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AIRPORTS DIVISION  
HONOLULU INTERNATIONAL AIRPORT • HONOLULU, HAWAII 96819

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IN REPLY REFER TO:

AIR-EW  
90.1423

March 1, 1990

Mr. Donald Clegg, Director  
Department of Land Utilization  
City and County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813

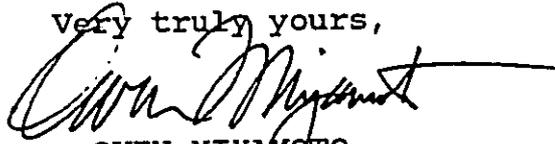
Dear Mr. Clegg:

Subject: Negative Declaration  
for the South Ramp Expansion Project  
Honolulu International Airport  
Honolulu, Hawaii

In conformance with Chapter 343, HRS, we are hereby filing our notice of determination for the South Ramp Expansion Project at the Honolulu International Airport. In accordance with the findings of the attached Environmental Assessment, we have determined that the Project will not create any significant adverse effects on the project area's environment. Moreover, it is anticipated that the implementation of the Project will enhance the overall airport environs by providing for more effective use of airport lands and by increasing efficiency of operations by airport uses.

In this regard, we have determined that an EIS for the Project will not be required. Should you have any questions regarding this Negative Declaration, please feel free to contact our project management consultants, Wilson Okamoto & Associates, Inc. at 531-5261 and ask for Mr. Ernest Takahashi.

Very truly yours,



OWEN MIYAMOTO  
Airports Administrator

cc: Wilson Okamoto & Associates, Inc.

1990-03-23-0A-FEA

FILE COPY

\*  
SOUTH RAMP  
EXPANSION AREA

HONOLULU INTERNATIONAL AIRPORT \*

ENVIRONMENTAL ASSESSMENT

Prepared For:  
AIRPORTS DIVISION  
DEPARTMENT OF TRANSPORTATION  
STATE OF HAWAII

Prepared By:  
WILSON OKAMOTO AND ASSOCIATES, INC.  
HONOLULU, HAWAII

March 1990

ENVIRONMENTAL IMPACT ASSESSMENT  
FOR THE  
SOUTH RAMP EXPANSION AREA PROJECT

Prepared For:

State of Hawaii  
Department of Transportation  
Airports Division

Prepared By:

Wilson Okamoto and Associates, Inc.  
Engineers, Architects and Planners  
1150 South King Street Suite 800  
Honolulu, Hawaii

March 1990

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I. INTRODUCTION

## I. INTRODUCTION

### A. PROJECT SITE LOCATION AND OVERVIEW

South Ramp is located at the southeastern portion of Honolulu International Airport (HIA), encompassing an area of roughly 194 acres between Keehi Lagoon and the Airport runways (see Figure 1). For purposes of this report the project area of the South Ramp hereinafter referred to as the South Ramp Expansion Area consists of roughly 25 acres which are presently being used as a stockpile area containing borrow material. Existing aviation-related services and facilities provided within the surrounding areas include hangars, the Aircraft Rescue/Fire Fighting station, aircraft tie-downs, air cargo facilities, Taxiway "C" and Taxiway "RT" (see Figure 2).

The Keehi Lagoon Recreational Plan Update (Draft, Edward Noda & Associates and Eugene P. Dashiell, AICP, December, 1987), proposes to develop a recreational marina in Keehi Lagoon parallel to Lagoon Drive.

Improvements within the Taxiway Lease Lots have recently been completed, as shown on Figure 2. These improvements include the realignment and widening of Lagoon Drive, installation of support utilities and infrastructure, and subdivision of new lease lots. Permits and land use requirements for these improvements (e.g. Special Management Area Permit, Conservation District Use Permit, Department of the Army Permit, Shorewaters Work Permit, subdivision approvals, an environmental impact assessment, etc.) have been approved by the appropriate governmental agencies.

These improvements have, for the most part, eliminated concerns regarding a lack of use and deteriorated conditions on the Taxiway Lease Lots. The proposed South Ramp Expansion Area remains unimproved and underutilized.

The South Ramp Development Plan Update report prepared by Wilson Okamoto & Associates, Inc., provides plans to facilitate development in the South Ramp Expansion Area to ensure its "highest and best use" and to reach land use compatibility with the Taxiway Lease Lots at South Ramp (see Figure 3). Utility requirements to support development on the South Ramp Expansion Area are included in the Plan Update.

The purpose of this assessment is to examine the anticipated environmental impacts of the proposed improvements in the Project Area and to serve as supplemental information for submittal of permit requirements.

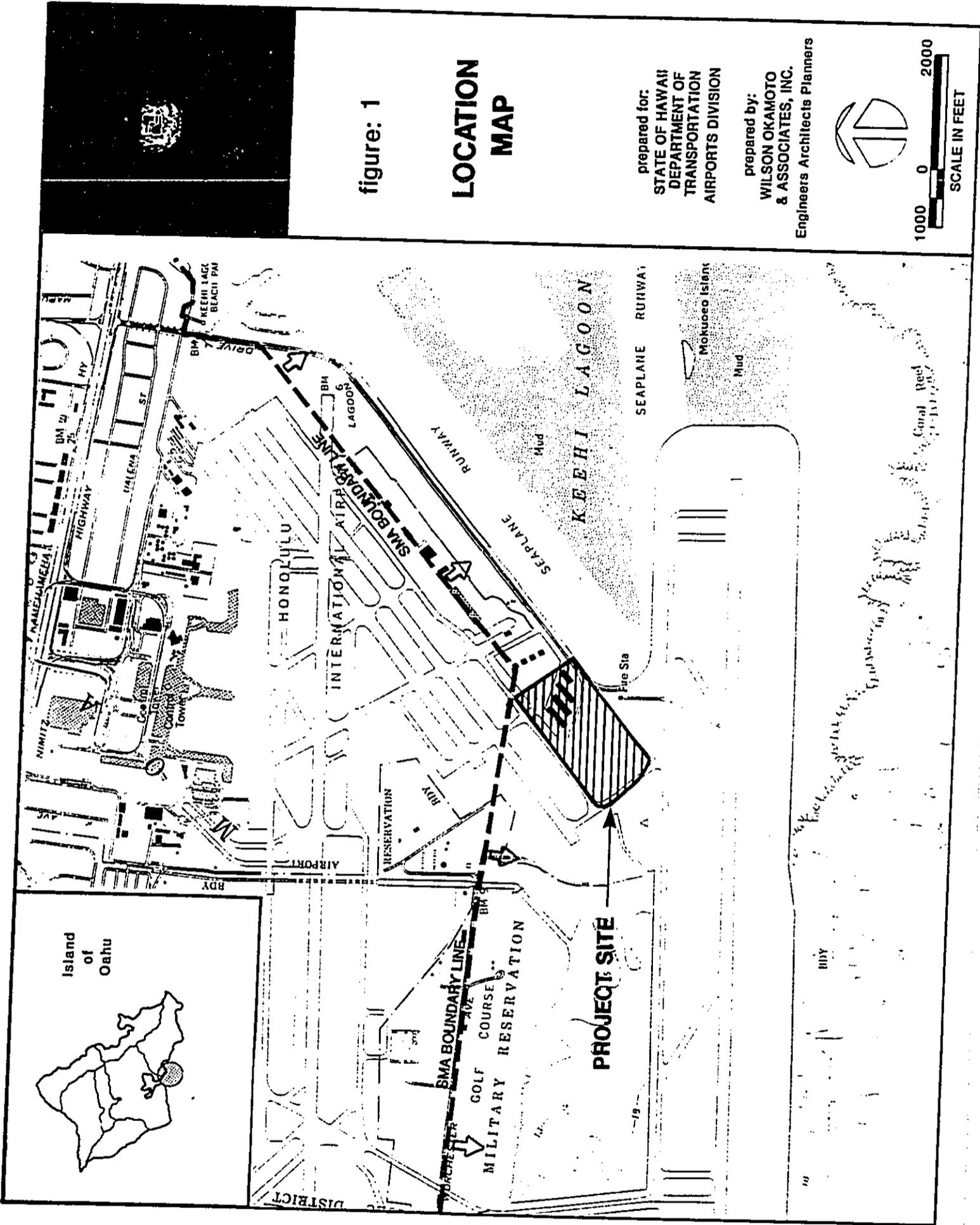
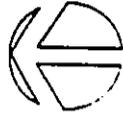


figure: 1

# LOCATION MAP

prepared for:  
 STATE OF HAWAII  
 DEPARTMENT OF  
 TRANSPORTATION  
 AIRPORTS DIVISION

prepared by:  
 WILSON OKAMOTO  
 & ASSOCIATES, INC.  
 Engineers Architects Planners





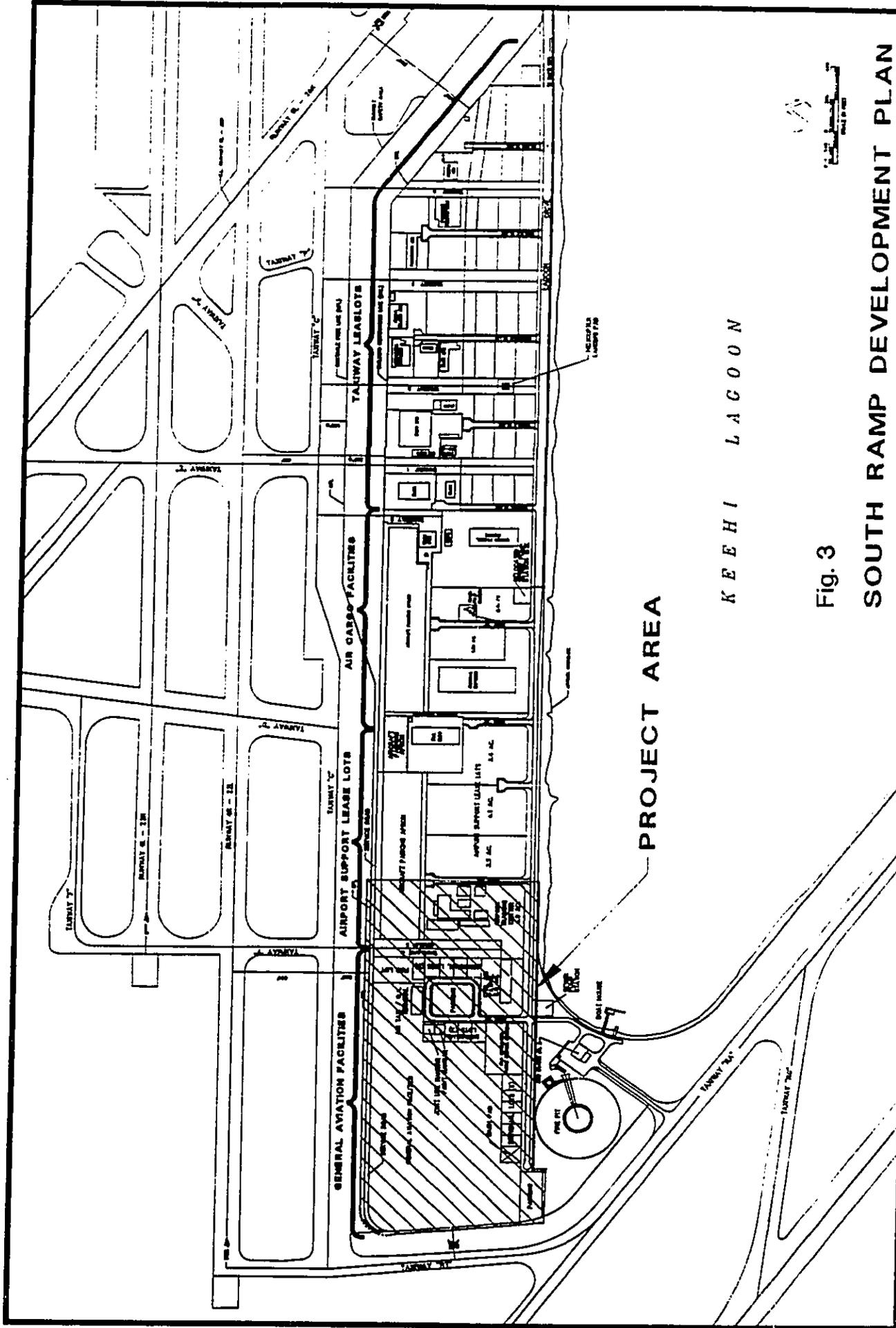


Fig. 3

SOUTH RAMP DEVELOPMENT PLAN

B. PROJECT OBJECTIVE

The objectives of the South Ramp Expansion Area project are to:

- o Maximize land use in the South Ramp area,
- o Promote development of aviation-related support activities and accommodate facility space requirements of aviation demand forecasts for Honolulu International Airport,
- o Provide needed aviation-related improvements for potential users, and,
- o Improve the interrelationship between South Ramp and other components of Honolulu International Airport.

OBJECTIVE 1. MAXIMIZE LAND USE IN THE SOUTH RAMP AREA

The report, Environmental Impact Assessment For The South Ramp Development Project, prepared by Wilson Okamoto & Associates, Inc., 1981, indicated that South Ramp was underused due to inadequate utilities, aged and deteriorated facilities and inefficient space utilization. Recent improvements at South Ramp such as the realignment of Lagoon Drive and upgrading of utilities, as well as the subdivision of new lease lots, have eliminated these concerns for the Taxiway Lease lots (northern half) at South Ramp. However, the Expansion Area (southern half) remains more or less in its present deteriorated and underused condition and will require development of aviation-related facilities and supporting infrastructure to achieve "highest and best use."

OBJECTIVE 2. PROMOTE DEVELOPMENT OF AVIATION-RELATED SUPPORT ACTIVITIES AND ACCOMMODATE AVIATION DEMAND FORECASTS

The Honolulu International Airport Master Plan Update & Noise Compatibility Program, Project No. AO1011-03, Volume 1, Master Plan Update final report (prepared for the State Department of Transportation, Airports Division by KFC Airport, Inc., October 1988) and the Statewide Airport System Plan (SASP) draft report (prepared for the State Department of Transportation, Airports Division by Wilson Okamoto and Associates, Inc. and Aries Consultants, Ltd., 1987) indicates that approximately 280 general aviation aircraft are currently based on HIA. This figure is projected to increase to 340 by the year 2005, a 21.4% increase.

Air taxi/commuter passenger counts, which totalled 69,918 in 1986 (enplaned and deplaned passengers), is anticipated to increase to 85,000 by the year 2005, a growth of 21.6%. In addition, overseas and interisland cargo is projected to increase from 240,600 tons in 1986 to 261,000 tons by the year 2005, an 8.1% growth. Areas for development and "redevelopment" on the South Ramp will accommodate aviation support service facilities thereby supporting the overall growth of HIA.

**OBJECTIVE 3. PROVIDE AVIATION-RELATED FACILITIES TO POTENTIAL USERS**

Since the inception of the South Ramp Development Plan, several potential users have communicated with officials at the State Department of Transportation, Airports Division, a need to provide space for their airport related facilities. Included among these requested facilities for the South Ramp Expansion Area are:

- o FAA Flight Service Station
- o Civil Air Patrol Facility
- o In-Flight Kitchens
- o Airport Training Center

Space for these and other potential uses including general aviation, fixed base operators, Aircraft Rescue/Fire Fighting facilities, and an aircraft maintenance area can be provided on the South Ramp.

**OBJECTIVE 4. IMPROVE THE INTERRELATIONSHIP BETWEEN SOUTH RAMP AND OTHER COMPONENTS OF HONOLULU INTERNATIONAL AIRPORT**

According to the HIA Master Plan Update report (October 1988), one of the key issues regarding the development of HIA is the expansion of the main terminal and maintenance baseyard facilities on the north side of the airport, which will require relocation of some of the existing functions. Space in other airport areas will be required to accommodate the displaced functions such as the existing air taxi/commuter terminal, flight kitchens, and general aviation facilities. The South Ramp will be used to accommodate the majority of these displaced functions.

**C. LAND OWNERSHIP**

The entire South Ramp Expansion Area is owned by the State of Hawaii, Department of Transportation, Airports Division (DOT-A).

II. DESCRIPTION OF THE PROPOSED ACTION

## II. DESCRIPTION OF THE PROPOSED ACTION

This chapter describes the project components, utility requirements, and cost estimates for the proposed development of the South Ramp Expansion Area.

### A. PROJECT COMPONENTS

Proposed South Ramp Expansion Area project components are depicted in Figure 4. The proposed expansion area is comprised of the General Aviation Expansion Area incorporating General Aviation, Civil Air Patrol, and FAA Flight Service Station facilities. An Airport Support Lease Lot Area consists of airline in-flight kitchens, Airport Training Center, and aircraft maintenance facilities.

Prior to development of projects within the Expansion Area existing structures/facilities which will hinder construction of proposed facilities, will be demolished or relocated.

#### 1. GENERAL AVIATION EXPANSION AREA

- a. General Aviation Facilities - Development of general aviation facilities is planned for the southern end of the South Ramp Expansion Area and involves the consolidation of most of the general aviation facilities at HIA. Proposed facilities include T-hangars, tiedowns, and transient aircraft parking spaces to accommodate about 200 aircraft, two run-up areas, FBO/individual hangar lots, an air taxi terminal/general aviation building, and two automobile parking lots.
- b. Civil Air Patrol - Civil Air Patrol facility is presently located in one of the old hangars in the South Ramp Expansion Area. The proposed Civil Air Patrol facility will occupy about 2.0 acres and include administrative offices, flight operations facility, hangar space, tiedowns, fueling facility, flammable material storage facility and automobile parking. The planned facilities will be designed to meet required safety standards set forth by Federal, State, and City and County of Honolulu regulations.
- c. FAA Flight Service Station - The FAA Flight Service Station at Diamond Head will be relocated on the site north of the existing Aircraft Rescue/Fire Fighting station. The proposed Flight Service Station building will provide information such as weather and flight conditions and approach maps of other

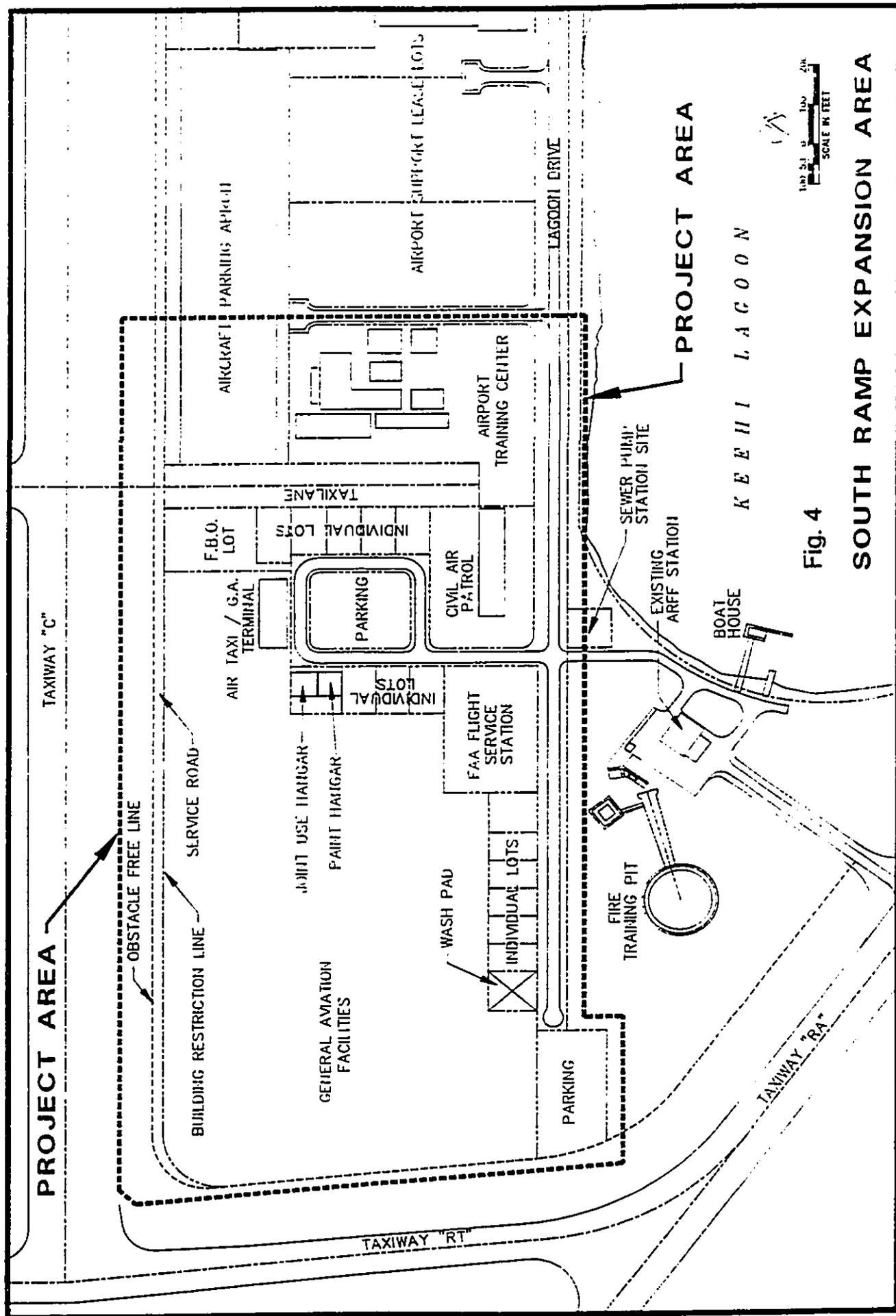


Fig. 4

**SOUTH RAMP EXPANSION AREA**

other airports to general aviation flyers. The proposed station will require a 1.6 acre lot and will include parking for visitors, employees, handicapped and aircraft parking.

- d. Airport Training Center - The proposed Airport Training Center will occupy about 4.9 acres. The proposed facility includes development of a classroom building for aircraft maintenance instruction, foreign language training, airport security and aircraft rescue and fire fighting training.

## B. ROADWAY AND UTILITY REQUIREMENTS

### 1. ROADWAY SYSTEM

The primary focus of the proposed roadway system is the realignment and extension of Lagoon Drive within the South Ramp Expansion Area. Access to the various proposed facilities will be via connecting roads off of Lagoon Drive.

### 2. WATER SYSTEM

An extension of the existing 16-inch underground waterline is planned along the proposed widening of Lagoon Drive. This extended line will connect with additional 6 and 8-inch lines in the general aviation area and serve the airline flight kitchens, airport support lease lots, the air taxi terminal and general aviation facilities. There will also be a non-potable water system which will be used for landscaping requirements.

### 3. SEWER SYSTEM

An extension of the existing underground sewer line is proposed along the proposed realignment and extension of Lagoon Drive. This sewer line, consisting of gravity lines and force mains, will serve the entire South Ramp Expansion Area.

### 4. DRAINAGE SYSTEM

The drainage system, consisting of a series of drain lines and culverts, will draw runoff from the South Ramp Expansion Area. Surface water runoff from parking lots, aprons, hangars, and buildings will eventually be discharged from existing drainage outlets along the water edge of Lagoon Drive. Petrochemical pollutants and detergents used for stripping and washing of aircraft will be discharged into

existing evaporation ponds by means of a separate existing wash pad wastewater disposal system.

5. ELECTRICAL/TELEPHONE SYSTEM

The electrical/telephone system will consist of a network of duct lines underneath the realigned Lagoon Drive.

C. DEVELOPMENT SCHEDULE AND COST ESTIMATES

A schedule for the development of the South Ramp expansion area is presented in Figure 5. The entire schedule covers a period between April 1989 to November 1992.

A summary of site development cost estimates (those costs for buildings, utilities, and improvements within South Ramp Expansion Area to be incurred by the State) is also presented in Figure 5. These cost estimates are based on a unit cost per square foot basis derived from estimates for projects currently under construction. Total cost for the eleven projects comprising the South Ramp Development Plan is approximately \$ 62,000,000.

Utilities and infrastructure outside of the project site are considered adequate at this time to accommodate development of the South Ramp Expansion Area, based on utility adequacy investigations and consultation with respective public works agencies.



III. RELATIONSHIP TO PUBLIC LAND USE POLICIES AND CONTROLS

### III. RELATIONSHIP TO PUBLIC LAND USE POLICIES AND CONTROLS

This chapter presents land use controls affecting the development of the South Ramp Expansion Area. Land use controls and permits discussed include those administered by Federal, State and local land use regulatory agencies.

#### A. FEDERAL

##### 1. DEPARTMENT OF THE ARMY PERMIT

The Department of the Army permit is administered by the U.S. Army Corps of Engineers, Honolulu District under Section 10 of the Rivers and Harbors Act (33 USC 403), Section 404 of the Clean Water Act (33 USC 1344) and Section 103 of the Marine Protection, Research and Sanitation Act of 1972 (33 USC 1413). The permit is required for all work within waters of the United States, including ocean and coastal waters, inland and tidal waters, tidal ponds, fishponds, rivers, streams and adjacent wetlands, perched wetlands, and intermittent streams.

The proposed South Ramp improvements will not involve any work which will require an Army Permit. All drainage will discharge through existing outlets.

##### 2. FEDERAL AVIATION ADMINISTRATION

Additional requirements affecting portions of the project development include Federal Aviation Administration (FAA) requirements. These requirements include height setback, separation standards, and taxiway design standards.

With regard to height limits, Part 77 of the FAA regulations limits the heights of buildings and structures below the 7-to-1 transition side slope which extends from the edge of the runway to the primary surface. The primary surface is a surface longitudinally centered on the runway, extending 200 feet beyond the each end of the runway. The width of the primary surface varies depending on the type of runway used and aircraft served.

Separation standards, as provided in Advisory Circular, 150/5300-13, Airport Design Standards, Transport Airports, September 29, 1989, refer to minimum distance between airport facilities. Separation standards considered for the proposed south Ramp Expansion Area include:

- o Runway centerline to taxiway centerline
- o Runway centerline to aircraft parking area
- o Runway centerline to property/building restriction line
- o Runway centerline to helicopter touchdown pad
- o Taxiway centerline to parallel taxiway centerline
- o Taxiway centerline to fixed or movable object and to property line

Taxiway design standards, as provided in Advisory Circular 150/5300-13 Airport Design Standards, Transport Airports, September 29, 1989 refer primarily to taxiway shoulder, safety area widths, and taxiway intersections, entrances, and exits.

B. STATE

1. STATE LAND USE DISTRICT

Pursuant to the Hawaii Land Use Law (Chapter 205, HRS) the State Land Use Commission has classified all lands in the State into four land use districts; Urban, Agriculture, Conservation and Rural. South Ramp is in the Urban District. The proposed development of the South Ramp Expansion Area is permitted under the Urban designation and therefore no boundary amendment to reclassify the site will be necessary.

2. CONSERVATION DISTRICT USE APPLICATION

Any use of lands, including submerged lands within the State's Conservation District, as established by the State Land Use Commission, is subject to review pursuant to Chapter 183, HRS and Title 13, Chapter 2 of the Department of Land and Natural Resources Regulations. At the terminal site, the area beyond the shoreline, defined as "the upper reaches of the wash of waves, other than storm and tidal waves, usually evidenced by the edge of vegetation growth, or the upper line of debris left by the wash of waves," is subject to review as a use in the "Resource(R) subzone of the State Conservation District (Section 13-2-13, Administrative Rules of the Department of Land and Natural Resources). Approval by the State Board of Land and Natural Resources will be required through a Conservation District Use Application for all dredging and construction beyond the shoreline.

A Conservation District Use Application (CDUA) will not be required for development of the South Ramp Expansion Area.

3. HAWAII COASTAL ZONE MANAGEMENT PROGRAM  
FEDERAL CONSISTENCY REVIEW

Section 307 of the National Coastal Zone Management Act of 1972 (16 U.S.C. 1451 et. seq.) provides for State review of federal actions affecting the coastal zones of States with approved Coastal Zone Management Programs.

Hawaii's Coastal Zone Management (CZM) Program established pursuant to Chapter 205A, HRS was federally approved in 1977. It is administered by the Office of State Planning (OSP).

The proposed South Ramp improvements will not involve any work which will require any Federal permit and therefore a Consistency Review will not be required.

4. ENVIRONMENTAL IMPACT ASSESSMENT

Chapter 343, HRS establishes a system of environmental review at the State and County levels to ensure that environmental concerns of a proposed project are appropriately considered. The proposed development of the South Ramp Expansion Area, an agency action subject to the provisions of Chapter 343, HRS, will require preparation and submittal of an environmental impact assessment (EIA).

5. SECTION 401 WATER QUALITY CERTIFICATION

The State Department of Health is charged with the responsibility of establishing and administering a State certification system pursuant to Section 401 of the National Clean Water Act (33 USC 1344) and Section 342-32(13), HRS. Certification is required of any applicant for a Federal license or permit to conduct any activity that may result in any discharge into navigable water. Thus, certification will be sought under the State Department of Health processing guidelines for discharge of runoff from proposed drainage outlets along the water's edge of Lagoon Drive.

The proposed South Ramp improvements will not involve any work which will require a Federal permit and therefore a Consistency Review will not be required.

The State Department of Health also administers a water classification and permit system to regulate activities that could pollute waters within the State's jurisdiction (Title 11, Chapter 54, Water Quality Standards, Administrative Rules, Department of Health). The waters of Keehi Lagoon are designated Class A. The objective of this class is to protect their use for recreational purposes and aesthetic enjoyment. Any other use is permitted as long as it is compatible with the protection and propagation of fish and wildlife, and with recreation. No discharges are allowed unless it has received the best degree of treatment or control compatible with the criteria established for the class. No new industrial or sewage discharges are permitted within embayments. As such, coordination with the Department of Health will be required to review discharge requirements of storm waters into Keehi Lagoon waters.

C. CITY AND COUNTY OF HONOLULU

1. DEVELOPMENT PLAN

The City and County of Honolulu's Development Plans guide the desired sequence, patterns and characteristics of future development as set forth by the City and county of Honolulu General Plan. The Development Plan land use maps designate the South Ramp Expansion Area and the entire Honolulu International Airport as Public Facilities (PF). Development of aviation related facilities at the South Ramp Expansion Area is permitted under this designation and is consistent with the objectives of the Development Plan.

2. LAND USE ORDINANCE

The Land Use Ordinance (LUO), administered by the Department of Land Utilization, is intended to regulate land use in accordance with adopted land use policies, including the General Plan and Development Plans.

South Ramp is zoned General Industrial, I-2. Development of aviation-related facilities is permitted under this zoning designation. Development of facilities will be conducted in accordance with established LUO General Development Standards (Article 3), and Zoning District Regulations for I-2 Districts (Article 5, Section 5.100).

3. SPECIAL MANAGEMENT AREA PERMIT

The Hawaii Coastal Zone Management Law (Chapter 205A, HRS) charges the Counties with designating and administering Special Management Areas (SMA) within the State's coastal environments.

Any development within the SMA requires an SMA permit, which is administered by the City and County of Honolulu Department of Land Utilization.

The objective of the SMA permit requirement is to determine if a proposal will have "significant environmental effects" on the SMA with respect to recreational, historic/ archaeological and scenic/open space, coastal ecosystems, coastal hazards, and economic use considerations.

The entire project site is located within the SMA boundary and is subject to review under the SMA permit procedures. (see Figure 1).

#### 4. SHORELINE SETBACK VARIANCE

The State's Shoreline Setback Law, Chapter 205, HRS prohibits virtually any development or development-related activity including the removal of sand, rocks, soil, etc. from the shoreline setback area, a 40 foot (20 feet in some areas) strip of land along the shoreline. The counties, however, are authorized to grant variances for construction that would encroach in the setback area. The City and County of Honolulu, Department of Land Utilization administers this variance under its shoreline setback regulations.

Variances may be granted in consideration of a structure, or activity being in the public interest, hardship to the applicant if the proposed structure or activity is not allowed and the effect of a structure or activity would have on natural shoreline processes, particularly with regard to shoreline erosion.

A shoreline setback variance will not be required since the development of the proposed South Ramp improvements will not occur within forty (40) feet of the shoreline.

IV. DESCRIPTION OF THE EXISTING ENVIRONMENT

#### IV. DESCRIPTION OF THE EXISTING ENVIRONMENT

##### A. EXISTING USES

Existing uses at South Ramp consist primarily of aviation support service facilities which include fixed-base operators (helicopter and fixed-wing maintenance), general aviation, air taxi/commuter flight services, air tour flights, and air cargo facilities (currently under construction). As shown in Figure 2, these facilities, developed principally on a lease lot basis on roughly 90 acres of land on the northern half of South Ramp (including the area north of the air cargo facilities being constructed), are generally referred to as "taxiway lease lots" (denoting taxiway access requirements).

The southern section of South Ramp (south of the cargo facilities currently under construction) comprises roughly 25 acres of land. This area consists of existing FAA building, hangers, a stockpile area, aircraft tie-downs, World War II vintage buildings, and the Aircraft Rescue/Fire Fighting Station No. 2 and its associated fire pit (used during training exercises) and boat ramp.

##### B. CLIMATE

Lying on the southern coast of Oahu, in the "rain shadow" of the Koolau Range, the Honolulu International Airport, and South Ramp, experience less cloud cover than many other part of the island. The northeasterly tradewinds prevail throughout most of the year, blowing at 90% frequency during the summer months. It becomes less frequent during the winter season, reaching only 50% frequency during January. The monthly mean velocity of the prevailing tradewinds ranges from 10 to 15 miles per hour. Rainfall in the airport area is low when compared to the rest of the island, averaging only 20 to 25 inches a year. The seasonal influence provides considerable variation in the average monthly rainfall. Typically almost half of all rainfall occurs during the "winter" season, during the months of December, January, and February. The prevailing tradewinds keep humidity at moderate levels throughout most of the year. However, humidity occasionally rises to uncomfortable levels during periods of the lighter southerly Kona winds. Average temperatures range from between the mid 60's and high-70's (degrees Fahrenheit) during the winter months, and between the low-70's and mid-80's during the summer.

##### C. TOPOGRAPHY AND GEOLOGY

The topography throughout South Ramp is generally flat. Elevations at South Ramp, mauka of the realigned Lagoon Drive, range from seven to ten feet above sea level. A portion of the South Ramp Expansion Area, on the southernmost section, is currently used as a stockpile area for earth and gravel materials.

The South Ramp is located in the coastal plain. There is no recorded incidence of tsunami damage to the airport area. The highest recorded tsunami heights in the nearby area was three feet at Hickam Air Force Base and five feet at Honolulu Harbor at Pier 1.

D. FLORA AND FLORA

Flora within and surrounding the South Ramp Expansion Area consist generally of sparse, low lying grasses and weeds, with some haole koa present throughout the site, and a few coconut trees. Because of the heavy urban use in the area, native plants species are nonexistent and no known rare or threatened endangered plant species have been identified in previous airport surveys. Faunal species in the area are believed to be limited to land rodents and typical species of urban dogs and cats.

An ecological survey of marine waters performed by the Oceanic Institute in September, 1987 of Keehi Lagoon classifies the lagoon as a very poor biological resource. Mollusks and fish including mullet, hammerhead shark, and butterfly fish have been observed in the area. Commercial baitfish are also found in the area near Kalihi Basin. Future airport development would not be expected to significantly affect the marine communities unless there is additional dredging or filling in marine waters.

The tidal mudflats within the lagoon are used by the Hawaiian Stilt, an endangered waterbird, for feeding. The small islands in the lagoon serve as nesting areas for the Stilt and other migratory birds.

E. HISTORICAL AND ARCHAEOLOGICAL RESOURCES

To date, no historical or archaeological resources have been identified within the airport property (Honolulu International Airport Master Plan and Noise Compatibility Program, Volume 3, Environmental Assessment, prepared for State Department of Transportation, Airports Division, September 1989). Further, it is very unlikely that any items of historical or archaeological significance will be found at South Ramp since much of the site is comprised of fill material.

F. RECREATION

The South Ramp Expansion Area lies along the western edge of Keehi Lagoon, a body of water considered as a valuable recreational resource. The waters of the Lagoon are used for boating and canoe regattas, water skiing, fishing, and sailing, while the shoreline areas are frequently used by fishermen.

The utilization of Keehi Lagoon as a recreational resource may grow even greater, if plans to create a Lagoon Drive Marina just east of South Ramp

are implemented under the Keehi Lagoon Recreation Plan Update (Edward K. Noda & Associates and Eugene P. Dashiell, AICP December, 1987). The proposed recreational marina plan includes:

- o 750-850 slips
- o Vehicular parking facilities
- o Administration building
- o Comfort stations
- o Boat launch facility
- o Boat fueling dock
- o Restaurant/Snack bar
- o Club house
- o Marine supply store
- o Ferry transit landing
- o Commercial marine facility

G. WATER QUALITY

The area of Keehi Lagoon adjacent to the South Ramp Expansion Project area is the body of water that will receive the surface water runoff from the project site. Keehi Lagoon is also the receiving body for stream flows, industrial discharges, and urban drainage from a number of sources. As a result the waters of Keehi Lagoon are of relatively poor quality.

Moanalua and Kalihi Streams are the primary sources of flow into the Lagoon. These streams drain the western portion of the heavily urbanized city of Honolulu. Keehi Lagoon is also fed by Kapalama Stream through Honolulu Harbor and current inflow from Mamala Bay. Previous studies of water quality found that the worst conditions were found in the northern corner where Kalihi and Moanalua streams discharge into the lagoon, and where flushing is least efficient. The airport does not contribute to these two stream flows. In the area of the Honolulu International Airport, a drainage ditch collects runoff from the northern portion of the airport and enters lagoon waters south of Keehi Lagoon Beach Park. This ditch is designed to minimize flooding during a 50-year storm. Other sources of airport discharge include drainlines which collect runway runoff and direct surface flow from the South Ramp and the nearby areas.

The waters of Keehi Lagoon are designated Class A waters by the State Department of Health (State Department of Health, "Chapter 37-A, Water Quality Standards"; Public Health Regulations, 1979). The Class A designation serves to protect the water for recreational uses and aesthetic enjoyment. Other uses are permitted providing they are compatible with the protection and propagation of fish, shellfish, and wildlife and with recreation in and on the waters. Discharges are allowed into these waters unless they have received the best degree of treatment or control compatible with the criteria established for this class. New sewage discharges are not permitted

within Class A designated waters. No new industrial discharges, except acceptable non-contact thermal and floating drydock or marine railway discharges, will be permitted within embayments, and only in the following waters:

- o Honolulu Harbor, Oahu
- o Barbers Point Harbor, Oahu
- o Keehi Lagoon Marina, Oahu
- o Ala Wai Boat Harbor, Oahu
- o Kahului Harbor, Maui

According to the best available data from water sampling stations located in the vicinity of South Ramp, nutrient levels in the lagoon generally exceed the State's water quality criteria for embayments. An investigation of the airport surface drainage system suggests that surface runoff from the airport may contribute nutrients to Keehi Lagoon. However, the impact of airport runoff on the overall quality of lagoon waters cannot be quantified since water quality of other waters entering Keehi Lagoon are not quantified.

#### H. AIR QUALITY

The ambient air quality at South Ramp is in many ways typical for the aviation industry. General airport activities which result in emission of air pollutants are the operation of aircraft and surface motor vehicles, fuel storage and handling, and engine maintenance facility operations. Primary aviation related pollutants include carbon monoxide, oxides of nitrogen, hydrocarbons, and particulates.

At Honolulu International Airport, emissions during periods of heavy aircraft traffic can be significant; however, the northeast tradewinds contribute to the dispersal of pollutants out to sea. When the tradewinds diminish or give way to southerly winds (known locally as "Kona weather"), usually during winter and early spring months, localized problems of poor air quality may occur. These problems generally occur at the airport, in areas of intense industrial development or along heavily travelled vehicle corridors.

Although there are pollutant emission standards applicable for many of the mobile and stationary sources mentioned earlier, the most important indicator of the levels of air pollution are based on compliance with ambient air quality standards. These standards are based on the concentrations of specific pollutants averaged over specified times. The standards are intended to protect human health and welfare. Ambient air quality standards have been promulgated by both State and Federal agencies. The State standards are significantly more stringent than the national standards.

I. NOISE

Aircraft operations at the Honolulu International Airport have a direct impact on the noise levels at South Ramp. A noise exposure analysis conducted within the airport environs (KFC Airports, Inc., Honolulu International Airport Master Plan Update and Noise Compatibility Program, Draft Report, prepared for State Department of Transportation, Airports Division, August 1987) indicated that the 1985 and 2005 noise levels at South Ramp generally range between 70 and 75 Ldn. The Ldn (day-night sound level) descriptor represents a 24-hour average of instantaneous A-Weighted sound levels (recorded under conditions that simulate the human ear) as read on a standard Sound Level Meter. A weighing factor equivalent to a 10 dB penalty applied for nighttime (10:00 p.m. to 6:59 a.m.) operations to account for the increased sensitivity of people to noise at night. According to the land use compatibility guidelines established for the Noise Compatibility Program, optimum noise levels for uses at South Ramp range from Ldn 65 (office buildings, personal business, and professional) to Ldn 75 (commercial-wholesale, retail, industrial, manufacturing, and utilities).

J. SCENIC VALUE

One of the significant aesthetic/scenic values of South Ramp is the variety of scenic vistas available from the area. A broad panoramic view extends from Barbers Point to Diamond Head, providing a sweeping view of the Honolulu skyline and coast against the backdrop of the Koolau Mountain Range. The seaward facing view from South Ramp is less spectacular. Heavy commercial, industrial, maritime, and aviation activities surrounding the lagoon render the available view less appealing. As a further visual distraction, the vacant area along the South Ramp Expansion Area shoreline is comprised of unsightly piles of soil, rock and debris.

K. FLOOD HAZARD

Based on the Flood Insurance Rate Maps published by the Federal Emergency Management Agency for the island of Oahu, revised on September 4, 1987, the entire South Ramp Expansion Area has been designated as an area of undetermined but possible flood hazard. There are no development restrictions for this zone designation.

L. ROADWAY AND UTILITIES

1. ROADWAY SYSTEM

The existing South Ramp Expansion Area roadway system (south of the Taxiway Lease lots where the realigned segment of Lagoon Drive ends) is a two lane, paved road which branches into two dead end access roads. The road which branches to the west provides access

to existing warehouse buildings and the stockpile area, while the road which branches to the southeast provides access to the Aircraft Rescue/Fire Fighting Station No. 2. The roadway system in the Taxiway Leaselots area consists of the realigned segment of Lagoon Drive, a four lane road, which serves as the main accessway to South Ramp from Nimitz Highway. The realigned segment of Lagoon Drive stretches for a distance of approximately 0.50 mile beginning approximately 500 feet beyond Mokuea Place and extending approximately 4,200 feet beyond the aircraft rescue and fire fighting facility.

2. WATER SYSTEM

Water service for the South Ramp Expansion Area is provided by a 16-inch transmission line along the realigned Lagoon Drive. This transmission line connects to the City and County of Honolulu, Board of Water Supply system near Aolele Street.

3. SEWER SYSTEM

The existing sewer system consists of gravity lines, force mains and a lift station. Sewage from the South Ramp Expansion Area is conveyed to an existing 14-inch sewerline aligned along Lagoon Drive.

The focal point of the sewer system is a lift station (Lift Station "C") located near the newly constructed air cargo facilities. This lift station pumps sewage from South Ramp via the 14-inch force main along the former Lagoon Drive alignment, to the City and County system near Aolele Street.

The major components of the gravity system which feeds Lift Station "C" are:

- o A 12-inch gravity line along the former Lagoon Drive alignment which services the existing and new taxiway leaselots
- o Twelve (12) and 15-inch gravity lines servicing areas to the west

Sewage from South Ramp is treated at the Sand Island Wastewater Treatment Plant.

4. DRAINAGE SYSTEM

Runoff at the South Ramp Expansion Area is conveyed by a network of up to 84-inch drain pipes and 11 Ft. x 3 Ft. box drains. Runoff is ultimately discharged through several existing outlets at Keehi Lagoon.

5. ELECTRICAL/TELEPHONE SYSTEM

The electrical and telephone system consists primarily of duct lines buried underneath the realigned Lagoon Drive. Hawaiian Electric Company provides electrical services for South Ramp. Telephone service is provided by the Hawaiian Telephone Company.

V. ANTICIPATED ENVIRONMENTAL IMPACTS AND PROPOSED MITIGATIVE MEASURES

V. ANTICIPATED ENVIRONMENTAL IMPACTS AND PROPOSED MITIGATIVE MEASURES

A. SHORT TERM CONSTRUCTION RELATED IMPACTS

1. EROSION AND WATER QUALITY

Site preparation for construction activities at the South Ramp Expansion Area will include the demolition of existing structures and fencing, removal of stored vehicles, removal of the stockpile material, and clearing and grubbing activities. These preparatory activities will pose potential erosion problems and excess runoff of sediments into Keehi Lagoon. Measures to control erosion will be detailed in an erosion control plan which will be implemented by the contractor to minimize the impact of site preparation activities.

2. AIR QUALITY

Site preparation activities may result in a problem with fugitive dust, which would tend to increase with dry and windy conditions. Preventative measures such as the use of a water sprinkler system will be implemented by the contractor to minimize this problem.

3. NOISE

In the short term, the greatest noise impacts will likely be generated by the operation of the trucks and machinery associated with construction. These noise levels typically tend to fall in the noise level range of general aircraft activities (78-92 dbA). The two most serious noise generators are bulldozers and pile drivers which generate about (76-96 dbA) and (94-105 dbA) respectively at ninety feet. However, considering the industrial environment in which these activities will be taking place, their noise impacts should not have any significant adverse impact.

The mudflats offshore of South Ramp provide a habitat for waterbirds, and are therefore a subject of particular concern when considering noise impact on the South Ramp environment. It is expected however, that the intervening distance between the construction site and the habitat area will serve to dissipate the construction noise. Additionally, the prevailing northeast tradewinds will further prevent noise generated by construction activities from reaching the waterbird areas.

A noise permit will be obtained as required by Public Health Regulations, Chapter 44B, Community Noise Control for Oahu. The contractor will comply with all regulations to minimize noise generated by site construction activities, and heavy vehicles traveling to and from the construction site (Public Health Regulations Chapter 44A, Vehicular Noise Control for Oahu).

4. **TRAFFIC**

Construction will be designed and phased to minimize disruption of local traffic movement. Temporary rerouting of local traffic will be implemented during construction of underground utility lines along the unimproved segment of Lagoon Drive. These temporary construction activities will pose a nuisance to the general public. However, traffic inconveniences will be minimal due to relatively low population in the area and of short duration.

5. **SAFETY**

Construction sites typically pose various safety hazards to members of the public, particularly during unattended periods such as evenings, weekends and holidays. Due to the "remote" location of the South Ramp Expansion Area, potential public safety hazards is not anticipated to be significant.

During construction periods, aircraft operators and other tenants at South Ramp will be subjected to possible safety hazards. These potential safety hazards to aircraft operators, South Ramp tenants, and the general public can be minimized through strict adherence of all established safety requirements and through implementation of additional safety precautions where necessary by the contractor. Measures will also be taken to provide security for the South Ramp Expansion Area.

B. LONG TERM IMPACTS

1. **FLORA AND FAUNA**

Terrestrial flora and fauna at the South Ramp Expansion Area consists primarily of rodents, urban cats and dogs. These animals are highly motile and are not anticipated to be adversely impacted. No threatened or candidate listed endangered species of land fauna or flora exist, negating the potential for adverse impacts.

Anticipated impacts resulting from increased activities in the South Ramp Expansion Area should be negligible on existing habitats of the endangered Hawaiian Stilt, and any other waterfowl in the area. As has already been discussed in this section as well as in the water quality section, any increase in surface runoff or other discharge should be minimal and should have no significant influence on the water quality in Keehi Lagoon. Accordingly, one would expect that the Hawaiian Stilt habitat will not be adversely affected by any degradation of the water quality in the area due to development on the South Ramp.

Another possible adverse impact on the Hawaiian Stilt habitat might arise from the increase in activity and associated noise and air pollutant emissions resulting from increased use on the South Ramp Expansion Area. There is every reason to believe that these additional impacts would not be significant in light of the already high level of activity that occurs in the area. The Stilts' mudflat feeding area is already heavily impacted by noise from existing recreational activities and overhead flights within Keehi Lagoon. The old seaplane runway channels are heavily used by water skiers, boaters, and fishermen. The Hawaiian Stilt has acclimated to aircraft noise and heavy recreational use of Keehi Lagoon. Impacts associated with the South Ramp Expansion Area are not expected to affect the stilt's habitat. The prevailing northeast tradewinds will carry noise and air emissions away from the stilt's mudflat feeding area.

The anticipated impact of the South Ramp Expansion Area on the aquatic environment of Keehi Lagoon is not expected to significantly alter existing conditions. The lagoon has already been classified as biologically poor due to discharges upstream of the airport. Therefore, any impact to the marine habitat and fishing resources that may occur as a result of the project is not expected to have a significant impact on the overall aquatic environment.

The commercial baitfish operation in the Kalihi Basin adjacent to Keehi Beach Park is not expected to be negatively impacted by the South Ramp Expansion Project. Keehi Lagoon will not be significantly degraded by the proposed action. Currents in the lagoon circulate to the south, away from Kalihi Basin and the commercial baitfish operation.

## 2. HISTORIC AND ARCHAEOLOGICAL RESOURCES

Since no historic and archaeological resources have been identified within the airport property (Honolulu International Airport Master

Plan and Noise Compatibility Program, Volume 3, Environmental Assessment, prepared for State Department of Transportation, Airports Division, September 1989), the impact of the project on artifacts or structures of historic and archaeological value is negligible.

3. RECREATION

The South Ramp Expansion Area project should have little long term effect on current recreational activities in the area. If the proposed Lagoon Drive Marina (Draft Keehi Lagoon Recreational Plan Update, Edward K. Noda & Associates and Eugene P. Dashiell, AICP December 1987), is developed it will consist of approximately 750-850 slips, vehicular parking facilities, administration building, comfort stations, boat launch facility, boat fueling dock, restaurant/snack bar, club house, marine supply store, ferry transit landing, and a commercial marine facility, will be located parallel to Lagoon Drive.

Since existing waterborne recreational activities will be increased as a result of the proposed recreational marina plan, adverse impacts to recreational activities in the area is anticipated to be minimal. Moreover, harmonious coexistence between industrial facilities and recreational marinas is not an unusual nor conflictive phenomenon as demonstrated by San Francisco's Oyster Cove Marina, a joint marina industrial park development.

4. WATER QUALITY

Water quality in Keehi Lagoon will not be adversely impacted by project improvements such as paving and other impervious surfaces action. Surface water runoff is expected to be minimal in relation to the existing discharge from Kalihi, Moanalua, and Kapalama Streams and other sources of industrial and urban runoff. The water quality should improve to the extent that sediment discharges into Keehi Lagoon should decrease as the vacant land areas of the South Ramp Expansion Area are developed.

5. AIR QUALITY

There are no significant air quality impacts that are expected to result from the proposed expansion project. A slight increase in vehicular and aircraft emissions can be expected, however, it should not be of significant quantity to create any adverse environmental impacts in the industrially designated South Ramp Expansion Area.

6. NOISE

The proposed expansion project is not anticipated to have any significant impacts on noise levels. Increased noise can be expected as a result of increases in the numbers of vehicles and aircraft which will be operating in the South Ramp Expansion Area. However, the project site lies in the immediate vicinity of two of the airport's runways and therefore any increase in noise created by the South Ramp Expansion Area can be expected to be negligible in relation to existing noise levels created by a mix of aircraft landing or taking off from the nearby runways.

The anticipated noise levels will be generally compatible with existing uses at South Ramp. Offices to be located in the Expansion Area may require interior sound proofing to minimize interior noise levels.

7. SCENIC VIEWS

The existing view planes of the South Ramp Expansion Area are not expected to be adversely affected by the proposed project. The project will enhance existing aesthetic conditions through removal of old and deteriorated hangars and warehouses, clearing of overgrown brush, removal of the stockpile area and effective landscaping which will be part of the South Ramp development project.

8. TRAFFIC

The increased development that would accompany the proposed South Ramp Expansion Area is not anticipated to have major long term adverse impacts on the traffic flow along Lagoon Drive. Any increase in the traffic volume is primarily a function of relocating existing airport facilities from the North Ramp to the South Ramp. These facilities include general aviation facilities and the air taxi/commuter terminal at North Ramp.

9. SAFETY

Numerous standards and restrictions to promote safety and protect aircraft and businesses operating in the airport area will be adhered to as dictated by law. Among the regulations that will be adhered to are those dealing with lighting, vehicular and aircraft access, security, and maintenance. Additionally, airport height restriction requirements will be followed to ensure that structures do not interfere with aircraft operations and navigational aids.

VI. ALTERNATIVES TO THE PROPOSED ACTION

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A. NO ACTION

The air transportation system at the Honolulu International Airport (HIA) represents an integrated system composed of various aviation related operations and activities. The South Ramp expansion project is essentially a course of action necessary to allow maximum use of underutilized areas within HIA to accommodate the relocation and expansion of various airport functions which are being displaced by the expansion of the passenger terminal building. From a system-wide perspective, the "no action" alternative would place additional operational burdens upon other parts of the airport system and limit the Honolulu International Airport's overall ability to meet increasing airport function requirements.

B. ALTERNATE SITE WITHIN HONOLULU INTERNATIONAL AIRPORT

The Honolulu International Airport Master Plan documents the various development proposals within the HIA. These plans indicate that space for future development on the airport is very quickly being used up. Future developments will require acquisition of additional lands adjacent to the airport. Therefore, development of the facilities planned for the South Ramp in other areas of the airport appear to be very unlikely. Furthermore, delaying the development until additional lands can be acquired will not serve the mission of the Department of Transportation.

C. ALTERNATE SITE OUTSIDE OF HONOLULU INTERNATIONAL AIRPORT

The facilities proposed for the South Ramp require proximity to the runways and taxiways of the airport. Another site outside of the airport would not be appropriate.

VII. AGENCIES AND ORGANIZATIONS CONSULTED  
IN PREPARING THIS ASSESSMENT

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FEDERAL

U.S. Department of Transportation, Federal Aviation Administration  
U.S. Army Corps of Engineers  
U.S. Fish & Wildlife Services

STATE OF HAWAII

Department of Transportation, Airports Division  
Department of Transportation, Harbors Division  
Department of Business and Economic Development  
Department of Land and Natural Resources  
Department of Health  
Office of State Planning, Office of the Governor

CITY AND COUNTY OF HONOLULU

Board of Water Supply  
Department of Land Utilization  
Department of General Planning  
Department of Parks and Recreation  
Department of Public Works, Division of Engineering  
Department of Transportation Services

OTHER ORGANIZATIONS

Chevron U.S.A.  
Hawaiian Electric Company  
Hawaiian Telephone Company  
Honolulu Airlines Committee  
KFC Airports, Inc.

VIII. REFERENCES

VIII. REFERENCES

Airport Design Standards: Transport Airports. Federal Aviation Administration Advisory Circular 150/5300-13, September 29, 1989.

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