced products such as plastic lumber, hydromulch, soil amendment and glass tile.

Please refer to the attached *Guidelines for Sustainable Building Design In Hawaii: A planner's checklist* and *A Contractor's Waste Management Guide"* for additional information.

Sincerely,

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

Enclosures
c: OEQC

WILSON
OKAMOTO
& ASSOCIATES, INC

ENGINEERS
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PH: (808) 946-2277
FAX: (808) 946-2253

6635-01
December 13, 2002

Mr. Maurice H. Kaya, Energy, Resources, and Technology Program Administrator
Energy, Resources, and Technology Division
Department of Business, Economic Development & Tourism
State of Hawaii
P.O. Box 2359
Honolulu, Hawaii 96804-2359

Subject: Draft Environmental Assessment (EA), Collection System Maintenance Baseyard, Halawa Corporation Yard, Aiea, Oahu, Hawaii; Tax Map Key: 9-9-73: 27
Response to Comment

Dear: Mr. Kaya:

Thank you for your November 27, 2002 comment letter on the Draft EA for the Collection System Maintenance (CSM) Baseyard project. Our responses follow:

1. The City generally directs its design teams to use technologies which include energy conservation. The CSM facilities have been designed to incorporate such features, where possible.

2. The CSM facility has been designed to incorporate energy conservation into the lighting fixtures, the air conditioning system, and the hot water heating system.

3. It should be noted that, the City and County of Honolulu has instituted a recycling program for a range of materials, and that the program is applicable to all its facilities, including the CSM Baseayrd.

Thank you for your participation in the review of the Draft EA.

If you have any questions, please call me at 808.946.2277.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

cc: C. Lau, DDC
D. Uchida, SSFM

6635-01 JS

LINDA LINGLE
GOVERNOR OF HAWAII

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

RECEIVED
DEC 12 2002
WILSON OKAMOTO & ASSOC., INC.

LORETTA J. FUDDY, A.C.S.W., M.P.H.
ACTING DIRECTOR OF HEALTH

12/13/02

In reply, please refer to File:

02-289/epo

December 11, 2002

CC: DDC, SSFM > VIA FAX

Mr. John L. Sakaguchi, AICP, Senior Planner
Wilson Okamoto & Associates, Inc.
1907 S. Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Sakaguchi:

Subject: Draft Environmental Assessment (DEA)
Collection System Maintenance Baseyard
Halawa Corporation Yard, Aiea, Oahu
Tax Map Key: 9-9-073:027

Thank you for the opportunity to review and comment on the subject proposal. The DEA was routed to the various branches of the Environmental Health Administration. We have the following comments:

Clean Water Branch (CWB)

1. The applicant should contact the Army Corps of Engineers to identify whether a federal permit (including a Department of Army permit) is required for this project. A Section 401 Water Quality Certification is required for "Any applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters...", pursuant to Section 401(a)(1) of the Federal Water Pollution Act (commonly known as the "Clean Water Act");

2. A National Pollutant Discharge Elimination System (NPDES) general permit coverage is required for the following discharges to waters of the State:

   a. Discharge of storm water runoff associated with industrial activities, as define in Title 40, Code of Federal Regulations, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi);

   b. Discharge of storm water runoff associated with construction activities that involve the disturbance of five (5) acres or greater, including clearing, grading, and excavation;

   c. Discharge of treated effluent from leaking underground storage tank remedial activities;

   d. Discharge of once through cooling water less than one million gallons per day;

   e. Discharge of hydro-testing water;

   f. Discharge of construction dewatering effluent;

   g. Discharge of treated effluent from petroleum bulk stations and terminals; and

   h. Discharge of treated effluent from well drilling activities.

   Any person requesting to be covered by a NPDES general permit for any of the above activities should file a Notice of Intent with the Department of Health, Clean Water Branch (CWB) at least thirty (30) days prior to commencement of any discharges to State waters.

3. If construction activities involve the disturbance of one acre or greater, including clearing, grading, and excavation, and will take place or extend after March 10, 2003, an NPDES general permit coverage is required for discharges of storm water runoff into State waters; and

4. The applicant may be required to apply for an individual NPDES permit if there is any type of activity in which wastewater is discharged from the project into State waters.

If you have any questions, please contact the Clean Water Branch at (808) 586-4309.

Clean Air Branch (CAB)

Control of Fugitive Dust

There is a significant potential for fugitive dust emissions during all phases of construction. Proposed construction activities will occur in proximity to existing business establishments and major thoroughfares, thereby exacerbating potential dust problems. It is recommended that a dust control management plan be developed which identifies and addresses all activities that have a potential to generate fugitive dust. Implementation of adequate dust control measures during all phases of development and construction activities is warranted.

Construction activities must comply with the provisions of Hawaii Administrative Rules, §11-60.1-33 on Fugitive Dust.

The contractor should provide adequate measures to control dust from the road areas and during the various phases of construction. These measures include, but are not limited to, the following:

a) Plan 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) Provide an adequate water source at the site prior to start-up of construction activities;
c) Landscape and provide rapid covering of bare areas, including slopes, starting from the initial grading phase;
d) Minimize dust from shoulders and access roads;
e) Provide adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
f) Control dust from debris being hauled away from the project site.

If you have any questions, please contact Barry Ching at (808) 586-4200.

Solid and Hazardous Waste Branch (SHWB)

If the City and County Honolulu Department of Environmental Services Collection System Maintenance Division plans to install underground storage tanks (USTs) as part of the construction of the new baseyard, they will be subject to state UST requirements. The state UST rules, Chapter 11-281, entitled "Underground Storage Tanks" became effective January 28, 2000. A permit is now required from the Underground Storage Tank Section for the installation and operation of new USTs. Also, permits must be obtained from the applicable building and fire safety authorities before installation of any USTs.

The Solid and Hazardous Waste Branch, Underground Storage Tank Section does not have records of USTs on the proposed site of the Halawa Corporation Yard. However, we have a file (Facility ID No. 9-200151) showing twelve (12) USTs currently in use and two (2) USTs permanently out of use at the OTS Halawa Bus facility, located at 99-999 Iwaena Street, Aiea, Hawaii. For additional information, please contact Mr. Jack Richardson at (808) 586-4226.

The Underground Storage Tank/Leaking Underground Storage Tank database for Hawaii is available on the Internet at http://www.state.hi.us/health/eh/shwb, and on a 3.5" floppy disk in Microsoft Excel format. These allow for searches by street address, facility name, city, etc. This version is also available through e-mail.

To order either the disk for $3.00 or the e-mail version free of charge, please submit a *Request to Access a Government Record* form specifying: **UST/LUST database on 3.5" disk (or e-mail)**, and attention it to the UST Section. The latest copy of the RCRA List can also be obtained by calling our office.

If you have any questions, please contact Greg Olmsted at (808) 586-4226.

Hazard Evaluation and Emergency Response (HEER) Office

All removal and remedial actions to clean up hazardous substance or oil sills by past and present tenants must comply with HRS, Chapter 128D, Environmental Response Law, and HAR, Title 11, Chapter 451, State Contingency Plan.

If you have any questions, contact HEER Office at (808) 586-4347.

Noise, Radiation and Indoor Air Quality (NRIAQ) Branch

All project activities shall comply with the Administrative Rules of the Department of Health, Chapter 11-46, on "Community Noise Control".

If you have any questions, please contact the NRIAQ at (808) 586-4701.

Environmental Planning Office (EPO)

This project is located in the Halawa Stream/Pearl Harbor watershed. Halawa Stream is currently listed under section 303(d) of the Clean Water Act as being impaired by nutrients and turbidity. Pearl Harbor is similarly listed for nutrients, turbidity, and suspended solids. The impaired status of these waters requires that the Department of Health establish Total Maximum Daily Loads (TMDLs) suggesting how much the existing pollutant loads should be reduced in order to attain water quality standards in the stream and coastal waters.

Although these TMDLs are yet to be established and implemented, a first step in achieving TMDL objectives would be to prevent any project-related increases in pollutant loads. The proposed project would address this by placing a storm drain filter system within the new grated inlets and existing catch basins. We suggest that the filter system also include the existing drainage inlet located near the center of the project site (Draft Environmental Assessment, p. 1-20.) and that vegetated buffers be established between paved areas of the project and the stream (Draft Environmental Assessment, Appendix A, p. 11). In addition, note that the results of the biological reconnaissance survey conducted for this project (Draft Environmental Assessment, Appendix A) suggest that North Halawa Stream in the vicinity of the project area may be a good candidate for restoration of stream habitat and ecological function.

A TMDL technical study of water quality in Halawa Stream is underway. When TMDLs are established for Halawa Stream, the State will establish pollutant load allocations for the lands surrounding the stream and an implementation plan to improve its water quality. One of the components of this implementation plan will be to reduce the polluted runoff entering the stream under the City's NPDES storm water permit, and we suggest that a new Collection System Maintenance Baseyard drainage system include additional practices for reducing any pollutant loads carried by runoff from the site.

We encourage the Department of Design and Construction and Department of Environmental Services to continue participating in the TMDL process and suggest that they consult with the Department of Health Clean Water Branch (Engineering Section) to discuss how water pollution control permitting may be linked with TMDL implementation.

If you have any questions, please contact David Penn at (808) 586-4337.

Sincerely,

June F. Harrigan-Lum

JUNE F. HARRIGAN-LUM, MANAGER
Environmental Planning Office

c: CWB
CAB
SHWB
HEER
NRIAQ
EPO

6635-01
January 14, 2003

WILSON
OKAMOTO
CORPORATION

ENGINEERS
PLANNERS
1907 S. BERETANIA ST
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HONOLULU, HI 96826
PH (808)946-2277
FAX (808)946-2253

Ms. June F. Harrigan-Lum, Manager,
Environmental Planning Office
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801-3378

Subject: Draft Environmental Assessment (EA), Collection System Maintenance Baseyard, Halawa Corporation Yard,
Aiea, Oahu, Hawaii; Tax Map Key: 9-9-73: 27
Response to Comment

Dear: Ms. Harrigan-Lum:

Thank you for your December 11, 2002 comment letter (02-289/epo) on the Draft EA for the Collection System Maintenance (CSM) Baseyard project. Our responses follow:

Clean Water Branch (CWB)

1. The Department of the Army Corps of Engineers was included in the distribution list for the Draft EA.

2. A National Pollutant Discharge Elimination System (NPDES) general permit will be submitted to the CWB, as appropriate.

3. See 2, above.

4. The Final EA will note that wastewater will not be discharged into North Halawa Stream (State waters).

Clean Air Branch (CAB)

Section 2.7.2 of the Draft EA stated construction activities must comply with the provisions of Chapter 11-60.1, Hawaii Administrative Rules, and with respect to fugitive dust, Section 11-60.1-33. In addition, the Final EA will note that the entire project site is approximately 2.1 and the limits of grading will be about ± 1.5 acres. In addition, the Final EA will state the City and County of Honolulu contract specifications include a standard Environmental Controls section with specific reference to Chapter 11-60.

Under air pollution control, the Environmental Controls specifications include the provision that the contractor must maintain the areas within and without the project limits free from dust which would cause hazards to the work and to other persons or property. The specifications also stated the contractor will be permitted to use accepted methods for dust control such as enclosure and filtering.

Solid and Hazardous Waste Branch (SHWB)

The Final EA will note that installation of underground storage tanks (UST's) is not part of the CSM Baseyard project.

The Draft EA stated the City will be undertaking a project to remediate the area in the Halawa Corporation Yard Phase 2 site which showed the presence of total petroleum hydrocarbons (THP) as gasoline, THP as diesel, THP as oil, benzene, toluene, ethylbenzene, and xylenes (BETX) polynuclear aromatic hydrocarbons, and total lead. The Final EA will note that there are twelve UST's on the Halawa Corporation Yard Phase 2 site and that these UST's will be removed as part of the Phase 2 construction.

Hazard Evaluation and Emergency Response (HEER) Office

The Draft EA stated the soil borings did not detect the presence of petroleum products.

Noise, Radiation, and Indoor Air Quality (NRIAQ) Branch

The Final EA will note that the zoning for project site is Intensive Industrial (I-2) which, according to the Hawaii Administrative Rules Chapter 11-46, is a Class C district and permits sound levels of 70 dBA.

Environmental Planning Office (EPO)

The Final EA will be revised to include the information that Halawa Stream is currently listed under Section 303(d) of the Clean Water Act as being impaired by nutrients and turbidity. The Final EA will also stated the impaired status of the Halawa Stream and Pearl Harbor require that the State of Hawaii Department of Health establish Total Maximum Daily Loads (TMDLs) to suggest how much the existing pollutant loads should be reduced to attain water quality standards in the stream and coastal waters.

The Draft EA stated the storm drain filter system will be placed in the new grated inlets and the existing inlets on the CSM Basyard project site. The Draft EA stated, a storm drain filter system will be placed within the new grated inlets and in the existing inlets to collect sediments, oil and grease in the runoff. The storm drain lines will outlet the flow to the existing stream outlets in North Halawa Stream, which will not be notified or improved. Thus, construction of the storm drain filter system will improve the quality of the runoff discharge to North Halawa Stream, when compared to the existing system.

The Draft EA stated the entire CSM Baseyard project site has been paved since the late 1970's when the bus repair and maintenance facility was constructed. Construction of a vegetated buffer within the project site would not be feasible.

Thank you for your participation in the review of the Draft EA.

If you have any questions, please call me at 808.946.2277.

Sincerely,

John L. Sakaguchi, AICP

JS/ry

cc: C. Lau, DDC
D. Uchida, SSFM

(63601) 12/20/02 JS

LINDA LINGLE
GOVERNOR

GILBERT S. COLOMA-AGARAN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

LINNEL T. NISHIOKA
DEPUTY DIRECTOR FOR
THE COMMISSION ON WATER
RESOURCE MANAGEMENT

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. Box 621
HONOLULU, HAWAII 96809

RECEIVED
DEC 19 2002
WILSON OKAMOTO & ASSOC., INC.

cc: DPC, 12/20/02 VIA FAX

December 18, 2002
HALAWABASEYARDDEA.RCM
NAV-LD L-3682/3806/43864

John L. Sakaguchi, AICP
Wilson Okamoto & Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826-1880

Dear Mr. Sakaguchi:

SUBJECT: Draft Environmental Assessment (DEA) - Collective System Maintenance Baseyard - Halawa Corporation Yard, Halawa, Aiea, Island of Oahu, Hawaii - TMK: 1st/ 9-9-073: 027

Thank you for the opportunity to review and comment on the Draft Environmental Assessment covering the subject matter.

A copy of the DEA was distributed or made available to the following Department of Land and Natural Resources' Divisions for their review and comment:

- Division of Forestry and Wildlife
- Division of State Parks
- Engineering Division
- Commission on Water Resource Management
- Land Division Oahu District Land Office

Attached herewith is a copy of the Commission on Water Resource Management and Engineering Division comments.

The Department of Land and Natural Resources has no other comment to offer on the subject matter.

Should you have any questions, please contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 587-0384.

Very truly yours,

for DIERDRE S. MAMIYA
Administrator

C: ODLO

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

GILBERT S. COLOMA-AGARAN
CHAIRPERSON

BRUCE S. ANDERSON
MEREDITH J. CHING
CLAYTON W. DELA CRUZ
BRIAN C. NISHIDA
HERBERT M. RICHARDS, JR.

LINNEL T. NISHIOKA
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

November 19, 2002

COPY

Ref.csm baseyard dr

Mr. John L. Sakaguchi, AICP
Wilson Okamoto & Associates, Inc.
1907 S. Beretania St., Ste. 400
Honolulu, HI 96826

Dear Mr. Sakaguchi:

SUBJECT: Draft Environmental Assessment, Collection System Maintenance Baseyard, Halawa Corporation Yard, Aiea, Oahu, Hawaii; Tax Map Key: 9-9-73:27

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

[X] We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.

[ ] We recommend coordination with the Land Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.

[ ] We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

[ ] A Well Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.

[ ] The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.

[ ] Groundwater withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.

[ ] We are concerned about the potential for degradation of instream uses from development on highly erodible slopes adjacent to streams within or near the project. We recommend that approvals for this project be conditioned upon a review by the corresponding county's Building Department and the developer's acceptance of any resulting requirements related to erosion control.

[ ] If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and amend the instream flow standard for the affected stream(s).

[X] If the proposed project alters the bed and banks of a stream channel, the project may require a stream channel alteration permit.

[ ] OTHER:

If there are any questions, please contact Lenore Nakama at 587-0218.

Sincerely,

LINNEL T. NISHIOKA
Deputy Director

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P.O. BOX 621
HONOLULU, HAWAII 96809

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

December 3, 2002

LD-NAV
HALAWABASEYARDDEA.CMT

Suspense Date: 12/13/02

MEMORANDUM:

TO:
- / Division of Aquatic Resources
- XXX Division of Forestry & Wildlife
- XXX Division of State Parks
- XXX Engineering Division
- Division of Boating and Ocean Recreation
- XXX Commission on Water Resource Management
- Land Division:
- Planning and Technical Services
- XXX Oahu District Land Office

FROM: Charlene E. Unoki, Acting Assistant Administrator
Land Division

SUBJECT: Draft Environmental Assessment - Collective System Maintenance Baseyard - Halawa Corporation Yard, Halawa, Aiea, Island of Oahu, Hawaii- TMK: 1st/ 9-9-073: 027

Please review the attached Draft Environmental Assessment covering the subject matter and submit your written comment and recommendation (if any) on Division letterhead signed and dated on or before the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

(X) We have no comments.

( ) Comments attached.

Date: _____

Signed: Paul J. Conry

MICHAEL G. BUCK, ADMINISTRATOR
DIVISION OF FORESTRY AND WILDLIFE
DEC 11 .

RECEIVED
02 DEC 4 P1:35
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P.O. BOX 621
HONOLULU, HAWAII 96809

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

December 3, 2002

LD-NAV
HALAWABASEYARDDEA.CMT

Suspense Date: 12/13/02

MEMORANDUM:

TO:
- Division of Aquatic Resources
- XXX Division of Forestry & Wildlife
- XXX Division of State Parks
- XXX Engineering Division
- Division of Boating and Ocean Recreation
- XXX Commission on Water Resource Management
- Land Division:
- Planning and Technical Services
- XXX Oahu District Land Office

FROM: Charlene E. Unoki, Acting Assistant Administrator
Land Division

SUBJECT: Draft Environmental Assessment - Collective System Maintenance Baseyard - Halawa Corporation Yard, Halawa, Aiea, Island of Oahu, Hawaii- TMK: 1st/ 9-9-073: 027

Please review the attached Draft Environmental Assessment covering the subject matter and submit your written comment and recommendation (if any) on Division letterhead signed and dated on or before the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

( ) We have no comments.

( ) Comments attached.

Date: _____

Signed: _____

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P.O. BOX 621
HONOLULU, HAWAII 96809

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

December 3, 2002

LD-NAV
HALAWABASEYARDDEA.CMT Suspense Date: 12/13/02

MEMORANDUM:

TO:
- Division of Aquatic Resources
- XXX Division of Forestry & Wildlife
- XXX Division of State Parks
- XXX Engineering Division
- Division of Boating and Ocean Recreation
- XXX Commission on Water Resource Management
- Land Division:
- Planning and Technical Services
- XXX Oahu District Land Office

FROM: Charlene E. Unoki, Acting Assistant Administrator
Land Division

SUBJECT: Draft Environmental Assessment - Collective System Maintenance Baseyard - Halawa Corporation Yard, Halawa, Aiea, Island of Oahu, Hawaii- TMK: 1st/ 9-9-073: 027

Please review the attached Draft Environmental Assessment covering the subject matter and submit your written comment and recommendation (if any) on Division letterhead signed and dated on or before the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

( ) We have no comments. (X) Comments attached.

Date:_____ Signed:

DEPARTMENT OF LAND AND NATURAL RESOURCES
Engineering Division

COMMENTS

We confirm that the southern-eastern boundary of the proposed project site, according to FEMA Community-Panel No. 15003C0245 E, is located in Zone AE. Zone AE is an area within the 100-year flood plain, with base flood elevations determined.

We also confirm that the remainder of the project area is located in Zone X. This is an area determined to be outside the 500-year flood plain.

Please note that any future development on the subject property must comply with rules and regulations of the National Flood Insurance Program (NFIP), whenever work is required within a flood zone. If there are any questions regarding the NFIP, please contact the State NFIP Coordinator, Sterling Yong, of the Department of Land and Natural Resources at 587-0248. If there are questions regarding flood ordinances, the applicable County representative should be contacted.

Should you have any questions, please call Mr. Andrew Monden of the Planning Branch at 587-0229.

Signed:
ERIC T. HIRANO, CHIEF ENGINEER

Date: 12/4/02

N:\WLD\MAKAI\DENNIS\WORD\Aiea_HalawaC&CCSMDivByd_DEA_com_032.doc

LINDA LINGLE
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. Box 621
HONOLULU, HAWAII 96809

January 9, 2003

HALAWABASEYARDDEA.RCM2

John L. Sakaguchi, AICP
Wilson Okamoto & Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826-1880

Dear Mr. Sakaguchi:

SUBJECT: Draft Environmental Assessment (DEA) - Collective System Maintenance Baseyard - Halawa Corporation Yard, Halawa, Aiea, Island of Oahu, Hawaii - TMK: 1st/ 9-9-073: 027

This is a follow-up to our letter to you dated December 18, 2002 (Ref.: HALAWABASEYARDEA.RCM), pertaining to the subject matter.

Attached herewith is a copy of the Oahu District Land Office response.

The Department of Land and Natural Resources has no other comment to offer on the subject matter.

Should you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at (808) 587-0384.

Very truly yours,

Charlene E. Unoki

DIERDRE S. MAMIYA
Administrator

C: ODLO

6435-01 JS

1/14/03

ERIC T. HIRANO
ACTING CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEAN A. NAKANO
ACTING DEPUTY DIRECTOR FOR
THE COMMISSION ON WATER
RESOURCE MANAGEMENT

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

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JAN 10 2003
WILSON OKAMOTO CORPORATION

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P.O. BOX 621
HONOLULU, HAWAII 96809

December 3, 2002

AQUACULTURE DEVELOPMENT PROGRAM
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CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND DIVISION
STATE PARKS
WATER RESOURCE MANAGEMENT

LD-NAV
HALAWABASEYARDDEA.CMT

Suspense Date: 12/13/02

MEMORANDUM:

~~TO:~~
Division of Aquatic Resources
XXX Division of Forestry & Wildlife
XXX Division of State Parks
XXX Engineering Division
Division of Boating and Ocean Recreation
XXX Commission on Water Resource Management
Land Division:
Planning and Technical Services
XXX Oahu District Land Office

~~FROM:~~ Charlene E. Unoki, Acting ~~Assistant~~ Administrator
Land Division

SUBJECT: Draft Environmental Assessment - Collective System Maintenance Baseyard - Halawa Corporation Yard, Halawa, Aiea, Island of Oahu, Hawaii- TMK: 1st/ 9-9-073: 027

Please review the attached Draft Environmental Assessment covering the subject matter and submit your written comment and recommendation (if any) on Division letterhead signed and dated on or before the suspense date.

Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0384.

If this office does not receive your comments by the suspense date, we will assume there are no comments.

(X) We have no comments. ( ) Comments attached.

Date: 12/16/02

Signed: for

6635-01
January 3, 2003

NILSON
KAMOTO
RPORATION

NGINEERS
'LANNERS
S BERETANIA ST.
SUITE 400
OLULU, HI 96826
I. (808)946-2277
< (808)946-2253

Mr. Eric T. Hirano, Chief Engineer
Engineering Division
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Subject: Draft Environmental Assessment (EA), Collection System Maintenance Baseyard, Halawa Corporation Yard,
Aiea, Oahu, Hawaii; Tax Map Key: 9-9-73: 27
Response to Comment

Dear Mr. Hirano:

Thank you for your December 12, 2002 comment letter on the Draft EA for the Collection System Maintenance (CSM) Baseyard project. Our responses follow:

1. The CSM project site will be located above the top of bank of North Halawa Stream. The top of bank elevation is at approximately 121.32±near the CSM maintenance building which will have a finished floor elevation of 125.67. Although it is difficult to tell with certainty, the FEMA map appears to show Zone AE to be confined to the channel of North Halawa Stream. The FEA will be revised to reflect this information.

Thank you for your participation in the review of the Draft EA.

If you have any questions, please call me at 808.946.2277.

Sincerely,

John L. Sakaguchi, AICP

cc: C. Lau, DDC
D. Uchida, SSFM

6635-01
January 3, 2003

WILSON
OKAMOTO
CORPORATION

ENGINEERS
PLANNERS
1907 S BERETANIA ST
SUITE 400
HONOLULU, HI 96826
PH (808)946-2277
FAX: (808)946-2253

Ms. Linnel T. Nishioka, Deputy Director
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Subject: Draft Environmental Assessment (EA), Collection System Maintenance Baseyard, Halawa Corporation Yard,
Aiea, Oahu, Hawaii; Tax Map Key: 9-9-73: 27
Response to Comment

Dear Ms. Nishioka:

Thank you for your November 19, 2002 comment letter (csm baseyard.dr) on the Draft EA for the Collection System Maintenance (CSM) Baseyard project. Our responses follow:

1. The City and County of Honolulu Board of Water Supply (BWS) has been included in the review of the Draft EA. The existing BWS system has the capacity to meet the water supply and fire flow requirements of the CSM Baseyard project.

2. The design plans for the CSM drainage system show use the existing outlets into North Halawa Stream, without modifications. A stream channel alteration permit will not be included in the project.

Thank you for your participation in the review of the Draft EA.

If you have any questions, please call me at 808.946.2277.

Sincerely,

John L. Sakaguchi, AICP

cc: C. Lau, DDC
D. Uchida, SSFM

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

GILBERT S. COLOMA-AGARAN, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCES MANAGEMENT

DEPUTIES
ERIC T. HIRANO
LINNEL NISHIOKA

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

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

RECEIVED
NOV 25 2002
WILSON OKAMOTO & ASSOC. INC.

November 19, 2002

John L. Sakaguchi
Senior Planner
Wilson Okamoto & Associates, Inc.
1907 S. Beretania Street, Suite 400
Honolulu, Hawaii 96825

LOG NO: 31133
DOC NO: 0211EJ05

Dear Mr. Sakaguchi:

SUBJECT: Chapter 6E-8 Historic Preservation Review - Draft Environmental Assessment for the Collection System Maintenance Baseyard, Halawa Corporation Yard
Halawa, `Ewa, O`ahu
TMK: (1) 9-9-073:027

The DEA correctly incorporates our comments that we believe this project will have "no effect" on significant historic sites. Our complete comments are included in Appendix C of the DEA.

Should you have any questions, please feel free to call Sara Collins at 692-8026 or Elaine Jourdane at 692-8027.

Aloha,

Don Hibbard, Administrator
State Historic Preservation Division

EJ:jk

c: Glenn Kimura, Kimura International, Inc., 1600 Kapiolani Boulevard, Suite 1610, Honolulu, HI 96814
OEQC

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

GLENN M. OKIMOTO
DEPUTY DIRECTOR

IN REPLY REFER TO
HWY-PS
2.8894

DEC 16 2002

Mr. John L. Sakaguchi, AICP
Senior Planner
Wilson Okamoto & Associates, Inc.
1907 S. Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Sakaguchi:

Subject: Draft Environmental Assessment, Collection System Maintenance Baseyard, Halawa Corporation Yard, Aiea, Oahu, Hawaii, TMK: 9-9-73:27

Thank you for the opportunity to review the subject draft. We have the following comments:

1. Pages 1–20 should include a description of how the City will address environmental issues and provide Best Management Practices (BMP) as they relate to the MS4 permit.

2. An oil separator should be considered in addition to the storm drain filter system within the new grated inlets and existing catch basins.

3. Sections 2-4 should address whether or not all storm water runoff will go through the filter system before entering Halawa Stream.

4. The Traffic Impact Report should be revised as follows and submitted for our review:

   a. Raw traffic count data should be provided.

   b. On page 8, figure 5, the intersection of Ulune Street Extension with Halawa Valley Street is shown with 230 vehicles making westbound left-turns to the freeway during the p.m. peak hour. This figure should be verified because left turns are prohibited on weekdays from 3:30 p.m. to 6:00 p.m.

   c. On page 9, paragraph d, in the third sentence, "mauka bound approaches" should be changed to "makai bound approaches."

d. In addition to LOS results, general observations regarding traffic flows or conflicts should be included.

e. Information on whether the peak period extends beyond one hour and on peak spreading should be included.

f. On page 18, figure 8, the adequacy of storage lane length on the Ulune Street Extension should be checked to ensure that the additional left turn traffic into Halawa Valley Street can be accommodated.

5. The applicant should be required to provide roadway mitigation measures recommended in the revised Traffic Impact Report at no cost to the State.

If you have any questions, please contact Ronald Tsuzuki, Head Planning Engineer, Highways Division, at 587-1830.

Very truly yours,

GLENN M. OKIMOTO
Interim Director of Transportation

WILSON
OKAMOTO
CORPORATION

ENGINEERS
PLANNERS
1907 S BERETANIA ST
SUITE 400
HONOLULU, HI 96826
PH (808)946-2277
FAX (808)946-2253

6635-01
January 14, 2003

Mr Glenn M. Okimoto, Interim Director of Transportation
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

Subject: Draft Environmental Assessment (EA), Collection System Maintenance Baseyard, Halawa Corporation Yard,
Aiea, Oahu, Hawaii; Tax Map Key: 9-9-73: 27
Response to Comment

Dear: Mr. Okimoto:

Thank you for your December 16, 2002 comment letter (HWY-PS 2.8894) on the Draft EA for the Collection System Maintenance (CSM) Baseyard project. Our responses follow:

1. The Draft EA stated existing inlets on the project site collect surface runoff and discharge directly to North Halawa Stream without treatment through four discharge outlets. The CSM Baseyard project will construct five additional grated inlets to collect surface runoff. In addition, the Draft EA stated, a storm drain filter system will be placed within the new grated inlets and in the existing inlets to collect sediments, oil and grease in the runoff. The storm drain lines will outlet the flow to the existing stream outlets in North Halawa Stream, which will not be notified or improved. Thus, construction of the storm drain filter system will improve the quality of the runoff discharge to North Halawa Stream, when compared to the existing system, and the CSM Baseyard project should not have an adverse impact to the City's municipal separate storm sewer system (MS4) permit.

2. The Final EA will note that, use of oil water separator in the drainage system was initially considered during the drainage system design. However, since only vehicle parking will occur and no vehicle maintenance will take place on the project site, use of the filter system was considered appropriate for the drainage system.

3. The Draft EA noted that storm runoff from the project site will be collected through the filter systems in the drainage system before disposal into North Halawa Stream.

4. a. Raw traffic count data is attached and will be provided as Appendix A of the Traffic Impact Report in the Final EA.

b. The number of vehicles making the left turns was verified. A significant number of vehicles were observed making illegal left-turns from the Ulune Street Extension onto H-1 westbound. This will be added to the Traffic Impact Report in the Final EA.

c. Paragraph d, in the third sentence, Page 9 of the Traffic Impact Report in the Final EA, "mauka bound approaches" will be changed to "makai bound approaches"

d. The Traffic Impact Report in the Final EA will be revised to include Section III.C.4: "Field Observations" as follows: "Heavy traffic volumes were observed during the morning and afternoon peak periods. In general, afternoon traffic was heavier than morning traffic. Vehicle arrivals were observed to occur in platoons. Ulune Street Extension and Ulune Street westbound traffic was the predominant movement within the study area. Intermittently during both peak hours, a solid vehicle queue formed between Halawa Valley Street and Kahuapaani Street."

e. In addition, the Traffic Impact Report in the Final EA will be revised as follows: "The peak traffic condition generally extends for two hours during the both the morning and afternoon. However, capacity analysis was performed for the peak hour to capture the highest volumes of vehicles and thus most congested traffic conditions expected during typical morning and afternoon peak periods."

f. The Traffic Impact Report in the Final EA will be revised as follows: The distance between Ulune Street/Halawa Valley Street and Ulune Street/ Kahuapaani Street is approximately 650 feet. Thus, approximately 26 vehicles can queue between the intersections. Under existing conditions, an average of 15 vehicles queue between the intersections. The estimated queues with the project are 5 vehicles longer for an average of 20 vehicles. Adequate storage should be available to accommodate the additional left-turns on average. Queue storage may be inadequate, intermittently during the peak hours, similar to existing conditions

4. The roadway mitigation measures recommended in the revised Traffic Impact Report will be implemented at no cost to the State, where appropriate.

Thank you for your participation in the review of the Draft EA.

If you have any questions, please call me at 808.946.2277.

Sincerely,

John L. Sakaguchi, AICP

Attachment

JLS/ry

cc: C. Lau, DDC
D. Uchida, SSFM

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
Telephone: (808) 586-4185
Facsimile: (808) 586-4186
Email: oeqc@health.state.hi.us

6635-1

GENEVIEVE SALMONSON
DIRECTOR

12/11

RECEIVED
DEC 11 2002
WILSON OKAMOTO & ASSOC.

December 9, 2002

Mr. Clifford Lau
Department of Design & Construction, City & County of Honolulu
650 South King Street
Honolulu, Hawai'i 96813

Mr. John Sakaguchi
Wilson Okamoto & Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawai'i 96826

Dear Messrs. Lau and Sakaguchi:

The Office of Environmental Quality Control has reviewed the October 2002, draft environmental assessment for Collection System Maintenance Baseyard at Halawa in the judicidal district of 'Ewa and offers the following comments for your consideration and response.

1. SUSTAINABLE BUILDING GUIDELINES, USE OF NATIVE PLANTS, AND GLASSPHALT. We respectfully refer you to our website at http://www.state.hi.us/health/oeqc/index.html for guidance documents on sustainable building and the use of native plants in landscaping. Also, please plan to use glassphalt aggregate for proposed paving at the project site.

Thank you for the opportunity to comment. If there are any questions, please call Leslie Segundo of my staff at (808) 586-4185.

Sincerely,

GENEVIEVE SALMONSON
Director

WILSON
OKAMOTO
CORPORATION

ENGINEERS
PLANNERS
1907 S. BERETANIA ST
SUITE 400
HONOLULU, HI 96826
PH: (808)946-2277
FAX: (808)946-2253

6635-01
January 15, 2003

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

Subject: Draft Environmental Assessment (EA), Collection System Maintenance Baseyard, Halawa Corporation Yard,
Aiea, Oahu, Hawaii; Tax Map Key: 9-9-73: 27
Response to Comment

Dear: Ms. Salmonson:

Thank you for your December 9, 2002 comment letter on the Draft EA for the Collection System Maintenance (CSM) Baseyard project. Our responses follow:

1. The City and County of Honolulu Department of Design and Construction, the agency which will direct the design and construction of the CSM Baseyard project, typically considers the use of glassphalt and native plants when developing contract specifications for City facilities. This will be done for the CSM Baseyard project.

Thank you for your participation in the review of the Draft EA.

If you have any questions, please call me at 808.946.2277.

Sincerely,

John L. Sakaguchi, AICP

cc: C. Lau, DDC
D. Uchida, SSFM

6635-01

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE (808) 523-4414 • FAX (808) 527-6743 • INTERNET www.co.honolulu.hi.us

12/17/02

MY HARRIS
MAYOR

ERIC G CRISPIN
Acting DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

2002/ELOG-3193 (MH)

December 12, 2002

CC: DDC SSFM > VIA FAX 12/17/02

Mr. John L. Sakaguchi, Senior Planner
Wilson Okamoto & Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Sakaguchi:

Draft Environmental Assessment (DEA)
Collection System Maintenance (CSM) Baseyard,
Halawa Corporation Yard, TMK: 9-9-073: 027, Halawa, Aiea, O'ahu, Hawai'i

In response to your request for comments of November 8, 2002, we have reviewed the subject DEA and have the following comments to offer:

1. Section 1.3.3 Other Project Site Data incorrectly describes the project site as designated Industrial on the Primary Urban Center Development Plan Land Use Map (PUC DPLUM). The project site is designated Public and Quasi-Public on the existing PUC DPLUM.

2. Page 2-2, Section 2.2: The Final Environmental Assessment (FEA) should identify if any improvements will be located in the Federal Emergency Management Agency floodway. If so, the project shall comply with Federal regulations and a CERTIFICATION OF A "NO RISE" DETERMINATION FOR A PROPOSED FLOODWAY DEVELOPMENT shall be prepared.

3. Section 2.2.1 Existing Environment of the FEA should include a statement that the northwest corner of the project site is located within Zone D defined as undetermined flood hazard.

4. Section 2.4.2 Impacts and Mitigation Measures of the FEA should delete the sentence fragment *("Given the project site conditions and the developed character of the surrounding areas")* after the second complete sentence under the "Fauna" subsection.

5. Section 2.8.2 Impacts and Mitigation Measures of the FEA should elaborate on proposed mitigation measures since "the CSM Baseyard project would result in the noise levels which would affect nearby areas."

6. Page 2-14, Section 2.10: This section of the FEA should also include a discussion relating to the existing and proposed drainage infrastructure.

7. Section 2.10.2 of the FEA should state that a Sewer Connection Application has been approved for the project on October 7, 2002 (2002/SCA-0591).

8. Section 3 "RELATIONSHIP to PLANS, POLICIES and CONTROLS" of the FEA should include a subsection to discuss the relationship and consistency of the subject project with the existing PUC DPLUM designation for the project area and how the project relates to the draft PUC Development Plan revision, in particular, principles and guidelines for industrial areas and infrastructure systems.

9. Section 3.2.3 City and County of Honolulu Development Plan Public Facilities Map of the FEA needs to be revised to reflect the Department of Planning and Permitting's previous comments of September 9, 2002, to explain why an amendment to the current DPPFM is not required for the proposed project.

10. In our previous comments of September 9, 2002, the Department of Planning and Permitting (DPP) stated, "The DEA should also include potential visual impacts and proposed mitigation measures." This comment should be addressed in the FEA, and DPP further recommends that landscaping be provided to screen facilities and activities from the roadway.

11. The building height limit for the subject property is 25 feet. The roofline of the proposed building is 33 feet, which will require a waiver. This information should be discussed in the FEA.

Should you have any questions, please contact Matt Higashida of our staff at 527-6056.

Sincerely yours,

for ERIC G. CRISPIN, AIA
Acting Director of Planning and Permitting

EGC:js

cc: Department of Design and Construction

g:\Planning Div Function\Ea-eis\2002\CSM Baseyard, Halawa Corporation Yard DEA

WILSON
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6635-01
January 3, 2003

Mr. Eric G. Crispin, AIA
Acting Director of Planning and Permitting
Department of Planning and Permitting
City and County of Honolulu
P.O. Box 621
Honolulu, Hawaii 96809

Subject: Draft Environmental Assessment (EA), Collection System Maintenance Baseyard, Halawa Corporation Yard,
Aiea, Oahu, Hawaii; Tax Map Key: 9-9-73: 27
Response to Comment

Dear: Mr. Crispin:

Thank you for your December 12, 2002 comment letter (2002/ELOG-3193 MH) on the Draft EA for the Collection System Maintenance (CSM) Baseyard project. Our responses follow:

1. Section 1.3.3 of the Final EA (FEA) will be revised to state the project site is designated Public and Quasi-Public on the PUC Development Plan Land Use Map.

2. Section 2.2 of the FEA will be revised to state the CSM project site will be located above the top of bank of North Halawa Stream. The top of bank elevation is at approximately 121.32±near the CSM maintenance building whicl will have a finished floor elevation of 125.67. Although it is difficult to tell with certainty, the FEMA map appears to show Zone AE to be confined to the channel of North Halawa Stream.

3. Section 2.2.1 of the FEA will be revised to state that almost all of the project sit is located in Zone X (areas determined to be outside the 500-year flood plain) and a small portion of the northwest corner is located in Zone D (defined as areas in which flood hazards are undetermined).

4. Section 2.4.2 of the FEA will be revised to delete the sentence fragment.

5. Section 2.8.2 of the FEA will include the following: "However, for the most part, the noise impacts would occur during the daytime hours when noise from other nearby sources would occur. In addition, the project site is located in the Halawa Industrial Park where similar sources of noise are located."

6. Drainage is discussed in Section 2.2 which includes a discussion of the proposed drainage system.

7. Section 2.10.2 of the FEA will note that a Sewer Connection application was approved for the CSM Baseyard project on October 2, 2002.

8. A new Section 3.2.3 will be added to the FEA to indicate the CSM Baseyard will be located in the area designated "Public and Quasi-Public " on the PUC Development Plan Land Use Map. Thus, the CSM Baseyard will be compatible with the draft PUC DP.

   In addition, the CSM Baseyard supports the PUC DP Infrastructure and Public Facilities policies and guidelines as it will be used by the City's Department of Environmental Services as the facility from which to service the existing wastewater collection system in the PUC and other areas of Oahu. A new and modern facility designed to CSM's needs will be an important factor in maintaining the wastewater collection system within the PUC.

9. Section 3.2.4 (new) will be revised with the following: "An amendment to the existing PUC DPPF map will not be required as the CSM Baseyard project site is located within the former Halawa bus maintenance facility, now called the Halawa Corporation Yard, which was approved by Ordinance 98-23. On July 2, 2001, the previous site for the CSM Baseyard (H-3 Freeway/Queen Emma Foundation site) was approved by Ordinance 01-37. The DP Common Provisions indicate that the project boundaries shown on the public facilities map indicate approximate locations and shall be interpreted flexibly to allow reasonable implementation."

10. Section 2.11, Visual Considerations, will be added to the FEA to indicate the following: "2.11.1 Existing Conditions. The CSM Baseyard project site is located within Halawa Industrial Park which has been intensely developed with

industrial and industrial/commercial uses, including a number of uses with yard areas used for vehicle parking and exterior storage. For the most part, the exterior walls of buildings within Halawa Industrial Park are concrete block or metal siding with a range of colors, including greens, blues, and tans/light browns. The buildings are primarily single or two story with sloped roofs. 2.11.2 Impacts and Mitigation Measures. The exterior walls of the CSM Baseyard maintenance building will be concrete block for the lower about 7 feet with metal siding above. The concrete block, metal siding, and roof will be green, similar to the color scheme used for the Halawa Corporation Yard Phase 1 buildings. Thus, the design of the CSM Baseyard building will be compatible with the existing surrounding buildings and will not have an adverse impact to the visual character of Halawa Industrial Park. In addition, the design plans for the CSM Baseyard, include retention of the existing planted landscape material and new plantings of hibiscus and grass along the fence on Iwaena Street south the access driveway. Overall, the design of the building and the addition of the new landscape material will ensure that the CSM Baseyard project will be visually compatible with surrounding Industrial Park areas.

11. The FEA will note that a building height limit is 25 feet for the project site. A building height waiver from DPP will be required to construct the CSM maintenance building.

Thank you for your participation in the review of the Draft EA.

If you have any questions, please call me at 808.946.2277.

Sincerely,

John L. Sakaguchi, AICP

cc: C. Lau, DDC
D. Uchida, SSFM

6635-01

DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU
1000 ULUOHIA STREET, SUITE 309 • KAPOLEI, HAWAII 96707
TELEPHONE (808) 692-5561 • FAX (808) 692-5121 • INTERNET www.co.honolulu.hi.us

11/27/02

JEREMY HARRIS
MAYOR

WILLIAM D. BALFOUR, JR.
DIRECTOR

EDWARD T. "SKIPPA" DIAZ
DEPUTY DIRECTOR

cc: DDC
SSFM } VIA FAX
11/27/02

November 22, 2002

Mr. John Sakaguchi, AICP, Senior Planner,
Wilson Okamoto & Associates, Inc.
1907 S Beretania St. Suite 400
Honolulu, Hawaii 96826

Dear Mr. Sakaguchi:

Subject: Draft Environmental Assessment, Collection System Maintenance Baseyard
Halawa Corporation Yard, Aiea, Oahu, Hawaii;
Tax Map Key: 9-9-73:27

Thank you for the opportunity to review and comment on the Draft Environmental Assessment relating to the Halawa Collection System Maintenance Baseyard.

The Department of Parks and Recreation has no comment on this project.

Should you have any questions, please contact Mr. John Reid, Planner, at 692-5454.

Sincerely,

WILLIAM D. BALFOUR, JR.
Director

WDB:mk (J. Reid, MS)
(17872)

cc: Mr. Don Griffin, Department of Design and Construction

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR • HONOLULU, HAWAII 96813
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6635-01
12/30/0

JEREMY HARRIS
MAYOR

CHERYL D. SOON
DIRECTOR

GEORGE "KEOKI" MIYA
DEPUTY DIRECTOR

December 27, 2002

TPD11/02-04570R
cc: DDC, VIA FAX

Mr. John L. Sakaguchi, Senior Planner
Wilson Okamoto & Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Sakaguchi:

Subject: Halawa Corporation Yard Collection System Maintenance Baseyard

In response to your November 8, 2002 letter, we reviewed the draft environmental assessment (EA) for the subject project and have the following comments:

1. Presently, the U.S. Federal Transit Administration (FTA) has an interest in the Halawa Corporation Yard property. The EA should discuss the FTA's interest in the site and the possibility of the FTA relinquishing its interest in the property.

2. The walkway striping on the mauka side of the driveway, shown in Figure 1.11 on Page 1-18, should not extend into the right-of-way at Iwaena Street. The driveway should be reconstructed to a "drop driveway". These comments also apply to Figure 1.4 on Page 1-7 and Figure 2 in Appendix B.

3. The recommendations of the Traffic Impact Report listed on Page 21 of Appendix B should be implemented. Stopping sight distance should be provided on both sides of the driveway.

Should you have any questions regarding these comments, please contact Faith Miyamoto of the Transportation Planning Division at 527-6976.

Sincerely,

CHERYL D. SOON
Director

WILSON
OKAMOTO
CORPORATION

ENGINEERS
PLANNERS

1907 S. BERETANIA ST
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HONOLULU, HI 96826
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6635-01
January 14, 2003

Ms. Cheryl D. Soon, Director
Department of Transportation Services
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Attention: Ms. Faith Miyamoto, Transportation Planning Division

Subject: Draft Environmental Assessment (EA), Collection System Maintenance Baseyard, Halawa Corporation Yard,
Aiea, Oahu, Hawaii; Tax Map Key: 9-9-73: 27
Response to Comment

Dear: Ms. Soon:

Thank you for your December 27, 2002 comment letter (TPD11/02-04570R) on the Draft EA for the Collection System Maintenance (CSM) Baseyard project. Our responses follow:

1. The Final EA will state the City is working with the Federal Transit Administration (FTA) to allow a public facility on the former Halawa bus facility.

2. The Final EA, Figure 1.11, Figure 1.4, and Figure 2 Appendix B, will be revised to remove the walkway striping from the right-of-way of Iwaena Street. The use of a "drop driveway" was considered. However, the CSM Baseyard will continue to use the existing access driveway with no improvements or changes. Thus, the access driveway will not be constructed as a drop driveway.

3. Proper stopping sight distance will be provided on both sides of the driveway.

Thank you for your participation in the review of the Draft EA.

If you have any questions, please call me at 808.946.2277.

Sincerely,

John L. Sakaguchi, AICP

cc: C. Lau, DDC
D. Uchida, SSFM

(6635-01) JS

BOARD OF WATER SUPPLY

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

November 26, 2002

RECEIVED
NOV 29 2002
WILSON OKAMOTO & ASSOC., INC.

CC: DDC, SSFM } VIA FAX 11/31/02

Mr. John L. Sakaguchi
Wilson Okamoto & Associates, Inc.
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96825

Dear Mr. Sakaguchi:

Subject: Your Letter of November 8, 2002 on the Draft Environmental Assessment for the Collection System Maintenance Baseyard, Halawa Corporation Yard, TMK: 9-9-73: 27

Thank you for the opportunity to review the subject document for the proposed collection system maintenance baseyard.

The existing water system is presently adequate to accommodate the proposed baseyard.

The availability of water will be confirmed when the building permit is approved. 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 proposed project is subject to Board of Water Supply Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit.

If you have any questions, please contact Joseph Kaakua at 527-6123.

Very truly yours,

K. Sumida

for CLIFFORD S. JAMILE
Manager and Chief Engineer

Pure Water . . . our greatest need – use it wisely

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GEN-6 (FIS/EA) JS
6635.01

12/10/02
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DEC 16 2002
WILSON OKAMOTO & ASSOC., INC.

December 11, 2002

cc: DDC, SSFM } VIA FAX

Mr. John L. Sakaguchi
Senior Planner
Wilson Okamoto & Associates
1907 S. Beretania St. - Ste 400
Honolulu, HI 96826

Dear Mr. Sakaguchi:

Re: Collection System Maintenance Baseyard
Halawa Corporation Yard

Thank you for the opportunity to comment on the October 2002 draft EA of the Collection System Maintenance Baseyard as proposed by the Department of Design and Construction, City & County of Honolulu. We have reviewed the subject document and have no comments at this time.

HECO reserves the opportunity to further comment on the protection of existing powerlines and electric power facilities that may be affected by the project until construction plans are finalized. Again, thank you for the opportunity to comment on this draft EA.

Sincerely,

Kirk S. Tomita

Kirk S. Tomita
Senior Environmental Scientist

cc: Ms. Genevieve Salmonson (OEQC)

THE QUEEN EMMA FOUNDATION

615 Piikoi Street, Suite 701 • Honolulu, Hawaii 96814 • Phone (808) 594-4700 • FAX (808) 594-4705

6635

cc: DDC
SSFM

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NOV 21 2002
WILSON OKAMOTO & ASSOC., INC.

November 20, 2002

Wilson Okamoto & Associates, Inc.
1907 S. Beretania St., Suite 400
Honolulu, Hawaii 96826
Attention: Mr. John L. Sakaguchi, Senior Planner

Re: City Department of Environmental Services Collection System Maintenance Baseyard, Halawa Corporation Baseyard; TMK 9-9-73:027

Dear Mr. Sakaguchi:

In response to the Draft Environmental Assessment dated October 2002 for the subject property, we offer the following comments:

1. Will onsite parking for users of the Halawa Corporation Yard be adequate? If demand exceeds available parking, will there be adequate alternative parking areas onsite?

2. How supportive is the city of having additional industrial development in Halawa to replace those lands acquired by government for the H-3, Halawa prison, corporation yard, etc.?

3. Are there plans by the city for additional corporation yards or other public uses in Halawa Valley?

Your response to the questions would be appreciated. Please call me if you have any questions.

Very truly yours,

Stuart C. Lau

A Queen's Health Systems Company

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ENGINEERS PLANNERS
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6635-01
November 29, 2002

Mr. Stuart C. Lau
The Queen Emma Foundation
615 Piikoi Street, Suite 701
Honolulu, Hawaii 96814

Subject: Draft Environmental Assessment (EA), Collection System Maintenance Baseyard, Halawa Corporation Yard, Aiea, Oahu, Hawaii; Tax Map Key: 9-9-73: 27 Response to Comment

Dear Mr. Lau:

Thank you for your November 20, 2002 comment letter on the Draft EA for the Collection System Maintenance (CSM) Baseyard project. Our responses follow:

1. City-owned vehicles and equipment will be parked within the Baseyard area. CSM personnel will park in the Halawa Corporation Yard, in either the Phase 1 area, the former Crazy Shirts parcel, or the Phase 2 area on the roof of the former bus maintenance facility.

2. The question regarding additional industrial land uses in Halawa Valley would be more appropriately addressed as part of the Development Plan Land Use Map amendment or in the Primary Urban Center Development Plan update currently being processed by the Department of Planning and Permitting.

3. At this time, the City has no plans for additional corporation yards in Halawa Valley.

Thank you for your participation in the review of the Draft EA.

If you have any questions, please call me at 808.946.2277.

Sincerely,

John L. Sakaguchi, AICP

cc: C. Lau, DDC
D. Uchida, SSFM

AIEA NEIGHBORHOOD BOARD NO. 20
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6635.01

November 25, 2002

cc: DDC SSFM

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NOV 29 2002
WILSON OKAMOTO & ASSOC., INC.

Wilson Okamoto & Associates, Inc.
Attn: John L. Sakaguchi, Senior Planner
1907 S. Beretania Street, Suite 400
Honolulu, Hawaii 96825

Re: Response to Draft Environmental Assessment for
Collection System Maintenance Baseyard Halawa H-3 Site

Dear Mr. Sakaguchi:

At the Aiea Neighborhood Board meeting on November 18, 2002, the following concerns were raised relating to the impact of traffic arising from this project.

Hawaii Cement has already increased its hours of operation, which increases the traffic through the Halawa community and the State has indicated that it is considering construction to increase Halawa Prison to accommodate the closing of OCC in Kalihi.

The community would like assurances that the construction of the CSM Baseyard project and the daily use of the roads into and out of Halawa Valley by 161 employees will not negatively affect the ingress and egress of the residents of that community and their access to H-3.

We appreciate your attention to our concerns.

Sincerely,

William B. Clark
by J. Richardson

William B. Clark, Chair
Aiea Neighborhood Board

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6635-01
December 10, 2002

Mr. William B. Clark, Chair
Aiea Neighborhood Board No. 20
Neighborhood Commission
530 South King Street, Room 400
Honolulu, Hawaii 96813

Subject: Draft Environmental Assessment (EA), Collection System Maintenance Baseyard, Halawa Corporation Yard, Aiea, Oahu, Hawaii; Tax Map Key: 9-9-73: 27
Response to Comment

Dear: Mr. Clark:

Thank you for your November 25, 2002 comment letter on the Draft EA for the Collection System Maintenance (CSM) Baseyard project.

In response, Appendix B of the Draft EA included the traffic study which discussed traffic conditions at four key intersections near the CSM Baseyard project site. The traffic study showed traffic conditions without and with the CSM Baseyard project. Overall, the traffic study concluded that slight increases in delay would occur. However, the level of service conditions at the intersections will generally remain the same as conditions without the CSM project.

Further, as noted in the Draft EA, the City is planning to install a traffic signal at the intersection of Halawa Valley Road and Iwaiwa Street to improve traffic operations at that location.

Thank you for your participation in the review of the Draft EA.

If you have any questions, please call me at 808.946.2277.

Sincerely,

John L. Sakaguchi, AICP

cc: C. Lau, DDC
D. Uchida, SSFM