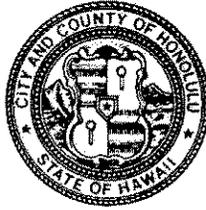


DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11<sup>TH</sup> FLOOR  
HONOLULU, HAWAII 96813  
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MUFI HANNEMANN  
MAYOR



WAYNE M. HASHIRO, P.E.  
DIRECTOR

EUGENE C. LEE, P.E.  
DEPUTY DIRECTOR

137747

January 25, 2006

RECEIVED  
06 JAN 27 P4:25  
OFFICE OF ENVIRONMENTAL  
QUALITY CONTROL

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

Dear Ms. Salmonson:

Subject: Final Environmental Assessment (FEA) and Finding of No Significant Impact (FONSI), Kawai Nui Model Airplane Park Comfort Station TMK: 1<sup>st</sup> 4-2-16:1, Kapaa Quarry Road, Kailua, Oahu, Hawaii

The Department of Design and Construction (DDC), Facilities Division, has reviewed the comments received during the 45-day public comment period that began on September 8, 2005 and ended on October 24, 2005. The agency has determined that this project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the next available OEQC *Environmental Notice*.

We have enclosed a completed OEQC Publication Form and four copies of the final EA (two hard copies and two PDF copies on CD-ROM).

Questions may be directed to Michael Sakamoto, Project Manager, Facilities Division, at 527-6323, or by email at [msakamoto@honolulu.gov](mailto:msakamoto@honolulu.gov), or to DDC's agent for the submittal, Charles Willson at Helber, Hastert, & Fee, Planners, at 545-2055 x239, or by email at [cwillson@hhf.com](mailto:cwillson@hhf.com).

Very truly yours,

  
for Wayne M. Hashiro, P.E.  
Director

WMH:ei

Enclosures

# KAWAI NUI MODEL AIRPLANE PARK



## COMFORT STATION

### FINAL ENVIRONMENTAL ASSESSMENT

PREPARED FOR:  
CITY AND COUNTY OF HONOLULU,  
DEPARTMENT OF DESIGN AND CONSTRUCTION

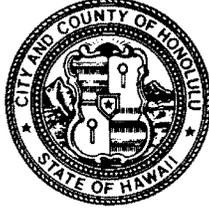
PREPARED BY:  
HELBER HASTERT & FEE, PLANNERS

JANUARY 2006

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11<sup>TH</sup> FLOOR  
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for Wayne M. Hashiro, P.E.  
Director

WMH:ei

Enclosures

# **Kawai Nui Model Airplane Park Comfort Station**

## **Final Environmental Assessment**

Tax Map Key 4-2-16: por. 1 Lot 4

January 2006

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## 1.0 INTRODUCTION AND SUMMARY

The proposed project is known as the “Kawai Nui<sup>1</sup> Model Airplane Park Comfort Station”, given its location at Kawai Nui Model Airplane Park (or “Model Airplane Field” on some maps, formerly Kawai Nui Regional Park) adjoining Kawai Nui Marsh. A Comfort Station and drinking fountain would be installed to replace an existing portable chemical toilet and to comply with Americans with Disabilities Act (ADA) accessibility standards. This use of public funds triggers the preparation of an Environmental Assessment (EA) in compliance with Hawai'i Revised Statutes (HRS) Chapter 343, Department of Health (DOH) Title 11, Chapter 200 of the Hawai'i Administrative Rules (HAR), and the National Environmental Policy Act (NEPA) of 1969.

### 1.1 GENERAL INFORMATION

Project Name:	Kawai Nui Model Airplane Park Comfort Station
Project Location:	Kawai Nui Model Airplane Park, Kapa'a Quarry Road Kailua, Ko'olaupoko, O'ahu, Hawai'i, TMK 4-2-16: por. 1 Lot 4
Proposed Action:	To construct a Comfort Station with running water, flush toilets, and ADA-accessibility improvements at Kawai Nui Model Airplane Park
Property Owner:	City and County of Honolulu, Department of Parks and Recreation
Applicant/Petitioner:	City and County of Honolulu, Department of Design and Construction
Accepting Authority:	City and County of Honolulu, Department of Design and Construction
Planning Consultant:	Helber Hastert & Fee, Planners Pacific Guardian Center, Makai Tower 733 Bishop Street, Suite 2590 Honolulu, Hawai'i 96813 (808) 545-2055 Fax: 545-2050
Total Acreage:	10.603 acres (designated park), 4.3 acres graded
State Land Use District:	Conservation, Protective (P) subzone
City and County of Honolulu Zoning:	P-1 Restricted Preservation Subzone

#### 1.1.1 Required Permits and Approvals

In addition to the Environmental Assessment (EA), the proposed comfort station will require a Conservation District Use Application (CDUA) and Board Permit from the State Department of Land and Natural Resources (DLNR), a Special Management Area Use Permit (SMA - Major) from the City and County of Honolulu (City), Department of Planning and Permitting (DPP), Land Use Division, with final approval by the City Council, and a Building Permit from DPP. Additional approval from the State Department of Health (DOH), Waste Water Division will be required prior to operation of the waste water system.

<sup>1</sup> Kawai Nui is also seen written as Kawainui, literally “the big water”. Usage in this document follows Pukui, et. al., except the usage of the source documents is retained when quoted or cited. This standard is also applied to other variant word uses.

<b>Permits, Approvals, and Consultations</b>	
<b>Oversight Agency</b>	<b>Permit, Approval, or Consultation</b>
<b>State of Hawai'i</b>	
Office of Environmental Quality Control	Environmental Assessment (HRS Ch. 343)
Department of Land and Natural Resources	Board Permit and Conservation District Use Permit
Department of Health Waste Water Division	Plan Review and approval of wastewater system
<b>City and County of Honolulu</b>	
City Council (via Dep't of Planning & Permitting)	Special Management Area Use Permit (Major)
Department of Planning and Permitting	Building Permit (Grading Permit not anticipated)
Board of Water Supply	Plan Approval (cross-connection control and backflow prevention requirements)

## **1.2 PURPOSE AND NEED**

The purpose of this action is to replace an existing portable chemical toilet with a basic comfort station facility at the existing Kawai Nui Model Airplane Park. The need is to provide an ADA-accessible facility with flush toilets, running water, wash basins, and a accessible drinking fountain while minimizing environmental and community impacts, costs, and maintenance. This is a public health, comfort, and handicap access improvement which supports an existing use of some 33 years duration. This action would also support any members of the community requiring a public restroom in the Kawai Nui Marsh area.

## **1.3 SUMMARY OF PROBABLE IMPACTS AND MITIGATION MEASURES**

The intent of the proposed project is to minimize potential impacts to any affected areas. It is expected that any potential impacts would be short-term and minimal during the construction of the proposed project. After the installation of the prefab comfort station, utility hookup, and access improvements, there are no foreseeable adverse long-term impacts.

### **1.3.1 Physical Environment**

Impacts to the Physical Environment are generally negligible. The following sections have no anticipated negative impacts: Geology, Climate, Topography, Soil, Flora, Avifauna, Water Resources, Aquatic Species, Archeological and Cultural Resources, Aesthetic and Visual Environment, and Land Use Controls. There are no anticipated cumulative impacts and only minor short-term construction impacts, including exposure of a minimal amount (about 0.12 acre) of ground cover, site preparation, and placement of the structure.

### **1.3.2 Socio-Economic Environment**

**Cultural Impact Evaluation.** No significant impacts to archeological, avian, fish, or plant resources are expected or likely. Socio-economic impacts would be negligible or slightly positive. No impacts on residential neighborhoods or traffic flow are expected or likely. A small positive cumulative impact on general quality of life and improved access to the

recreational, natural, and cultural resources of the Kawai Nui marsh area is likely, especially for families with children and visitors requiring handicapped access.

### 1.3.3 Public Facilities and Services

**Recreational Facilities.** Construction of the proposed project would improve access to public recreational resources at the existing Kawai Nui Model Airplane Park by providing a “family friendly”, clean and modern ADA-accessible comfort station with two handicap parking spaces and access improvements. Although intended to support existing park users, these improvements would also benefit hikers, runners, bicyclists, marsh clean-up volunteers, and other users of the marsh perimeter area and the planned Kawai Nui Marsh Pathway (“Pathway”). These users are not currently supported by public restrooms with running water, and this comfort station would be the only public restroom facility with flush toilets along the Pathway until the proposed Kawai Nui Gateway Park and Kawai Nui Visitors’ Center are funded and completed, as well as the only public drinking fountain in the area. The availability of a drinking fountain and a washroom with running water is valuable to the community, especially if Park or Pathway users or marsh clean-up volunteers become dehydrated or sustain an injury which needs to be cleaned.

**Police and Fire Protection.** There are two fire stations that serve the Kailua area, including the project site. The first is located on Kalaniana’ole Highway, approximately 1.5 miles south of Kawai Nui Marsh. The other fire station is located next to the police station, on Ku’ulei Road east of the marsh. The police station serves the area from Waimānalo to the Marine Corps Base Hawai’i, Kaneohe Bay.

The proposed structure supports the existing use of the park which would be unchanged. It would be constructed of fireproof materials, and would be locked at night. No increase in the existing level of calls for police and fire protection services is anticipated or likely. The comfort station would be oriented to allow police to observe the entryway while making rounds to minimize police concerns regarding adequate surveillance of a potential “hangout” area within a mile of Kalāheo High School.

## 1.4 DETERMINATION

The significance criteria found in §11-200-12 of the Hawai’i Administrative Rules (HAR) of the Department of Health (DOH) are employed to determine whether any action may have an effect on the environment:

1. The proposed comfort station and access improvements do not involve an irrevocable commitment to loss or destruction of any natural or cultural resource.
2. The project would not curtail the range of beneficial uses of the environment; it would increase beneficial uses by providing “family friendly” facilities which would benefit park users, their families, Kawai Nui Marsh Pathway users, and those running, walking, hiking, or bicycling the marsh perimeter.
3. The Proposed Action is consistent with the State’s long-term environmental policies, and supports the *Kawai Nui Marsh Master Plan* and agency goals and plans for management and enjoyment of Kawai Nui Marsh and its environs.
4. The project would not affect the economic welfare, social welfare, and cultural practices of the community or State.

5. There would be a beneficial impact on public health as a result of the project.
6. No significant secondary impacts resulting from project implementation (such as population changes or effects on other public facilities) are expected or likely.
7. Evaluation of the project identified no significant potential impacts associated with stormwater runoff and sedimentation. Regardless, contractors would be required to implement Best Management Practices (BMPs) to mitigate potential impacts in the event of heavy rains during construction. No degradation of environmental quality is expected or likely.
8. Analysis conducted for the EA has shown that the project will have no impact to the wetlands ecology of the marsh.
9. There are no threatened or endangered species or habitat in the project area. There are endangered waterbirds (and habitat) that exist primarily in the southeast area of the marsh about 3/4 mile to the southeast. The implementation of the proposed project would have no effect on these areas.
10. Air quality and ambient noise would not be affected by the proposed project other than very minor noise when the comfort station is delivered and the leachfield constructed. No residences would be affected.
11. The proposed comfort station is outside the 500-year flood plain, and would not affect or suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;
12. The implementation of the proposed comfort station would not affect vistas of the marsh or scenic viewplanes.
13. The implementation of the project and its longer-term maintenance and use would not require considerable energy consumption. No electrical hookup is required.

Therefore, under the provisions of Hawai'i Revised Statutes (HRS) Chapter 343 and Title 11, Chapter 200, Hawai'i Administrative Rules (HAR) of the Department of Health (DOH), the overall and cumulative effects of the Proposed Action would not have a significant adverse effect on the environment, and an Environmental Impact Statement would not be required. The City and County of Honolulu Department of Design and Construction has therefore made a Finding Of No Significant Impact (FONSI).

### **1.5 COMPATIBILITY WITH LAND USE PLANS AND POLICIES**

The proposed project is consistent with the City and County of Honolulu, State of Hawai'i, and Federal Government land use plans and policies, and with the *Kawai Nui Marsh Master Plan*. Section 1.1.1 provided a list of the permits and approvals needed from the various County and State agencies. No approvals have been obtained for the project at this time.

## **1.6 ALTERNATIVES CONSIDERED**

Four alternative locations were considered for the proposed project: 1) the No Action Alternative; 2) Alternative # 2 – Southeast Location, 3) Alternative # 3 – Southwest Location, 4) Alternative # 4 – Northwest Location. (Alternative waste disposal options were also considered and resolved early in the process, as noted on page 2-4.)

### **1.6.1 Alternative #1 – The “No Action” Alternative**

The “No Action” alternative means the area would remain in its existing state. The existing temporary “Jet-o-Matic” (“Porta-Potty”-type) portable chemical toilet would remain in place, and there would be no running water or washroom facilities. The existing portable chemical toilet is blocked from the lot with a concrete piling and is not handicap accessible.



The “No Action” alternative would not meet the purpose and need for the proposed project and would be inconsistent with the desires of the park users, the intent of the City Departments of Parks and Recreation (“DPR”) and Design and Construction (“DDC”), would not support the DLNR’s 1994 *Kawai Nui Marsh Master Plan* goal to enhance recreational opportunities in the area, and would not provide accessible facilities for handicapped users of the site. For these reasons, this alternative was rejected.

### **1.6.2 Alternative # 2 – Southeast Location (Preferred Alternative)**

This location is on the makai (open field) side of the parking lot closest to the first parking space on the outside of the driveway curve, and adjoins the southern border of the mown grass field and the area where the field transitions to tall grass (see Fig. 1). This location exhibits some ground settlement at the edge of the parking lot, but has several key advantages: (1) construction in this area is ideal for the placement of the leachfield inside the tall grass area outside of the flight areas, so construction (or maintenance) activity within the flying area would be minimized, (2) this is a flat area with good soil percolation, so there would be no runoff to impact the wetlands ecology of Kawai Nui Marsh, (3) construction in this location would allow simultaneous needed repair of the settled corner of the parking lot (advantageous to the project and budget) (4) this location would have the greatest (over 140’) setback from the street and furthest (over 200’) distance from the drainage ditch along the street, (5) this location would allow the most effective landscaping to blend into the tall grass in the background and would have the least visual impacts, and (6) this location would orient the entry for easy after-hours surveillance by Kailua Police. Disadvantages include slightly greater site preparation and engineering work to minimize possible future ground settlement issues – a minor issue balanced by a far better location for the leachfield and water service, and the capability to repair the settled portion of the parking lot on the same contract. (See Figure 1 for the location of alternative comfort station sites.)

### **1.6.3 Alternative # 3 – Southwest Location**

This location is on the inside curve of the driveway on the Kapa’a Quarry Road (west / mauka) side of the parking lot closest to the first two spaces. This area also shows noticeable uneven ground settlement, but this does not affect the paved areas. Two Fiji

Fan (Loulou) palms (*Pritchardia Thurstonii*, a non-native species) would likely require relocation a few feet back from the structure (or could be replaced with a native species more appropriate to the marsh). The advantages of this location are that it has: (1) good flexibility in handicap access space if the entry were to be reconfigured for additional spaces, (2) better availability from Kapa'a Quarry Road, and (3) the best clearance from flight operations. Disadvantages are (1) more noticeable visual impacts, (2) reduced setback from the street and the drainage ditch along the street, and (3) a gentle slope which drains toward the street which increases the possibility that construction runoff or overflow could run to the drainage ditch along the roadway, which flows into Kawai Nui Marsh.

#### 1.6.4 Alternative # 4 – Northwest Location

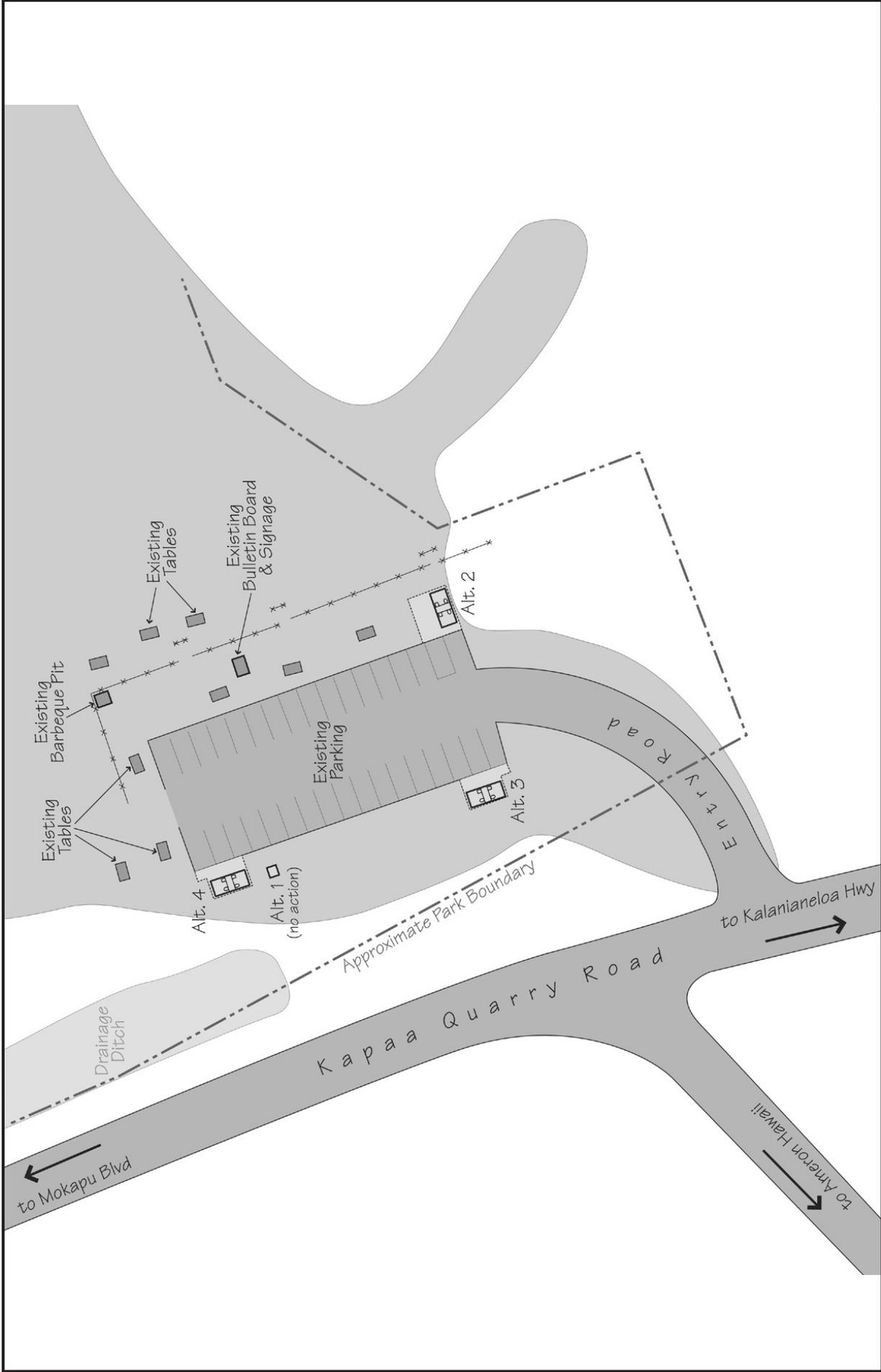
This location places the new comfort station structure on the street side (west or mauka) of the north end parking lot, the location of the existing "Jet-o-Matic" portable chemical toilet. This is an area with a moderate slope which drains toward the drainage ditch along the street. This location is less desirable as (1) visual impacts would be more pronounced, (2) the orientation of the entry would not be easily observable from the street for police on nightly patrols, and (3) leachfield construction would be in closer proximity to the drainage ditch along the road, may require digging up a portion of the flying field, and would have a greater likelihood of impacting water quality in the event of runoff during construction (although these impacts would be minor and controllable), or in the event of an overflow. After construction, impacts are unlikely unless the leachfield requires maintenance or has other operational problems, but this location was excluded from consideration due to potential impacts.

#### 1.6.5 Alternatives Analysis Conclusion

The No Action Alternative did not satisfy the purpose and need for the Proposed Action, and Alternatives # 3 and # 4 did not adequately minimize environmental and visual impacts. Alternative # 2 was determined to be substantially superior in meeting the needs identified in the study without significant environmental, community, or visual impacts, and was selected as the Proposed Action. Several alternative alignments (face-on, side-on, and angled) were also considered to minimize visual impacts at the selected site, with an angled presentation selected to improve landscaping opportunities. (See proposed final layout (schematic view) on Fig. 4 on page 2-4a.)

### **1.7 UNRESOLVED ISSUES**

The tank and leachfield design has not yet been finalized. The area of ground disturbance is estimated at 0.12 acres (about 5,200 square feet, which would include bringing in a new water line and resurfacing the two handicapped-accessible parking spaces). Leachfield operational issues are not yet fully defined, but it will be constructed in compliance with all applicable, City, State, and Federal standards, and must be approved by the Hawai'i Department of Health Wastewater Division prior to operation.



### Site Alternatives Analysis

Kawai Nui Model Airplane Park Comfort Station  
 Kailua, Ko'olaupoko, O'ahu

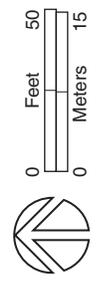


Figure **1**

## **1.8 PROJECT COST**

Preliminary estimates of project construction costs are:

\$ 47,700.	CXT "Cortez" prefabricated, pre-plumbed comfort station
\$ <u>1,850.</u>	ADA-accessible drinking fountain (optional CTX built-in)
\$ 49,550.	Structure cost, delivered to site and plumbing hooked up
\$ <u>4,950.</u>	General contractor's 10% markup
<b>\$ 54,500.</b>	<b>Structure Total</b>
\$100,000.	Septic tank and leachfield
\$ 10,000.	Wastewater hookup to leachfield
\$ 5,000.	Contractor site preparation for building placement
\$ 10,000.	New water line and plumbing hookup, permits, fees
\$ <u>12,000.</u>	Parking lot (3 spaces rebuilt as 2 ADA spaces with signs and striping)
<b>\$137,000.</b>	<b>Site Work Subtotal (very rough estimate)</b>
\$ 13,700.	10% Mobilization
\$ <u>13,700.</u>	10% Contingency
<b>\$164,000.</b>	<b>Site Work Total</b>
<b>\$220,000.</b>	<b>Construction Total (rounded from \$218,900)</b>

A \$250,000 funding request was recommended to be conservative, and to allow for a design and planning contingency to address unforeseen circumstances and to adjust for the current situation on construction bids.

The above figures do not include consulting fees for architectural and engineering design, geotechnical/soils analysis, planning, and related services, which were funded in 2003 by a \$100,000 Kailua Community Vision Group ("CVG") grant.

## 2.0 PROJECT DESCRIPTION

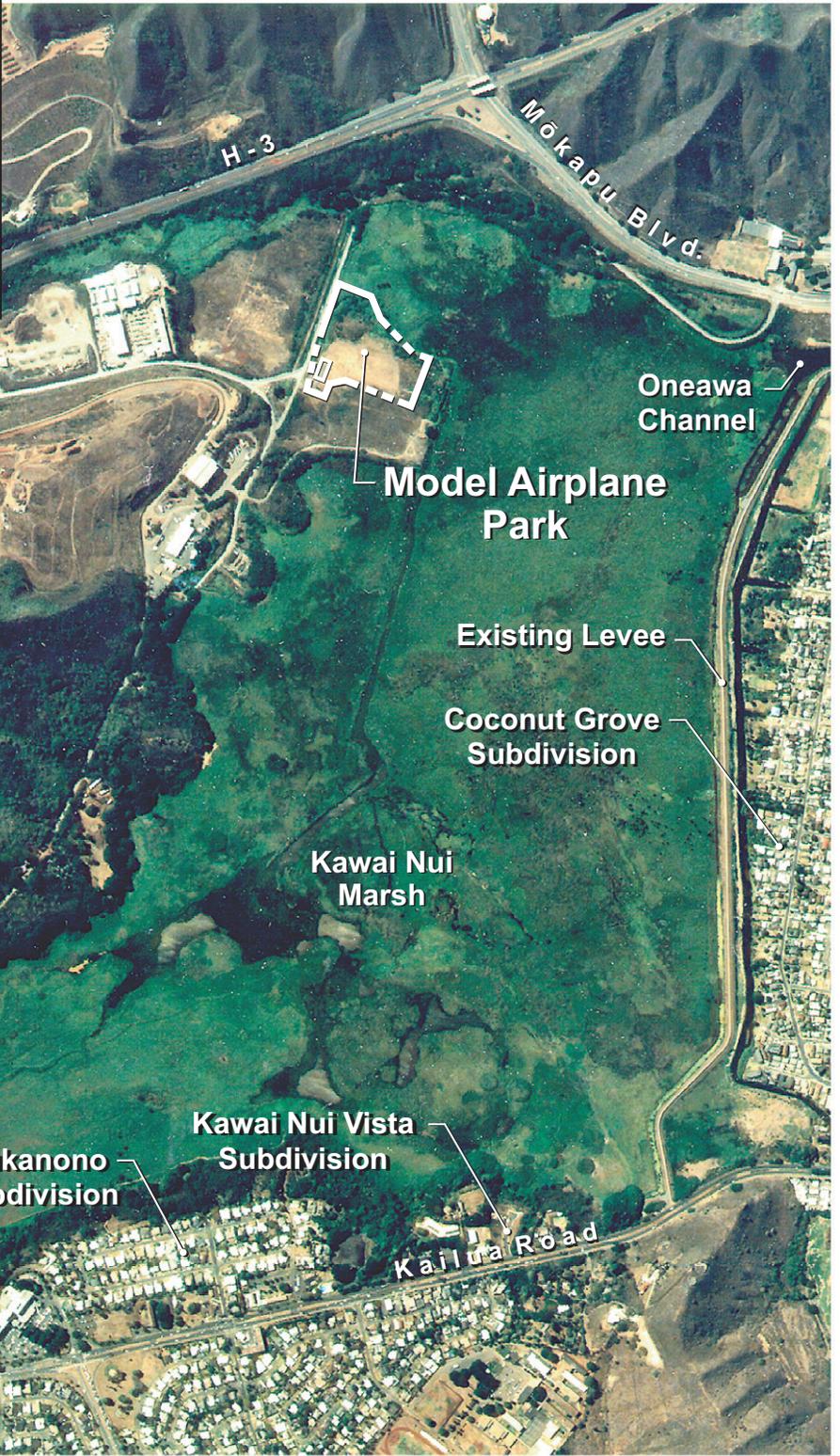
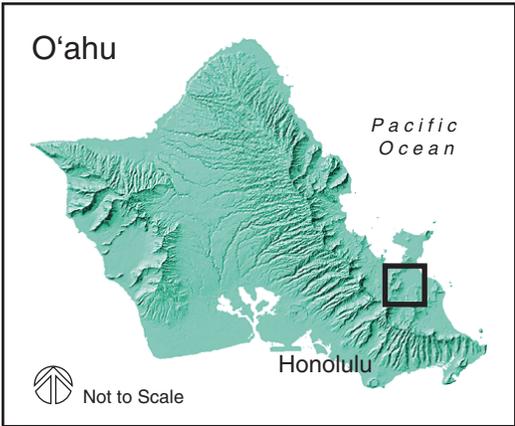
### 2.1 INTRODUCTION

**Location:** The proposed project is located in Kailua Town, Ko‘olaupoko, O‘ahu on the northeast, *ko‘olau* (windward) side of O‘ahu approximately ten miles north of Honolulu. The *ahupua‘a* of Kailua is the largest valley and the largest *ahupua‘a* of the Ko‘olaupoko District. Kawai Nui Marsh is the largest remaining wetland in Hawai‘i, consisting of 830 acres nestled between the Ko‘olau mountain range and Kailua Town. The marsh is bound by Kapa‘a Quarry Road to the west, Mōkapu Boulevard to the north, the Coconut Grove subdivision to the east and Kailua Road to the south (Figure 1). The marsh is an important community resource for its cultural history, its wetlands habitat, and as an essential flood control basin. One measure of its significance is the recent February 2, 2005 World Wetlands Day (Ramsar Convention) designation of the Kawai Nui and Hamakua Marsh Complex to the list of Wetlands of International Importance. This is the first Ramsar designation in Hawai‘i and only the twenty-second in the United States.

The Model Airplane Park (or Field) is located on reclaimed wetlands on the northwestern border of Kawai Nui Marsh over a former county landfill / rockfill (dump) site. It is bound by Kapa‘a Quarry Road to the west, a former City landfill area to the northeast, east, and south, and by unimproved and overgrown portions of designated Model Airplane Park lands to the north between the flying field and the marsh. The flying field portion of the park comprises only about 40% of the designated park area, so the buffer zone between the user areas and the wetland areas of the marsh is larger than the user area. The only open water in close proximity is the drainage ditch along Kapa‘a Quarry Road, which does not support a normal wetlands ecology due to the continual use of herbicide by the City to control the growth of invasive weed species.

**Ownership:** Currently, the City is the primary landowner of the Kawai Nui Marsh (Figure 2). The City is working to transfer and consolidate ownership of most of the marsh’s 830 acres to the State DLNR, which would be responsible for the oversight and control of the marsh once the right, title and fee simple interest of the lands are transferred. (Oneawa Channel would also be transferred to the State by cancellation of an Executive Order that initially transferred the channel to the City as a separate matter.) The current status of the two transfers are uncertain, but are said to be progressing. The Model Airplane Park has been subdivided as “Lot 4” to create a separate legal designation to facilitate return of the park to the City DPR by Executive Order once the transfer of the marsh is complete.

**Area:** The Model Airplane Park, the project site, is an irregular (roughly trapezoidal) property of 10.603 acres (shown as “Lot 4” on the 2001 subdivision parcel map in Appendix A-1 and A-2), of which only about 4.3 acres is graded for the Model Airplane Park use (according to the original 1972 Grading Plan [Appendix B-1], which illustrates only grading boundaries). The 2001 subdivision map shows approximately 825 feet of frontage on the property line along Kapa‘a Quarry Road (the widest point), and a depth of about 800 feet to the east. (The grading plan shows a smaller 484± foot graded street frontage and a 503± foot graded depth west-to-east.) A City easement for the existing drainage channel is shown along the street frontage on the subdivision map, but not on the Tax Map Key (TMK). About 180 feet east of the parcel (makai, toward the middle of the marsh), there is a second berm at the limit of the fill area, and a City and County drainage channel cut through the marsh east of the berm.



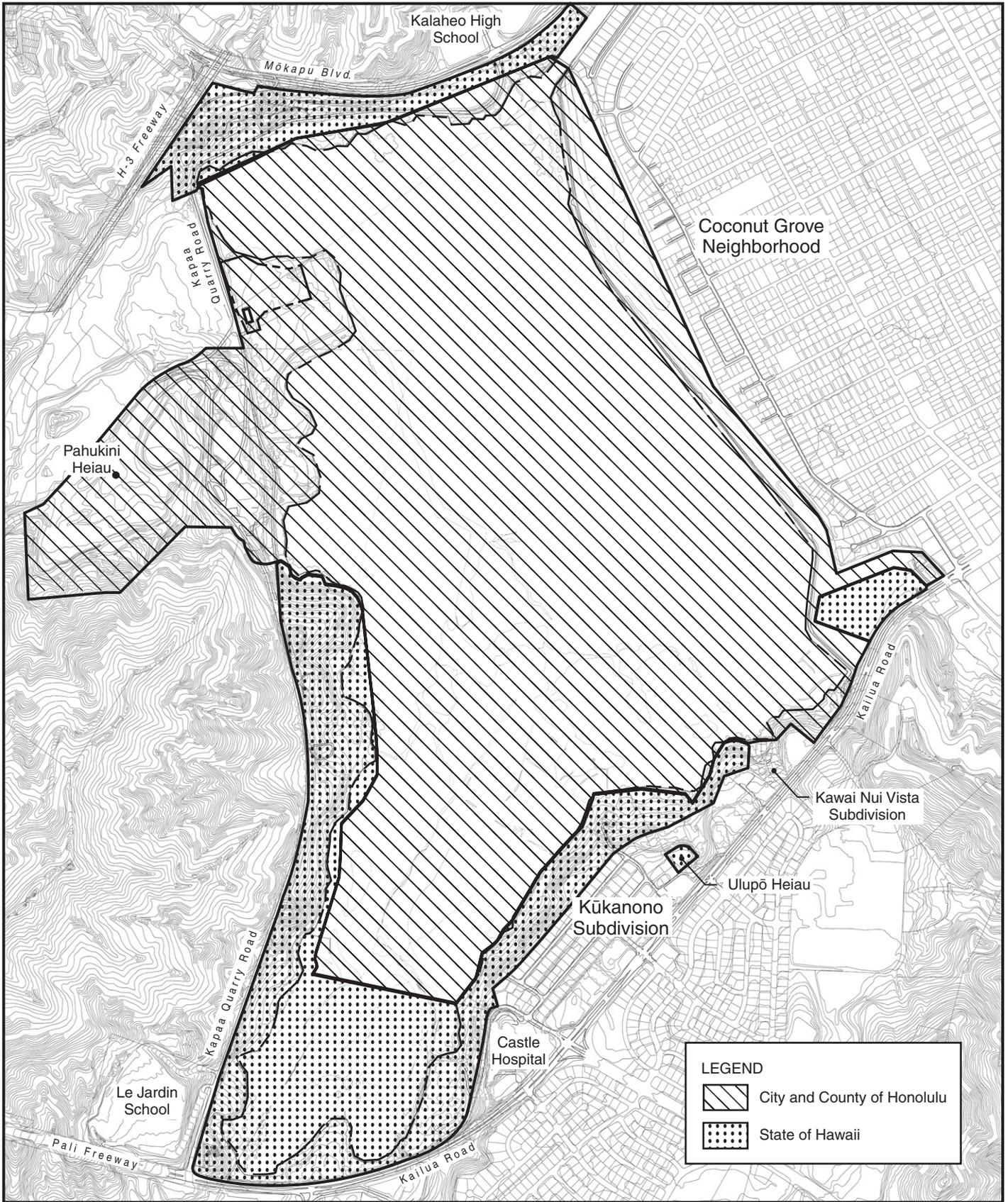
**Project Location**

Kawai Nui Model Airplane Park Comfort Station  
 Kailua, Ko'olaupoko, O'ahu



Not to Scale

Figure  
**2**



## Land Ownership

Kawai Nui Model Airplane Park Comfort Station  
 Kailua, Ko'olaupoko, O'ahu

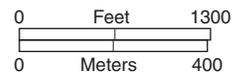


Figure  
**3**

The flying area uses the makai portion of the graded area, and is surrounded with tall grasses on three sides. This is a well-groomed grassed field on leveled fill material on top of the former landfill, with a slight dropoff at the edge of the built-up fill area. The useful flying area is about 400 feet wide (north-to-south) at the fence separating the spectator area and parking lot from the flying area. This tapers down to less than 300 feet wide at the east (makai) end, some of which appears to have been lost due to encroachment by the tall grasses at the perimeter. Slightly over 400 feet of depth is available as useful “flying field” area for fixed wing aircraft, and slightly less than 300 feet for the helicopters (due to the space fenced off for the parking lot and spectator area). The area on the street side of the parking lot and berm is not used, but provides a buffer between the park and the road.

## **2.2 PROJECT BACKGROUND**

**History:** In 1972, the City designated a Model Airplane Field for enthusiasts to fly radio-controlled (“R/C”) model aircraft on the western portion of Kawai Nui Marsh on previously reclaimed marsh land over a former sanitary landfill (dump) site. The site has been variously referred to in past actions as “Kawai Nui Park” (by DLNR in their use approval of CDUA OA-378 on Sept. 18, 1972), as “Kawainui Regional Park” (on the 1972 Grading Plans), and as Kawai Nui Model Airplane Field by the City DDC Division of Land Survey and Acquisition on a subdivision map approved November 16, 2001.

The City and County of Honolulu Department of Parks and Recreation (“DPR”) administers and maintains this park, and provided a “Jet-o-Matic” (“Porta-Potty”-type) portable chemical toilet about 14 - 15 years ago to support the park, and to address public health concerns. This was appreciated by park patrons, although the regular, sustained, daily use of this park area suggests an ADA-accessible lavatory facility featuring modern plumbing and hand-washing facilities would be more appropriate than the chemical toilet. The Kailua Community Vision Group initiated a project to provide a simple ADA-accessible restroom facility, and approved it as a project in the last quarter of 2001, with \$100,000 for design and planning approved and funded for 2003. The Kailua CVG coordinated with DPR and the City Department of Design and Construction (“DDC”) to come up with a mutually-acceptable, cost-effective design. The City is awaiting completion of the Design and Planning phase before approving construction funding. The CVG funded the design work and this Environmental Assessment (“EA”) and Special Management Area Permit (“SMA”) to allow work to proceed and produce reliable cost estimates.

**Positioning:** This is the only field on O’ahu formally designated for model aircraft uses, which includes fixed wing aircraft, helicopters, and gliders. This area is ideally suited for this type of recreational use. The park provides a large grassed field surrounded by wide open area over the marsh on three sides. There are no nearby residential housing units and relatively little commercial or recreational human activity within about 600 yards (1/3 of a mile) of the flight area. The area afforded by the open marsh land provides a huge area of unobstructed airspace with relatively stable air and no conflicting uses. The large field provides adequate space for even inexperienced fliers with an area surrounded on three sides with tall grass, which would intercept a model aircraft with electrical, mechanical, communication, or human failures resulting in loss of control. Because the park area and the expansive open area of the marsh does not support team sports or pedestrian use, this area provides a large margin of safety for a hobby which must otherwise be practiced in more restrictive surroundings. The open

buffer area exceeds the range of the model airplanes' radio control systems, which makes this an ideal site for this park. Park users indicated they had never heard of any aircraft accidentally reaching any residential area.

**Patronage:** Park use is quite regular, but varies according to weather, season, day, time, and what other activities are going on.<sup>2</sup> Dan Brookins, a long-time park user and member of the Kailua CVG, estimates weekday turnout is about 25 to 40 users, and 60 to 80 users on weekends. Many may arrive and fly for a short period, then depart, especially on weekdays, so they are not all present at once. Park use is heaviest during special events – which may draw up to 100 park users per day – and their annual summer Open House – which may draw up to 500 per day. (Two additional portable chemical toilets are rented to support the heavy turnout. This practice would continue after installation of the comfort station until it is possible to confirm the new comfort station can accommodate this single annual peak load weekend.) Because there are no other nearby public restrooms, the existing portable chemical toilet is also used by others in the community, including volunteers working to clear the marsh of invasive species, and by hikers, runners, bicyclists, and other recreational and educational users of the marsh perimeter area. Upgrading to a comfort station with running water will serve all these users. Wash-up facilities are an especially pressing need for volunteers exposed to the existing bacterial contamination of the marsh by leptospirosis and other pathogens, as noted by a sign at the park entry.

**Consistency with Community Directions:** This action is consistent with long-term community planning for this area. The DLNR 1994 Master Plan, building on the Department of Planning and Economic Development (DPED) 1983 *Resource Management Plan for Kawai Nui Marsh*, proposed the enhancement of recreational opportunities in this area. This project clearly supports that objective. Additionally, this public facility would support other existing recreational uses of the Kawai Nui Marsh perimeter area, including hiking, running, bicycling, and related uses. It also supports intended future recreational and educational uses, such as the development of the Kawai Nui Marsh Pathway (also know as the Kawai Nui Marsh Perimeter Pathway or Multiuse Pathway), which is likely to increase the public use of the marsh perimeter, but for which there are no other public restroom facilities with running water in the area. The facility would also support volunteer workers (and the women from the nearby correctional facility) who help clear vegetation from the marsh area. These people currently use the single portable chemical toilet, but have no drinking fountain or running water for wash-up available. Thus, this project provides multiple uses to the community, supporting existing park users, spectators who stop to watch the aerobatic aircraft and stunt helicopters, existing perimeter users, volunteer and other workers, and future Pathway uses. (See Section 3.12 *Relationship of the Project to Existing Public Plans, Policies and Controls* for more information for consistency with planning objectives.)

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<sup>2</sup> - Park use declines occasionally when the KMCAS base commander allows flight operations on base, which has been the case recently. This access depends upon the base commander, the level of other activity, and other conditions on base, so it is not considered a regular or stable venue for radio-controlled aircraft operations.

## **2.3 PROPOSED PROJECT**

The proposed comfort station replaces the existing “Jet-o-Matic” portable chemical toilet with a modern ADA-accessible comfort station providing running water, flush toilets, waste digester septic tank and leachfield, a built-in ADA-accessible bi-level drinking fountain, two ADA-compliant parking stalls (one van accessible) and accessible walkways to the restroom and fountain.

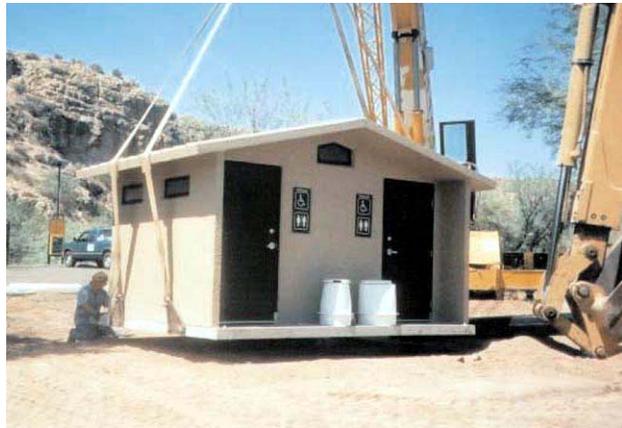


### **2.3.1 Design Features**

**Structure:** A CXT “Cortez” comfort station was selected to accommodate the limited project budget. This is a prefabricated, pre-plumbed, vandal resistant structure comprised of pre-cast reinforced 5,000 psi concrete with 4”-thick “colored through” concrete walls and a 5”-thick concrete floor and roof. The building is 10’3” by 17’, stands 9’ 9-3/8” high, and is available in several earth-tone colors and textures for the structure and roof. The building will not rot, rust, or burn, and is designed for minimum maintenance in harsh and vandal-prone environments. Plumbing and electrical components are pre-installed. Hookups stub-out to an opening within the floor in the chase area for rapid connection, including the built-in ADA-accessible bi-level stainless steel drinking fountain installed between the doors (not illustrated). All cleaning is designed to be accomplished with a soapy brush and it can be hosed down inside and out (after removing paper products). Graffiti may be removed with Xylene solvent.



**Installation:** The building is designed to be placed at ground level on a base of compacted gravel, but a concrete pad is likely be used due to unstable soil and ground settlement conditions encountered on site. The building is positioned in place with a truck and crane (see photo) on top of pre-plumbed utilities which rise through the base material and into the utility access hole in the floor of the chase area, and are easily connected after placement. The floor would stand slightly above grade to allow water to flow away, but not enough to impede handicap access.



**Waste management:** The normal waste handling options for a project of this nature would be (1) a standard sewer connection, (2) a holding tank, or (3) a leachfield. A County sewer connection is not available along Kapa’a Quarry Road, so this option is excluded. A holding tank is not the preferred option as the City prefers to avoid a system that requires frequent pumping. A leachfield is an ecologically sound option with

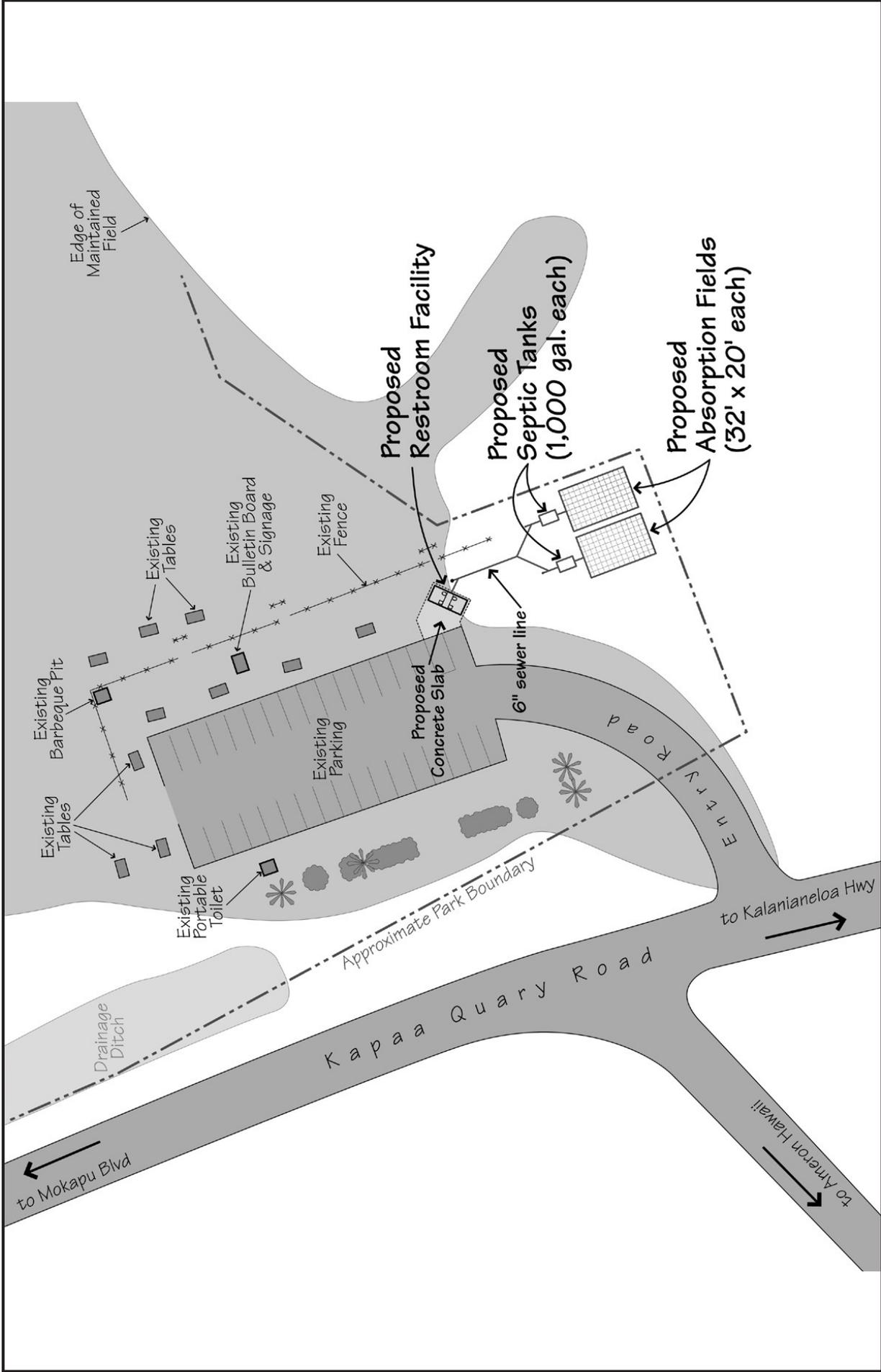
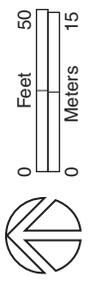


Figure 4



**Site Plan**

Kawai Nui Model Airplane Park Comfort Station  
 Kailua, Ko'olaupoko, O'ahu

the least maintenance, and was selected as the preferred option for this project. Waste goes to a tank which acts as a digester, breaking down wastes so only liquids flow to the leachfield and are disbursed over an area where the nitrogen-rich nutrients support plant growth. The tank can trap any solids that do not break down, and can be pumped periodically, as required. This system is designed to avoid backflow if rainy conditions saturate the leachfield area. No leachate is expected or likely to travel the 220-foot distance to the nearest water (a flood control drainage ditch at the side of the road).

### 2.3.2 Americans with Disabilities Act (ADA) Requirements

The ADA requires new construction with public funds to be made accessible to those with disabilities. All new construction would be designed to meet the requirements of the Americans with Disabilities Act and Chapter 103-50, Hawai'i Revised Statutes ("HRS"), and to be compatible with recommendations from the U.S. Access Board's Regulatory Negotiating Committee on Access to Outdoor Developed Areas, the Recreation Access Advisory Committee's final design guidelines for "Accessible Recreation Facilities," and/or other accessibility guidelines for outdoor recreation areas.

Construction drawings indicate the existing parking lot is 153' by 63' and has 34 parking stalls striped at 9' by 18' dimensions, with a 27' separation between rows. ADA Accessibility Guidelines ("ADAAG") require one standard ADA parking space plus one ADA van space for lots with 26 to 50 spaces. This can be accomplished by restriping three parking spaces for two accessible parking spaces and an accessible entryway to comply with ADA standards.

The proposed project supports additional recreational and educational opportunities for the physically disabled by providing two ADA-compliant rest rooms with flush toilets, running water, and external bi-level drinking fountain, in place of the completely inaccessible portable chemical toilet. This existing toilet is blocked from the parking lot by a concrete piling, cannot be used by wheelchair-bound park users, and has no washing facilities or drinking water availability whatsoever.

### 2.3.3 Maintenance and Responsibility

Maintenance of the proposed comfort station would be the responsibility of the City DPR, consistent with the maintenance and operation of other parks within the system. The DPR morning and evening crews would unlock the gate and restrooms around 7 am and lock up when dark (by 7 pm). Supplies, cleaning, and maintenance would be handled by a DPR roving crew. DPR grounds-keeping staff would handle watering and mowing the grass, periodically monitor the level of the septic tank, and see the tank gets pumped, as required. Following current practice, the Aloha State R/C Club has indicated a willingness to assist with the upkeep of the facility, and some model airplane park users would be allowed to have keys so the gate can be opened or supplies replenished, as needed for events.

### 2.3.4 Signage

**Park Entry:** The park entry signage would be upgraded to indicate the hours of operation and discourage parking for non-park users; this would help prevent getting cars locked inside the lot if the owners leave for other marsh perimeter activities.

**Comfort Station:** The proposed project would include signage at the comfort station and two ADA-compliant parking stalls consistent with ADA requirements, City DPR standards, and any other applicable requirements.

### **3.0 EXISTING CONDITIONS AND IMPACT ASSESSMENT: PHYSICAL ENVIRONMENT**

This chapter describes the existing physical environment and examines the anticipated impacts of the proposed Kawai Nui Model Airplane Park Comfort Station project and relevant measures to mitigate potential impacts.

#### **3.1 PROJECT AREA**

The project – adding an ADA-accessible comfort station to replace the current inaccessible portable chemical toilet – would be confined to a very small area adjoining and connecting to the parking lot. The project includes a leachfield and septic tank for waste disposal, an accessible entryway, and re-striping to add two ADA-compliant parking spaces providing direct access to the comfort station. No other actions are intended in this upgrade or included in this assessment.

##### **3.1.1 Residential Neighborhoods**

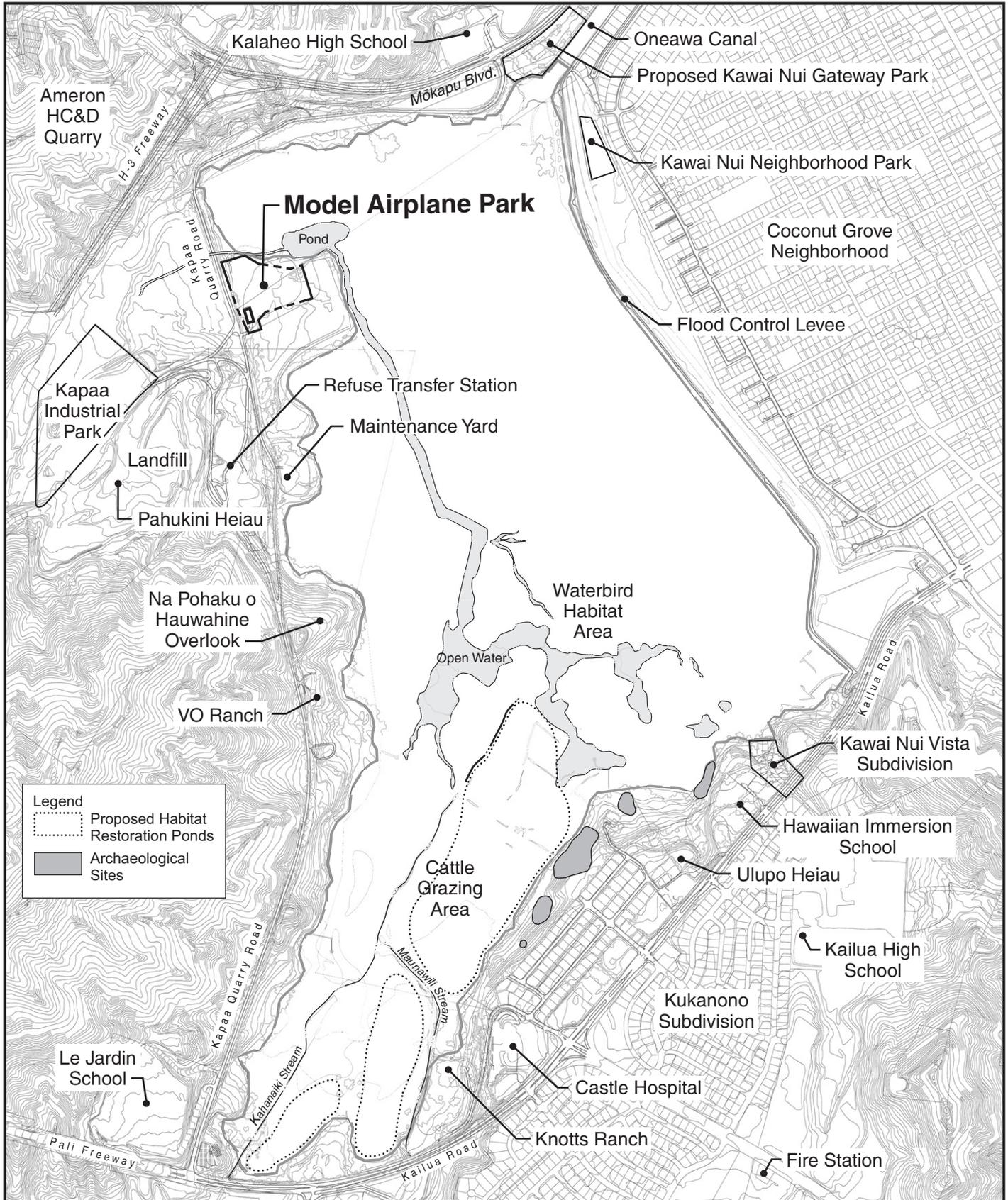
The closest residential neighborhood is found along Mōkapu Boulevard, about one-third mile due north of the Model Airplane Park. Coconut Grove, one of the most populated areas of Kailua, is over one-half mile due east on the east side of the marsh. (See Fig. 4, Surrounding Environment.) This action has no foreseeable impacts on residential areas, as there would be no change in the use of the park. None of the park users questioned prior to the preparation of this report was aware of any instance of a model aircraft from this park reaching a residential neighborhood during the 30-year history of their activities on this site. Upgrading the present portable chemical toilet to a modern, ADA-accessible comfort station is unlikely to have any impacts on any residential area.

##### **3.1.2 Schools**

Several schools are located in proximity to the boundary of the marsh. Le Jardin is located on Kailua Road at the intersection with Kapa‘a Quarry Road in the area formerly occupied by the Kailua Drive-In. North of the marsh, Kalāheo High School is located just across Mōkapu Boulevard. The Ke Kula ‘o Samuel M. Kamakau Hawaiian Immersion School is located on Kailua Road. Only Kalāheo High School, just over one-third mile north-by-east of the park, is in close proximity. Insofar as the proposed comfort station is within walking distance of the school, it is possible that students could utilize the comfort station – a positive benefit to the students. It is also possible that some students could find the comfort station as a possible hang-out area, although this is considered unlikely due to two factors: (1) this is not a common pedestrian pathway between the school and residences, shopping, or normal after-school recreational opportunities, and (2) Model Aircraft Park users are commonly present in the afternoons and take an active role in looking after their park, and would likely report any suspicious activity to the police. However, to mitigate potential loitering or misuse of the facility, (1) the structure would be locked during night-time hours and (2) the comfort station can be oriented so the entry is visible from the street and observable by to police during their patrols through the area.

##### **3.1.3 Industrial Uses**

For many years, Kapa‘a Quarry Road has been heavily used by trucks and other large vehicles to access the Kapa‘a Landfill and the nearby industrial park. The City and



## Surrounding Environment

Kawai Nui Model Airplane Park Comfort Station  
 Kailua, Ko'olaupoko, O'ahu

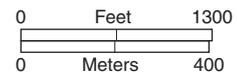


Figure  
**5**

County of Honolulu closed the landfill in the mid-1990's, but still operates a refuse transfer station *mauka* of the road. With the opening of the H-3 Freeway, the majority of trucks access the industrial area from Mōkapu Boulevard. This entry route passes directly in front of the Model Aircraft Park, with an entry road directly opposite the parking lot, and the continual passage of heavy trucks results in slightly elevated levels of fugitive dust and noise. These uses would not be affected by the installation of the proposed comfort station.

**Anticipated Impacts:** No significant impacts to residential neighborhoods, schools, or industrial uses are anticipated as a result of the proposed project.

### **3.2 GEOLOGY**

Kawai Nui Marsh dates from between the Tertiary Period (about two million years ago) to the early Pleistocene Epoch (about one million years ago). It was once located in the center of a caldera which indented the summit of the Ko'olau Volcano. The caldera floor and volcano walls sagged, due to erosion and poor support to form the Kailua syncline (behind Lanikai). Today, Kawai Nui Marsh is located in the center of the old caldera. Underneath the marsh exists a volcanic plug of dense basaltic rock, which prevents stream and rain runoff. From all directions, except from the east, the marsh is surrounded by basaltic flows, dike complexes, cemented throat breccia and the talus slopes of the Kailua and Ko'olau Volcanic Series.

Between 6,000 and 4,000 years ago, Kawai Nui Marsh was an open saltwater marine bay, as evidenced by marine deposits of coral sand/silt recorded at a 30-foot depth. A sand barrier formed on the *mauka* side of the coral reef, thus increasing deposits of alluvial sedimentation and soils in the newly formed lagoon. Athens and Ward (1991) estimated that the marsh was transformed into a freshwater system around 200 B.C. (DLNR, 1994).

The Model Aircraft Park sits on the perimeter of Kawai Nui Marsh on an elevated parcel of fill over a former sanitary landfill site, as discussed below in the Soils section (3.5). This reclaimed wetlands area has been heavily disturbed, and there are no known geological assets or features likely to be affected by this action.

**Anticipated Impacts:** The Proposed Action Area would not affect or be adversely impacted by geologic conditions.

### **3.3 CLIMATE**

The climate around Kawai Nui Marsh has a mean annual temperature of 75° F (42° C), with a mean maximum temperature of 81° F (27° C) and a mean minimum temperature of 68° F (20° C). Humidity is commonly between 70 to 80 percent. Marsh elevations receive more solar energy than hill elevations. The solar insolation in the upper watershed can range between 300 calories/cm<sup>2</sup> to 375 calories/cm<sup>2</sup> in the marsh.

Tradewinds flow from east to west. They are more persistent in the afternoon than night, and during summer months. On average, winds blow from the north-northeast and east about 86% of the time. Kona (southerly) winds blow about 10% of the time and winds are calm about 4% of the time. Due to the varied terrain, Kailua neighborhoods may get different exposure to or protection from the wind.

Rainfall increases when the inversion layer (at 4,000 to 5,000 feet) that contains moist air meets the mountain *pali* (ridgeline) as it is forced over to the other side of the mountain. Readings show an approximate median annual rainfall of 84 inches per year over the Maunawili drainage basin, and 40 inches per year at Kailua (DLNR, 1994).

**Anticipated Impacts:** The project would not create adverse impacts to other properties or be threatened by climatic events, including 500-year rainfall events, and flood storage volumes would not be altered.

### **3.4 TOPOGRAPHY**

The Oneawa Hills and the Kukanono slope, to the west and east of the marshland, respectively, act as a cradle for Kawai Nui Marsh. The hills rise to the Ulumawao Summit at 995 feet Above Mean Sea Level (AMSL). The Kukanono slope ranges in elevation from 5 feet AMSL to 75 feet AMSL (DLNR, 1994). From Kapa'a Quarry Road, elevation ranges from 60 feet AMSL (at the old Kailua Drive-In site, now Le Jardin school) to 7 feet AMSL near the Ameron HC&D Quarry (across the street from the project site). Flooding occurs in this low-lying area when water elevation in the marsh is high, and some flood waters collect in the drainage ditch shown on the northeast border of the project area between the parking lot and the road. At the intersection of Mokapu Boulevard and Kapa'a Quarry Road, about two-thirds of a mile past the project to the northeast, the road is 11 feet AMSL.

As indicated in the project introduction (Section 2.1) the Model Airplane Park is bounded on the west by Kapa'a Quarry Road on the south by the old refuse dump access road, and on the north and east by the edges of the fill area reaching approximately 500 feet east. According to the original *Site and Grading Plan* (approved March 17, 1972 and re-approved on May 23, 1973 after deletion of the concrete runway), the north-south distance varies between about 640 feet on the mauka side (the west end at Kapa'a Quarry Road) and 295 feet to the north, varying with the curvature of the old refuse dump access road. The high point of the property is shown as 16.3' AMSL, sloping to the east and west at a 0.60% slope and dropping to about 15' MSL at the east and west boundaries of the working area of the field. The ground and then drops steeply to about 12' AMSL past the edges of the fill area. These elevations differ from the later (approved April 18, 1975 by DPW) *Site and Grading Plan* which shows a concrete runway (never constructed) on a base elevation of 17' AMSL and the *Miscellaneous Details Plan* showing the parking lot elevation of 16.8' at the east (makai) side and 16.0' AMSL at the west (mauka / street) side. A current topographic map was produced for a portion of the field to generate accurate relative elevations to lay out the foundation pad and the gradient for the leachfield. By adjusting the relative elevations based on common points at the hydrant and telephone pole on the original 1972 *Kawainui Regional Park Site and Grading Plan* (the key portion of which is reproduced as Appendix B-1), we were able to generate realistic current MSL elevations, as shown on Appendix B-2: *Kawai Nui Model Airplane Park Concept Site and Utility Plan*. This shows elevations in the predicted range, and some uneven in several areas. Where needed, these elevations can be adjusted by the contractor to provide the proper gradient for the wastewater system and rainwater drainage.

Past the berm at the east (mauka) side of the field, between the north end of the parking lot and Kapa'a Quarry Road lies a stagnant, shallow drainage ditch that ends on the property. According to the grading plan, the low point of the ditch lies just outside of the street side of the property line at about 2.3' AMSL and water level in the ditch appears to

be at least 5 – 6' AMSL. At the end of the ditch there are two small concrete pillars, which may be used to judge water depth. Some variation in water level is to be expected, and this ditch has a small contribution to flood storage area and the ability of the flood plain to convey excess rainfall runoff from the street to the ocean. However, the project would be built above this area and would not impact this terrain or flood storage volume.

**Anticipated Impacts:** No impact to the topography of the area would result from the proposed project.

### **3.5 SOIL**

The Kawai Nui Model Airplane Park is a heavily disturbed area located over 16.5 to 18.5 feet of landfill used to cover a former sanitary landfill (dump) site; it is now a reclaimed wetlands area. The geotechnical report produced by Geolabs, Inc. for the design of this facility indicates lagoonal materials consisting of gray clay, silt, sand and gravel were encountered below the surface, extending to approximately 31.5 feet below the existing ground surface (the maximum drill depth). Groundwater was encountered at about 8 to 9.3 feet below the existing ground surface – a level which is subject to change due to tides, seasonal precipitation and other factors.

Actual soils types were determined by core sample characterizations from borings conducted in the intended construction and leachfield areas. Due to the apparent use of varied landfill material, some inconsistency is seen between borings. Depths indicated are below ground surface.

#### **Boring 1:** (flying field area north of the intended leachfield area)

<b>Depth</b>	<b>USCS</b>	<b>Description of soil layer</b>
0 – 5'	MH	Brown <b>SANDY SILT</b> with some clay and rootlets, medium dense, moist (fill)
5 – 7'	CL	Brown <b>SANDY CLAY</b> with silt, soft, moist (fill)
7 – 8'	SC	Brown <b>CLAYEY SAND</b> with silt, loose, very moist (fill)
8 – 10'	CH	Gray <b>CLAY</b> with sand, medium stiff (fill) / graded to brown at 9 feet
10 – 13'	SM	Dark gray <b>SILTY SAND</b> with gravel, loose to medium dense (fill)
13 – 15'	ML	Dark gray <b>SANDY SILT</b> with gravel, pieces of glass and paper, very soft (fill)
15 – 18.5'	CH	Brown <b>CLAY</b> with organics, very soft
18.5 – 23'	CH	Gray <b>CLAY</b> , medium stiff
23 – 25'	GM	Light gray <b>CORALLINE SAND AND GRAVEL</b> with glass, bottles, metal and basaltic gravel
25 – 30'	ML	Light gray <b>CORALLINE CLAYEY SILT</b> with gravel, very soft (lagoonal deposit)
30 – 31.5	GM	Gray <b>SILTY GRAVEL</b> with sand and clay, loose (lagoonal deposit) (Boring terminated at 31.5 feet )

#### **Boring 2:** (east end of the intended leachfield area)

<b>Depth</b>	<b>USCS</b>	<b>Description of soil layer</b>
0 – 2.5'	CL	Brown <b>SANDY CLAY</b> with gravel, stiff, damp
2.5 – 5'	CH/CL	Brown with multi-color mottling <b>SANDY CLAY</b> with gravel and a piece of plastic, stiff to very stiff, damp
5 – 11'	SM	Brown <b>SILTY SAND</b> with gravel, clay and wood, dense, dry
11 – 16.5'	SP	Brown with tan mottling fine <b>SAND</b> with wood, medium dense
16.5 – 20'	MH	Dark gray <b>CLAYEY SILT</b> , medium stiff
20 – 21.5'	GM	Gray <b>CORALLINE SILTY GRAVEL</b> with sand, loose (lagoonal deposit) (Boring terminated at 21 5 feet)

**Percolation Testing:** A site evaluation was conducted by Geolabs, Inc. on February 25, 2005 in accordance with the provisions of DOH Administrative Rules, Chapter 11-62-31.2, "Wastewater Systems", to test the site percolation rate and perform the borings referenced above. Both percolation test borings accepted water readily, and the April 8, 2005 report concluded "... the percolation rate obtained at the site would be suitable for the siting of the absorption system ...". A percolation rate of about 10 minutes per inch was recommended for this application. The construction of two 20' by 32' absorption beds is anticipated for use as a leachfield, with dual 1000 gallon septic tanks.

**Building Foundation Preparation:** The geotechnical evaluation anticipates "minimal site grading work on the order of less than one foot will be required for construction of the new comfort station at the project site." Most leveling and filling would be restricted to the surface of the fill material. The proposed comfort station is a prefabricated unit designed to be hoisted into position with a crane. The report recommends site preparation including leveling a 14' by 21' area (about 2 feet past the edges of the 10'3" by 17' base of the unit) and pouring a slab-on-grade footing with thickened edges to support the facility. The report made site-specific ground preparation recommendations, and determined the ground to be suitable for an allowable bearing pressure of up to 2,000 pounds per square inch. Assuming the recommended foundation preparations, estimated total settlements is less than one inch with a differential settlement of one-half inch. The concrete floor of the unit would be slightly above ground level to allow rain to flow away. Minor additional soil disturbance would be required for the utilities hookup, and repair of the settled area for a smooth entry pathway to two ADA-compliant parking stalls (which would be restriped in the existing parking lot). Irrigation water lines already run past the proposed site, although a new water line would be installed for the comfort station.

**Anticipated Impacts:** This project would not require significant ground or soil disturbance, and no significant impacts are anticipated to the soils of the area as a result of the proposed project. The comfort station would result in an increase in impermeable area of 175 sf (square feet). Adding an estimated 210 sf of area for the full concrete entryway pad results in a **total increase in impermeable area of about 385 sf**. Additional ground disturbance would be required for repair of the parking spaces to be converted for ADA accessibility, installation of a waste treatment system consisting of two septic tanks and two leachfields, and to hook up to the comfort station. A small trench would also be required to run a new water line, a straight line distance of about 168 feet, plus a trench for about 60 feet of 6" sewer line. Total ground disturbance is estimated at 0.12 acres (about 5,200 square feet). Excavated soils will be reused on-site as fill material to level settled areas around the comfort station, parking lot, and the runway and field. Model airplane users will mark depressed areas of the field so contractors will know where these soils can be deposited.

Any potential impacts to soils would be very short-term and minimal during the construction of the proposed project, and the contractor would be required to follow Best Management Practices ("BMPs") in accordance with Figure 3 of the "Rules Relating to Soil Erosion Standards and Guidelines" to mitigate these impacts. Long-term runoff potential from this project would be negligible for all alternatives. Construction period impacts would not be significant for any alternative if work is conducted in dry weather. Soil exposure would be required for the base preparation, entry walkway slab, and to construct the leachfield (including placement of tanks and plumbing), but flat terrain and good percolation rates suggest any runoff from the site would be highly improbable. Some runoff could result under Alternative 4 if heavy rains occur immediately after initial

preparation work, but this alternative was not selected. Fugitive dust is unlikely to be a significant problem for any of the discussed alternatives, and would be insignificant compared to that created by the heavy trucks moving in and out of the Ameron HC&D Quarry across the street or the City Refuse Transfer Station and Maintenance Yard about 500 yards south of the project location. However, should dry, windy conditions create a blowing dust problem during construction, contractors would control dust by wetting the area or other means, as required by the BMPS.

Additional ground disturbance would be anticipated if it is necessary to reroute a portion of the existing 2-1/2" sprinkler piping, or if the County removes a portion of the old parking lot for repaving. Repair of the southeast corner during construction is anticipated, as this area must be reconfigured for ADA-compliant access to the comfort station. However ground exposure of additional portions of the parking lot are not expected due to the tight budget and acceptable condition of the remainder of the lot.

Potential impacts are short-term and minimal during construction. No outside soils are expected to be brought in to the site, other than (1) ground preparation for the comfort station footprint (which could be a concrete pad or compressed gravel depending on final engineering), (2) materials brought in to adjust the permeability of the ground in the area of the leachfield lines, if needed, and/or (3) possible fill for leveling the settled area on the south corner of the parking lot. Soil removed during leachfield construction would likely be reused on-site for ground leveling so wastes are not generated. After construction, there will be no foreseeable long-term impacts.

**Mitigation Measures:** The City and County, Department of Planning and Permitting (DPP) Civil Engineering Branch, U.S. Army Corps of Engineers (USACE), and DLNR will be consulted regarding erosion control and construction practices. Their recommendations will be implemented during construction. The contractor will be required to comply with the BMPs specified in the construction contract to mitigate the potential effects of exposing soil to storm and wind erosion. BMPs would typically include: wetting exposed soil, providing temporary cover, grassing over and landscaping areas to prevent soil loss and erosion and limiting the area of ground disturbance, among others. The selection of appropriate BMPs will be made during the final design of the proposed project. The contractor will submit erosion control measures for the City and County's approval per the City and County grading ordinance, and must adhere to the requirements of the Hawai'i Administrative Rules, Chapter 11-60, 1-33 (Air Pollution Control, Fugitive Dust). Once ground cover is reestablished, no further measures are required.

### **3.6 FLORA**

A botanical survey of the marsh perimeter was conducted in July 2000 and February 2001 by Char & Associates (Appendix B) for incorporation into the *Kawai Nui Marsh Pathway Plan* (May 2001) and the *Kawai Nui Marsh Pathway Environmental Assessment* (Final EA, July 2003). The proposed comfort station is located at the end of segment 4 of that survey.<sup>3</sup> The vegetation within the limits of the proposed project area is entirely comprised of alien or introduced species. Native species have diminished since Western contact due to human occupation and activity (i.e., urbanization). The

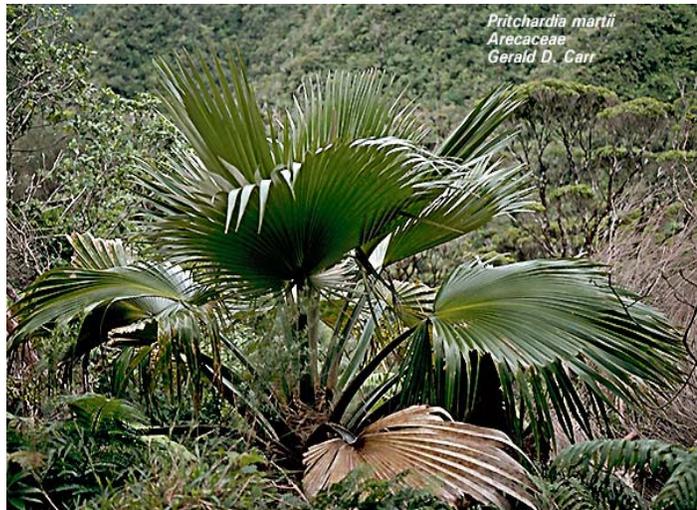
<sup>3</sup> - The survey found the segment along Kapa'a Quarry Road to be largely barren soil and leaf litter with a few patches of grass and weeds. Makai of the road right-of-way, there are dense thickets of hau on the moderate to steeply sloping terrain. A few albizia (*Falcataria moluccana*) and Java plum trees are scattered through the hau thickets. None of these species inhabit the project area and will none will be impacted by the project.

botanical survey concluded that none of the plant species encountered in this area were threatened, endangered, or a species of concern.

There is a recurring infestation of *Salvinia molesta* (and other unwanted invasive plant species) in the drainage canal along the street frontage. These invasive species have become a major problem for the marsh, and severely choking off marsh drainage and impairing the marsh's flood plain capacity for low-lying areas of Kailua. These plants are regularly sprayed with the herbicide Rodeo<sup>4</sup> by the City Department of Facilities Maintenance, affecting the drainage canal and a strip of ground about 40 feet back from the street and extending up the slope of the berm near the parking lot edge. Spraying followed by removal of dead vegetation occurs about 15-times per year, resulting in a dead area around the ditch. This area is heavily overgrown when untreated.

**Anticipated Impacts:** The project area for the comfort station is a landfill area covered with alien grasses and non-native species. The disturbance area will be limited to the footprint of the prefabricated comfort station, the access pad and 2-ADA-accessible parking spaces, the septic tank and leachfield area, and water and sewer hookup lines, totaling less than 5,200 square feet. No significant impacts are anticipated to flora of the area as a result of the proposed project.

**Mitigation and Improvement Measures:** Simple landscaping with plants native to the Kawai Nui Marsh area is recommended (in § 3.11) to soften the visual impact of the comfort station structure and enhance the natural landscape. Fossil pollen evidence indicates native Loulu palms were once quite widespread in many parts of the Islands, including the Kawai Nui Marsh area. Loulu is the only native palm, but native species have become rare due to consumption of the seeds by introduced animals, the clearing of land, and replacement with Fijian and Tahitian Loulu species. A species native to O'ahu would be preferred, such as *Pritchardia martii*, which is native to the Ko'olau area but no longer common. It is short, easy to grow, has broad, fan-shaped leaves with silvery undersides, golden yellow flowers, and bears golf ball-sized fruit. Alternative native Hawaiian species such as *Pritchardia hillebrandii* (Loulu Lelu, a closely related species more common on Molokai with traditional medicinal uses) are also available. Replanting in its native vicinity would also provide a plentiful source of seeds which can be collected by area residents for replanting in its native habitat.



<sup>4</sup> - Rodeo is an unrestricted salt-based, environmentally-friendly herbicide which is safe around aquatic life. This is the same herbicide used to kill *Salvinia molesta* on and around the Lake Wilson reservoir in Wahiawa. A similar herbicide, Roundup, is used on dry areas along the road where there is no drainage to the marsh.

### **3.7 AVIFAUNA**

The project area does not include any avifaunal (bird) habitat area. Inside the larger Kawai Nui Marsh perimeter area, an avifaunal survey was conducted in May and July 2000 by Phil Bruner, also in support of the proposed Kawai Nui Marsh Pathway plan and the EA for same. In brief, the survey encountered the following species of native resident waterbirds and migratory shorebirds:

- Seven *auku'u* or Black-crowned Night Heron (*Nycticorax nycticorax hoactli*).
- Ten endangered *Koloa maoli* or Hawaiian Duck (*Anas wyvilliana*).
- Twelve endangered 'Alae ke'o ke'o or Hawaiian Coot (*Fulica alai*).
- Four endangered 'Alae 'ula or Common Moorhen (*Gallinula chloropus sandvicensis*).
- Five endangered *ae'o kukulao* or Black-necked Stilt (*Himantopus mexicanus knudseni*).
- Three *kolea* or Golden-Plover (*Pluvialis fulva*).
- Two 'akekeke or Ruddy Turnstone (*Arenaria interpres*).

Because the fieldwork was conducted in May and June, no migratory waterfowl were recorded as they were on their breeding grounds in North America. The number of migratory shorebirds tallied was limited to the few individuals that failed to return to the arctic to breed. These birds are typically juveniles that failed to obtain sufficient fat reserves to migrate, and adults that may have sustained injury that inhibited their ability to migrate. There were no unexpected species found in the study area.

On recent visits to the project site, none of the above species were seen in the area, but about two dozen Cattle Egrets were observed. It is not known if they are attracted to the flight activity, but they clearly did not appear to be bothered or deterred by the presence of model aircraft.

**Anticipated Impacts:** No significant impacts to the avifaunal population or environment are anticipated as a result of the proposed project. The Model Airplane Park is separated from open water and foraging area habitats (shown on the map in Figure 3), and nesting waterbirds do not inhabit the site. The replacement of the existing portable chemical toilet with a comfort station would not affect the bird population.

### **3.8 WATER RESOURCES**

#### **3.8.1 Kawai Nui Marsh Hydrology**

Kawai Nui Marsh is classified as a lowland wetland, and is the state's largest freshwater wetland. The marsh acts as a sediment filter and a nutrient recycler, and serves as Kailua's flood control basin. A 9.71-square mile area of the Ko'olau mountain range, with direct contribution from about 6,200 acres, drains to the marsh. The Maunawili Stream, Kapa'a Quarry Stream, and Kahana Iki Stream are three tributaries that convey water to the marsh, in addition to smaller contributions from rainwater and small rivulets.

Storm water flows from the marsh to the sea via two channels: on the north end, the 9,470-foot long federally-constructed Oneawa Channel (aka Kawai Nui Canal) empties into North Kailua Bay, and the midsection and south drains into Hāmākua Drive Canal and then to Ka'elepulu Stream, which flows into south Kailua Bay.<sup>5</sup> The transit of flood

<sup>5</sup> - *Reconnaissance Report for Kawai Nui Marsh Flood Control Project – Kailua, O'ahu, HI*, U.S. Army Engineer District, Honolulu, 20 Nov. 1989, p. 3. Oneawa Channel is shown as Kawai Nui Canal on TMK: 1st 4-2-16.

waters out of the marsh is often impeded or obstructed by overgrowth of invasive species such as *Salvinia molesta*, water hyacinth and water lettuce, and removal of these unwanted plants has been the focus of efforts by the community and the Corps of Engineers for ecological, flood control, and aesthetic reasons. As noted in Section 3.6 Flora, the herbicide Rodeo is regularly used in the marsh area to control the growth in and around the drainage ditch along the street frontage and elsewhere in the marsh.

The importance of Kawai Nui Marsh as a flood control basin<sup>6</sup> cannot be overstated, and has been the subject of continual study. However, this project will have no impact on flood contributions, water quality or other resource issues. Most rainfall on the project area will percolate into the soil due to the flat topography and good percolation rate, so any contribution to marsh waters is highly unlikely. The exception to this is the small sloped area between the parking lot and the road on the east (mauka) end of the park; this area can sheet flow in a heavy rain and contribute water to the small drainage canal in that area, which primarily collects street runoff.

**Anticipated Impacts:** The addition of a building, entryway, and ADA-access improvements will add less than 400 square feet of impervious surface, and any additional runoff will be easily absorbed into the highly permeable surrounding soils, so no contribution or other impacts to Kawai Nui Marsh's hydrology are expected or likely, and no mitigation is necessary.

### 3.8.2 Water Quality

**Existing Conditions:** Existing water quality in Kawai Nui Marsh is significantly compromised. A sign at the park entry warns of the leptospirosis health hazard. Until 1988, when the Olomana-Maunawili Sewer Line was completed, four secondary treatment plants discharged partially treated effluent into the marsh. This area is currently designated as a Critical Wastewater Disposal Area, as determined by the O'ahu Wastewater Advisory Committee. In 1993, the Water Resource Research Center (WRRC) assessed fecal indicator bacteria in and around the marsh. Three indicator bacteria (fecal coliform, *Esherichia coli* and *enterococci*) were noted which exceeded established USEPA freshwater standards for water quality compliance at most of the sample sites. All of these bacteria exceed the standard in Oneawa Canal. Levels of the bacteria *Clostridium perfringens* (an indicator of fecal pollution) were also elevated downstream of urban areas, but not present at levels indicating sewage discharge, and not at levels exceeding the standard. The likely source for these indicator bacterial was identified as the ducks which concentrate where marsh water enters the canal. Kapa'a Stream, which discharges to the marsh just north of the Model Airplane Park, has also been identified as a past source of pollution. Unfortunately, recent water quality testing has not been done to assess current conditions, but it is likely these level would remain

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<sup>6</sup> - Water inflow and outflow measurements vary for the marsh. Various reports estimate inflow water to the marsh between 6.8 million gallons per day (mgd) to 13.1 mgd. Outflow estimates are between 4.6 mgd to 6.4 mgd. Today, the marsh acts as a flood control basin for the Kailua community. It drains an approximate 9.61square mile area.

In 1966, Kawai Nui Marsh's flood storage capacity was estimated to be 3,000 acre-feet. The mean water level in the marsh has been determined to be 3.3 feet AMSL and fluctuates between 2 to 4 feet AMSL. Levee height varies from 12.9 to 17.7 AMSL and was designed to withstand a 100-year flood. Several communities adjacent to the Kawai Nui Marsh were flooded January 1, 1988, during a severe storm. Consequently, the USACE redesigned the levee in May 1997, to increase its flood control capacity. The levee prevents floodwaters from entering the Coconut Grove community.

During the last thirty years, Maunawili Valley, a significant drainage basin for the marsh, has become more urbanized. This urbanization has led to increased sedimentation in the marsh, reducing the marsh's flood control capacity. Until 1988, treated sewage was also discharged into the marsh increasing nutrients, and stimulating vegetation growth, further reducing the marsh's flood control capacity (DLNR, 1994).

elevated (and relatively constant) in areas with any significant waterbird population, but would vary seasonally with population changes and stormwater inputs to the marsh. It is likely these levels would also remain high in areas where cattle graze in the marsh. These areas are well south of the project site.

The WRRC study noted that 90% of the inflowing nitrogenous and phosphoric nutrient loading in the marsh were removed as a result of uptake by plants in the marsh, loss to sediments, and loss to the atmosphere. Suspended solids are retained in the marsh and a small portion are output via Oneawa Canal. The study confirmed the discontinuation of the prior sewage treatment plant discharge after 1998 had reduced nutrient mass loading. But the study also noted heavy levels of copper, chromium, iron, nickel and zinc were found in the marsh's sediments. These elevated background levels of bacteria and metals may have subsided since 1994, but existing uses (such as cattle grazing) and continuing runoff to the marsh will continue to contribute bacteria and pollutants.

The Final 2004 *List of Impaired Waters in Hawai'i* does not show Kawai Nui Marsh as a "Listed Waterbody", but it is within the "geographic scope of the listing" of two contributing streams and is considered impaired. Kapaa Stream and Maunawili Stream are both listed on the basis of visual assessments. The Total Maximum Daily Load (TMDL) under US EPA Clean Water Act 303(d) has not been established for Kapaa Stream, and Maunawili Stream is listed as medium priority. Since these are both upstream, neither have any potential to be impacted by the project. Neither listing has indicator bacteria specified as pollutants, and TMDLs would apply to those streams, not to Kawai Nui Marsh itself. There are no current TMDLs for Kawai Nui Marsh, and any future determination would have to be adjusted due to the elevated background bacteria level created by the waterbird habitat.

**Anticipated Impacts:** The Proposed Action would result in no discharge into Kawai Nui Marsh, a Class 1a waterbody, and would not contribute to water quality degradation. The Proposed Action is a small, low use comfort station which is intended to recycle organic waste instead of discharge into sewer system. Wastewater and sewage from the proposed comfort station will be handled by a waste treatment system consisting of dual septic (digester) tanks to organically break down wastes and discharge effluent to dual leachfields. Septic / leachfield systems are a well-known and mature, but highly regulated technology. DoH and Uniform Plumbing Code (UPC) design standards are extremely conservative, and compliant systems have no significant impacts. There must be a minimum of 3 feet of suitable soil from the bottom of the system to any groundwater, bedrock, or limiting layer. This project has double that. Clearance from the nearest waterbody must be over 50 feet. This project has well over four times the required clearance.

The leachfield / septic system is designed for the specific site conditions, with moisture and nutrient discharge spread over an area appropriate for the soils and percolation rate, and designed to enable nutrient uptake by nearby dry-land vegetation. Potential pathogens will be deactivated and will not be discharged to the marsh environment. DoH Wastewater Branch (WWB) indicates it is highly unlikely that any indicator organisms could be detected further than 5' beyond the leachfield, although some nutrients may remain at that distance. Typically, phosphorus gets bound up quickly due to the iron rich composition of Hawaiian soils, and is not a problem. Nitrogen travels further through the soil column, but is a plant nutrient which is taken up quickly in the root structure of grasses and other plant matter near the leachfield. If any nitrogen is

able to migrate, over time, through the subsurface soils to the water's edge, it would be immediately taken up by shoreline plant matter. In consultation, DoH WWB agreed this project would have no adverse impacts on the marsh ecology. It would not increase the eutrophication of the wetlands area or introduce pathogens to the marsh area (which are already elevated, especially in the southern portions, where there are cattle grazing and wildlife habitat). Following project completion, there will be no foreseeable impact to water quality.

**Mitigation Measures:** The Proposed Action would be constructed according to the strict standards and oversight imposed by DoH Wastewater Branch and must comply with rigid design standards based on the UPC, the requirements specified of the Hawai'i Administrative Rules (HAR), Chapter 11-62-08, "Wastewater Systems", and the revised (Jan. 2000) Department of Parks and Recreation (DPR) standards, as imposed at beach parks and other conservation areas. DoH approval<sup>7</sup> is required on the final design prior to operation. Compliance with BMPs will mitigate the potential effects of exposing soil near the marsh. BMPs might include: erecting water and soil barriers, where necessary, and limiting the area of water disturbance, among others. Selection of appropriate BMPs will be determined during the final design of the proposed project.

### **3.9 AQUATIC SPECIES**

**Existing Conditions:** Legends and oral history note Kawai Nui Marsh was once the largest inland pond on O'ahu (Cultural Surveys Hawaii, 2000). Today, the marsh supports an aquatic environment of insect, fish and invertebrate species. Its open waters contain tilapia, top minnows, other "mosquito fish", oriental rice eel, small mouth bass, Louisiana crayfish, and the pond snail.

Although exotic species predominate, several native fish species inhabit Oneawa Canal, including: *o'opu naniha* (*Stenogobius genivittatus*), *o'opu nakea* (*Awaous stamineus*), *o'opua 'akupa 'oau*, *awa* or milkfish (*Chanos chanos*), *aholehole* or silversides (*Kuhlia sandwicensis*), *'ama'ama* or mullet (*Muqil cephalus*) and *kaku* or barracuda. At the head of the channel, lizardfish, *papio* (*Caranx sp.*), *oio*, *uouoa* and crab and prawn species are present. Two species, *o'opu nakea* and the *opae kala 'ole* or mountain shrimp (*Atyoida bisulcata*) migrate from Oneawa Canal through the marsh in their diadramous life cycle.

However, presently none of these species is present in the small drainage ditch at the edge of the project site, which is the only area likely to capable of receiving any runoff from the site. (This is only a significant concern under very heavy rainfall for the two alternatives which were not selected. The only area of soil exposure under the Proposed Action (preferred alternative) which has a downhill slope to the drainage ditch is a small (50 – 60-foot) segment of the trench for the new waterline installation. There will be no impacts from the leachfield.)

<sup>7</sup> DoH Wastewater Branch (WWB) maintains oversight over the design and installation of the leachfield, and DoH approval is required before operation. There are three phases to the approval process:

- (1) The civil engineer submits the design for DoH WWB review and approval before it goes to bid, or for a Building Permit (BP). This requires construction plans, design calculations, and Geotechnical Report (complete with soil sampling and percolation testing and analysis) to support the design.
- (2) A Building Permit is required for construction, and DPP passes the BP application through DoH for review and signoff on the WW system. DoH WWB will not sign off on BP until the design has been formally approved.
- (3) After construction, the design engineer must turn in a final inspection report, detailing the construction in accordance with design and noting any "as built" changes to the system. DoH WWB reviews the final inspection report, and if properly built according to the approved design, provides written authorization to use the system. The system can not be legally used prior to issuance of this formal written authorization.

**Anticipated Impacts:** Insofar as the proposed project involves minimal ground disturbance in an area which does not drain to the marsh, the project is unlikely to generate any soil erosion, increased turbidity, or degradation of the marsh's aquatic habitat. No impact on the marsh's aquatic habitat is expected or likely.

**Mitigation Measures:** While the possibility of impacts are remote, contractor compliance with BMPs would be required to further mitigate the potential for impacts to aquatic species.

### **3.10 CULTURAL RESOURCES**

#### **3.10.1 Historical Kawai Nui Agricultural and Aquacultural Resources**

Kailua was once a productive *ahupua'a*. Kawai Nui's agricultural uses included wetland and *kula* (dry land agriculture) along its slopes, where *taro*, yams, gourds and sweet potatoes were once planted. Aquaculture was also used to dam the waters and channel streams into *lo'i* and *'auwai* fields. Kawai Nui had a 440-acre fishpond and 250 acres of *taro lo'i* and *'auwai*. Kawai Nui once drained into Enchanted Lake or Ka'elepulu by a mile long canal. Ka'elepulu means "moist blackness". Kawai Nui Heritage Foundation noted that Kawai Nui would have been called a "*loko wai*" or freshwater inland pond, and in pre-contact times it was referred to as Kawai Nui Loko, or "the big freshwater pond."

Sterling and Summers (1978) note Kawai Nui had a bountiful garden, where fish, fowl and vegetables were plentiful. Many *mele* (chants) noted Kawai Nui, was famous for its mullet and *awa*. Kawai Nui *taro* was also mentioned in the *mo'olelo* (epics). Kamehameha I was also known to have used resources from Kawai Nui to feed his army during the unification of Hawai'i.

After the post-contact period, the Hawaiian population declined due to Western contact, diseases and influences. Agricultural resources were abandoned as a new Western Lifestyle was adopted. In the later half of the 19<sup>th</sup> century, sugar and rice became the main agricultural resources planted in the marsh as crops.

**Anticipated Impacts:** None. The project is located on landfill where there are no known cultural resources, nor are there gathering activities or cultural practices taking place on site. No known Native Hawaiian traditional and customary gathering, access, or use rights would be adversely affected.

**Mitigation Measures:** None required.

#### **3.10.2 Historical Resources**

Kawai Nui Marsh gives valuable insight to the migration, settlement and cultural development practices of prehistoric Polynesian Cultures. Kawai Nui Marsh played a prehistoric and historic role as an important economic component of an *ahupua'a* unit. It was eligible for listing on the National Register of Historic Places on July 13, 1979.

There are several notable historical resources around the marsh perimeter. Ulupo Heiau is located on the eastern edge of the marsh, next to the YMCA. Pahukini Heiau, also known as Makini and Mo'okini Heiau, is located on the western side of the marsh on Kapa'a Ridge, above the Kapa'a Waste Transfer Station area, in the area previously

used as the (now closed) Kailua landfill. The remains of Holomakani Heiau may have been identified on the slope north of the old Kailua Drive-in (Ulumawao Ridge), but little is known about this site. Nā Pōhaku o Hauwahine, known as “the stone of the Hauwahine”, the mo’o or guardian spirit of the pond who ensured its productivity, is on the makai side of the marsh. However none of these historical resources are in or adjoining the project area or likely to be impacted by the proposed project.

**Anticipated Impacts:** The project is located on landfill over a former dump site. No known historical resources exist within the area of disturbance on the project site or are likely to be impacted by this action.

**Mitigation Measures:** No mitigation is required. However should any objects, artifacts, or bones are encountered which could be of historical or cultural significance, all work in that area will cease and the State Historic Preservation Officer will be contacted.

### 3.10.3 Archeological Assessment

Insofar as this project is entirely sited on landfill, an archeological assessment was not necessary to determine that there are no archeological resources within the area of disturbance, so this section focuses on the possibility of impacts on such resources in the vicinity of the project. Archeological assessments and background literature searches were conducted for the proposed Kawai Nui Gateway Park in July 2001 by Cultural Surveys Hawaii, Inc.<sup>8</sup> and for the Kawai Nui Marsh Pathway project in July 2000, also by Cultural Surveys Hawaii, Inc.<sup>9</sup> The second of these Archeological Assessments consisted of a historical and archeological literature review and a reconnaissance type field inspection of the proposed Pathway alignment, which included the portion of the Model Airplane Park along Kapa’a Quarry Road. It also considered the potential impacts of Pathway construction on the historic properties known to be in the vicinity. The proposed comfort station project site is located at the end of Segment 4 of the trail’s alignment. Kapaloa Agricultural Terrace, the Pōhākea Terrace, possibly Holomakani Heiau, the Kawai Nui Cluster, and Pahukini Heiau are located along this segment, but not in the project area, so the project will not impact these sites. The Archeological Assessment found no known archeological or cultural sites in the vicinity of the project.

**Anticipated Impacts on Cultural Resources:** No archeological, cultural, or historical resources exist on the project site or likely to be impacted by this action. However the availability of a handicapped accessible public rest room available to residents and tourists who visit this area to view and study the archeological, cultural and historical resources of the marsh is a possible positive long-term community impact which could facilitate community access to and appreciation of the archeological, cultural, and historical resources which exist in the area.

**Mitigation Measures:** No mitigation is required. However should any objects, artifacts, or bones are encountered which could be of historical or cultural significance, all work in that area will cease and the State Historic Preservation Officer will be contacted.

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<sup>8</sup> *Kawai Nui Gateway Park Final Environmental Assessment* (October 2002), Appendix C.

<sup>9</sup> *Kawainui Marsh Pathway Environmental Assessment* (July 2003), Appendix D.

### **3.11 AESTHETIC AND VISUAL ENVIRONMENT**

**Existing Conditions:** Kawai Nui Model Airplane Park is surrounded by tall grass and does not enjoy sweeping vistas of Kawai Nui Marsh. Visitors see a large grass field, a parking lot, a portable chemical toilet, an information board (posted rules and radio frequencies), and a chain link fence separating the parking and spectator area from the flight line. There are no views of the marsh or shoreline. The field is green and attractive (more so than apparent from the aerial photograph), and there are pleasant views of the mountains and hillsides to the north and west, but this is an industrial area which would not be considered a particularly scenic area given the spectacular scenic vistas available throughout most of Kailua.

**Anticipated Impacts:** There are no views of the marsh from this location so existing views of the marsh will not be impacted by the proposed comfort station. Views of the mountains will be generally unaffected, as the site location has been chosen to minimize visual impacts and blend in with the surrounding environment. The existing unsightly 4' by 4' portable "Jet-o-Matic" blue-green chemical toilet structure will be removed and a more attractive earth-tone CTX Cortez comfort station and landscaping will be installed – a significant aesthetic improvement. A small portion of the grass field may be obstructed if a person is standing or parked directly behind the 10' by 17' building, but neither the leachfield nor the ADA-compliant modifications to the parking lot and the walkway will significantly alter any scenic views.

**Mitigation and Improvement Measures:** As discussed under §3.6 (Flora), simple landscaping with plants native to the Kawai Nui Marsh area is recommended to soften the visual impact of the comfort station and blend the structure into the tall grasses surrounding the south end of the park. Installation of up to three Loulu palms, native to the Kawai Nui Marsh area (as evidenced by fossil pollen evidence), preferably *Pritchardia martii*, would return this uncommon palm to its native habitat while providing attractive, low maintenance landscaping consistent with the slowly improving natural appearance of the park. Replanting in its native vicinity would also provide a plentiful supply of seeds which can be collected by local people for repopulating this native plant in the environment in which it thrived in pre-contact times.

### **3.12 RELATIONSHIP OF THE PROPOSED PROJECT TO EXISTING PUBLIC PLANS, POLICIES AND CONTROLS**

#### **3.12.1 State of Hawai'i**

##### **3.12.1.1 State Land Use District**

Under the provisions of Hawai'i Revised Statutes (HRS) Chapter 205, the State Land Use Commission classifies all lands in the State of Hawai'i under one of four land use districts: (1) Conservation; (2) Agriculture; (3) Urban; and (4) Rural. The project site lies within the State Conservation Land Use District, Protective (P) subzone.

Appropriate governing regulations of the Conservation District Rules and Regulations are found in Hawai'i Administrative Rules (HAR) Chapter 13-3 Conservation District, Section 13-5-22 (b)(1). Under these guidelines a board permit is required for the project, which falls under the category of "Public Purpose Uses," category D-1, which notes:

*D-1 Land uses undertaken by the State of Hawai'i or the counties to fulfill a mandated governmental function, activity, or service for public benefit and in accordance with public policy and the purpose of the conservation district. Such land use may include transportation systems, water systems, communication systems, and recreational facilities.*

**Discussion:** The proposed project is an accessory use which is a health and safety upgrade to an existing public park dedicated to recreational use since 1973. This is clearly a permitted use which benefits the public and is consistent with allowable uses in the Conservation District, but requires a public hearing and issuance of a Conservation District Use Permit from the Board of Land and Natural Resources

### 3.12.1.2 Coastal Zone Management Area

The project lies within the State's Coastal Zone Management (CZM) Area. Therefore, the CZM objectives and policies, as stated in Section 205A-2 HRS, are applicable to the proposed project. The CZM objectives and policies (Section 205A-2(b), HRS) applicable to the proposed project are cited and discussed below:

*(b) Objectives:*

*(1) Recreational Resources;*

*(A) Provide coastal recreational resources opportunities to the public.*

*(3) Scenic and open space resources;*

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

**Discussion:** The project proposes to provide a public restroom which will support sanitary needs of park users and others using the marsh perimeter area. It supports public access to recreational resources and opportunities in an area which currently has limited amenities available for the general public. Existing open space will be protected and preserved to the maximum possible extent. View planes in and around the marsh will be generally unaffected. The project also supports restoration and improvement of the Kawai Nui Marsh environment by supporting workers and volunteers working to maintain, restore, and improve the marsh environment by removing invasive species harmful to the marsh environment.

*(c) Policies:*

*(1) Recreational resources;*

*(B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by;*

*(i) **Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;***

*(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;*

*(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;*

*(v) Ensuring public recreational use of county, state, and federal owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources; and*

**Discussion:** This project clearly supports the protection, utilization, and access to a coastal resource area uniquely suited for a recreational activity that cannot be provided in other areas. The Model Airplane Park is surrounded on three sides by open marshland to a distance that roughly corresponds to the range of the radio control equipment and the ability of the park users to maintain visual contact with their aircraft. The dedication of this park for this use provides a margin of safety unavailable in other areas. The project area is uniquely and ideally suited for model airplane use, and is the only such designated area on the island of O'ahu. The proposed upgrade will make the park more accessible for family use and accessible to handicapped visitors unable to presently use the portable chemical toilet or access the eastern side of the flying field.

*(3) Scenic and open space resources;*

*(B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;*

*(D) Encourage those developments which are not coastal dependent to locate in inland areas.*

**Discussion:** The Proposed Action would take place in an inland area that is not coastal dependant. It requires no alteration of natural landforms and does not impact public views of the ocean or the marsh (which are not visible due to surrounding dense vegetation and trees) or other scenic resources. The project will be designed to: (1) blend in with the landscape (by using natural looking material and landscaping) and (2) minimize the disruption of public viewplanes. It will not disrupt or degrade coastal water ecosystems.

*(6) Coastal Hazards*

*(C) Ensure that developments comply with requirements of the Federal Flood Insurance Program;*

*(D) Prevent coastal flooding from inland projects; and*

*(E) Develop a coastal point and non-point source pollution control program.*

**Discussion:** The U.S. Federal Emergency Management Agency, National Flood Rate Map, Flood Insurance Rate Map (FIRM) has determined Kawai Nui Marsh falls in Zone A, defined as no base flood elevation, determined for a 100-year flood. According to the FEMA Flood Control Rate Map (Map # 15003C0290E, 11/20/00) the entire project area, and the entire useful area of the Kawai Nui Model Airplane Park, is designated as **Zone X**, outside the 500 year floodplain area, and therefore has no significant flood risk and provides no flood storage volume for any foreseeable flood event. (The Zone X boundary is most accurately illustrated on the enlarged segment of the subdivision map in Appendix page A-2, which also shows the metes and bounds of the Model Airplane Field parcel.) The only flood storage volume on the property is the small drainage ditch located between the north end of the parking lot and Kapa'a Quarry Road, which is partially on the western (mauka) property line. This is outside the project area, and will not be disturbed by the proposed project. There will be no impact on flood conditions. Soil erosion control measures and Best Management Practices (BMPs) will be used during construction to strictly avoid point and non-point source pollution Kawai Nui Marsh. No pollution impacts are expected or likely.

### 3.12.2 City and County of Honolulu

#### 3.12.2.1 Ko'olaupoko Sustainable Communities Plan

On August 25, 2000, the Ko'olaupoko Sustainable Communities Plan was adopted as Ordinance 00-47, replacing the 1983 Ko'olaupoko Development Plan (which was repealed). The Ko'olaupoko Sustainable Communities Plan, Section 3.1.3.3 (Wetlands, Wildlife Preserves and Nature Parks/Preserves), notes Ko'olaupoko is significant because of the occurrence and abundance of native waterbirds, such as the Hawaiian Stilt (*ae'o*), Hawaiian Coot (*'alae ke'oke'o*), Hawaiian Duck (*koloa maoli*), Hawaiian Moorhen (*'alae'ula*), and migratory waterfowl and shorebirds. The section describes Kawai Nui Marsh as one of eight major existing wetlands, proposed nature parks/preserves and/or botanical gardens of Ko'olaupoko.

*“Kawai Nui Marsh serves multiple purposes as a flood storage basin, wetland filter, wildlife habitat and cultural and scenic resource pursuant to a master plan prepared in 1994<sup>10</sup>. The master plan includes hiking trails through the Marsh. Also proposed are an environmental education center and a pedestrian path around the perimeter of the Marsh.”*

**Discussion:** The project is consistent with the DLNR 1994 Master Plan and Section 3.1.3.3 of the Ko'olaupoko Sustainable Communities Plan, which labels Kawai Nui Marsh as Open Space/Preservation Area. Public recreational uses are consistent with permitted uses in a Open Space/Preservation Area, as are facilities accessory to such uses. While intended primarily to support the existing park users, the comfort station would be the only public restroom available to perimeter pathway users in this area, and therefore indirectly supports the overall proposed Master Plan development concepts.

#### 3.12.2.2 General Plan

As described in the introduction to the *General Plan*, first adopted in 1977:

*“The General Plan for the City and County of Honolulu is a comprehensive statement of objectives and policies which sets forth the long-range aspirations of O'ahu's residents and the strategies of actions to achieve them. It is the focal point of a comprehensive planning process that addresses physical, social, economic and environmental concerns affecting the City and County of Honolulu. This planning process serves as the coordinative means by which the City and County government provides for the future growth of the metropolitan area of Honolulu.”*

The Proposed Action is consistent with the following objectives and policies of the General Plan:

#### Natural Environment

Objective B: *To preserve and enhance the natural monuments and scenic views of O'ahu for the benefit of both residents and visitors.*

Policy 4: *Provide opportunities for recreational and educational use and physical contact with O'ahu's natural environment.*

<sup>10</sup> State of Hawai'i Department of Land and Natural Resources, *Kawai Nui Marsh Master Plan*, July 1994.

## Culture and Recreation

Objective D: **To provide a wide range of recreational facilities and services that are readily available to all residents of O‘ahu.**

Policy 2: *Develop and maintain a system of regional parks and specialized recreation facilities.*

Policy 6: *Provide convenient access to all beaches and inland recreation areas.*

**Discussion:** The Proposed Action is consistent with the County *General Plan*, and supports and improves access, especially for the handicapped and for families, to the specialized recreational facilities of the Kawai Nui Model Airplane Park.

### 3.12.2.3 Zoning

The City and County of Honolulu’s Zoning Map classifies Kawai Nui Marsh as P-1 (Restricted Preservation). Uses within the P-1 Restricted Preservation District are regulated by the State of Hawai‘i, Department of Land and Natural Resources. The use of Conservation District lands is regulated by HAR Chapter 13-5, “Conservation District” and HRS Chapter 183C. HAR 13-5-11 Protective (P) subzone, paragraph (c) restricts uses to those Identified in Section 13-5-22, and Section P-6 *Public Purpose Uses* allows “(D-1) Land uses undertaken by the State of Hawai‘i or the counties to fulfill a mandated governmental function, activity, or service for public benefit and in accordance with public policy and the purpose of the conservation district. Such land uses may include transportation systems, water systems, communications systems, and **recreational facilities.**” HAR §13-5-22(b)(4) also states: “*Identified land uses beginning with letter (D) require a board permit, and where indicated, a management plan.*”

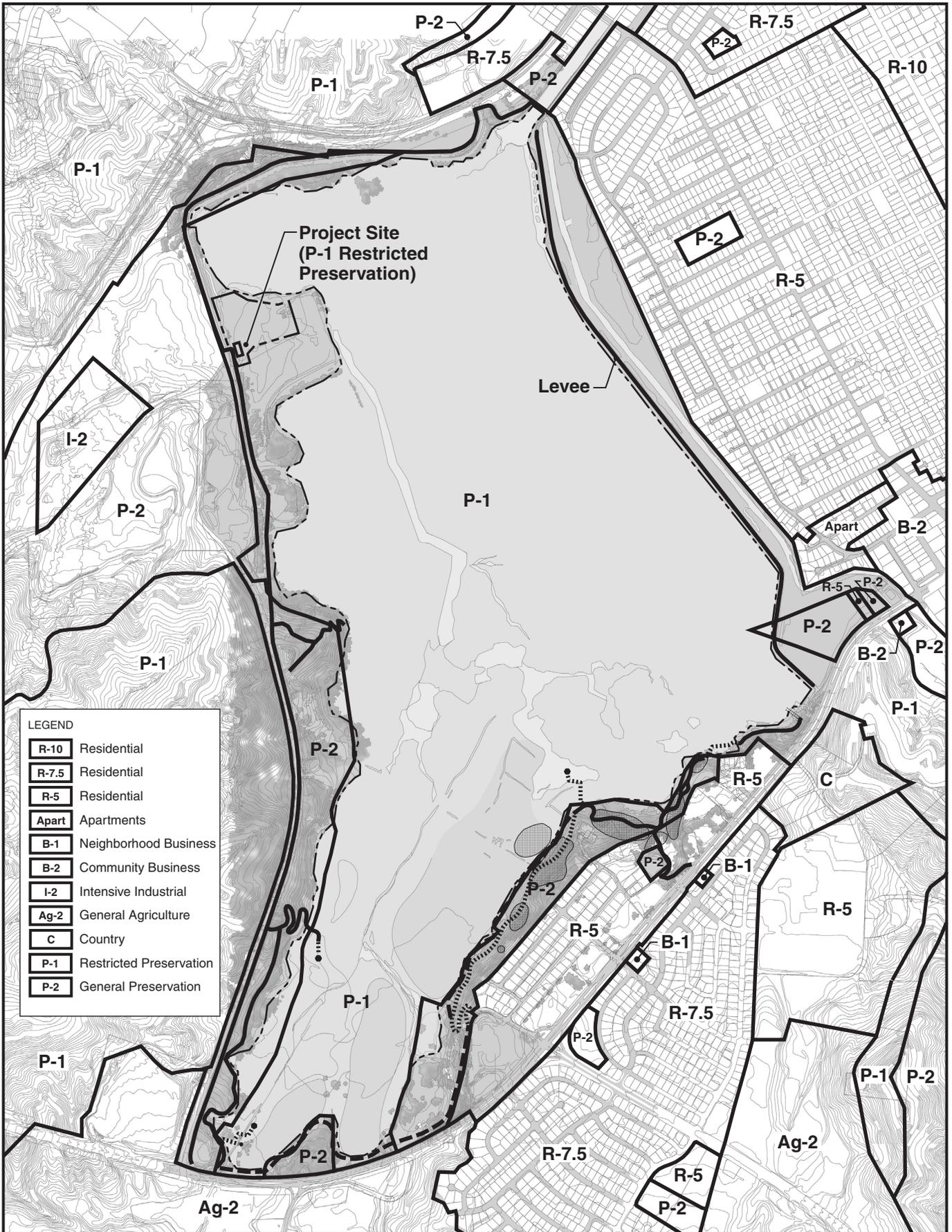
**Discussion:** Public recreation and structures accessory to that use are allowable, but require filing a Conservation District Use Application (CDUA), a public hearing in front of the Board of Land and Natural Resources, and approval of a Conservation District Use Permit by Board. A Special Management Area (SMA) Use Permit must be issued by the City and County prior to approval of the Conservation District Use Permit. No significant zoning-related impacts are anticipated as a result of the proposed project.

### 3.12.2.4 Special Management Area

The project area lies within the City and County’s SMA boundary so the review guidelines stated in Section 25-3.2 ROH are applicable to the Proposed Action. These review guidelines, and their relationship to the Proposed Action are discussed below:

*All development in the special management area shall be subject to reasonable terms and conditions set by the council to ensure that:*

- (1) Adequate access, by dedication or other means, to publicly owned or used beaches, recreation areas and natural reserves is provided to the extent consistent with sound conservation principles;*
- (2) Adequate and properly located public recreation areas and wildlife preserves are reserved;*
- (3) Provisions are made for solid and liquid waste treatment, disposition and management which will minimize adverse effects upon special management area resources; and*



**LEGEND**

R-10	Residential
R-7.5	Residential
R-5	Residential
Apart	Apartments
B-1	Neighborhood Business
B-2	Community Business
I-2	Intensive Industrial
Ag-2	General Agriculture
C	Country
P-1	Restricted Preservation
P-2	General Preservation

# Zoning Map

Kawai Nui Model Airplane Park Comfort Station  
 Kailua, Ko'olaupoko, O'ahu

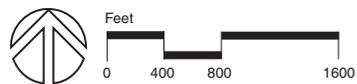


Figure  
**6**

*(4) Alterations to existing land forms and vegetation; except crops, and construction of structures shall cause minimum adverse effect to water resources and scenic and recreational amenities and minimum danger of floods, landslides, erosion, siltation or failure in the event of earthquake.*

**Discussion:** The Proposed Action improves access to the public recreational resources available at Kawai Nui Model Airplane Park, especially for families and handicapped users. It provides upgraded safety, sanitation, and meets ADA-accessibility standards. It provides a prefabricated comfort station with ecologically-sound on-site waste treatment with minimal water use and no power consumption, and is designed to avoid adverse impacts on the environment. It will not alter the physical landform of the marsh, and is fully consistent with the SMA Guidelines.

*No development shall be approved unless the council has first found that:*

*(1) The development will not have any substantial, adverse environmental or ecological effect except as such adverse effect is minimized to the extent practicable and clearly outweighed by public health and safety, or compelling public interest. Such adverse effect shall include, but not be limited to, the potential cumulative impact of individual developments, each one of which taken in itself might not have a substantial adverse effect and the elimination of planning options;*

*(2) The development is consistent with the objectives and policies set forth in Section 25-3.1 and area guidelines contained in HRS Section 205A-26;*

*(3) The development is consistent with the county General Plan, development plans and zoning. Such a finding of consistency does not preclude concurrent processing where a development plan amendment or zone change may also be required.*

**Discussion:** The project seeks to minimize any substantial, adverse environmental and/or ecological effects. This is a single upgrade to a long-standing existing use with no cumulative development or potential for cumulative impacts.

As discussed in Section 3.12.1.2 (Coastal Zone Management Area), the proposed project is consistent with the policies and objectives contained in Section 205A-2, HRS. As further shown in Sections 3.12.2.1 (Ko'olaupoko Sustainable Communities Plan), Section 3.12.2.2 (General Plan), Section 3.12.2.3 (Zoning), and Section 3.12.2.4 (Special Management Area), the proposed project is consistent with the Ko'olaupoko Sustainable Communities Plan, the General Plan, zoning, and the SMA Guidelines.

### **3.13 Cumulative Impacts: Physical Environment**

This project will have no significant cumulative impacts on the physical environment.

There are other agency and community projects under consideration that are geared to environmental protection, cleanup, and enhancement of the marsh environs, in addition to efforts to provide increased educational awareness about the marsh. This project is not linked to any of these proposals, projects, or activities, but may provide a small measure of support to these efforts, which will make the area far more comfortable for volunteer and other workers, especially those involved in cleanup activities where a washroom with running water would be of significant benefit. Increasing the sanitary conditions for workers increases the likelihood of greater participation in the necessary maintenance and improvement of the physical environment of the marsh area.

## 4.0 EXISTING CONDITIONS AND IMPACT ASSESSMENT: SOCIO-ECONOMIC CHARACTERISTICS

### 4.1 KAILUA TOWN

**Existing Conditions:** Kailua Town is located on the windward (east) side of O‘ahu. It supports a resident population of approximately 36,000 people. Kawai Nui Marsh is located northwest of the town. Approximately 17,000 residents live within one-half mile of the Kawai Nui Marsh perimeter<sup>11</sup>. These include residents of the Kalāheo, Coconut Grove, Kūkanono and Kawai Nui Vista neighborhoods, which are adjacent to the marsh perimeter (DBEDT, 2000). However, none of these residences are in the area of the Model Airplane Park. The closest residences to the project site are about one-third of a mile north of the project site, with the largest concentration across the marsh in the Coconut Grove subdivision over one-half mile east.

**Desire for Improved Recreational Opportunities.** The impetus for the Kawai Nui Model Airplane Park Comfort Station project came from park users and community members on the Kailua Community Vision Group (“CVG”) who wanted to improve conditions for park users, who have been requesting a rest room facility with flush toilets and running water for more than a decade. This will be of significant benefit to users who want “family friendly” amenities suitable for family outings with young children. The increased use of the marsh perimeter for hiking, walking, jogging, and bicycling in recent years has also increased the need for public rest rooms to serve the community, and this upgrade will be a positive addition to the quality of life in Kailua.

**Anticipated Impacts:** The replacement of the existing portable chemical toilet in an existing park with a modern, handicapped accessible public comfort station will not have any significant anticipated impacts on residential neighborhoods, community economics, traffic flow, or the natural and cultural resources of the area.

**Recreational Opportunities and Improved Access in the Area.** There will be a positive impact to recreational opportunities in Kailua. This project provides a significant improvement in amenities for recreational users of the Kawai Nui Model Airplane Park and greatly improved access for handicapped park users. The existence of a modern public comfort station may lead to slightly greater utilization of the park, especially by users with families, who may be more inclined to bring young children. This project can also support users of the marsh perimeter and the planned Kawai Nui Marsh Pathway, so it supports other efforts to increase access to multiple recreational opportunities.

**Protection of Natural and Cultural Features.** As discussed in Section 3.10 (Cultural Resources) this project is built on fill over an old landfill, and there are no historic or cultural resources that will be impacted by this project. The area of disturbance is limited to a small area near the parking lot. There will be no significant impacts to the natural environment (flora, avifaunal and aquatic species). As discussed in Section 3.9 (Aquatic Species), soil exposure in some areas could increase runoff to the drainage culvert that drains to the marsh in the event that heavy rains are experienced during construction. While unlikely, the EA addresses this issue and provides mitigation measures to minimize potential impacts.

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<sup>11</sup> Year 2000 census data indicated 16,892 residents in census tracts 109.01, 109.03, 109.04, 109.05, and 110 (DBEDT, 2003).

**Impact on Residential Neighborhoods.** Potential impacts to the residential neighborhoods around the marsh are minimal to negligible. Potential impacts considered include:

**1) Traffic and Parking.** The park is not adjacent to any residential neighborhoods. There will be no increase in traffic or parking in any residential neighborhoods as a result of this project. This is an existing use and no impacts to any surrounding neighborhood is expected or likely as a result of the improved restroom.

**2) Safety and Crime.** The one-half mile proximity to Kalāheo High School introduces a concern that this structure could be considered a possible hang-out or hide-out area for students. This is considered unlikely, because the park regulars are commonly present in the park in the afternoons until dusk, and “keep an eye on things” (due to the high value of their radio-controlled model aircraft, which can cost several thousand dollars). To mitigate the potential of becoming an “attractive nuisance”, the gate and the structure will be locked at the end of the day by DPR, and the comfort station will be oriented to allow police surveillance of the entry during their patrols. No impact on neighborhood safety or crime is expected or likely as a result of this project.

**3) Noise.** There will be no increase in noise as a result of this action other than a temporary increase when the building is trucked to the site and the leachfield and tank are installed. After construction, there will be no noise impacts.

#### 4.1.1 Industrial Activities

**Existing Conditions:** The Kapa’a Industrial Park is located across the street from the Kawai Nui Model Airplane Park. Ameron HC & D, operates the quarry adjacent to the industrial park. They lease the land from the Trustees of the Harold K.L. Castle Estate. Quarry operations will continue in the area for the foreseeable future.

**Anticipated Impacts:** No significant impacts to Kapa’a Industrial Park or Ameron HC & D are expected or likely anticipated as a result of the improved restroom

#### 4.1.2 Cultural Impact Evaluation

**Existing Conditions:** Cultural Surveys Hawai’i prepared a cultural impact evaluation for the proposed Kawai Nui Marsh Pathway project and identified a number of traditional uses of Kawai Nui Marsh. The literature review found many references to the use of Kawai Nui for hunting, adze quarrying, fishing, and collecting of plants for a variety of reasons. Many of these activities are no longer enjoyed because native resources are not present or no longer abundant. However, none of these resources are in the project area. A separate evaluation was not prepared for this project because the area of disturbance will be confined to the fill layer over the former landfill (refuse dump) area.

**Anticipated Impacts:** This EA considered the potential for adverse impacts to any culturally significant (archeological, avian, earth, fish, and plant) resources. However, the nature of the project, replacing a portable chemical toilet with a small comfort station, involves only minor disturbance to the surface of the ground and no change to the use of the property. No cultural resources or practices will be disturbed, no habitat will be disturbed, and the overall impact of the project will have no significant adverse impacts.

## **4.2 CUMULATIVE IMPACTS: SOCIO-ECONOMIC CONDITIONS**

It is possible that an improved park experience could result in slightly increased park use and potentially increase sales of radio controlled model aircraft, but this is a highly speculative connection. It is also possible that the availability of a clean restroom facility along the planned Kawai Nui Marsh Pathway could increase the use of that resource, improving community recreational opportunities and possibly promoting the increased use and sale of bicycles and gear associated with hiking and running, and possibly patronage of Kailua eating establishments if people are drawn to these activities. However, any such effects would be indirect and probably insignificant (although mildly positive), so effects on the economic community are considered negligible. Similarly, impacts on surrounding uses, nearby residential communities, or are generally negligible, although cumulatively a small positive effect on quality of life is likely.

The cumulative impacts of the Proposed Action on socio-economic conditions should be viewed in the context of other planned improvements around the marsh. These include a proposed visitor center, Pathway development, and the Kawai Nui Gateway Park. Collectively, these projects will provide improved recreational opportunities, greater access to the marsh, and improved opportunities for more people to experience the natural and cultural environment available around the Kawai Nui Marsh perimeter.

## 5.0 EXISTING CONDITIONS AND IMPACT ASSESSMENT: PUBLIC FACILITIES AND SERVICES

### 5.1 UTILITIES

**Existing Conditions:** There is existing water service to the project area, but no existing power or sewer service. Existing water service includes a fire hydrant at the road and irrigation to the central portion of the park. Documents indicate an existing 2" water meter and control valve, a 3" Hersey No. 1 reduced pressure principle backflow prevention unit, and 2-1/2" PVC irrigation water line. Site irrigation is currently manually controlled by park users or DPR grounds crews, on an infrequent, as-needed basis.

**Anticipated Impacts:** The proposed project will not require additional utility services. The existing 2" water meter is sufficient for the intended need. Parks and Recreation has not expressed an intent to provide electrical service to the proposed comfort station, which will be for daylight use only. No impact on the infrastructure in neighboring communities is expected or likely.

**Mitigation Measures:** The proposed comfort station will be designed to use ambient light and will be unlocked and available only in daylight hours. CXT has proposed alternatives to provide improved natural lighting and natural airflow to replace the lights and ventilation fan. A solar power option is also available. Waste will be recycled on-site using a septic tank and leachfield, and avoiding the need for sewer service.

### 5.2 PUBLIC FACILITIES

**Existing Conditions:** The existing Kawai Nui Model Airplane Park (the project area) is a public facility, and has been in use since 1972. The existing temporary "Jet-o-Matic" portable chemical toilet is provided for park users, but has no handicap access (the toilet is blocked from the lot with a concrete piling), and there are no washroom facilities or running water. The parking lot has no handicap spaces, and a portion of the lot has settled considerably. There are no known public restrooms or water fountains available around the marsh perimeter to support the Kawai Nui Marsh Pathway project (a separate project that focused on the construction of a perimeter pathway around the marsh) or the proposed Kawai Nui Gateway Park, although the DLNR 1994 Master Plan has proposed restroom facilities and potable water services for both the Kawai Nui Gateway Park and the Kawai Nui Marsh Pathway Visitor Center sites, but these projects are NOT currently funded.

**Anticipated Impacts:** The proposed Kawai Nui Model Airplane Park Comfort Station and ADA access improvements will remedy the substandard public restroom and sanitary conditions at this park. This project will also have a positive impact by providing public facilities in the Kawai Nui Marsh area in support of the long range goals of the DLNR 1994 Master Plan. However no additional outside public facilities are required or likely to be adversely impacted by the proposed comfort station.

**Mitigation Measures:** The proposed comfort station provides a positive impact, and no mitigation is required or needed.

**Parking Notes:** Insofar as the park is designated for model aircraft operation, and the gate is currently locked when there are no model aircraft group members present to

keep the parking lot open (although DPR intends to initiate opening and closing by DPR morning and evening crews in the future), this lot should not be considered a parking option for Pathway users. The DLNR Master Plan designates parking for the Pathway is to be provided at the proposed Kawai Nui Gateway Park (a.k.a. Kalāheo Park) on Mokapu Boulevard, at Na Pohaku o Hauwahine on Quarry Road, at Mokulana Peninsula on Kailua Road, and at the proposed visitor center across from Le Jardin School. However, this proposed comfort station will be available to Pathway users and other visitors, and the two handicapped access parking spaces will be able to accommodate handicapped visitors who need to find an accessible public rest room in this vicinity.

### **5.3 FLOOD CONTROL CONDITIONS**

**Existing Conditions:** Kawai Nui Marsh acts as an important flood storage basin to protect the Kailua community. However, according to the FEMA Flood Control Rate Map (FIRM Map # 15003C0290E, 11/20/00) the project area, and the entire useful area of the Kawai Nui Model Airplane Park, is designated as **Zone X**, outside the 500 year floodplain area, and therefore provides no flood storage volume for any foreseeable flood event. The only flood storage volume on the property is the small ditch located between the north end of the parking lot and Kapa'a Quarry Road, which is partially on the western (mauka) property line. This is outside the project area, and will not be disturbed by the proposed project.

During a June 21, 2005 presentation to the Kailua Neighborhood Board Planning, Zoning, & Environmental Subcommittee, members indicated Kapa'a Quarry road sometimes experiences significant flooding, with temporary flood elevations above surface of the road in this area, and resulting in road closure. There was a concern that flood waters could damage or otherwise effect the proposed comfort station. Inquiry with long-term park users indicates they have no knowledge of any flooding of the park area since it was constructed. Examination of the best available topographic information (see section 3.4 Topography for a more detailed discussion of site elevation) indicates the base of the driveway lies just below 11' MSL. The surface of the water in the flood conveyance channel is around 3' below the road surface, so any water reaching the level of the street will be flowing rapidly into the marsh and out toward the sea. Once flooded to the base of the driveway, flood waters would have to rise an additional 4 feet to reach the level of the project area. This seems highly unlikely, supporting the FEMA FIRM designation of the park area as outside the 500-year flood plain.

**Anticipated Impacts:** The proposed project will not impact the flood storage basin. Additionally, floodwater runoff would not affect the project area under the 500-year storm flood conditions anticipated in the FEMA calculations.

### **5.4 SURROUNDING INDUSTRIAL USES**

**Existing Conditions:** The Kapa'a Industrial Park is about ¼ mile west southwest (mauka, upslope) of the project and supports a mix of industrial uses. The City and County of Honolulu Kapa'a Refuse Station (and Kapa'a Incinerator and Ash Disposal Site shown as parcels 4 and 5 on TMK 4-2-15) is located across (on the west or mauka side of) Kapa'a Quarry Road, just under ¼ mile southwest of the project. A green waste site is also operated across Kapa'a Quarry Road. The transfer station is located at the eastern base of the City and County of Honolulu Kapa'a Sanitary Landfill. Kapa'a Energy Partners leases property on the landfill, and has a grid collection system to

extract methane gas for commercial use. A City Maintenance Yard is located just over ¼ mile south southeast of the project on the marsh side of the road. The Kalāheo Sanitary Landfill located west of the marsh was closed in 1990.

**Anticipated Impacts:** No significant impacts are anticipated to the City and County of Honolulu Kapa'a refuse or transfer station operations, or any other industrial uses in the vicinity.

## **5.5 ELEMENTARY AND HIGH SCHOOLS**

**Existing Conditions:** Several schools are within a one-mile radius of Kawai Nui Marsh. Kalāheo High School is located at the north end of the marsh across Mōkapu Boulevard, about 1/3 mile from the project. It had an enrollment of approximately 1,045 students for school year 2001. This is the only school within easy walking distance of the project site, but the project is not along a walking route to nearby residences, and pedestrian students would not normally pass through the project area.

Several other schools are located along the marsh perimeter, but more distant. Le Jardin School, on the southwestern corner of the marsh about 1.4 miles south of the project, had a 2001 enrollment of 438 students from preschool to 8th grade (and is currently expanding to high school levels). The Ke Kula `o Samuel M. Kamakau Immersion School is located on Kailua Road, and serves students from kindergarten to 12th grade and had a 2001 enrollment of 46 students. Kailua High School, Kainalu Elementary School, 'Aikahi Elementary School, Kailua Elementary and Intermediate School are all located within a 3-mile radius of the marsh perimeter.

**Anticipated Impacts:** Construction of the proposed comfort station is unlikely to impact nearby schools. However, it may of minor benefit to local schools planning a field trip to study Kawai Nui Marsh's history, biology, wetland ecology, hydrology, water quality, native birds and/or aquatic life.

## **5.6 RECREATIONAL FACILITIES**

### **5.6.1 Community Parks**

**Existing Conditions:** In addition to the **Kawai Nui Model Airplane Park**, the northeastern end of the Kawai Nui marsh perimeter has two community parks, one existing and one designated but not yet constructed or improved (this should occur in the near future). The **Kawai Nui Community Park** (Kaha Park) is located in the northeastern corner of the marsh and is accessible from Kaha Street in the Coconut Grove subdivision. This 4.4-acre park is used primarily by youth soccer and baseball leagues. Parking at the park has recently been expanded to accommodate 40 stalls, and has two portable toilets on-site, as documented in an October 2000 EA. The **Kawai Nui Gateway Park** is located the south side of Mokapu Boulevard just east of the intersection with Kapa'a Quarry Road, between Mōkapu Boulevard and Oneawa Canal. This park is documented in an October 2002 EA. A county standard comfort station was approved as part of this project, but the project has not been funded, possibly due to the high cost of improvements and budgetary constraints. There is a gravel parking area but little else on this site. A third project, the **Kawai Nui Marsh Pathway**, was documented in a July 2003 EA, and also has not moved forward due to lack of funding.

**Anticipated Impacts:** Installation of the proposed comfort station and construction of the leach field would not have a significant impact on the continued use of existing community parks in the study area. It would significantly improve sanitary conditions for users of the Kawai Nui Model Airplane Park where it is installed, as well as users of the pathway and volunteers working to help clear the marsh area of vegetation. This would be the only ADA-accessible public restroom with running water around the marsh perimeter for users requiring accessible facilities.

## **5.7 POLICE AND FIRE PROTECTION**

**Existing Conditions:** There are two fire stations that serve the Kailua area, including the project site. The first is located on Kalanianaʻole Highway, approximately 1.5 miles south of Kawai Nui Marsh. The other fire station is located next to the police station, on Kuʻulei Road east of the marsh. The police station serves the area from Waimānalo to the Marine Corps Base Hawaiʻi, Kaneohe Bay.

**Anticipated Impacts:** The Proposed Action supports an existing use of 30 years duration, which will not change. The comfort station building is constructed of fireproof materials, and will be locked at night when the park gate is locked, and there are no lights for nighttime use. It is unlikely to draw unintended visitors or to become a “hangout area” for high school students. No increase in the existing level of calls for police and fire protection services is anticipated as a result of this action.

**Mitigation Measures:** The comfort station will be oriented to allow police to observe the entryway while making rounds, as this will to minimize police and community concerns regarding adequate surveillance of a potential “hangout area” within a half-mile of Kalāheo High School, although this is not considered likely due to the nearly constant daylight presence of the existing park regulars, who have taken a special interest in taking care of the facility.

## **5.8 CUMULATIVE IMPACTS: PUBLIC FACILITIES AND SERVICES**

**Public Services:** The Proposed Action would provide an additional public comfort station facility, with future commitments to lock and unlock the park gate and comfort station, and for ongoing operation and maintenance services. It would generate a need to provide supplies and provide periodic cleaning by DPR roving crews, and occasional maintenance pumping by DPR Maintenance Support Services (MSS) as is done for other public park comfort stations. These needs are planned and expected. DPR crews already visit the site to handle grounds-keeping chores such as mowing and watering the grass. This action, and these services, will replace the existing contracted services to pump and maintain the existing portable chemical toilet (and included in the rental cost). These contracted expenses will terminate once the comfort station is installed and operational.

**Longevity and Upkeep:** CXT, the manufacturer of the recommended prefabricated comfort station, indicates the building should last 50 years or more with proper maintenance, and recommends repainting every 3 to 4 years to seal the structure against moisture. The Aloha State R/C Club, a group comprised of many of the regular park users, has been involved in long-term park upkeep and previously funded and carried out sprinkler system repairs and upgrades, ground leveling projects, and other maintenance and improvements. They have expressed a willingness to see the

structure is kept painted to assure the longevity of the structure, and to minimize impacts on DPR maintenance staff. Such volunteer user support partnerships are encouraged and supported by the City through "Adopt-A-Park" and similar programs.

**Impact on Public Utilities:** This comfort station is designed to minimize the impacts on public utilities. It will use natural lighting and a leachfield, and therefore will not require power or sewer connections. The only public utilities requirement will be a connection to the existing water lines (and meter) for the site.

**Impact on Other Facilities:** Replacement of the existing portable chemical toilet at the Kawai Nui Model Airplane Park is a desirable improvement for the users of this public park, and will provide a desirable ADA-accessible public comfort station facility for users of the existing park, and for other members of the public requiring a public comfort station in the Kawai Nui marsh area. This action will decrease, rather than increase, the need for other (off-site) public facilities, and help cover the current lack of public restroom facilities in the Kawai Nui marsh perimeter area.

## 6.0 PREPARERS OF THE EA

This Environmental Assessment (EA) was prepared for the City and County of Honolulu, Department of Design and Construction. The following list identifies individuals and organizations involved in the preparation of this EA and their respective contributions.

### Helber Hastert & Fee, Planners

David Curry, AICP, Project Manager  
Charles Willson, Physical Planning and EA Preparation  
Lori Chun, Graphic Presentation

### Other Contributors

Dean Ichiyama	Pacific Architects
Craig Luke	RM Towill
Gordon Ring	RM Towill
Clayton Nimura	Geolabs

### Technical Area

Architecture
Civil Engineering
Civil Engineering
Soils Consultant

## 7.0 PARTIES CONSULTED DURING THE PREPARATION OF THE EA

### Conceptual phase contributors

Mike Sakamoto, Project Manager, City Dept. of Design and Construction  
 Peter Caderas, Former Visions Coordinator, City Dept. of Design and Construction  
 Dan Brookins, President, Aloha State R/C Club; Kailua Community Vision Group

### Pre-Consultation and Draft EA phase contacts

The following people were involved in telephone or face-to-face preconsultations or (for the last three individuals) provided input following the release of the Draft EA:

Steve Tagawa, City Dept. of Planning and Permitting Land Use Division (SMA Use Permit)  
 Nelson Armitage, City Dept. of Planning & Permitting Land Use Division (SMA Use Permit)  
 Mario Siu Li, City Dept. of Planning and Permitting Land Use Division (subdivision issues)  
 David Smith, Wildlife Manager, Department of Land and Natural Resources  
 Tiger Mills, Dept. of Land and Natural Resources Office of Conservation and Coastal Lands  
 Paul Mizue, Chief of Public and Civil Works, US Army Corps of Engineers  
 Watson Okubo, State Department of Health Clean Water Branch  
 Harold Yee, State Department of Health Wastewater Branch  
 Ed Chen, State Department of Health Environmental Management Division  
 Barbara Marshall, Councilmember, City Council (District 3)  
 Nancy Azeri, Legislative Aide / Secretary, City Council (District 3)  
 Art Castaldi, Kailua Com. Vision Group; Kailua Neighborhood Board; park user (fixed wing)  
 Mike Oshiro, model airplane park user (helicopter side)  
 Will Ho, District 4 Manager, City Dept. of Parks and Recreation (operations & maintenance)  
 Miles Hazama, Recreational District Supervisor, Department of Parks and Recreation  
 Laverne Higa, Acting Director, City Department of Facilities Maintenance  
 Michael Pundyke, Superintendent, Kailua Corporation Yard, Dept. Facilities Maintenance  
 Terry Hildebrandt, City Department of Design and Construction  
 Kathy Bryant Hunter, Chairperson, Kailua Neighborhood Board  
 Larry Bartley, Kailua Neighborhood Board (construction engineering & longevity issues)  
 Shannon Wood & Jim Wood, Windward Ahupua'a Alliance  
 Kailua Neighborhood Board Planning, Zoning, & Environmental Subcommittee Members  
 Chuck Burrows, Kawai Nui Heritage Foundation  
 Eric Guinther, 'Ahahui Mālama I Ka Lōkahi  
 John King, President, All Pool and Spa (Kapa'a Industrial Park), adjoining land owner  
 Nick Bianco, CXT, Inc. (manufacturers of prefab structure)  
 Susan Miller, Kawai Nui Heritage Foundation  
 David Penn, Total Maximum Daily Load Coordinator, DOH, Environmental Planning Office  
 Chris Moynahan, DLNR, State Historic Preservation Division

### Draft EA Comments and Responses

Agencies and organizations providing written comments to the Draft EA have their comments and questions attached immediately following this section, presented in the order received, with written responses following the comments.



DEPARTMENT OF COMMUNITY SERVICES  
CITY AND COUNTY OF HONOLULU

715 SOUTH KING STREET, SUITE 311 • HONOLULU, HAWAII 96813 • AREA CODE 808 • PHONE: 527-5311 • FAX: 527-5488



MUFI HANNEMANN  
MAYOR

DEBORAH K. MORIKAWA  
DIRECTOR  
AARON S. FUJIOKA  
SPECIAL ADVISOR

September 14, 2005

MEMORANDUM

TO: WAYNE HASHIRO, DIRECTOR  
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTENTION: MIKE SAKAMOTO, PROJECT MANAGER  
FACILITIES PLANNING BRANCH

FROM: DEBORAH K. MORIKAWA, DIRECTOR

SUBJECT: KAWAII NUI AIRPLANE PARK COMFORT STATION DRAFT  
ENVIRONMENTAL ASSESSMENT (TMK: 1<sup>st</sup> 4-2-16:1  
KAPAA QUARRY ROAD, KAILUA, OAHU, HAWAII)

We have reviewed the information provided regarding the subject draft environmental assessment, and have determined that the project will not have a negative impact on any projects or programs of the Department of Community Services.

It will provide an additional ADA-accessible facility to the community. The project adds a public health comfort and handicap access improvement which supports an existing use of some 33 years duration. It is consistent with the Kawai Nui Marsh Master Plan. It also should help address the needs for such a facility by the increased number of visitors expected to use the proposed Gateway Park.

We note that approval from the State Department of Health Waste Water Division is still pending.

We appreciate the opportunity to review and comment on this matter. Please call Mr. Randy Wong at 523-4435 should you have any questions.

  
DEBORAH K. MORIKAWA  
Director

DKM:dk

cc: The Office of Environmental Quality Control  
Charles Wilson, Project Planner  
Helber Hastert & Fee, Planners

Helber Hastert & Fee  
Planners, Inc.

January 23, 2006

Deborah K. Morikawa, Director  
Department of Community Services  
715 South King Street, #311  
Honolulu, HI 96813



RE: Comments to Kawai Nui Model Airplane Park Draft Environmental Assessment.

Dear Ms. Morikawa,

Thank you for your comments on the Kawai Nui Model Airplane Park Draft Environmental Assessment, and your determination that the project will not have a negative impact on any projects or programs of the Department of Community Services, and that the project is consistent with the Kawai Nui Marsh Master Plan. We agree that it would help address the needs for such a facility by the increased number of visitors expected to use the proposed Gateway Park, especially if that park does not have it's own facilities or begins informal use with no facilities.

Approvals from the State Department of Health Waste Water Division (Doh WWVD) must await final design. Doh WWVD maintains oversight over the design and installation of the leachfield, and approval is required before operation. This is a three phase approval process:

1. The civil engineer submits the design for Doh/WWVD review and approval before it goes to bid, or for a Building Permit. This requires construction plans, design calculations, and Geotechnical Report (complete with soil sampling and percolation testing and analysis) to support the design.
2. A Building Permit (BP) is required for construction, and DPP passes the BP application through Doh WWVD for review and signoff on the WW system. Doh WWVD will not sign off on the BP until the design has been formally approved.
3. After construction, the design engineer must turn in a final inspection report, detailing the construction in accordance with design and noting any "as built" changes to the system. Doh WWVD reviews the final inspection report, and if properly built according to the approved design, provides written authorization to use the system. The system can not be legally used prior to issuance of this formal written authorization.

Thank you again for your interest in this project,

  
Charles Wilson  
Planner

Pacific Guardian Center • 733 Bishop Street, Suite 2590 • Honolulu, Hawaii 96813  
Tel. 808.545.2055 • Fax 808.545.2050 • www.hhf.com • e-mail: info@hhf.com

**BOARD OF WATER SUPPLY**

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



MUFTI HANNEMANN, Mayor  
RANDALL Y. S. CHUNG, Chairman  
KAPUHA, SR.  
SAMUEL T. HATA  
ALLY J. PARK  
ROSEMARY HARAGA, Ex-Officio  
LAVERNE HIGA, Ex-Officio  
DONNA FAY K. KIYOSAKI  
Deputy Manager and Chief Engineer

September 19, 2005

Mr. Mike Sakamoto, Project Manager  
City and County of Honolulu  
Department of Design and Construction  
Facilities Planning Branch  
650 South King Street  
Honolulu, Hawaii 96813



Dear Mr. Sakamoto:

Subject: The Draft Environmental Assessment for Kawai Nui Model Airplane Park  
Comfort Station, TMK: 4-2-16:1

The existing water system is presently adequate to accommodate the proposed comfort station facility.

The availability of water will be confirmed when the building permit is submitted for our approval. When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

The proposed development is subject to Board of Water Supply cross-connection control and backflow prevention requirements prior to issuance of the Building Permit Application.

If you have any questions, please contact Joseph Kaakua at 748-5442.

Very truly yours,

  
for KEITH S. SHIDA  
Principal Executive  
Customer Care Division

cc: Office of Environmental Quality Control  
Charles Wilson, Helbert Hastert & Fee, Planners

**Helbert Hastert & Fee**  
Planners, Inc.

January 23, 2006



City & County of Honolulu  
Board of Water Supply  
630 S. Beretania Street  
Honolulu, HI 96843  
Attn: Keith S. Shida, Principal Executive, Customer Care Division

**RE: Comments to Kawai Nui Model Airplane Park Draft Environmental Assessment.**

Dear Mr. Shida,

Thank you for your comments on the Kawai Nui Model Airplane Park Draft Environmental Assessment, and your determination that the existing water system is presently adequate to accommodate the proposed comfort station facility.

We understand that charges and water availability will be confirmed when the Building Permit is submitted for approval, and that there will be Water System Facilities Charges for resource development, transmission and daily storage. We also understand that the proposed development is subject to Board of Water Supply cross-connection control and backflow prevention requirements prior to issuance of the Building Permit Application, and we have added this information to the Permits, Approvals, and Consultations table on page 1-2 of the EA.

If we have any follow-up questions, we will contact Joseph Kaakua at 748-5442.

Thank you again for your interest in this project.



Charles Wilson  
Planner

Pacific Guardian Center • 733 Bishop Street, Suite 2590 • Honolulu, Hawaii 96813  
Tel. 808.545.2055 • Fax 808.545.2050 • www.hhf.com • e-mail: info@hhf.com

LINDA LINGLE  
GOVERNOR



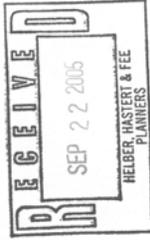
STATE OF HAWAII

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

RUSS K. SAITO  
COMPTROLLER  
KATHERINE H. THOMASON  
DEPUTY COMPTROLLER

(P)240.5

SEP -2 1 2005



Mr. Mike Sakamoto, Project Manager  
Department of Design and Construction  
Facilities Planning Branch  
650 South King Street  
Honolulu, Hawaii 96813

Dear Mr. Sakamoto:

Subject: Kawai Nui Model Airplane Park Comfort Station  
Draft Environmental Assessment  
TMK: (1) 4-2-16:1

Thank you for the opportunity to review the Draft Environmental Assessment report for the Kawai Nui Model Airplane Park Comfort Station.

This project does not impact any of the Department of Accounting and General Services' projects or existing facilities. Therefore, we have no comments to offer.

If you have any questions, please have your staff call Mr. Allen Yamanoha of the Planning Branch at 586-0488.

Sincerely,

ERNEST Y. W. LAU  
Public Works Administrator

AY:mo  
c: Ms. Genevieve Salmonson, OEQC  
-Mr. Charles Wilson, Project Planner, Helber Hastert & Fee

Helber Hastert & Fee  
Planners, Inc.

January 23, 2006

Ernest Y. W. Lau, Administrator  
Department of Accounting and General Services  
PO Box 119  
Honolulu, HI 96810

RE: Comments to Kawai Nui Model Airplane Park Draft Environmental Assessment.

Dear Mr. Lau,

Thank you for your comments on the Kawai Nui Model Airplane Park Draft Environmental Assessment, and your determination that the project does not impact any of the Department of Accounting and General Services' projects or existing facilities.

If we have any follow-up questions, we will contact Mr. Allen Yamanoha of the Planning Branch at 586-0488.

Thank you again for your review of this project.

Charles Willson  
Planner



POLICE DEPARTMENT  
**CITY AND COUNTY OF HONOLULU**  
801 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96813 - AREA CODE (808) 529-3111  
<http://www.honolulu.gov>  
<http://www.honolulupd.org>  
[www.honolulu.gov](http://www.honolulu.gov)

BOISSE P. CORREA  
CHIEF

GLEN R. KAJIYAMA  
PAUL D. PUTZULU  
DEPUTY CHIEFS



MUFI HANNEMANN  
MAYOR

OUR REFERENCE BS-KP

September 19, 2005

TO: WAYNE M. HASHIRO, P.E., DIRECTOR  
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTENTION: MICHAEL R. SAKAMOTO, CIVIL ENGINEER/PROJECT MANAGER,  
FACILITIES DESIGN DIVISION

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

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT, KAWAI NUI MODEL  
AIRPLANE PARK COMFORT STATION, TMK: 4-2-16: POR. 1 LOT 4

Thank you for the opportunity to review and comment on the subject project.

Pursuant to the "Anticipated Impacts" mentioned in section 5.7 on page 5-4, we appreciate this attention to preventive design and will expect the locking of the comfort station at night to occur as planned.

If there are any questions, please call Major Susan Dowsett of District 4 at 247-2166 or Mr. Brandon Stone of the Executive Bureau at 529-3644.

BOISSE P. CORREA  
Chief of Police

By   
KARL GODSEY  
Assistant Chief of Police  
Support Services Bureau

cc: ✓ Mr. Charles Willson  
Helber Hastert and Fee, Planners  
Ms. Genevieve Salmonson  
OECC

*Serving and Protecting with Aloha*

**Helber Hastert & Fee**  
Planners, Inc.

January 23, 2006

Boisse P. Correa, Police Chief  
Honolulu Police Department  
801 South Beretania Street  
Honolulu, HI 96813  
Attn: Karl Godsey, Asst Chief – Support Services Bureau



**RE: Comments to Kawai Nui Model Airplane Park Draft Environmental Assessment.**

Dear Chief Correa,

Thank you for your comments on the Kawai Nui Model Airplane Park Draft Environmental Assessment, and your words of appreciation regarding our attention to preventive design. We acknowledge your expectation for the locking of the comfort station at night to occur as planned. This will be handled by Parks and Recreation roving crews, as is accomplished at other DPR facilities.

If we have any follow-up questions, we will contact Major Susan Dowsett of District 4 at 247-2166 or Mr. Brandon Stone of the Executive Bureau at 529-3644.

Thank you again for your interest in this project.

  
Charles Willson  
Planner

Pacific Guardian Center • 733 Bishop Street, Suite 2590 • Honolulu, Hawaii 96813  
Tel. 808.545.2055 • Fax 808.545.2050 • [www.hhf.com](http://www.hhf.com) • e-mail: [info@hhf.com](mailto:info@hhf.com)

DEPARTMENT OF PARKS AND RECREATION  
**CITY AND COUNTY OF HONOLULU**

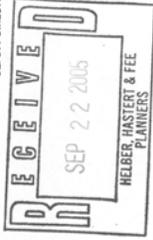
KAPOLEI HALE • 1000 ULUOHA STREET, SUITE 309 • KAPOLEI, HAWAII 96707  
TELEPHONE: (808) 692-5561 • FAX: (808) 692-5131 • INTERNET: www.honolulu.gov



MUFI HANNEMANN  
MAYOR

LESTER K.C. CHANG  
DIRECTOR

DANA TAKAHARA-DIAS  
DEPUTY DIRECTOR



September 20, 2005

TO: WAYNE M. HASHIRO, P.E., DIRECTOR  
DEPARTMENT OF DESIGN AND CONSTRUCTION

FROM: LESTER K. C. CHANG, DIRECTOR

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT  
KAWAI NUI MODEL AIRPLANE PARK COMFORT STATION

Thank you for the opportunity to review and comment on the Draft Environmental Assessment relating to the Kawai Nui Model Airplane Comfort Station.

The Department of Parks and Recreation supports the proposed improvements.

Should you have any questions, please contact Mr. John Reid, Planner, at 692-5454.

  
LESTER K. C. CHANG  
Director

LKCC:mk  
(120194)

cc: Office of Environmental Quality Control  
Helber Hastert & Fee, Planners

**Helber Hastert & Fee**  
Planners, Inc.

January 23, 2006

Lester K. C. Chang, Director  
City & County of Honolulu  
Department of Parks and Recreation  
1000 Uluohia Street, Room 309  
Kapolei, HI 96707



**RE: Comments to Kawai Nui Model Airplane Park Draft Environmental Assessment.**

Dear Mr. Chang,

Thank you for your comments on the Kawai Nui Model Airplane Park Draft Environmental Assessment, and your support of these improvements.

If we have any follow-up questions, we will contact Mr. John Reid, Planner, at 692-5454.

Thank you again for your interest and support.

  
Charles Willson  
Planner

LINDA LINGLE  
GOVERNOR

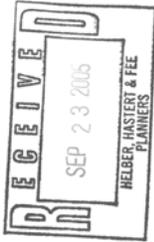


ANTHONY J.H. CHING  
EXECUTIVE OFFICER

STATE OF HAWAII  
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM  
LAND USE COMMISSION

P.O. Box 2359  
Honolulu, Hawaii 96804-2359  
Telephone: 808-587-3822  
Fax: 808-587-3827

September 19, 2005



Mr. Charles Willson, Project Planner  
Helber Hastert & Fee Planners, Inc.  
Pacific Guardian Center  
733 Bishop Street, Suite 2590  
Honolulu, Hawaii 96813

Dear Mr. Willson:

Subject: Kawai Nui Model Airplane Park Comfort Station  
Draft Environmental Assessment  
TMK: 1\* 4-2-16:1  
Kapaa Quarry Road, Kailua, Oahu, Hawaii

We received your September 8, 2005 letter regarding the above-mentioned subject project.

Thank you for the opportunity to provide comments on the Draft Environmental Assessment. We do not have any comments to offer at this time.

Please feel free to contact me at 587-3822 should you require clarification or further assistance.

Sincerely,

  
ANTHONY J. H. CHING  
Executive Officer

Helber Hastert & Fee  
Planners, Inc.

January 23, 2006

Anthony J. H. Ching, Executive Officer  
State of Hawaii  
Dept of Business, Economic Development & Tourism  
Land Use Commission  
P.O. Box 2359  
Honolulu, HI 96804



RE: Comments to Kawai Nui Model Airplane Park Draft Environmental Assessment.

Dear Mr. Ching,

Thank you for your response to the Kawai Nui Model Airplane Park Draft Environmental Assessment. We understand you have no comments to offer at this time, but will contact you at 587-3822 should we require clarification or further assistance.

Thank you again for your review of this project,



Charles Willson  
Planner

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Tel. 808.545.2055 • Fax 808.545.2050 • www.hhf.com • e-mail: info@hhf.com

DEPARTMENT OF PLANNING AND PERMITTING  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 7<sup>th</sup> FLOOR • HONOLULU, HAWAII 96813  
TELEPHONE: (808) 525-5332 • FAX: (808) 525-5333  
DEPT. INTERNET: [www.honolulu.gov](http://www.honolulu.gov) • INTERNET: [www.honolulu.gov](http://www.honolulu.gov)



MUJI HANNEMANN  
MAYOR

HENRY ENG, FAICP  
DIRECTOR  
DAVID K. TANOUKE  
DEPUTY DIRECTOR

2005/ELOG-2113 (NA)

September 27, 2005



MEMORANDUM

TO: WAYNE M. HASHIRO, P.E., DIRECTOR  
DEPARTMENT OF DESIGN AND CONSTRUCTION

ATTN: MIKE SAKAMOTO, PROJECT MANAGER  
FACILITIES PLANNING BRANCH

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

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE  
KAWAI NUI MODEL AIRPLANE PARK COMFORT STATION  
KAPAA QUARRY ROAD - KAILUA  
TAX MAP KEY 4-2-16: POR. 1

The following are comments of the Department of Planning and Permitting relating to the Draft Environmental Assessment (DEA) for the above-referenced project.

Site Development Division, Civil Engineering Branch:

1. Section 1.1.1 (Required Permits and Approvals): Building Permits are issued by the Department of Planning and Permitting, not the Department of Design and Construction.
2. Section 3.5 (Mitigation Measures): According to the DEA, a Grading Permit will not be required for the project. The project should implement minimum BMPs in accordance with Figure 3 of the "Rules Relating to Soil Erosion Standards and Guidelines," as this is considered a Category 1 project.
3. The appendices should be labeled in accordance with the index.
4. Appendix C (FIRM Map): Clearly show the boundaries of the park on the map to illustrate that the park lies within Zone X.

WAYNE M. HASHIRO, P.E., DIRECTOR  
SEPTEMBER 27, 2005  
PAGE 2

Planning Division, Policy Planning Branch

1. Section 3.12.2.1 (Ko'olaupoko Sustainable Communities Plan): We concur that public recreational uses and the proposed accessory use are consistent with Section 3.1.3.3 of the Ko'olaupoko *Sustainable Communities Plan*, which was adopted as Ordinance 00-47 on August 25, 2000.
2. The project will not require a Public Infrastructure Map revision.  
Land Use Permits Division, Zoning Regulations and Permits Branch
  1. Section 1.1.1 (Required Permits and Approvals): Please note that Special Management Area Use Permit (Major) applications are approved by the Honolulu City Council, and not by the Department of Planning and Permitting.
  2. Section 1.8 (Project Cost): As the cost of the project is estimated to be at least \$220,000, we confirm that the project will need a Special Management Area Use Permit (Major), which must be approved by the Honolulu City Council.
  3. Section 2.2 (Project Background, Consistency with Community Directions): In Line 8, please change "Kauai" to "Kawai."
  4. Figure 6 (Zoning Map): Our records indicate that the project site is located within the P-1 Restricted Preservation District. Figure 6, however, gives the impression that the site is within the P-2 General Preservation District. Please confirm that the project site is located within the P-1 District and amend Figure 6 to show the proper zoning designation for the site.

Please contact Nelson Armitage of our staff at 527-6274 if you have any questions.

HE:cs

Henry Eng, FAICP, Director  
Department of Planning and Permitting

cc: The Office of Environmental Quality Control  
Helber Haster & Fee, Planners (Charles Willson)

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**Helber Haster & Fee**  
*Planners, Inc.*

January 23, 2006

Henry Eng, FAICP, Director  
City & County of Honolulu  
Department of Planning & Permitting  
650 South King Street, 7<sup>th</sup> Floor  
Honolulu, HI 96813



**RE: Comments to Kawai Nui Model Airplane Park Draft Environmental Assessment.**

Dear Mr. Eng,

Thank you for your comments on the Kawai Nui Model Airplane Park Draft Environmental Assessment. We have revised the draft so the Final Environmental Assessment incorporates the changes and corrections pointed out in your review of our submittal. Specific changes, broken down by the branches requesting those changes, and the revisions made to the Final EA, are as follows:

**Site Development Division, Civil Engineering Branch:**

**Section 1.1.1 (Required Permits and Approvals):** This section was corrected to indicate Building Permits are issued by the Department of Planning and Permitting, not the Department of Design and Construction. We also added text to indicate the Special Management Area Use Permit (SMA - Major), after submission to DPP, requires approval by the City Council.

**Section 3.5 (Mitigation Measures):** Your comments said: "According to the DEA, a Grading Permit will not be required for the project." This is incorrect. In the Permits table, the DEA indicated a Building Permit would be required, and indicated "(Grading Permit not anticipated)" – this is a permit issue that will need to be determined when additional civil engineering and soils work has been completed.

You also indicated that the project should implement minimum BMPs in accordance with Figure 3 of the "Rules Relating to Soil Erosion Standards and Guidelines," as this is considered a Category 1 project. We therefore altered Section 3.5 to read: "*Any potential impacts to soils would be very short-term and minimal during the construction of the proposed project, and the contractor would be required to follow Best Management Practices ("BMPs") in accordance with Figure 3 of the "Rules Relating to Soil Erosion Standards and Guidelines" to mitigate these impacts.*"

We also added information in the prior paragraph to respond to an outside question, so it now includes: "*Excavated soils will be reused on-site as fill material to level settled areas of the runway and field. Model airplane users will mark depressed areas of the field so contractors will know the areas these soils can be deposited.*"

**Appendices:** You requested we label Appendix in accordance with the index. We have a more detailed listing of items on the Appendix separator page for the convenience of the reader. We feel this level of detail is inappropriate in the index, and altering the appendix cover sheet to precisely match the Contents page entries needlessly reduces helpful detail which we did not have space for in the TOC. These entries are unlikely to confuse the reader, and this would not be an improvement.

**Appendix C (FIRM Map):** You asked us to clearly show the boundaries of the park on the map to illustrate that the park lies within Zone X. We have not done this because FIRM maps are known for being off-scale and superimposition of an approximate outline would imply these are the real boundaries. We want the reader to look at the more precise Zone X boundary reference clearly illustrated on the DDC

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**Subdivision Map** along with precise survey boundaries (metes and bounds) for the subject lot, as well as the location of the parking lot for reference. We enlarged this area of the map as the second page in the Appendix to be sure these survey and flood zone boundaries were clearly shown. While we did superimpose an approximate outline on the TMK, where the parcel would have been difficult to locate, the project area is not difficult to locate on the FIRM, and we prefer not to alter the official map with rough boundaries when these are shown with precision on an official survey map. Therefore we have not altered the FIRM. Instead, we added the following parenthetical statement under Discussion at the end of 3.12.2: "(The Zone X boundary is most accurately illustrated on the enlarged segment of the subdivision map in Appendix page A-2, which also shows the metes and bounds of the Model Airplane Field parcel.)"

**Planning Division, Policy Planning Branch**

**Section 3.12.2.1 (Ko'olaupoko Sustainable Communities Plan):** Thanks you for your concurrence that public recreational uses and the proposed accessory use are consistent with Section 3.1.3.3 of the Ko'olaupoko Sustainable communities Plan. Per your comments, we revised the first sentence to indicate it was adopted as Ordinance 00-47 on August 25, 2000. It now reads: "*On August 25, 2000, the Ko'olaupoko Sustainable Communities Plan was adopted as Ordinance 00-47, replacing the 1983 Ko'olaupoko Development Plan (which was repealed).*"

Thank you for confirming that the project will not require a Public Infrastructure Map revision.

**Land Use Permits Division, Zoning Regulations and Permits Branch**

**Section 1.1.1 (Required Permits and Approvals):** This section was corrected (as noted above), to indicate the Special Management Area Use Permit (SMA - Major), after submission to DPP, requires approval by the City Council.

**Section 1.8 (Project Cost):** Thank you for confirming that a Special Management Area Use Permit (Major) is required, and must be approved by the Honolulu City Council. This was assumed in the SMA permit application, so no changes are required.

**Section 2.2 (Project Background / Consistency with Community Directions):** We corrected the spelling error noted on Line 8, and changed "Kauai" to "Kawai."

**Figure 6 (Zoning Map):** Your comment stated: "Our records indicate that the project site is located within the P-1 Restricted Preservation District. Figure 6, however, gives the impression that the site is within the P-2 General Preservation District. Please confirm that the project site is located within the P-1 District and amend Figure 6 to show the proper zoning designation for the site."

The project site is located within the P-1 Restricted Preservation District, and the proper zoning designation is shown on Figure 6. We apologize that the line weights and shading on the graphic were confusing. We revised the graphic to add a call-out indicating "Project Site (P-1)" to avoid possible confusion regarding the zoning designation of the site.

We appreciate the assistance of your staff in the above divisions in making this a better submission and a better project. We will contact Nelson Armitage at 527-6274 if we have further questions.

Thank you again for your interest in and assistance,

Charles Willson  
Planner

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Tel. 808.545.2055 • Fax 808.545.2050 • www.hbf.com • e-mail: info@hbf.com

September 29, 2005

- 2 -

I urge you to act favorably upon the EA as well as the suggestions made within. Again, the comfort station will provide numerous benefits for the park users and the community as a whole.

Sincerely,

Representative Cynthia Thielen  
Assistant Minority Floor Leader  
50<sup>th</sup> District, Kailua - Kaneohe Bay

cc: Office of Environmental Quality Control  
Charles Wilson - Helber Hastert & Fee  
Dan Brookins



**HOUSE OF REPRESENTATIVES**

STATE OF HAWAII  
STATE CAPITOL  
HONOLULU, HAWAII 96813

September 29, 2005

Department of Design and Construction  
Facilities Planning Branch  
ATTN: Mike Sakamoto, Project Manager  
650 South King Street  
Honolulu, HI 96813

Dear Mr. Sakamoto:

I am writing in support of the Kawai Nui Model Airplane Park Comfort Station, and the Draft Environmental Assessment (EA). The Kawai Nui Model Airplane Park Comfort Station will provide many benefits to the park and the community as a whole.

A comfort station as proposed in the EA would allow families and disabled persons to make better use of the park. The current situation, a portable toilet, does not adequately address the needs of families or disabled people. Other community members who also make use of the park will benefit as well from the expanded comfort station facilities. These include joggers, bicyclists, community volunteer clean up crews, and marsh restoration crews.

The cost and durability aspects of the proposed comfort station must also be acknowledged. The manufacture price of this structure, including shipping, delivery, and siting, comes out to approximately \$50,000. The construction of the structure is solid concrete, and is designed to withstand extreme weather conditions and vandalism - creating potential cost savings in maintenance of the facility.



**Helber Hastert & Fee**  
Planners, Inc.

January 23, 2006

Representative Cynthia Thielen  
50<sup>th</sup> Representative District  
Hawaii State Capitol, Room 443  
Honolulu, HI 96813

**RE: Comments to Kawai Nui Model Airplane Park Draft Environmental Assessment.**

Dear Representative Thielen,

Thank you for your letter of support on the Kawai Nui Model Airplane Park Draft Environmental Assessment. We have been impressed by the level of community support for this project, and most everyone has been in agreement with your statement that the project would allow families and disabled persons to make better use of the park, and that the current portable toilet does not adequately address the needs of families or disabled people. We also received support from other members of the community such as community volunteers and marsh restoration crews, as you noted.

We agree the cost and durability of the proposed prefab comfort station will realize real long-term cost savings in maintenance of the facility, but the major cost benefit is the low up-front cost of the structure, which is far less than constructing to County standards.

Thank you again for your interest and support.



Charles Willson  
Planner



FIRE DEPARTMENT  
**CITY AND COUNTY OF HONOLULU**  
3375 KOA'PAKA STREET, SUITE 1425 • HONOLULU, HAWAII 96819-1869  
TELEPHONE: (808) 831-7761 • FAX: (808) 831-7750 • INTERNET: www.honolulufire.org



MUFFI HANNEMANN  
MAYOR



ATTILIO K. LEONARDI  
FIRE CHIEF  
JOHN CLARK  
DEPUTY FIRE CHIEF

September 30, 2005



TO: WAYNE M. HASHIRO, P. E., DIRECTOR  
DEPARTMENT OF DESIGN AND CONSTRUCTION

VIA: MICHAEL SAKAMOTO, CIVIL ENGINEER  
FACILITIES DESIGN, PROGRAMMING

FROM: ATTILIO K. LEONARDI, FIRE CHIEF

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (DEA)  
KAWAI NUI MODEL AIRPLANE PARK COMFORT  
STATION  
OWNER: CITY AND COUNTY OF HONOLULU  
DEPARTMENT OF PARKS AND RECREATION  
APPLICANT: CITY AND COUNTY OF HONOLULU  
DEPARTMENT OF DESIGN AND CONSTRUCTION  
FACILITIES PLANNING BRANCH  
LOCATION: KAPA'A QUARRY ROAD  
KAILUA, O'AHU, HAWAII  
TAX MAP KEY: 4-2-016: 001

We received a letter dated September 8, 2005, from Mr. Charles Willson of Helber Hastert & Fee Planners, Inc. requesting our review and comments on the above-mentioned DEA.

The Honolulu Fire Department has no objections to the above-mentioned project.  
Should you have any questions, please call Battalion Chief Lloyd Rogers of our Fire Prevention Bureau at 831-7778.



ATTILIO K. LEONARDI  
Fire Chief

AKL/SY:jl

cc: Ms. Genevieve Salmonson, Director  
State of Hawaii, Department of Health, Office of Environmental Quality Control  
Mr. Charles Willson, Project Planner  
Helber Hastert & Fee Planners, Inc.

**Helber Hastert & Fee**  
Planners, Inc.

January 23, 2006

Attilio K. Leonardi, Fire Chief  
Honolulu Fire Department  
3375 Koapaka Street, Suite H425  
Honolulu, HI 96819



**RE: Comments to Kawai Nui Model Airplane Park Draft Environmental Assessment**

Dear Chief Leonardi,

Thank you for your response to the Kawai Nui Model Airplane Park Draft Environmental Assessment. We understand you have no objections to the project, or other comments to offer at this time, but will contact Battalion Chief Lloyd Rodgers of your Fire Prevention Bureau at 831-7778 if we have any questions or should we require further assistance.

Thank you again for your review of this project.

Charles Willson  
Planner

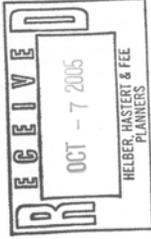
LINDA LINGLE  
GOVERNOR OF HAWAII



GENEVIEVE SALMONSON  
DIRECTOR

**STATE OF HAWAII**  
**OFFICE OF ENVIRONMENTAL QUALITY CONTROL**

235 SOUTH BERETANIA STREET  
HONOLULU, HAWAII 96813  
TELEPHONE (808) 586-4185  
FACSIMILE (808) 586-4186  
E-mail: [ogen@hawaii.gov](mailto:ogen@hawaii.gov)



September 30, 2005

Mr. Wayne Hashiro  
Department of Design and Construction  
City and County of Honolulu  
650 South King Street, 11<sup>th</sup> Floor  
Honolulu, Hawaii 96813

Dear Mr. Hashiro:

Subject: Draft Environmental Assessment for the Kawai Nui Model Airplane Comfort Station,  
Oahu

Thank you for the opportunity to review the subject document. We have the following comment.

1. Please provide reasons for the proposed FONSI determination based on all 13 criteria in HAR 11-200-12.

Should you have any questions, please call Jeyan Thirugnanam at 586-4185.

Sincerely,

Genevieve Salmonson  
Director

c: HHF

PHONE (808) 594-1888

FAX (808) 594-1885



STATE OF HAWAII  
OFFICE OF HAWAIIAN AFFAIRS  
711 KAPIOLANI BOULEVARD, SUITE 500  
HONOLULU, HAWAII 96813

**Helber Hastert & Fee**  
Planners, Inc.

January 23, 2006

Genevieve Salomonson, Director  
State of Hawaii  
Department of Health  
Office of Environmental Quality Control  
235 S. Beretania St., Suite 702  
Honolulu, HI 96813



**RE: Comments to Kawai Nui Model Airplane Park Draft Environmental Assessment**

Dear Ms. Salomonson,

Thank you for your comments on the Kawai Nui Model Airplane Park Draft Environmental Assessment. Per your comments we have inserted one missing significance criteria as required under HAR 11-200-12 on page 1-4 of the Final EA. This list is now renumbered so the added item is number 11 of the list of 13 criteria. The text added to remedy this omission states:

- 11. *The proposed comfort station is outside the 500-year flood plain, and would not affect or suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.*

Should we have any additional questions, we will contact Jeyan Thirugnanam for clarification.

Thank you again for your interest in this project,

Charles Willson  
Planner

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October 10, 2005

Mike Sakamoto, Project Manager  
Department of Design and Construction, Facilities Engineering Branch  
650 South King Street  
Honolulu, HI 96813

**RE: Kawai Nui Model Airplane Park Comfort Station Draft Environmental Assessment**

Dear Mr. Sakamoto,

The Office of Hawaiian Affairs (OHA) is in receipt of your September 8, 2005 request for comment on the above listed proposed project. OHA offers the following comments.

OHA reminds the applicant the human burials, historic properties and cultural sites have been encountered in areas that have undergone substantial grading and ground altering activities. Hence OHA requests your assurances that if the project goes forward, should iwi or Native Hawaiian cultural or traditional deposits be found during ground disturbance, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jonathan Likeke Scheuer at (808) 594-1946 or [jonathans@oha.org](mailto:jonathans@oha.org).

Mahalo,

Clyde W. Nānu'o  
Administrator

CC: The Office of Environmental Quality Control (OEQC)  
235 South Beretania Street, Suite 702, Honolulu, HI 96813

✓ Charles Wilson, Project Planner  
Helbert, Hastert & Fee, Planners  
733 Bishop Street, Suite 2590, Honolulu, HI 96813



HRD05/2044

125034

LINDA LINGLE  
GOVERNOR OF HAWAII



CHRYONE L. PUKONO, M.D.  
DIRECTOR OF HEALTH

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

January 23, 2006

Clyde W. Nāmu'o, Administrator  
Office Of Hawaiian Affairs  
711 Kapi'olani Blvd., Ste. 500  
Honolulu, HI 96813

**RE: Comments to Kawai Nui Model Airplane Park Draft Environmental Assessment.**

Dear Mr. Nāmu'o,

Thank you for your comments on the Kawai Nui Model Airplane Park Draft Environmental Assessment and the Conservation District Use Application (CDUA). With regard to your request for inclusion of a statement indicating that work will cease if bones or artifacts are encountered, this statement exists in 3.10.2 Historical Resources:

*"... should any objects, artifacts, or bones are encountered which could be of historical or cultural significance, all work in that area will cease and the State Historic Preservation Officer will be contacted."*

With regard to your comments on the CDUA, Native Hawaiian traditional and customary gathering, access, and use rights would not be negatively affected, as the construction area is only a small portion of a grassed field in an existing park, and will only areas under construction would have restricted access. The proposed comfort station would likely be a benefit to anyone accessing any of the resources in the Kawai Nui Marsh area, and will not impact or restrict traditional and customary gathering rights.

Should we have any additional questions, we will contact Jonathan Likeke Scheuer at 594-1946 for clarification.

Thank you again for your interest in this project,

Charles Willison  
Planner

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RECEIVED

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October 13, 2005

Mr. Mike Sakamoto, Project Manager  
City and County of Honolulu  
Department of Design and Construction  
Facilities Planning Branch  
650 South King Street  
Honolulu, Hawaii 96813

Dear Mr. Sakamoto:

**SUBJECT:** Draft Environmental Assessment for Proposed Kawai Nui Model Airplane Park  
Comfort Station, Kailua, Oahu, Hawaii, TMK: (1) 4-2-16:1

Thank you for allowing us to review and comment on the subject document. The document was routed to the various branches of the Environmental Health Administration. We have the following Wastewater Branch and Environmental Planning Office comments.

Wastewater Branch

We have reviewed the subject document which proposes to replace an existing portable chemical toilet with a comfort station facility at the existing Kawai Nui Model Airplane Park. The need is to provide an ADA-accessible facility with flush toilets, running water, wash basins and an accessible drinking fountain while minimizing environmental and community impacts, costs and maintenance.

The subject project is located in the Critical Wastewater Disposal Area (CWDA) as determined by the Oahu Wastewater Advisor Committee. No new cesspools will be allowed. The area is not within the County sewer service system. Therefore, we have no objections to the proposed project of replacing a portable chemical toilet with comfort station, provided that it will be connected to a treatment individual wastewater system (non-cesspool). We encourage the developer to work with the City and utilize recycle water for irrigation and other non-potable water purposes wherever possible. Also, should the County sewer line become available in the future, connection will be required.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater System." We do reserve the right to review the detailed wastewater plans for conformance to applicable rules. Should you have any

12/5/05

#### **Pending water quality management actions**

4. Identify all potentially affected water bodies that appear on the current *List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d)* including the listed waterbody, geographic scope of listing, and pollutant(s) (See Table 5 at <http://www.hawaii.gov/health/environmental/env-planning/wqm/203dpefinal.pdf>).
5. If the proposed project involves potentially affected water bodies that appear on the current *List of Impaired Waters in Hawaii Prepared under Clean Water Act §303(d)*, identify and quantify expected changes in the following site and watershed conditions and characteristics
  - surface permeability
  - hydrologic response of surface (timing, magnitude, and pathways)
  - receiving water hydrology
  - runoff and discharge constituents
  - pollutant concentrations and loads in receiving waters
  - aquatic habitat quality and the integrity of aquatic biota

Where TMDLs are already established they include pollutant load allocations for the surrounding lands and point source discharges. In these cases, we suggest that the submittal specify how the proposed project would contribute to achieving the applicable load reductions.

Where TMDLs are yet to be established and implemented, a first step in achieving TMDL objectives is to prevent any project-related increases in pollutant loads. This is generally accomplished through the proper application of suitable best management practices in all phases of the project and adherence to any applicable ordinances, standards, and permit conditions. In these cases we suggest that the submittal specify how the proposed project would contribute to reducing the polluted discharge and runoff entering the receiving waters, including plans for additional pollutant load reduction practices in future management of the surrounding lands and drainage/discharge systems.

#### **Proposed Action and Alternatives Considered**

We suggest that each submittal identify and analyze potential project impacts at a watershed scale by considering the potential contribution of the proposed project to cumulative, multi-project watershed effects on hydrology, water quality, and aquatic and riparian ecosystems.

We also suggest that each submittal broadly evaluate project alternatives by identifying more than one engineering solution for proposed projects. In particular, we suggest the consideration of "alternative," "soft," and "green" engineering solutions for channel modifications that would

questions, please contact the Planning & Design Section of the Wastewater Branch at telephone 586-4294.

#### **Environmental Planning Office**

To facilitate TMDL development and implementation, and to assist with our assessment of the potential impact of proposed actions upon water quality, pollutant loading, and biological resources in receiving waters, we suggest that environmental review documents, permit applications, and related submittals include the following standard information and analyses. Please note that these comments are also listed on our website: [www.state.hi.us/health/environmental/env-planning/landuse/landuse.html](http://www.state.hi.us/health/environmental/env-planning/landuse/landuse.html). We suggest that you also review other Standard Comments on this website.

#### **Waterbody type and class**

1. Identify the waterbody type and class, as defined in Hawaii Administrative Rules Chapter 11-54 (<http://www.state.hi.us/health/about/rules/11-54.pdf>), of all potentially affected water bodies. Potentially affected water bodies means those in which proposed project activity would take place and any others that could receive water discharged by the proposed project activity or water flowing down from the proposed site. These waterbodies can be presented as a chain of receiving waters whose top link is the project site upslope and whose bottom link is in Pacific Ocean "oceanic waters," with all receiving waters named according to conventions established by Chapter 11-54 and the *List of Impaired Waters in Hawaii Prepared under Clean Water Act § 303(d)*. For example, a recent project proposed for Nuhelewai Stream, Oahu (a tributary of Kapalama Canal) might potentially affect Nuhelewai Stream, Kapalama Canal, Honolulu Harbor and Shore Areas, and the Pacific Ocean.

#### **Existing water quality management actions**

2. Identify any existing National Pollutant Discharge Elimination System (NPDES) permits and related connection permits (issued by permittees) that will govern the management of water that runs off or is discharged from the proposed project site or facility. Please include NPDES and other permit numbers; names of permittees, permitted facilities, and receiving waters (including waterbody type and class as in 1. above); diagrams showing drainage/discharge pathways and outfall locations; and note any permit conditions that may specifically apply to the proposed project.
3. Identify any planning documents, groups, and projects that include specific prescriptions for water quality management at the proposed project site and in the potentially affected waterbodies. Please note those prescriptions that may specifically apply to the proposed project.

Mr. Sakamoto  
October 13, 2005  
Page 4

provide a more environmentally friendly and aesthetically pleasing channel environment and minimize the destruction of natural landscapes.

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

Sincerely,



HAROLD LAO, ACTING MANAGER  
Environmental Planning Office

c: WWB  
SDWB  
EPO

**Helber Hastert & Fee**  
*Planners, Inc.*

January 23, 2006

Chiyome L. Fukino, MD, Director  
State of Hawaii  
Department of Health  
Environmental Planning Office  
P.O. Box 3378  
Honolulu, HI 96801-3378



**RE: Comments to Kawai Nui Model Airplane Park Draft Environmental Assessment.**

Dear Dr. Fukino,

Thank you for your comments on the Kawai Nui Model Airplane Park Draft Environmental Assessment. We will respond to your comments as they were presented, by the branches that presented the comments.

**Wastewater Branch**

We have added the statement: "*This area is currently designated as a Critical Wastewater Disposal Area, as determined by the Oahu Wastewater Advisory Committee*" under section 3.8.2, Water Quality. We understand that no new cesspools will be allowed, and the area is not served by the County sewer service system, so the proposed action includes the installation of a non-cesspool individual wastewater treatment system, consistent with our discussions with your office and your letter. This system will conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems", and we anticipate full review of the detailed wastewater plans for conformance to applicable rules by your office prior to construction.

Should we have any additional questions, we will contact Wastewater Branch for clarification.

**Environmental Planning Office**

1. Kawai Nui Marsh, a lowland freshwater wetland, is the nearest potentially affected waterbody. Downstream of Kawai Nui Marsh is Oneawa Canal, which discharges to the Pacific Ocean at the northern side of Kailua Bay, as discussed in Section 3.8.1 Kawai Nui Marsh Hydrology. Water from the midsection and south portions of the marsh drains into Hamakua Drive Canal and then to Kalaepulu Stream, which flows into south Kailua Bay. The Proposed Action will not discharge effluent or stormwater runoff to the marsh, and there will be no impacts to those waters.
2. There are no National Pollutant Discharge Elimination System (NPDES) or other related permits for discharge from the project area, and none would be required for the proposed action.
3. There are no planning documents, groups, or projects which include specific prescriptions for water quality management at the proposed project site. Kawai Nui Marsh, however, has been the subject of numerous water quality investigations, planned interventions, and projects related to water quality management. As explained in Section 3.8.2 Water Quality:

LINDA LINGLE  
GOVERNOR



RODNEY K. HARAGA  
DIRECTOR

Deputy Directors  
BARRY J. MATSUJI  
BARRY FUKUNAGA  
BREANON T. MOROOKA  
BRIAN H. SEAGUCHI

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5087

STP 8.1920

IN REPLY REFER TO:

October 14, 2005

Mr. Wayne Hashiro  
Director  
Department of Design & Construction  
City and County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813

Attn: Mike Sakamoto

Dear Mr. Hashiro:

Subject: Kawai Nui Model Airplane Park Comfort Station  
Draft Environmental Assessment (DEA)  
TMK: 1<sup>st</sup> 4-2-16: 1

In response to a transmittal of the subject draft environmental assessment by your consultant, Helber Hastert & Fee, this is to advise you that the proposed comfort station project will not have an impact on our transportation facilities.

We appreciate the opportunity to provide our comments.

Very truly yours,

RODNEY K. HARAGA  
Director of Transportation

c: Genevieve Salmonson, Office of Environmental Quality Control  
Charles Willson, Helber Hastert & Fee, Planners

"Until 1988, when the Olomana-Maunawili Sewer Line was completed, four secondary treatment plants discharged partially treated effluent into the marsh. This area is currently designated as a Critical Wastewater Disposal Area, as determined by the Oahu Wastewater Advisory Committee. In 1993, the Water Resource Research Center (WTRC) assessed fecal indicator bacteria in and around the marsh. Three indicator bacteria (fecal coliform, *Escherichia coli* and enterococci) were noted which exceeded established USEPA freshwater standards for water quality compliance at most of the sample sites. All of these bacteria exceed the standard in Oneawa Canal. Levels of the bacteria *Clostridium perfringens* (an indicator of fecal pollution) were also elevated downstream of urban areas, but not present at levels indicating sewage discharge, and not at levels exceeding the standard. The likely source for these indicator bacteria was identified as the ducks which concentrate where marsh water enters the canal. Kapa'a Stream, which discharges to the marsh just north of the Model Airplane Park, has also been identified as a past source of pollution."

It is important to emphasize that none of these pollution sources, issues, or intervention plans are related to the project area, but address issues related to the four former secondary treatment plants discharged partially treated effluent into the marsh, soil runoff into the marsh from inland development, and runoff from nearby quarrying operations. Additional planning tangentially related to water quality management relate to the control of invasive species, flood control intervention involving dredge and fill activities, and wetlands habitat restoration. Those plans are unrelated to the Proposed Action, and the Proposed Action would not contribute to such pollution. The only reference to the land area underlying the project area was found in an October 1990 *Environmental Assessment for Kawai Nui (sic) Model Airplane Field Improvements*, which indicated "... no leachate from this land fill has been found in monitoring wells operated by the City Department of Public Works within the Marsh."

4. The Final 2004 *List of Impaired Waters in Hawaii* does not show Kawai Nui Marsh as a "Listed Waterbody", but it is within the "geographic scope of the listing" of two contributing streams. Kapa'a Stream (p. 39) and Maunawili Stream (p. 40) are both listed on the basis of visual assessments. The Total Maximum Daily Load (TMDL) under US EPA Clean Water Act 303(d) has not been established for Kapa'a Stream, and Maunawili Stream is listed as medium priority. Since these are both upstream, neither have any potential to be impacted by the project. Neither listing has indicator bacteria specified as pollutants, and TMDLs would apply to those streams, not Kawai Nui Marsh. There are no TMDLs for Kawai Nui Marsh, and any future determination would have to be adjusted due to the elevated background bacteria level created by the waterbird habitat (per our discussion with David Penn in the DOH TMDL Program). The Proposed Action would result in no discharge into this Class 1a waterbody, and would be constructed according to the strict standards and oversight imposed by DOH Wastewater Branch and the City and County Department of Parks and Recreation, as imposed at beach parks and other conservation areas, and will not contribute to water quality degradation in Kawai Nui Marsh.

Your comments also ask consideration be given to "green" engineering solutions, and this was considered for this project, and the proposed design is the outcome of this process, subject to DPR and VW standards. The current design will recycle nutrient back to the grasses above and surrounding the leachfields and will not adversely impact marsh ecology or the surrounding environment.

Thank you again for your interest in this project.

Charles Willson  
Planner

**Helber Hastert & Fee**  
Planners, Inc.

January 23, 2006

Rodney K. Haraga, Director  
State of Hawaii  
Department of Transportation  
869 Punchbowl St.  
Honolulu, HI 96813



**RE: Comments to Kawai Nui Model Airplane Park Draft Environmental Assessment**

Dear Mr. Haraga,

Thank you for your comments on the Kawai Nui Model Airplane Park Draft Environmental Assessment, and your determination that the project will not have an impact on your transportation facilities.

Should we have any follow-up questions, we will contact Larry Leopardi, Chief of the Division of Road Maintenance, at 484-7600.

Thank you again for your interest in this project.

  
Charles Willson  
Planner

Pacific Guardian Center • 733 Bishop Street, Suite 2590 • Honolulu, Hawaii 96813  
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DEPARTMENT OF FACILITY MAINTENANCE  
**CITY AND COUNTY OF HONOLULU**  
1000 ULUOHIA STREET, KAPOLEI HALE, SUITE 215, KAPOLEI, HAWAII 96707  
TELEPHONE: (808) 492-5054, FAX: (808) 492-5857  
Website: www.honolulu.gov



MUFT HANNEMANN  
MAYOR

LAVERNE HIGA, P.E.  
DIRECTOR AND CHIEF ENGINEER  
GEORGE K. MIYAMOTO  
DEPUTY DIRECTOR

IN REPLY REFER TO:  
DRM 05-1011

October 24, 2005



**MEMORANDUM**

**TO:** WAYNE HASHIRO, P.E., DIRECTOR  
DEPARTMENT OF DESIGN AND CONSTRUCTION

**ATTENTION:** MIKE SAKAMOTO, PROJECT MANAGER

*Laverne Higa*

**FROM:** LAVERNE HIGA, P.E., DIRECTOR AND CHIEF ENGINEER  
DEPARTMENT OF FACILITY MAINTENANCE

**SUBJECT:** DRAFT ENVIRONMENTAL ASSESSMENT (DEA)  
KAWAINUI MODEL AIRPLANE PARK COMFORT STATION

Thank you for giving us the opportunity to comment on the subject DEA. This project does not negatively impact our maintenance responsibility and as such, we have no comments to offer.

Should you have any further questions, please contact Larry Leopardi, Chief of the Division of Road Maintenance, at 484-7600.

cc: The Office of Environmental Quality Control  
Helber Hastert & Fee, Attn: Charles Wilson

**Helber Hastert & Fee**  
Planners, Inc.

January 23, 2006

Laverne Higa, P.E., Director and Chief Engineer  
City and County of Honolulu  
Department of Facility Maintenance  
1000 Ulukouia Street  
Kapolei Hale, Suite 215,  
Kapolei, HI 96707



**RE: Comments to Kawai Nui Model Airplane Park Draft Environmental Assessment**

Dear Ms. Higa,

Thank you for your comments on the Kawai Nui Model Airplane Park Draft Environmental Assessment and your determination that the project does not negatively impact DFM's maintenance responsibility. Should we have any follow-up questions, we will contact Larry Leopardi, Chief of the Division of Road Maintenance, at 484-7600.

Thank you again for your interest in this project.

Charles Willison  
Planner



**Hawaii's Thousand Friends**

305 Hahani St., PMB 282 • Kailua, HI 96734 • Phone/Fax: (808) 262-0682 E-mail: [hlf@java.net](mailto:hlf@java.net)

October 20, 2005

Mike Sakamoto, Project Manager  
Department of Design and Construction, Facilities Planning Branch  
650 South King Street  
Honolulu, Hawaii 96813

The Office of Environmental Quality Control  
235 South Beretania Street, Suite 702  
Honolulu, Hawaii 96813

Charles Willison, Project Planner  
Helber Hastert & Fee, Planners  
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RE: Kawai Nui Model Airplane Park Draft Environmental Assessment, Special Management Area Use Permit Application, Conservation District Use Application.

We found the combined submission of the DEA, SMAUP and CDUAP confusing. It is awkward to reply to permit applications when the applications keep referring the reader to pages in the DEA. It is also unclear if the October 24, 2005 reply deadline applies only to the DEA or to the SMAUP and CDUAP. Following the consultant's letter we are only responding to OEQC, Department of Design and Construction and the consultant but remain unclear that is the correct process and are concerned that we may be missing a deadline for the two applications.

As a *Wetland of International Importance*, home to four endangered water birds, and cultural historical complex eligible for listing on the State and National Historical Registers Kawai Nui Marsh deserves and must receive the greatest scrutiny on actions, activities and uses within and surrounding the marsh. The DEA fails to disclose all potential impacts including short and long-term cumulative impacts on the ground water, surrounding marsh and wildlife within and beyond the model airplane park. The DEA is incomplete and at the very least an Environmental Impact Statement must be done to ensure that the soil disturbance, increased nutrients from sewage water and increased use will not further degrade this important wetland.

1. Why didn't the DEA mention that on February 2, 2005 World Wetlands Day the United States designated *Kawatini and Hamakua Marsh Complex Wetlands of International Importance*, more commonly known as the Ramsar Convention after its place of adoption in Iran in 1971 and that this is the first Ramsar designation in Hawai'i and only the twenty-second in the United States?

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2. Why didn't the DEA mention that Kawaiuni Marsh is eligible for listing on the State and National Historical Registers as a wildlife habitat sanctuary and historical/cultural complex? Both of these acknowledgments are significant and add additional importance to the protection and ecological health of the largest fresh water marsh in the state.
3. Why wasn't water quality testing done as part of the DEA, so there would be base line data by which to measure long and short term effects of percolating liquid sewage from the leach fields on the ground water and the marsh? (Pg. 3-9)
4. Why is there no data showing if liquid from the leach fields will reach the ground water 8" below the surface?
5. Why is there no analysis on the cumulative long and short-term impacts of the percolated liquid on the ground water and marsh?
6. Is the actual percolation rate of the leach fields 10 minutes per inch as recommended and how much liquid will percolate during that time? (Pg. 3-5)
7. What is the quality of the liquid that will percolate into the soil and illegal landfill material?
8. What is the quality of the liquid as it percolates through the soil and illegal landfill material?
9. Once the liquid from the leach fields has percolated through the soil and illegal landfill material what is the disbursement pattern?
10. Will the liquid migrate into the ground water? If so, what are the short and long-term impacts to the ground water? Will the liquid migrate into the surrounding marsh? If so what are the short and long-term impacts to the wetland from the additional nutrients?
11. What data supports the statement that, "After the installation of the prefab comfort station, utility hookup, and access improvements, there are no foreseeable long-term impacts?" (Pg. 1-2)
12. Since Kawaiuni Marsh is in the Protective (P) Subzone that does not permit structures, is identified as a *Wetland of International Importance*, is eligible for listing on the State and National Historic Registers, and is home to four endangered water birds why weren't other options such as building a public comfort station at the public transfer station considered?
13. Once the comfort station is constructed the City proposes to open the gates from 7am to 7pm. Since the park and parking are currently restricted to model airplane flying and the gate is only opened by model airplane users who have keys what are the impacts, implications and conflicts once the Park is open for general public use? (Pg. 5-1)
14. Will other uses such as picnicking, playing ball, bird watching, and just other park activities be permitted? Are these uses compatible with model airplane flying? For instance what will happen if a family is picnicking or kids are playing ball and model airplane users want to use the field?
15. Can and will the City prohibit non-model airplane uses such as picnicking at the public park if the comfort station is constructed?
16. If some model airplane park users have keys to the gate will they be allowed to lock the gate during the 7am to 7pm time and open and lock the gate at will?
17. Who will enforce the proposed no parking for non-model airplane users?
18. Who determined that "the marshland does not support team sports or pedestrian access" and what criteria were used to make that determination? (Pg. 2-2)
19. What is the maximum daily/monthly capacity of the septic tanks and leach fields?
20. In addition to the numbers of model airplane users ranging from 25-40 week days, 60-80 a weekend and up to 500 for special events what is the number of non-model airplane users expected to use the park? Without an understanding of how many other people will use the park how can the City be sure that the septic tanks and leach fields have adequate capacity?
21. What information was used to determine that the proposed two-stall comfort station, 1000-gallon septic tanks and 30 x 20 feet leach fields will be adequate?
22. What are the anticipated impacts to the marsh and ground water from overflow or malfunction situations?
23. How often will the septic tanks need to be pumped?
24. How often will the leach fields require maintenance?
25. Who is responsible for maintenance of the septic tanks and leach fields?
26. What does "100% design efficiency" mean?
27. Who will be responsible for ensuring that toilet paper, paper towels and other paper debris does not enter the marsh?
28. What is the depth that the liquid from the leach fields is expected to percolate?
29. What is the maximum capacity of the leach fields?
30. What is the depth of the septic tanks and leach fields?
31. How much dirt/old landfill material will need to be removed for construction of the septic tanks and leach fields and where will the material be deposited?
32. What is the composition of the dirt/old landfill material that will be removed?
33. What data substantiates the statement that "there are no foreseeable long-term impacts" after installation of the prefab comfort station, utility hookup, and access improvements?
34. What data substantiates the statement "that the project will have no impact to the wetlands ecology of the marsh?" (Pg. 1-3)
35. What studies were conducted to determine that "There are no threatened or endangered species or habitat in the project area?" What is considered the "project area"?
36. How would not installing a comfort station in the marsh designated Conservation (P) Protective that prohibits structures and is a *Wetland of International Importance* "not support the implementation of the DLNR's 1994 *Kawai Nui Marsh Master Plan*?"
37. What is the proposed action if it is shown that the new two comfort station, two 1000-gallon septic tanks and 20' by 30' leach fields cannot accommodate an "annual peak load weekend?"
38. What types of materials will be brought in to "adjust the permeability of the ground?" What are the anticipated impacts from bringing in compressed gravel and other materials? (Pg. 3-6)
39. What agencies will be consulted regarding impacts to ground water and water quality during and after construction?
40. What are the anticipated impacts to the marsh and water quality from runoff from the leach fields during heavy rain?
41. What "small drainage ditch" is the DEA referring to and where is it located? (Pg. 3-10)
42. If the tall grass and floating mat are removed as proposed the comfort station will stand out as the only structure within the wetland boundary. How will the permanent structure not impact the unobstructed view plain?
43. What data was used to determine that only the "small drainage ditch at the edge of the project site" is the only area likely to receive any runoff from the site?
44. The National Flood Insurance Map shows that the Park is in Zone X an area of 500 and 100-year floods. How would a rise of just one foot of water impact the leach fields and septic tanks?
45. What are the anticipated short and long-term cumulative impacts on the ground water, water quality, bird habitat and the marsh from grading for the comfort station, excavating the illegal landfill material for a 168 foot trench for the new water line, the new 60 foot sewer line, the two 1000 gallon septic tanks and two 20' by 30' leach fields?

January 23, 2005

Hawaii's Thousand Friends  
305 Hahani St., PMB 282  
Kailua, HI 96734



**RE: Comments to Kawai Nui Model Airplane Park Draft Environmental Assessment, Special Management Area Use Permit Application, Conservation District Use Application.**

Thank you for your comments to the Kawai Nui Model Airplane Park Draft Environmental Assessment (DEA), Special Management Area (SMA) Use Permit Application, and Conservation District Use Application (CDUA). Due to the number and complexity of the questions, we will answer them in the order presented, as appropriate.

*"We found the combined submission of the DEA, SMAUP and CDUAP confusing. It is awkward to reply to permit applications when the applicants keep referring the reader to pages in the DEA. It is also unclear if the October 24, 2005 reply deadline applies only to the DEA or to the SMAUP and CDUAP."*

We are sorry you found it confusing. Apparently you have an agency copy of the combined submittal, rather than just the DEA distributed for public comment. The deadline is for DEA comments only. The combined submittal is so agency reviewers can find the necessary information in the DEA quickly, and it is abbreviated so they do not have to re-read the same information in the SMA and CDUA that they reviewed in the DEA. Many agencies are charged with reviewing all three submittals, and having to review the same DEA three times is an unnecessary (and avoidable) load on these agencies. Each action has its own schedule and public comment opportunities. The Final EA is required for the SMA, and the SMA Use Permit is required for issuance of the Conservation District Use Permit, and both the SMA and CDUA have public hearings.

1. *Why didn't the DEA mention that on February 2, 2005 World Wetlands Day the United States designated Kawai Nui and Hanalei Marsh Complex Wetlands of International Importance, more commonly known as the Ramsar Convention after its place of adoption in Iran in 1971 and that this is the first Ramsar designation in Hawaii and only the twenty-second in the United States?*

A: You are correct, we should have mentioned the Ramsar Convention designation. We missed this because the DEA was written in December 2004 (before their February 2, 2005 designation), and then publication was held up for several months while we waited for the survey team, soils consultant, and civil engineering consultant to complete their work regarding placement of the leachfield. This information was added to the Final EA under section 2.1 Introduction, on page 2-1.

2. *Why didn't the DEA mention that Kawai Nui Marsh is eligible for listing on the State and National Historical Registers as a wildlife habitat sanctuary and historical/cultural complex? Both of these acknowledgments are significant and add additional importance to the protection and ecological health of the largest fresh water marsh in the state.*

A: Based on information from Chris Moynahan at the State Historic Preservation Division, we altered the text under Section 3.10.2 Historical Resources, to read: "Kawai Nui Marsh gives valuable insight to the migration, settlement and cultural development practices of prehistoric Polynesian Cultures. Kawai Nui played a prehistoric and historic role as an important economic component of an ahupua'a unit. It was eligible for listing on the National Register of Historic Places on July 13, 1979." We were told the State listing applies to the defined state site boundary for SHP No. 50-80-11-2029 in the SW corner of the marsh, not to the marsh itself.

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3. *Why wasn't water quality testing done as part of the DEA so there would be base line data by which to measure long and short term effects of percolating liquid sewage from the leach fields on the ground water and the marsh? (Pg 3-9)*

A: First, effluent from the septic (digester) tanks has already been biologically broken down, and isn't the same as sewage. Second, leachfield design requirements to avoid contamination are well established, with millions of systems in use, and individual testing is not required for each system if design standards are followed. Third, all wastewater treatment is thoroughly reviewed by the Hawaii Department of Health (DoH) Wastewater Branch (WW), and must comply with rigid design standards based on the Uniform Plumbing Code (UPC), the requirements specified of the Hawaii Administrative Rules (HAR), Chapter 11-62-08, "Wastewater Systems", and the revised (Jan. 2000) Department of Parks and Recreation (DPR) standards. Further, DoH approval is required on the final design prior to operation. The leachfield for the comfort station has been located sufficiently distant (over 20' from the closest water, which is the drainage ditch along the side of the road) to assure no impact on the waters of the marsh. The same standard is applied to all systems to assure no pathogens enter the water. However, the marsh is not pristine. As noted in section 3.8.2 Water Quality, existing water quality in Kawai Nui Marsh is significantly compromised, with a warning at the park entry warns of the leptospirosis health hazard, and historically high levels of fecal coliform, *Escherichia coli*, enterococci, and *Clostridium perfringens*. These readings were taken five years after four secondary treatment plants ceased discharging partially treated effluent into the marsh, and these elevated levels are due to the heavy waterfowl concentration in the central marsh and cattle grazing in the south of the marsh, both of which result in animal waste directly discharged into the marsh. DoH indicates it is highly unlikely that any indicator organisms could be detected further than 5 feet beyond the leachfield, although some nutrients may remain at that distance. Typically, phosphorus (P) gets bound up quickly due to the iron rich composition of Hawaiian soils, so P is not a problem. Nitrogen (N) travels further through the soil column, but is a plant nutrient which is taken up quickly in the root structure of grasses and other plant matter near the leachfield. If any nitrogen is able to migrate, over time, through the subsurface soils to the water's edge, it would be immediately taken up by near shore plant matter. In consultation, DoH/WW agreed this project would have no adverse impacts on the marsh ecology.

4. *Why is there no data showing if liquid from the leach fields will reach the ground water 8" below the surface?*

5. *Why is there no analysis on the cumulative long and short-term impacts of the percolated liquid on the ground water and marsh?*

A (4&5): Geolabs, Inc. conducted a Geotechnical Exploration which found groundwater at depths between 8 and 9.3 feet during their tests (Geolabs, Inc. Geotechnical Engineering Exploration: Comfort Station at Kawai Nui Model Airplane Field, Kailua, Oahu, Hawaii, July 20, 2005). It is not possible to collect data from a facility which does not yet exist, so established and accepted design standards are used, and the design must be approved by DoH prior to operation. Septic / leachfield systems are a well-known and mature, but highly regulated technology. DoH and UPC design standards are extremely conservative, and compliant systems have no significant impacts. There must be a minimum of 3 feet of suitable soil from the bottom of the system to any groundwater, bedrock, or limiting layer. This project has double that. Clearance from the nearest water body is over 440% of UPC requirements. DPR standards specify a design flow of 3.5 gallons per flush (vs.

<sup>1</sup> DoH/WW maintains oversight over the design and installation of the leachfield, and DoH approval is required before operation. There are three phases to the permit process. DoH/WW review and approval before it goes to bid, or for a Building Permit. This requires construction plans, design calculations, and Geotechnical Report (complete with soil sampling and percolation testing and analysis) to support the design. DoH/WW will not sign off on BP until the design has been formally approved. (2) A Building Permit (BP) is required for construction, and DPP passes the BP application through DoH for review and sign-off on the WW system. DoH/WW will not sign off on BP until the design has been formally approved. (3) After construction, the design engineer must turn in a final inspection report, detailing the construction in accordance with design and noting any "as built" changes to the system. DoH/WW reviews the final inspection report, and if properly built according to the approved design, provides written authorization to use the system. The system can not be legally used prior to issuance of this formal written authorization.

the actual 1.6) flushing every 5 minutes per day. Standards further require dual tanks and leachfields for 100% redundancy (which doubles that capacity). Thus, either of the completely independent and redundant tank and leachfield systems is capable of exceeding the needs of the most extreme park use with the other system completely disabled. That is, the system can continue to operate at 100% of design capacity with a total failure of one side of the system. The geotechnical engineering exploration and percolations tests (performed in compliance with HAR 11-62-3.1.2), found soils and percolation rates suitable for the intended use, even at these flow rates.

6. *Is the actual percolation rate of the leach fields 10 minutes per inch as recommended and how much liquid will percolate during that time? (Pg. 3-5)*

A: No, this is the rate the consultant recommends to the civil engineer. Leachfield design can include preparation to adjust to an optimum percolation rate, or the size of the field can be adjusted to assure proper absorption. However, how much liquid actually percolates into the soil depends on the actual flow to the leachfields, as the only liquid actually present (rather than the design standard) can percolate. So the rate depends on how much is present, as well as how much area it is distributed across. That is, it may be designed to accommodate 2,000 gallons per day percolating at 10 minutes per inch, but the more likely 50 or so gallons per day may percolate at a slower rate, and/or may only use the first few feet of the absorption bed.

7. *What is the quality of the liquid that will percolate into the soil and illegal landfill material?*

8. *What is the quality of the liquid as it percolates through the soil and illegal landfill material?*

9. *Once the liquid from the leach fields has percolated through the soil and illegal landfill material what is the disbursement pattern?*

10. *Will the liquid migrate into the ground water? If so, what are the short and long-term impacts to the ground water? Will the liquid migrate into the surrounding marsh? If so what are the short and long-term impacts to the wetland from the additional nutrients?*

A (covers 7, 8, 9, & 10): Comments regarding the legality of the landfill, posed generations after-the-fact, would be handled by a process (and jurisdiction) other than this EA. This park is an existing public use of 33+ years duration; the landfill issue was based on decisions of prior generations.

The liquid effluent that leaves the septic (digester) tanks has been subject to biological decomposition during retention. Most of this was covered in the last part of the response to question 3. In brief, biological processes recycle waste matter into a resource with nutrient value, and will be taken up into the root structures of vegetation in the immediate area of the leachfield. DOH indicates only N is likely to pass more than a few feet through the soils. Leachfield design is subject to strict design standards which have undergone exhaustive review, and no pathogens are expected or likely to migrate to ground water or the waters of the marsh, nor are the nutrients expected or likely to have any adverse impacts on the waters or ecosystem of Kawai Nui Marsh.

11. *What data supports the statement that, "After the installation of the prefab comfort station, utility hookup, and access improvements, there are no foreseeable long-term impacts?" (Pg. 1-2)*

A: The detailed analysis in the DEA found no adverse impacts, and positive impacts for people needing a comfort station in the area of the Model Airplane Park, so we modified that sentence to read "...no foreseeable adverse long-term impacts ...".

12. *Since Kawai Nui Marsh is in the Protective (P) Subzone that does not permit structures, is identified as a Wetland of International Importance, is eligible for listing on the State and National Historic Registers, and is home to four endangered water birds why weren't other options such as building a public comfort station at the public transfer station considered?*

A: This statement is incorrect and misleading. The proposed structure is a permissible use in a Protective (P) Subzone, as noted in the Draft EA, § 3.12.1.1 "State Land Use District", per HAR § 13-5-22 (b)(1) "Public Purpose Uses," category D-1 (cf. Sept. 30, 2005 letter OA-3261 from Peter T. Young, Chairperson, Board of Land & Natural Resources). DEA section 3.12.2.1 "Kōloaupoko Sustainable Communities Plan" also notes this action qualifies as an accessory to a public

recreational use (with concurrence by Henry Eng, Director, DPP, in his letter of Sept. 27, 2005). The comfort station would be sited at the park because the County, as client, requested this placement, consistent with the standard practice of installing the comfort station on the park property.

13. *Once the comfort station is constructed the City proposes to open the gates from 7am to 7pm. Since the park and parking are currently restricted to model airplane flying and the gate is only opened by model airplane users who have keys what are the impacts, implications and conflicts once the Park is open for general public use? (Pg. 5-1)*

A: This is an incorrect assumption. The Draft EA (p. 5-1) states: "...the park is designated for model aircraft operation ...". The EA did not state that the park would be "open for general public use" — **no change in existing use is proposed**. The comfort station will, however, be available to anyone in the community needing a restroom or drinking fountain, as with other public comfort stations.

14. *Will other uses such as picnicking, playing ball, bird watching, and just other park activities be permitted? Are these uses compatible with model airplane flying? For instance what will happen if a family is picnicking or kids are playing ball and model airplane users want to use the field?*

A: **No, there will be no change in use for the Model Airplane Park**, and none was implied in the Draft EA. Picnicking, kids playing ball, or other uses of the runway and flying field areas are neither safe nor compatible uses. Following current practice, spectators are welcome in the spectator area, and members of the public would be free to use the public comfort station.

15. *Can and will the City prohibit non-model airplane uses such as picnicking at the public park if the comfort station is constructed?*

A: Spectators are allowed at the Model Airplane Park in designated spectator areas. Picnicking is allowed in the spectator areas, but not on the runway or flying field. This is the only park designated for model airplane operation; it is not being redesignated for other, incompatible uses.

16. *If some model airplane park users have keys to the gate will they be allowed to lock the gate during the 7am to 7pm time and open and lock the gate at will?*

A: Some park users have keys because they have shared the maintenance and stewardship of the park for the last 33 years. This is a long-standing symbiotic relationship based on shared responsibility. The constant presence of regular users has also kept incidences of vandalism and damage to the field to a minimum. DPR has expressed an intention to take over the locking and unlocking of gate by their roving crews (when the comfort station would be unlocked and checked) to simplify access. Questions about users locking or unlocking the gate at unusual times are speculative, and would seem unlikely, barring an emergency situation or an increase in park vandalism. Policy questions would be decided by DPR District 4 management.

17. *Who will enforce the proposed no parking for non-model airplane users?*

A: There has been no proposal of parking enforcement, and none has it been necessary in the past. Signage indicating park closure time may be installed to avoid the possibility that people could park and walk elsewhere, and have their car locked inside when the roving crews lock the gate. Any signage to restrict parking would be a County decision, in the event it becomes necessary.

18. *Who determined that "the marshland does not support team sports or pedestrian access" and what criteria were used to make that determination? (Pg. 2-2)*

A: People do not play sports or walk in the saturated marshland area, which provides a protective buffer around the park, as is clearly stated in this section of the Draft EA. The park is designated for model aircraft operation, and has no team sports and has signs to keep pedestrians off the flying field. To avoid ambiguity, we have revised the sentence in question to read: "Because **the park area and the expansive open area of the marsh** do not support team sports or **pedestrian use**, this area provides a large margin of safety for a hobby which must otherwise be practiced in more restrictive surroundings."

19. *What is the maximum daily/monthly capacity of the septic tanks and leach fields?*  
 A: See the response to question #4 above. The septic system is rated to handle 1,000 gallons per day, which it can do on either side of the redundant (dual) system, for a total capacity of 2,000 gallons per day. Anticipated use is less than 5% of this.
20. *In addition to the numbers of model airplane users ranging from 25-40 week days, 60-80 a weekend and up to 500 for special events what is the number of non-model airplane users expected to use the park? Without an understanding of how many other people will use the park how can the City be sure that the septic tanks and leach fields have adequate capacity?*  
 A: Initially, we expect little change and very few outside users, except for volunteers clearing the marsh of invasive species or improving neighboring areas, or occasional spectators. As the area is improved, we would expect perhaps 5 to 15 outside restroom users per day, probably hikers, joggers, and bicyclists. We would expect the heaviest outside use would be runners or walkers/hikers looking for a drinking fountain, which is a major improvement to this area. This use may increase if the proposed Kawai Nui Marsh Pathway is constructed. Also see the following answer.
21. *What information was used to determine that the proposed two-stall comfort station, 1000-gallon septic tanks and 30 x 20 feet leach fields will be adequate?*  
 A: The comfort station replaces a single portable chemical toilet, and was chosen as the smallest, most economical, lowest maintenance, and lowest impact option available. Analysis considered current park use and rough projections of potential community need based on area planning for the Kawai Nui Marsh Pathway, but was not designed to serve a large general purpose public park, as Pathway construction would likely involve construction of other comfort stations for Pathway users. The capacity of the septic/leachfield system was not chosen to be simply "adequate" – it was designed to meet stringent environmental protection standards. The system is custom designed specifically for this site by licensed professional civil engineers based on a professional geotechnical (soils) analysis, considering specific site conditions including topography, vertical separation distances from bodies of water and property lines, soil characteristics such as permeability, and applicable regulations. The design must then be approved by DoH as appropriate to this specific site and its special conditions.
22. *What are the anticipated impacts to the marsh and ground water from overflow or malfunction situations?*  
 A: The redundant design of the system makes the possibility of overflow extremely remote. Modern septic tank /leachfield systems are designed to survive a malfunction by carrying the full design load (1,000 gallons per day) on either of the two independent systems. (We anticipate an average daily use of 50 gallons per day.) In the highly unlikely event of a simultaneous failure of both tank /leachfield systems, the percolation rate of the soil is sufficient so significant soil saturation is unlikely (unless the soil has been pre-soaked by heavy rains). The biological processes described in the response to question 4 would continue as before, with little likelihood of significant adverse impacts to the marsh or ground water, but an odor might be detectable in the parking lot area (which is normally downwind from the leachfield). In such an event, DPR roving crews (or park users) would contact DPR District 4 to send out a crew to service the installation
23. *How often will the septic tanks need to be pumped?*  
 24. *How often will the leach fields require maintenance?*  
 25. *Who is responsible for maintenance of the septic tanks and leach fields?*  
 A (23 – 25): Pumping takes place when required, which would be every few years. The civil engineering design consultant for the project, R.M. Towill, provided operations and maintenance (O&M) instructions for the septic system which states that cleaning takes place when the bottom of the floating mat in the tank is within three inches of the bottom of the outlet pipe, or the sludge comes within six inches of the bottom of the outlet pipe. Please note that "cleaning" means pumping to within three inches of the bottom of the tank, which is left in the tank to seed the tank with the bacteria used in the digestion process which breaks down the waste matter. The tank is not washed or disinfected, as that would disrupt the digester. The O&M instructions specify semi-annual inspections to see if servicing is required, but Will Ho, District 4 manager, says District 4 will oversee the installation, and monitoring will be significantly more frequent than required in the first year until system capacity and proper operation has been verified. They also commonly monitor more frequently in sensitive areas such as KN Marsh. Informal monitoring actually takes place on a more frequent basis because maintenance crews verify there is no soggy ground when the area is mowed, and any odors indicating system problems would be noted by crews and park users. District 4 also indicates they can test the system using water if needed to verify proper percolation and absorption, but say the County has had no real problems with any of the systems installed in the last 5 years due to improved design of the initiators.
26. *What does "100% design efficiency" mean?*  
 A: The phrase used in the SMA Use Permit Application was: "...the system can continue to operate at 100% of design efficiency with a total failure of one side of the system." This was part of the explanation that the requirement is for a redundant (dual) septic system which can still operate at the full (i.e., 100%) required design capacity even if one side of the system becomes completely blocked or clogged. This means the system can continue to operate normally, potentially for many years, with one side of the parallel system incapacitated. It would probably have been better worded as "full design capacity" instead of "efficiency".
27. *Who will be responsible for ensuring that toilet paper, paper towels and other paper debris does not enter the marsh?*  
 A: DPR roving crews will oversee operation of the facility, as well as providing supplies and providing periodic cleaning. The users of this park have also been active in providing over 30 years of stewardship of the park.
28. *What is the depth that the liquid from the leach fields is expected to percolate?*  
 A: Direct percolation is only a few feet. However the character of the effluent is modified by contact with the soils. The National Environmental Services Center states: "The soil acts as a natural filter and contains organisms that help treat the waste" (Pipeline, Vol. 15, No. 4, Fall 2004, p. 6).
29. *What is the maximum capacity of the leach fields?*  
 A: This was also Question 19. See the answers to questions 4 and 19.
30. *What is the depth of the septic tanks and leach fields?*  
 A: The design has not yet been approved by Hawaii DoH Wastewater Branch, but preliminary design is 2 feet deep for the leachfields. We would estimate less than 6 feet for the septic tank.
31. *How much dirt/old landfill material will need to be removed for construction of the septic tanks and leach fields and where will the material be deposited?*  
 A: The design has not yet been approved by Hawaii DoH Wastewater Branch, so we do not have figures – a rough estimate would be about 300 cubic yards. We anticipate the removed soils will be used on-site for ground leveling of settled areas of the field, since this has been a problem at the park. The model aircraft users have previously raised their own funds to accomplish the leveling of the runway and field, and additional leveling is still needed. The users would mark off low areas where the soil can be deposited, and would be pleased to get extra soil for this purpose.
32. *What is the composition of the dirt/old landfill material that will be removed?*  
 A: Based on the Geotechnical Exploration report, we anticipate most removed material to be brown sandy clay with gravel, brown sandy silt with some clay and rootlets, and similar fill materials.
33. *What data substantiates the statement that "there are no foreseeable long-term impacts" after installation of the prefab comfort station, utility hookup, and access improvements?*

- A: This repeats question 11. Actually, we indicated there were some likely positive impacts, and no significant adverse impacts. See the response to question 11 (and the analysis presented in the Draft EA, which dealt with this topic exhaustively).
34. *What data substantiates the statement "that the project will have no impact to the wetlands ecology of the marsh?" (Pg. 1-3)*
- A: Avoidance of adverse impacts is a design issue shared by County DDC, DPR, State DoH/WW, the civil engineer, the geotechnical consultant, and the rest of the design team. See the response to this question when it was asked in questions 3, 4, 5, 10, 11, 22, and 33, and the analysis presented in the Draft EA, which dealt with this topic exhaustively.
35. *What studies were conducted to determine that "There are no threatened or endangered species or habitat in the project area?" "What is considered the "project area?"*
- A: The project area is the land area to be disturbed for the Proposed Action, as documented in the Draft EA. As explained in the Draft EA, this is a reclaimed landfill site which has supported an existing, continuous use since its reclamation (33+ years). It does not displace habitat. The structure would be built next to the existing parking lot, and the leachfield in an adjoining field supporting alien grasses. As noted in the DEA, prior studies were conducted to determine what threatened or endangered species or habitat existed in the marsh area, and we met with DLNR's Wildlife Manager to determine if there were potential adverse impacts to be considered before making the determination.
36. *How would not installing a comfort station in the marsh designated Conservation (P) Protective that prohibits structures and is a Wetland of International Importance "not support the implementation of the DLNR's 1994 Kawai Nui Marsh Master Plan?"*
- A: This question contains a statement which is incorrect and misleading. **The proposed action is a permissible use**, as noted in the answer to Question 12. Implementation of the project supports the Master Plan goal of enhanced recreational opportunities in the area. It also supports volunteer activities working on ongoing improvements to the marsh perimeter and management actions such as the removal of invasive species, and is consistent with the objectives of the Master Plan.
37. *What is the proposed action if it is shown that the new two comfort station, two 1000-gallon septic tanks and 20' by 30' leach fields cannot accommodate an "annual peak load weekend?"*
- A: The motel airplane group has agreed to supply portable chemical toilets for this annual event if the proposed comfort station proves to be inadequate.
38. *What types of materials will be brought in to "adjust the permeability of the ground?" What are the anticipated impacts from bringing in compressed gravel and other materials? (Pg 3-6)*
- A: Any decision to bring in soils to adjust permeability would be determined by the civil engineer and the geotechnical consultant, following standard engineering practice, based on actual percolation rates observed after the ground for the leachfield is marked off, exposed, and tested.
39. *What agencies will be consulted regarding impacts to ground water and water quality during and after construction?*
- A: DoH Wastewater Branch, DoH Clean Water Branch, DLNR Forestry and Wildlife Division were the primary contacts, but every agency on the contact list (in the Final EA Appendix) was given an opportunity to comment.
40. *What are the anticipated impacts to the marsh and water quality from runoff from the leach fields during heavy rain?*
- A: The possibility of heavy rains are considered in design, and this is reviewed and approved by DoH. No adverse impacts are anticipated or likely.
41. *What "small drainage ditch" is the DEA referring to and where is it located? (Pg 3-10)*

- A: It is located along the northwest street frontage, as explained in the DEA and shown in the illustration (Figs. 1 and 4).
42. *If the tall grass and floating mat are removed as proposed the comfort station will stand out as the only structure within the wetland boundary. How will the permanent structure not impact the unobstructed view plane?*
- A: First, the project site is at approximately 16 feet MSL and is not within a delineated wetland according to current wetland definitions, and no work would be permissible inside a jurisdictional wetland. Second, the site is surrounded by tall grass, shrubs, and trees on three sides, and there are no scenic vistas of the marsh or the ocean from the project site or the road, so no scenic vistas would be obstructed by the proposed comfort station. The existing "view plane" is of these trees, grasses, shrubs, and the mountains beyond. Further, this limited view plane is not unobstructed, as there is presently an unsightly and malodorous portable chemical toilet on the site, which has been on the site for about 15 years, the removal of which has substantial community support.
43. *What data was used to determine that only the "small drainage ditch at the edge of the project site" is the only area likely to receive any runoff from the site?*
- A: Site topographic data. Runoff flows downhill. Two of the original alternatives were located on the street side of the parking lot, which could have resulted in potential construction runoff to the drainage ditch under heavy rain conditions – one of the main reasons they were excluded from consideration. This is the major reason for choosing the "preferred alternative" site, which is on the far side of the parking lot, which presents a higher elevation so runoff to the ditch (or marsh) would not occur because of the uphill slope. A small area of ground would be exposed to install a new water line from the meter at the road. A portion of this narrow, 170-foot long trench (perhaps 50 – 60 feet, depending on alignment) is the only remaining area of soil exposure which could create runoff, but this is a tiny area with a very brief exposure during the construction period only, so this possibility is very small.
44. *The National Flood Insurance Map shows that the Park is in Zone X an area of 500 and 100-year floods. How would a rise of just one foot of water impact the leach fields and septic tanks?*
- A: The FEMA Flood Insurance Rate Map shows the Park in Zone X, which is **outside the area of 100 and 500-year flood impacts**. A rise of one foot of water would have no impact on the leachfields and/or septic tanks.
45. *What are the anticipated short and long-term cumulative impacts on the ground water, water quality, bird habitat and the marsh from grading for the comfort station, excavating the illegal landfill material for a 168 foot trench for the new water line, the new 60 foot sewer line, the two 1000 gallon septic tanks and two 20' by 30' leach fields?*
- A: No significant adverse short-term, long-term, or cumulative impacts are anticipated, as stated in the Draft EA, and per our consultations with DoH Wastewater Division, DLNR's Wildlife Manager for the region, the geotechnical consultant, the civil engineering team, and the County Parks and Recreation District 4 manager.

Thank you again for your interest in this project.



Charles Willson  
Planner

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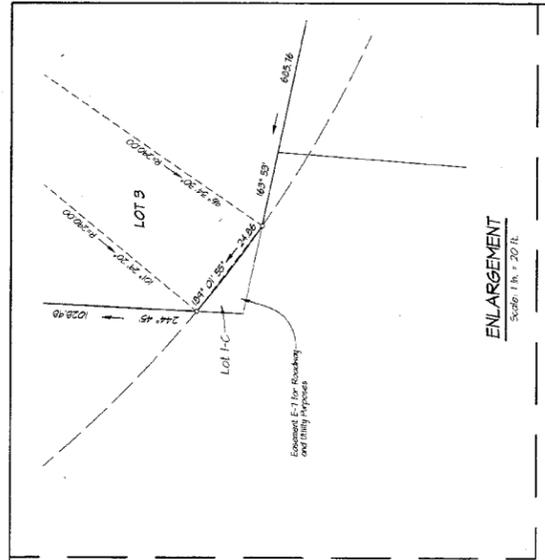
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# Appendices

- A-1 Kawai Nui Marsh Subdivision of Model Airplane Field
- A-2 Enlargement of Park Site Parcel from Subdivision Map, showing metes and bounds
- A-3 Tax Map: Tax Map Key 1<sup>st</sup> Div. 4-2-16 with site outlined
  
- B-1 Kawainui Regional Park Site and Grading Plan (sheet 2 of 5, Feb. 1972)
- B-2 Kawai Nui Model Airplane Park Concept Site and Utility Plan (2005 site topography)
  
- C FEMA Flood Insurance Rate Map
  
- D-1 CXT Cortez Comfort Station Brochure
- D-2 Cortez Elevations
- D-3 Cortez Drawing (shown with additional ventilation for Hawaii use)



APPROVED  
DEPARTMENT OF PLANNING AND PERMITTING  
CITY AND COUNTY OF HONOLULU  
DATE: NOV 16 2001  
*Loetta K.C. Chee*  
For  
SUBDIVISION MAPS  
2001/548-237

MAP SHOWING  
SUBDIVISION OF LOT 1-A (DRP 2001/ SUB-129)  
INTO LOTS 3 AND 4

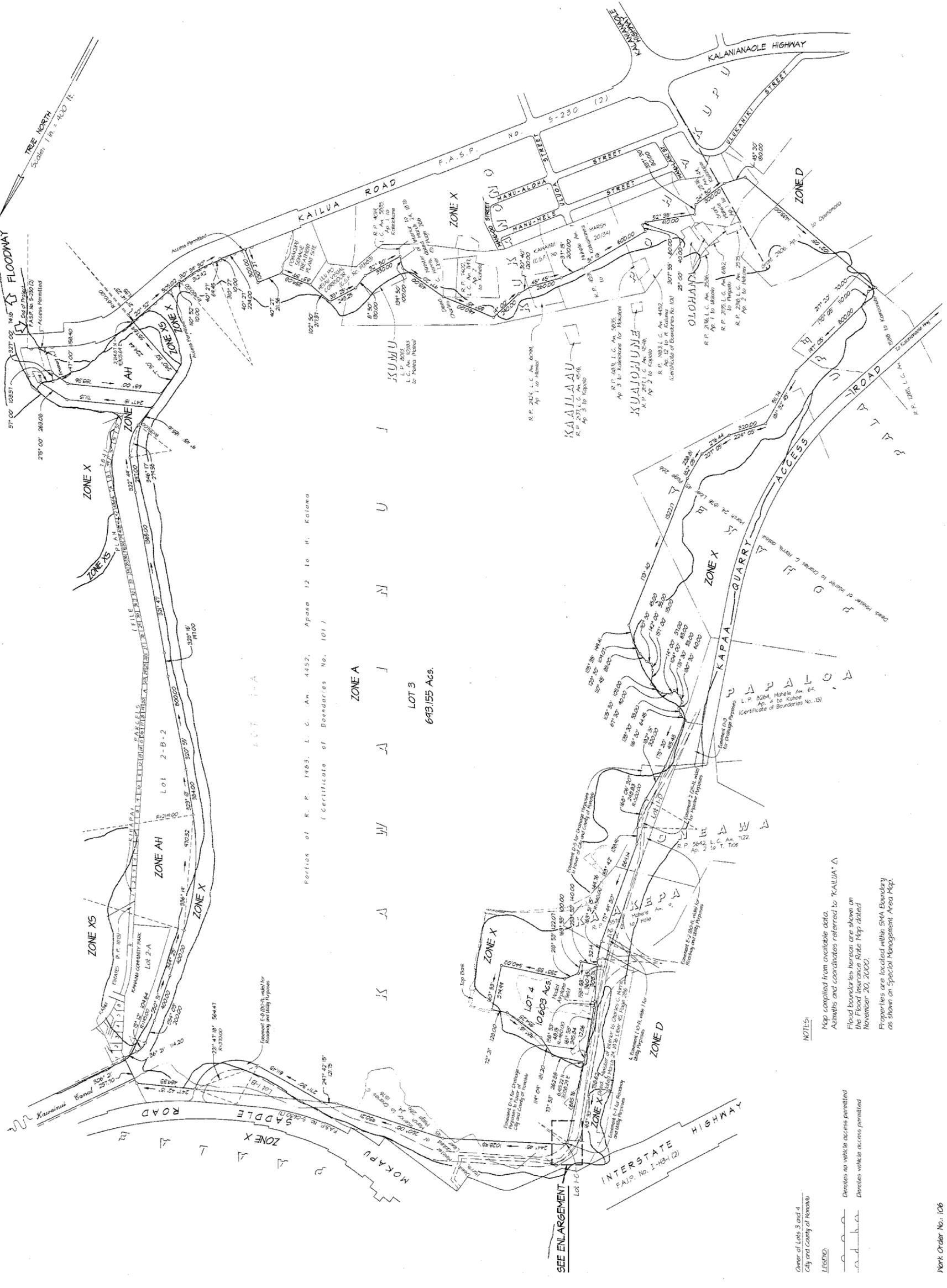
AT KAILUA, KOOLAUPOKO, OAHU, HAWAII

DEPARTMENT OF DESIGN AND CONSTRUCTION  
CITY AND COUNTY OF HONOLULU  
DIVISION OF LAND SURVEY AND ACQUISITION

**KAMAINUI MARSH  
SUBDIVISION OF  
MODEL AIRPLANE FIELD**  
AT KAILUA, KOOLAUPOKO, OAHU, HAWAII

APPROVED: *[Signature]*  
DATE: October 24, 2001  
BY: A. Y. Y.  
FOR: K. Nishiro  
PROJECT: (See Show)

DATE	BY	DESCRIPTION
10/24/01	A. Y. Y.	APPROVED
10/24/01	K. Nishiro	FOR
10/24/01	K. Nishiro	PROJECT



Portion of R. P. 1463, L. C. Am. 4457, Apans 12 to H. Kalama  
(Certificate of Boundaries No. 101)

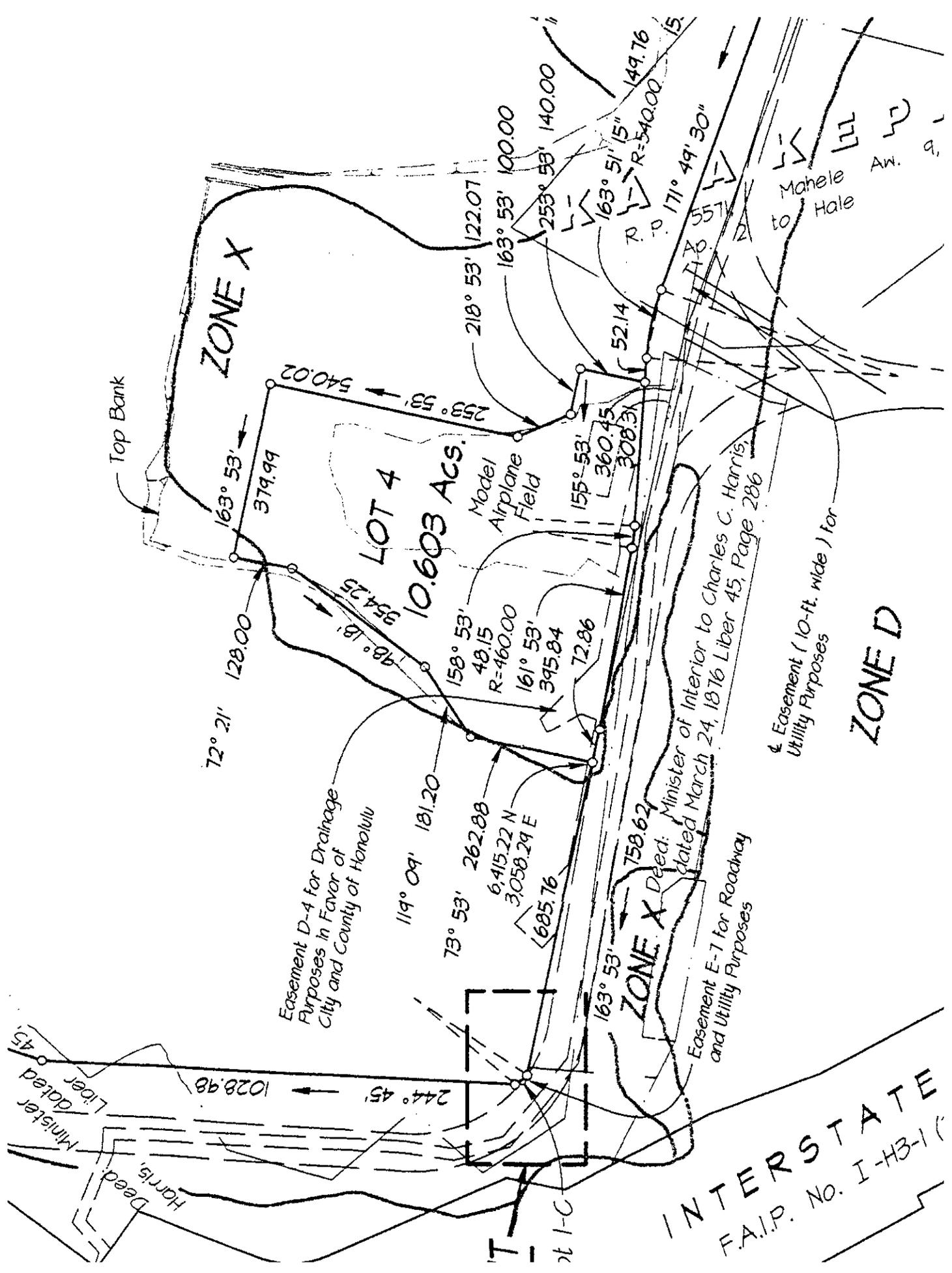
ZONE A  
LOT 3  
693.155 ACS.

NOTES:  
Map compiled from available data.  
Azimuths and coordinates referred to KAILUA\* Δ  
Flood boundaries hereon are shown on  
the Flood Insurance Rate Map dated  
November 20, 2000.  
Properties are located within SMA Boundary  
as shown on Special Management Area Map.

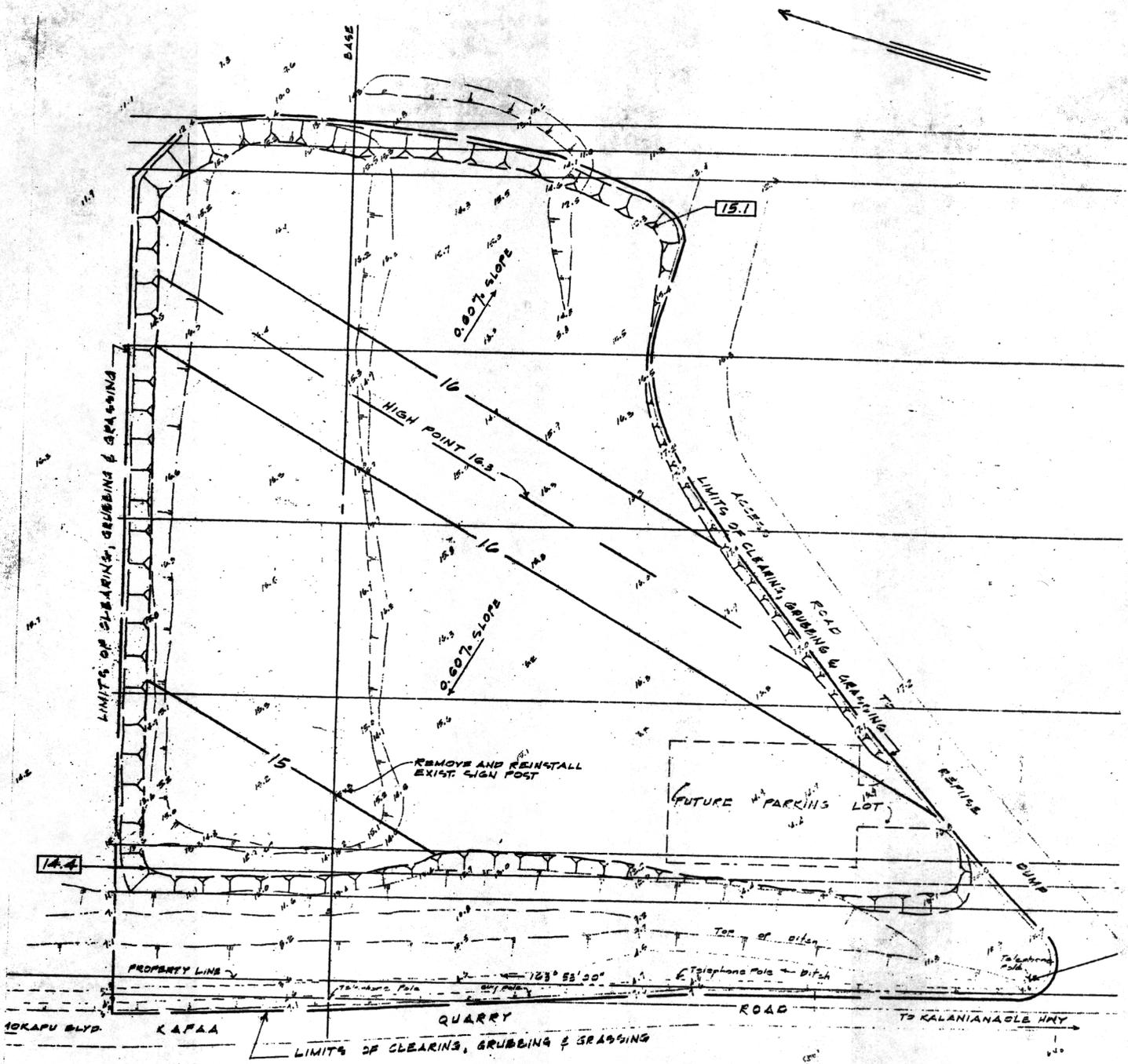
Owner of Lots 3 and 4  
City and County of Honolulu

LEGEND:  
Denotes no vehicle access permitted  
Denotes vehicle access permitted

Work Order No. 106  
Control No. 297X0048

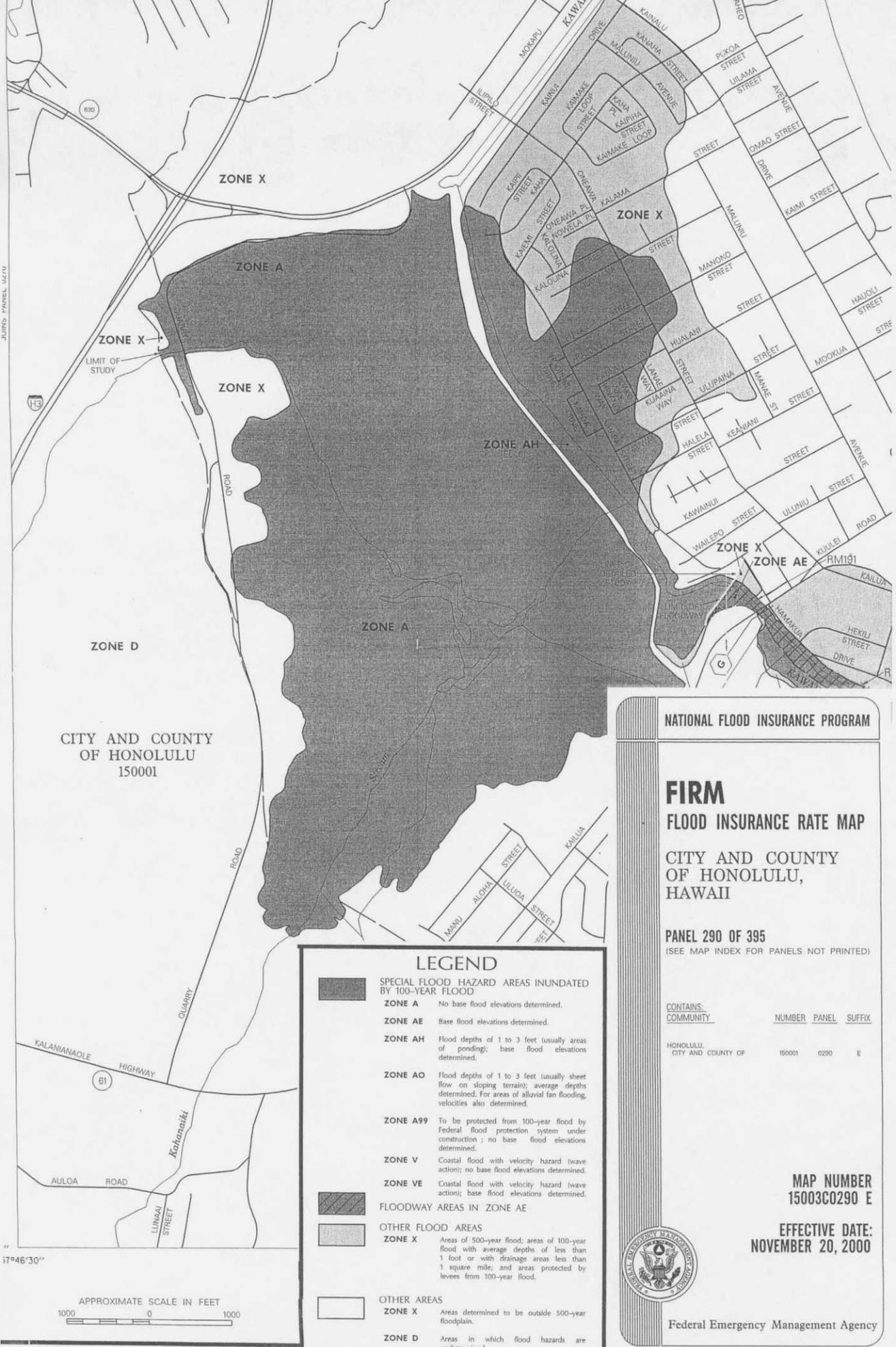






APPROXIMATE  
 EARTHWORK QUANTITIES  
 EXCAVATION = 320 C.Y.  
 EMBANKMENT = 2390 C.Y.





CITY AND COUNTY OF HONOLULU  
150001

**LEGEND**

-  **SPECIAL FLOOD HAZARD AREAS INUNDED BY 100-YEAR FLOOD**
- ZONE A** No base flood elevations determined.
- ZONE AE** Base flood elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE A99** To be protected from 100-year flood by Federal flood protection system under construction; no base flood elevations determined.
- ZONE V** Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- ZONE VE** Coastal flood with velocity hazard (wave action); base flood elevations determined.
-  **FLOODWAY AREAS IN ZONE AE**
- OTHER FLOOD AREAS**
- ZONE X** Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from 100-year flood.
-  **OTHER AREAS**
- ZONE X** Areas determined to be outside 500-year floodplain.
- ZONE D** Areas in which flood hazards are undetermined.

**NATIONAL FLOOD INSURANCE PROGRAM**

**FIRM  
FLOOD INSURANCE RATE MAP**

CITY AND COUNTY OF HONOLULU,  
HAWAII

**PANEL 290 OF 395**  
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:	NUMBER	PANEL	SUFFIX
COMMUNITY			
HONOLULU, CITY AND COUNTY OF	150001	0290	E

**MAP NUMBER  
15003C0290 E**  
**EFFECTIVE DATE:  
NOVEMBER 20, 2000**



Federal Emergency Management Agency

APPROXIMATE SCALE IN FEET  
1000 0 1000

17°46'30"



# CXT

## Precast Products

- Meets UFAS, A.D.A. and Title 24 statute of the State of California
- Vandal resistant building & toilet components
- 4" thick steel reinforced concrete walls
- 5" thick steel reinforced concrete roof & floors
- Quick installation and hookup at the jobsite
- Available in (25) different and unique earthtone colors
- Barnwood, struck trowel, or exposed aggregate exterior wall textures
- Cedar shake standing seam or exposed aggregate exterior roof textures

## Cortez

The Cortez is an economical double flush toilet building designed with a 60" turning radius within each toilet room. The turning radius is measured exclusively of all fixtures, walls and the door. The Cortez's standard features include sink, toilet bowl, electric hand dryer and interior and exterior entry lights.



The Cortez is ideal for both urban and rural areas that experience extreme vandalism. It also meets the needs of those who must provide a current A.D.A. toilet facility without the costly rehabilitation of their existing facilities.

### Durability:

The Cortez is engineered and designed for long-life in extreme

conditions. The building meets or exceeds the effects of a Zone 4 earthquake, a 120-mph wind load and a 250 pounds per square foot snow load.

### Maintenance:

The Cortez is extremely easy to maintain. With our steel reinforced 5,000 psi concrete construction, the building will not rot, rust, or burn. The building interior is primed and painted with white paint to reflect natural light from the Lexan windows mounted in heavy steel frames cast into the walls.

Cleaning of the building interior is easily accomplished with a brush and warm soapy water.



**Available in these textures:**

**Walls:**



Barnwood



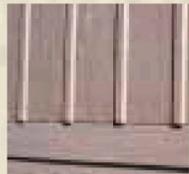
Stucco



Exposed Aggregate Wall



Split Face Block



Board & Batt with Horizontal Lap Siding

**Roofs:**



Ribbed Metal



Cedar Shake



Exposed Aggregate Roof

**Also available in 25 different earthtone colors.**

The walls and roof structure are made of “colored through concrete”, coated with an exterior stain, followed by an anti-graffiti sealer.

**Utilities:**

The Cortez’s utilities are pre-wired, plumbed and tested before shipping to meet local code requirements. They are conveniently concealed within the chase/storage area for easy hookup and maintenance and to reduce the effects of vandalism.

Standard plumbing fixtures are made of vitreous china construction. Optional stainless steel fixtures are available with this model. Hot water and room heaters are also available as options on this restroom.

**Hook Up and Installation:**

The Cortez requires minimal site work. It is designed to sit on a three-quarter minus gravel base of six-inches thick,

compacted to a ninety-five percent compaction level. The water, sewage and electrical utility lines are stubbed up through the prepared base material to match up with the utility access hole within the floor of the chase area.

Hookup of the three utility lines can be completed in a matter of hours by connecting the pre-plumbed and wired lines to those stubbed up through the base material.



**Quality and Value:**

Because of our two state-of-the-art, 120,000 square foot production facilities, CXT can produce consistently higher quality buildings at a lower cost to meet the needs of city, county, state and federal agencies.

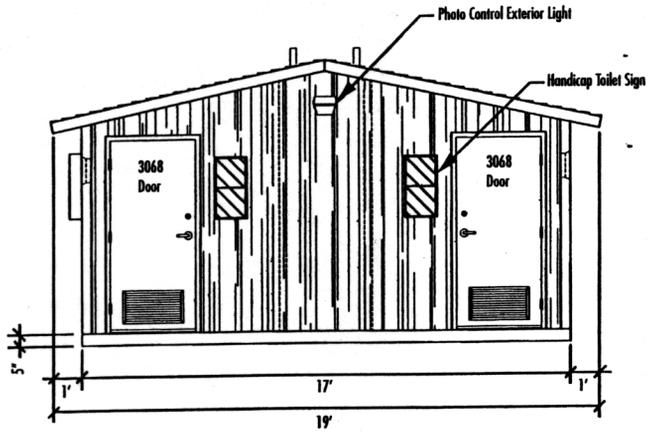
We at CXT take pride in our craftsmanship and are ready to provide you with our legendary customer service. See why we say, “Once you buy a CXT

produced building you will never purchase anything else.”

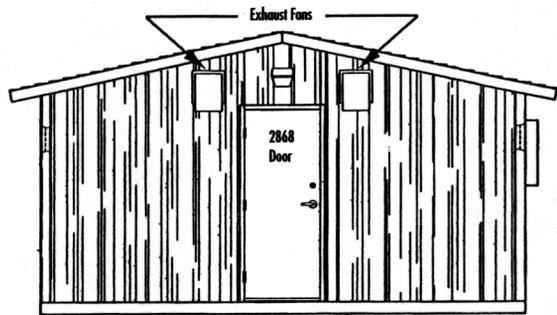


CXT Incorporated  
An L.B. Foster Company  
Spokane Industrial Park  
3808 N. Sullivan Road Bldg. #7  
Spokane, WA 99216  
Telephone 509-921-8766  
Fax 509-928-8270  
Toll Free 800-696-5766

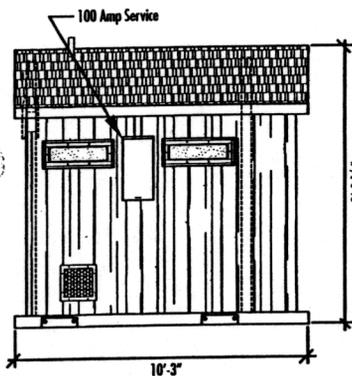
[www.cxtinc.com](http://www.cxtinc.com)



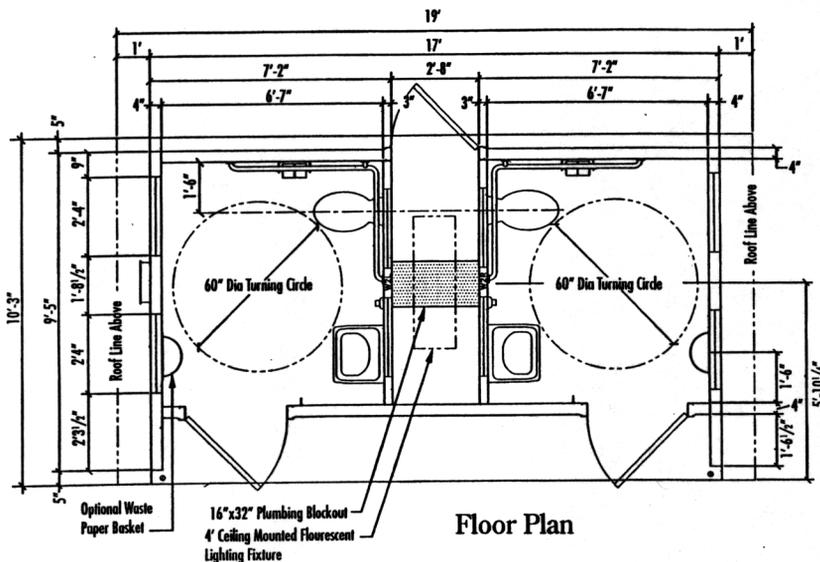
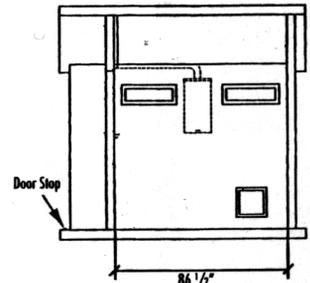
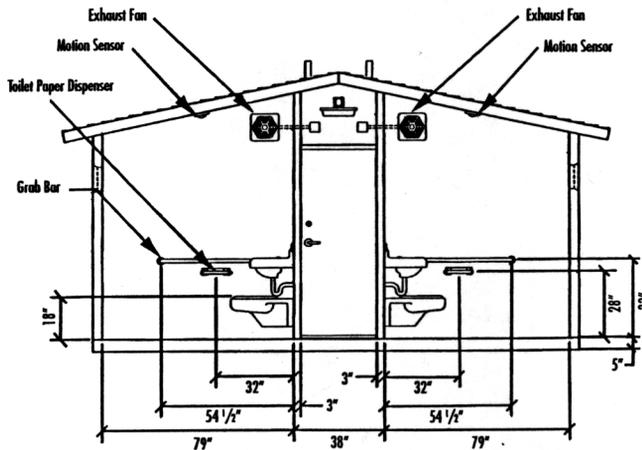
Front Elevation



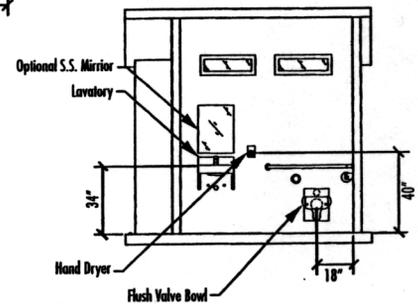
Back Elevation



Left Side Elevation



Floor Plan



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