TO: GENEVIEVE SALMONSON, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM: RODNEY K. HARAGA
DIRECTOR OF TRANSPORTATION

SUBJECT: FINAL ENVIRONMENTAL ASSESSMENT
HILO INTERNATIONAL AIRPORT MASTER PLAN & NCP UPDATE
STATE PROJECT NO. AH1011-03

The State Department of Transportation, Airports Division has reviewed the comments received during the 30-day public comment period which began on November 8, 2002. The agency has determined that this project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the May 8, 2003 OEQC Environmental Notice.

We have enclosed a completed OEQC Publication Form and four copies of the Final EA. If you need further information, please contact Ms. Lynn Becones, Planner, at 838-8811.

Enclosures: OEQC Publication form
Final EA (4)

### TABLE 1

**SUMMARY OF STATE OF HAWAI'I AND FEDERAL AMBIENT AIR QUALITY STANDARDS**

<table>
<thead>
<tr>
<th>POLLUTANT</th>
<th>SAMPLING PERIOD</th>
<th>DAQ'S PRIMARY</th>
<th>DAQ'S SECONDARY</th>
<th>STATE STANDARDS</th>
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<td>Annual 24-hr</td>
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<td>H₂S</td>
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<td>—</td>
<td>35</td>
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**KEY:**
- PM₂₀ – particulate matter ≤ 10 microns
- PM₁₀ – particulate matter ≥ 2.5 microns
- SO₂ – sulfur dioxide
- NOₓ – nitrogen dioxide
- CO – carbon monoxide
- NO – nitrogen oxide
- H₂S – hydrogen sulfide
- Pb – lead

All concentrations in micrograms per cubic meter (µg/m³).

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Finally, the State of Hawai‘i also has fugitive dust regulations for particular matter (PM) emanating from construction activities. Visible fugitive dust cannot exceed the property line of the property on which it originated.

2.3. **Conformity with the State Implementation Plan (SIP)** Pursuant to CAA §110, each state has an implementation plan to assure its compliance with the primary NAAQS. Through CAA §116, Congress directed the EPA to promulgate criteria and procedures for determining conformity of federal transportation plans, programs and projects with state implementation plans (SIP). EPA did so and made it clear in the applicability section of the rules that conformity determinations need only be made in areas designated nonattainment or having a maintenance plan for transportation-related criteria pollutants. Since the entire State of Hawai‘i Air Quality Control Region (AQCR) is in compliance with all NAAQS, no conformity determination is required.

3. **EXISTING AIR QUALITY**

3.1. **Department of Health Monitoring.** The state Department of Health (DOH) maintains a network of 17 air monitoring stations around the state to gather data on the following regulated pollutants:

- particulate matter ≤ 10 microns (PM₁₀)
- sulfur dioxide (SO₂)
- nitrogen dioxide (NOₓ)
- carbon monoxide (CO)
- ozone (O₃)
- hydrogen sulfide (H₂S)

In the case of PM₁₀, the DOH employs both continuous and manual methods to collect data. Measurements are made on a 24-hour basis to correspond with the averaging periods specified in state and federal standards. Manual samplers are operated once every six days in accordance with U.S. Environmental Protection Agency (EPA) guidelines. Carbon monoxide, sulfur dioxide, nitrogen dioxide, ozone and hydrogen sulfide are all measured with continuous instruments thereby allowing determination of concentrations corresponding to the averaging times applicable to each pollutant's standard.

The DOH operates one manual PM₁₀ instrument in Hilo. A summary of recent data from this site and other sites on Oahu are presented in Table 2. While most of the data are µg/m³ from the Hilo area, they do demonstrate compliance with state and federal ambient air quality standards even on the significantly more urbanized island of Oahu. It seems reasonable to infer from this that the Hilo area is also in compliance with these same standards.

3.2. **Onsite Carbon Monoxide Sampling.** In conjunction with this project, air sampling was conducted in August 2001 at a site across from the passenger terminal at the airport. A continuous carbon monoxide (CO) instrument was set up and operated during peak traffic hours. An anemometer and
TABLE 2
AIR QUALITY DATA
DEPARTMENT OF HEALTH MONITORING SITES
2000

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<td>Sulfur dioxide (SO₂)</td>
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<td>24-hr (max)</td>
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<td>Carbon monoxide (CO)</td>
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<td>8-hr (max)</td>
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<td>Annual</td>
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<td>Ozone (O₃)</td>
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<td>Annual</td>
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</table>

Notes: 1. PM<sub>10</sub> and SO₂ data are from the Hilo site. 2. CO and NO₂ are from the Waimea and Volcano sites. 3. O₃ data are from the Volcano and Waimea sites.

Source: Department of Health (Reference 24)

During the morning peak hour sampling on 24 August 2001, weather conditions were characterized by partly cloudy (50%) skies and light, variable winds averaging about 1.0 mph. CO concentrations were low, averaging less than 1.0 mg/m³. See Figure 2.

During the afternoon peak hour, skies were cloudy (80%) and the winds were predominantly southeasterly averaging 2.2 mph. The CO level remained low, averaging less than 1.0 mg/m³. See Figure 3.

4. CLIMATE AND SURFACE WINDS

4.1 Climate. Climatic normals, means and extremes for Hilo are presented in Table 3 along with Honolulu for comparison. While temperatures may be similar, other parameters are quite different due to the windward location of Hilo International Airport versus the leeward location of the Honolulu International Airport. Traditional geographic effects cause Hilo to have more cloud cover, higher humidity, more rain and lighter winds. Analysis of the monthly temperature and rainfall data in accordance with Thomso's scheme for climatic classification, yields a precipitation/exposure (P/E) index of 192 which classifies the area as "wet" and "rainforest." 26

4.2 Surface Winds. The predominance of northeastern trade winds is well known in the central Pacific due to the semi-permanent high pressure cell north of the Hawaiian Islands that generates them. However, as with precipitation noted above, the effect of terrain can also have a significant effect on local surface winds as is evident from the wind data from Hilo International Airport in Table 4 and Figure 4. While about 24% of the winds come from the northeast quadrant, over 40% come from the southeast quadrant due in large part to the presence of the 13,000-foot Mauna Kea mountain mass southwest of Hilo.

5. SHORT-TERM IMPACTS

5.1 Traffic Impacts. The principal source of short-term air quality impact will be construction activity. Construction vehicle activity may increase automobile pollutant concentrations along the existing roadways, e.g., Kehena Road, as well as in the immediate vicinity of each project site itself. The presence of large trucks at times may cause temporary reductions in and lower average travel speeds.

Site preparation and earth moving have the greatest potential for generating fugitive dust. Construction vehicles movement on unpaved work roads will also generate particulate emissions. EPA studies on fugitive dust emissions from construction sites indicate that about 1.2 ton/acre per month of activity may be expected under conditions of medium activity, moderate soil silt content (35%), and a precipitation/exposure (P/E) index of 50. 26 27
**FIGURE 2**
A.M. PEAK HOUR CONDITIONS
AIRPORT ACCESS ROAD AT THE PASSENGER TERMINAL
24 AUGUST 2001

- Wind Speed (mph)
- Wind Direction (deg)
- CO (mg/m³)
- Traffic (5-Min Counts)

**FIGURE 3**
P.M. PEAK HOUR CONDITIONS
AIRPORT ACCESS ROAD AT THE PASSENGER TERMINAL
24 AUGUST 2001

- Wind Speed (mph)
- Wind Direction (deg)
- CO (mg/m³)
- Traffic (5-Min Counts)

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J. W. MORROW
### TABLE 3
CLIMATIC Normals, Means and Extremes
HILO, HAWAII AND HONOLULU, OAHU

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<th>Honohono</th>
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<td>Minimum monthly</td>
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<td>Wind Speed (mph)</td>
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<td></td>
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Source: National Climatic Data Center (Reference 26)

### TABLE 4
ANNUAL joint FREQUENCY DISTRIBUTION
OF WIND SPEED and DIRECTION
HILO INTERNATIONAL AIRPORT

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All 0.0458 0.0190 0.1449 0.0546 0.0170 0.0023 0.0070

Source: National Weather Service, 1979

J. W. MORROW
5.2 Office Insects. In addition to the easy impacts attributable to construction activity, there will also be office impacts due to the operation of concrete and asphalt batching plants needed for construction. Some plants usually emit particulate matter and other gaseous pollutants. It is too early, however, to identify the specific facilities that will be providing these materials and thus the discussion of air quality impacts is necessarily generic. The batch plants which will be producing the concrete for runways, taxiways, etc. and the asphalt for runways must be permitted by the Department of Health Clean Air Branch pursuant to state regulations. In order to obtain these permits they must demonstrate their ability to continuously comply with both emission and ambient air quality standards. Under the recently promulgated Federal Title V operating permit requirements, new air pollution sources must regularly attest to their compliance with all applicable requirements.

6. AIR QUALITY IMPACT ANALYSIS

6.1 Emissions and Dispersion Modeling System (EDMS). Pursuant to FAA guidance, the EDMS model (Version 3.231) was employed to assess the air quality impacts of the various emission sources (described below) associated with the Hilo International Airport.

6.1.1 Aircraft Activity. Current aircraft activity was determined by a review of recent historical (CV 2000) Air Traffic Control Tower (ATCT) data for the airport, while forecasts of future operations were obtained from the DOT's master plan document. A summary of these data is presented in Table 5. It should be noted that the term "operations" as used herein includes each aircraft landing, takeoff, and "touch-and-go" movement. In order to generate the appropriate input data for EDMS, the "touch-and-go" operations (TGO) had to be separated out first and then the remaining operations divided by two in order to derive the "landing-takeoff operations" (LTO) necessary for model input. TOG accounted for 53.6% of the general aviation operations and 61.1% of the military operations at Hilo in 2000.

The model also required input of "operational profiles" for hourly, daily, and monthly periods. To generate these profiles a value of 1.0 was assigned to the period of interest with the highest number of operations, i.e., the period of maximum activity. All other periods were then computed as a fraction of this maximum value. These profiles were derived from the 2000 ATCT data and are presented in Tables 6, 7, and 8.

6.1.2 Motor Vehicle Activity. Peak hour motor vehicle activity was obtained from the traffic impact analysis prepared for this project.62 The state DOT 24-hour traffic count data from nearby intersections were also reviewed and used to generate hourly activity profiles (see Table 9) for the principal road segments used in the EDMS analysis. Annual and daily vehicle activity at the existing parking lot was obtained from the DOT's contractor, Arup System Parking.63

J.W. Morrow

14 DECEMBER 2001

AQI: HILO INTERNATIONAL AIRPORT
TABLE 5
CURRENT AND FORECAST AIRCRAFT OPERATIONS
HILO INTERNATIONAL AIRPORT
2000-2010

<table>
<thead>
<tr>
<th>Class</th>
<th>Operations Per Year</th>
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</thead>
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<td>48,680</td>
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<tr>
<td>General Aviation</td>
<td>22,008</td>
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<td>Military</td>
<td>11,692</td>
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</table>

References
Airport Traffic Record (FAA Form 7220-1), CY 2000
Hilo International Airport Master Plan (Ref. 28)

6.1.3 Stationary Source Activity. A survey of the airport area revealed that fuel storage tanks were the only significant stationary sources. Annual tank throughput data for Jet-A and aviation gasoline were obtained from the suppliers, i.e., Bradley Pacific Aviation and Murray Air, Ltd. Future annual throughput volumes were estimated based on the master plan estimated increases in activity by the principal consumers of those fuels, i.e., air carriers, helicopters, and general aviation aircraft.

6.1.4 Receptor Locations. For the purposes of assessing impacts on ambient air quality and compliance with standards, one hundred thirty-seven (137) receptor locations were placed around the airport area perimeter (see Figure 9). The dispersion module within EDMS computes pollutant concentrations at each location for averaging times corresponding to the state and federal ambient air quality standards.

6.1.5 Meteorological Data. Because of the EDMS model's ability to impact meteorological data, a recent (1995) set of surface and upper air data from the National Weather Service site at Hilo International Airport was obtained from the National Climatic Data Center and prepared for modeling use with EPA's meteorological preprocessor program. The output from the preprocessor was further converted into the appropriate format for use with EDMS.

6.1.6 EDMS Results

6.1.6.1 Airport Emissions. The emissions output from EDMS for the base year 2001 and Phase II planning year 2010, with and without the proposed airport improvements, are presented in Table 10. For comparison purposes and to provide some perspective on the magnitude of the emissions, the EDMS results have also been expressed as a percentage of the Year 2000 emissions inventory for Hawaii County. While CO, NOx, and SOx indicate increases of 8.3%, 43%, and 49%, respectively, they represent only a small portion (0.01% - 2.66%) of the total county inventory of those pollutants. In the case of PM10, it should be noted that the lack of emissions from aircraft in this period was due to the minimal number of PM10 emission factors for aircraft in the EDMS model. This in turn is due to the dearth of available PM data for aircraft engines. While the general trend in PM emissions as indicated by reduced visible emissions due to regulatory requirements for new and in-use gas turbine engines has been downward, we are unable to quantify them at this time.

Another measure of the significance of the emissions increases would be a comparison with the "significant" levels established in the state rules. While these levels are applicable to stationary point sources and not indirect sources such as airports, they nevertheless offer some indication of what increases are considered "significant". For example, the significant levels for CO and NOx are 100 and 40 tons per year (TPY), respectively. Applying these values to Table 10 suggests that the net increase in CO by the year 2010 would be "insignificant" (62 TPY increase) while the increase in NOx would be "significant" (96 TPY) when compared to the base year 2001. The increases in the other pollutants are below their respective "significant" thresholds.

Note also that the increase in aircraft CO emissions is more than offset by the decrease in automotive emissions despite a projected increase in traffic volumes. This is due to the effects of EPA's motor vehicle emissions control program which over time replaces older, higher-emitting vehicle with newer, lower emitting vehicles.
### TABLE 6
**AIRCRAFT HOURLY OPERATIONAL PROFILE**

<table>
<thead>
<tr>
<th>Hour</th>
<th>Air Carrier</th>
<th>Air Taxi &amp; Helicopters</th>
<th>General Aviation</th>
<th>Military</th>
<th>Default</th>
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### TABLE 7
**AIRCRAFT DAILY OPERATIONAL PROFILE**

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### TABLE 8

**AIRCRAFT MONTHLY OPERATIONAL PROFILE**

**HILO INTERNATIONAL AIRPORT**

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<th>Month</th>
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<th>Military</th>
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### TABLE 9

**MOTOR VEHICLE HOURLY OPERATIONAL PROFILE**

**HILO INTERNATIONAL AIRPORT**

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### Table 10

ANNUAL EMISSIONS ESTIMATES
HILO INTERNATIONAL AIRPORT
2001 - 2010

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<th>PM10</th>
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</table>

% of Hawaii Inventory: 2.27% 0.49% 1.64% 0.006% 0.012%

Year: 2010 w/o proj

<table>
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<tr>
<th>YEAR</th>
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<tr>
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% of Hawaii Inventory: 2.27% 0.49% 1.64% 0.006% 0.012%

Year: 2010 w/ proj

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% of Hawaii Inventory: 2.27% 0.49% 1.64% 0.006% 0.012%

2009 Hawaii Inventory: 20,209 17,699 13,692 531,749 31,859
6.1.6.2 Airport Direction Modeling. While emissions are an important component of any air quality impact analysis and do provide some insight into the significance of impacts, it is the ambient concentrations that are of primary interest because adverse effects are the direct result of high concentrations and duration of exposure. In the simplest terms, it is the emissions affected by meteorological conditions that result in the ambient concentrations. The dispersion module within EDMS uses built-in emission factors for each source type and the input meteorological data to generate ambient concentration estimates at each of the selected receptor locations. The results of that process for Hilo are presented in Table 11 along with the corresponding state standards. Compliance with those standards and therefore also with the less stringent federal standards is clearly demonstrated.

6.2 Highway Intersections

Since ground traffic in the vicinity of an airport is often found to be the primary source of high pollutant concentrations, particularly carbon monoxide, a more detailed microscopic analysis was performed for the intersection of Kamehame Avenue with the airport access road, Keakalani Street.

6.2.1 Motor Vehicle Activity. The traffic impact analysis prepared for the proposed project served as the basis for this motor vehicle analysis. Existing peak-hour traffic volumes and projections for 2010 were provided for the aforementioned intersection serving the airport area.

6.2.2 Emission Factors. Automotive emission factors for carbon monoxide (CO) were generated for calendar years 2001 and 2010 using the Mobile Source Emissions Model (MOBILE-3B). To localize the emission factors as much as possible, an age distribution for registered vehicles in the City & County of Honolulu was used in lieu of national statistics. That same age distribution was the basis for the distribution of vehicle miles traveled as well.

6.2.3 Modeling Methodology. Due to the current state-of-the-art in air quality modeling, analyses such as the one that focuses on estimating concentrations of non-reactive pollutants. Project involvements mobile sources as the principal source, carbon monoxide is normally selected for modeling because it has a relatively long half-life in the atmosphere (~1 month) and it comprises the largest fraction of automotive emissions.

Using the traffic data provided, modeling was performed for the aforementioned intersections for 2001 and 2010 (with and without the project) with peak hours meteorological data culled from the 1995 data set described in Section 6.1.5.

The EPA guideline model CALQHIC 44, 45 as modified to accept preprocessed meteorological data, 46, 47 was employed to estimate near-invention carbon monoxide concentrations. An array of 70 receptor sites at a distance of 10 meters from the road edge were entered in the model. A background CO concentration of 1.6 milligrams per cubic meter (mg/m³) (extracted from CY 2000 DOH monitoring data) was assumed.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Period</th>
<th>Maximum Concentration (µg/m³)</th>
</tr>
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<tbody>
<tr>
<td>CO</td>
<td>T-hr</td>
<td>3,737</td>
</tr>
<tr>
<td></td>
<td>6-hr</td>
<td>1,538</td>
</tr>
<tr>
<td>NO₂</td>
<td>Annual</td>
<td>19.3</td>
</tr>
<tr>
<td>SO₂</td>
<td>24-hr</td>
<td>10.5</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>24-hr</td>
<td>18.8</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>11.3</td>
</tr>
</tbody>
</table>

Note: All concentrations include DOH measurements as background (see Table 2)
6.2.4 Results: 1-Hour Concentrations  The results of this modeling are presented in Figure 10. The figure depicts the locations of the 76 receptor sites around the intersections. Maximum estimated concentrations in milligrams per cubic meter (mg/m³) for each of the evaluated scenarios are also presented along with the particular receptor location at which they were predicted.

The results suggest that, under actual peak hour conditions of meteorology and traffic, both the federal and state 1-hour CO standards would be met at all receptor sites; at distances of 10 meters and beyond from the highway.

6.2.5 Results: 8-Hour Concentrations  The 8-hour concentrations shown in Figure 10 also demonstrate compliance with state and federal standards. They are conservative estimates because they were derived from the peak hour data set used for identifying the "worst case" 1-hour CO concentration. In other words, they were based only on the hours with the highest traffic volumes during the day rather than the normal mix of the high and low hours (as indicated by the operational profiles in Table 9).

7. RECOMMENDATIONS AND CONCLUSIONS

7.1 Short-Term Impacts  The "worst" climate as represented by the Thermocale P/E index of 192 is well above the EPA value of 50 cited in Section 5.1, thus, there appears to be a reduced potential for fugitive dust generation during construction. Nevertheless, it will still be important to employ adequate dust control measures during construction periods, especially during the somewhat drier summer months. Dust control can be accomplished through frequent watering of unpaved roadsides and areas of exposed soil. The EPA estimates that twice daily watering can reduce fugitive dust emissions by as much as 50%.  The sooner possible paving or landscaping of exposed areas will also help.

7.2 Long-Term Impacts  As clearly indicated by the EDMS and CALJQHC modeling results, ambient concentrations of carbon monoxide, the principal indicator of mobile source pollution, demonstrated compliance with both federal and state standards on the airport perimeter as well as in close proximity to the major intersection serving the airport area. EDMS estimates of SO₂, NOx, and PM₁₀ concentrations in the airport area also indicated compliance with state and federal standards.

---

**FIGURE 6**

ESTIMATES OF MAXIMUM 1- AND 8-HOUR CARBON MONOXIDE CONCENTRATIONS

Kamehameha Avenue @ Kealakekua Street
Peak Traffic Hours
2003 - 2010

**Estimated Maximum Concentrations**

<table>
<thead>
<tr>
<th>Period</th>
<th>2001</th>
<th>2010 w/project</th>
<th>2010 w/project</th>
<th>Receptors</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.M.</td>
<td>4.7</td>
<td>5.0</td>
<td>5.0</td>
<td>R10, R07, R67</td>
</tr>
<tr>
<td>P.M.</td>
<td>6.3</td>
<td>6.3</td>
<td>6.0</td>
<td>R10</td>
</tr>
<tr>
<td>8-Hr</td>
<td>3.9</td>
<td>3.8</td>
<td>4.8</td>
<td>n/a</td>
</tr>
</tbody>
</table>

J.W. MORROW
REFERENCES


2. Clean Air Act, 42 U.S.C.A. §7410 (CWA §110), State Implementation Plans for National Primary and Secondary Ambient Air Quality Standards.

3. State of Hawaii, Title 11, Administrative Rules, Chapter 60.1, Air Pollution Control, §§11-60-1-34, 28 August 2001.


5. State of Hawaii, Title 11, Administrative Rules, Chapter 60.1, Air Pollution Control, Subchapters 4 and 5, 28 August 2001.


J.W. MORROW

AGIR: HILO INTERNATIONAL AIRPORT

14 DECEMBER 2001

AGIR: HILO INTERNATIONAL AIRPORT

14 DECEMBER 2001
APPENDIX D
ACOUSTIC STUDY
ACOUSTIC STUDY FOR THE PROPOSED NEW TOUR HELICOPTER FACILITIES AT HILO INTERNATIONAL AIRPORT, HILO, HAWAII

Prepared for:
WILSON OKAMOTO & ASSOCIATES, INC.

Prepared by:
Y. EBISU & ASSOCIATES
1126 12th Avenue, Room 305
Honolulu, Hawaii 96818

SEPTEMBER 2001

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CHAPTER I. SUMMARY

The findings from the sound measurements which were performed and the helicopter noise contours which were developed indicate that there will be minimal risk of deteriorating the current land use compatibility situation at Hilo International Airport as a result of operations at the proposed heliport. The reasons for this are that the existing buffer distances from the residential community in Waiakea are sufficient, and the helicopter ingress and egress routes to and from the facility can be located away from the existing residences. For these reasons, the helicopter noise contours can be located east of the quieter residential areas in Waiakea.

Some residences in the Waiakea community will continue to be located within the 60 DNL noise contour of Hilo International Airport, with or without the proposed heliport. Fixed wing jet aircraft using Runways 8/26 and fixed and rotary wing aircraft using Runways 3/21 are the primary contributors to the airport noise contours at Hilo International Airport. Incremental increases in the forecast airport noise levels due to the proposed heliport should not exceed 1.5 DNL at those residences who are located within the 60 DNL airport contour, and the increases in noise levels attributable to the proposed heliport should not be significant.

The primary noise mitigation measures recommended during operations at the proposed four helicopter facility are those operational procedures which minimize transient noise from surrounding noise sensitive properties and which are possible within the operating constraints at the facility. One of the primary mitigation measures for reducing risks of complaints from noise sensitive properties is to avoid overflights of these properties, particularly at low altitudes of less than 1,000 FT above ground level. The proposed siting of the heliport does allow for the avoidance of low level overflights during all portions of the ingress and egress routes associated with the proposed heliport. The special ingress and egress procedures developed for the facility should be adhered to by all future users of the heliport, whenever weather and safety conditions allow.

CHAPTER II. PURPOSE

The objectives of this study were to describe the existing and future noise environment in the environs of the proposed new heliport facility at Hilo International Airport on the Island of Hawaii. The heliport is proposed to be located east of the southwest end of the Runway 3 on airport property. It is approximately 1,400 feet away from the closest residences which are located across Runway 3 toward Kamehameha Avenue. The future noise environment and potential noise impacts were examined for conditions with and without the new facility using airport activity forecasts for the Years 2005 and 2020. Assessments of possible impacts from noise resulting from rotary wing aircraft operations at Hilo International Airport, and particularly those aircraft noise impacts associated with the proposed relocation of the four helicopter operations to the new facility, were included in the study objectives. Recommendations for minimizing these noise impacts were also to be provided as required.
CHAPTER III. NOISE DESCRIPTORS AND THEIR RELATIONSHIP TO LAND USE COMPATIBILITY

The noise descriptor currently used by federal agencies to assess environmental noise is the Day-Night Average Sound Level (DNL). This descriptor incorporates a 24-hour average of instantaneous A-Weighted Sound Levels as read on a standard Sound Level Meter. The maximum A-Weighted sound level occurring while an aircraft is flying past a listener (i.e., the maximum sound level from a "single event") is referred to as the "L_{max}" value. The mathematical product (or integral) of the instantaneous sound level times the duration of the event is known as the "Sound Exposure Level", or L_{se}, single event.

The DNL contours represent the average noise during a typical day of the year. DNL exposure levels of 55 or less are typical of quiet rural or suburban areas. DNL exposure levels of 55 to 65 are typical of urbanized areas with medium to high levels of activity and street traffic. DNL exposure levels above 65 are representative of densely developed urban areas and areas fronting high volume roadways.

By definition, the minimum averaging period for the DNL descriptor is 24 hours. Additionally, sound levels which occur during the nighttime hours of 10:00 PM to 7:00 AM are increased by 10 decibels (dB) prior to computing the 24-hour average by the DNL descriptor. Because of the averaging used, DNL values in urbanized areas typically range between 50 and 75 DNL. In comparison, the typical range of intermittent noise events may have maximum Sound Level Meter readings between 75 and 165 dB. A more complete list of noise descriptors is provided in Appendix B to this report. In Appendix B, the DNL descriptor symbol is used in place of the DNL descriptor symbol.

**TABLE 1**, extracted from Reference 1, categorizes the various DNL levels of outdoor noise exposure with severity classifications. **TABLE 2**, also extracted from Reference 1, presents the general effects of noise on people in residential use situations. **FIGURE 1**, extracted from Reference 2, presents suggested land use compatibility guidelines for residential and nonresidential land uses. A general development is considered acceptable in areas where exterior noise does not exceed 65 DNL. This value is 65 DNL is used as a federal regulatory threshold for determining the necessity for special noise abatement measures when applications for federal funding are made.

As a general rule, noise levels of 55 DNL or less occur in rural areas, or in areas which are removed from high volume roadways. In urbanized areas which are shielded from high volume streets, DNL levels generally range from 55 to 65 DNL and are usually controlled by motor vehicle traffic noise. Residences which front major roadways are generally exposed to levels of 65 DNL and as high as 75 DNL when the

<table>
<thead>
<tr>
<th>NOISE EXPOSURE CLASS</th>
<th>DAY–NIGHT SOUND LEVEL</th>
<th>EQUIVALENT SOUND LEVEL</th>
<th>FEDERAL (1) STANDARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal Exposure</td>
<td>Not Exceeding 55 DNL</td>
<td>Not Exceeding 55 Leq</td>
<td>Unconditionally Acceptable</td>
</tr>
<tr>
<td>Moderate Exposure</td>
<td>Above 55 DNL But Not Above 65 DNL</td>
<td>Above 55 Leq But Not Above 65 Leq</td>
<td>Acceptable(2)</td>
</tr>
<tr>
<td>Significant Exposure</td>
<td>Above 65 DNL But Not Above 75 DNL</td>
<td>Above 65 Leq But Not Above 75 Leq</td>
<td>Normally Unacceptable</td>
</tr>
<tr>
<td>Severe Exposure</td>
<td>Above 75 DNL</td>
<td>Above 75 Leq</td>
<td>Unacceptable</td>
</tr>
</tbody>
</table>

Notes: (1) Federal Housing Administration, Veterans Administration, Department of Defense, and Department of Transportation.

(2) FHWA uses the Leq instead of the Ldn descriptor. For planning purposes, both are equivalent. It: (a) heavy trucks do not exceed 10 percent of total traffic flow in vehicles per 24 hours, and (b) traffic between 10:00 PM and 7:00 AM does not exceed 15 percent of average daily traffic flow in vehicles per 24 hours. The noise mitigation threshold used by FHWA for residences is 67 Leq.
### Table 2

**Effects of Noise on People**
*(Residential Land Uses Only)*

<table>
<thead>
<tr>
<th>EFFECTS³</th>
<th>Hearing Loss</th>
<th>Speech Interference</th>
<th>Anxiety²</th>
<th>Community Reaction</th>
<th>General Community Attitude Towards Area</th>
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</thead>
<tbody>
<tr>
<td>Daily/night average sound levels in decibels</td>
<td>% Hearing Impairment</td>
<td>% Speech Interference</td>
<td>% Anxiety</td>
<td>% Population Highly Annoyed</td>
<td></td>
</tr>
<tr>
<td>15 and above</td>
<td>May begin to occur</td>
<td>90%</td>
<td>0.5</td>
<td>37%</td>
<td>Very Severe</td>
</tr>
<tr>
<td>70</td>
<td>Will not affect</td>
<td>99%</td>
<td>0.9</td>
<td>23%</td>
<td>Severe</td>
</tr>
<tr>
<td>65</td>
<td>Will not occur</td>
<td>100%</td>
<td>1.5</td>
<td>15%</td>
<td>Significant</td>
</tr>
<tr>
<td>60</td>
<td>Will not affect</td>
<td>100%</td>
<td>2.0</td>
<td>1%</td>
<td>Moderate</td>
</tr>
<tr>
<td>55 and below</td>
<td>Will not occur</td>
<td>100%</td>
<td>3.5</td>
<td>4%</td>
<td>Slight</td>
</tr>
</tbody>
</table>

2. Dependent on attitudes and other factors.
3. The percentage of people reporting annoyance in lesser effects are higher in each case. To ensure a small percentage of people will report being “Highly Annoyed” even in the current environment, one reason is the difficulty all people have in integrating annoyance over a very long time.

---

**Figure 1**

*Adjusted Yearly Average Sound Levels (ILN)*

- **Land Use**
  - Residential - Single Fam., Condominiums, Multi-Family, Townhouses
  - Commercial - Retail, Industrial, Office
  - Entertainment - Nightclubs, Bars, Movie Theaters
  - Schools, Religious Institutions
  - Public Services - Hospitals, Police, Fire
  - Public Parks
  - Miscellaneous

- **Sound Levels**
  - Uncontrolled
  - Controlled

- **Legend**
  - Compatibility
  - Incompatibility

---

*ANL USE CONSTRUCTION WITH AVERAGE DAILY NOISE LEVELS AT COMMONLY CONSTRUCTED LEVELS.*

- **Average Daily Noise Levels (ILN)**
  - 60 dB
  - 70 dB
  - 80 dB
  - 90 dB

- **Legend**
  - Compatibility
  - Incompatibility

---

*With Insulation per Section A.4.*
roadway is a high speed freeway. Due to noise shielding effects from intervening structures, interior lots are usually exposed to 3 to 10 DNL lower noise levels than the front lots which are not shielded from the traffic noise.

For the purposes of determining noise acceptability for funding assistance from federal agencies, an exterior noise level of 65 DNL or lower is considered acceptable. These federal agencies include the Federal Aviation Administration (FAA), Department of Defense (DOD); Federal Housing Administration, Housing and Urban Development (FHAHUD), and Veterans Administration (VA). This standard is applied nationally (see Reference 3), including Hawaii.

Because of our open living conditions, the predominant use of naturally ventilated dwellings, and the relatively low exterior-to-interior sound attenuation afforded by these naturally ventilated structures, an exterior noise level of 65 DNL does not eliminate all risks of noise impacts. Because of these factors, a lower level of 65 DNL is considered the "Unconditionally Acceptable" or "Near-Zero Risk" level of exterior noise (see Reference 4). For typical, naturally ventilated structures in Hawaii, an exterior noise level of 65 DNL results in an interior level of approximately 45 DNL, which is considered to be the "Unconditionally Acceptable" or "Near-Zero Risk" level of interior noise. However, after considering the cost and feasibility of applying the lower level of 65 DNL, government agencies such as FHAHUD and VA have selected 65 DNL as a more appropriate regulatory standard.

For aircraft noise, the State Department of Transportation, Airports Division (DOTA), has recommended that 65 DNL be used as the common level for determining land use compatibility in respect to noise sensitive uses near its airports. TABLE 3 summarizes the recommendations for compatible land uses at various levels of aircraft noise. For those noise sensitive land uses which are exposed to aircraft noise greater than 65 DNL, the division recommends that disclosure of the aircraft noise level be provided prior to any real property transactions. Reference 5 requires that such disclosure be provided prior to real property transactions concerning properties located within Airport Installation Compatibility Use Zones (AICUZ) or located within airport noise maps developed under Federal Aviation Regulation Part 150 - Airport Noise Compatibility Planning (14 CFR Part 150).

For commercial, industrial, and other non-noise sensitive land uses, exterior noise levels as high as 75 DNL are generally considered acceptable. Exceptions to this occur when naturally ventilated office and other commercial establishments are exposed to exterior levels which exceed 65 DNL.

In the State of Hawaii, the State Department of Health (DOH) regulates noise from on-site activities. State DOH noise regulations are expressed in maximum allowable property line noise limits rather than DNL (see Reference 6). The noise limits apply at all of the outer islands, including the island of Hawaii. Although they are not

### TABLE 3

<table>
<thead>
<tr>
<th>TYPE OF LAND USE</th>
<th>RECOMMENDED MAXIMUM NOISE LIMITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low density residential, resorts, and hotels (interior)</td>
<td>45 DNL</td>
</tr>
<tr>
<td>Low density residential, resorts, and hotels (exterior)</td>
<td>55 DNL</td>
</tr>
<tr>
<td>Low density with limited outdoor use</td>
<td>60 DNL</td>
</tr>
<tr>
<td>High density with limited outdoor use</td>
<td>65 DNL</td>
</tr>
<tr>
<td>Heavy industry and commerce</td>
<td>75 DNL</td>
</tr>
<tr>
<td>Commercial and office buildings serving the general public</td>
<td>75 DNL</td>
</tr>
<tr>
<td>Transportation and federal use</td>
<td>75 DNL</td>
</tr>
<tr>
<td>Commercial and retail - general merchandise, hardware and paint, etc.</td>
<td>75 DNL</td>
</tr>
<tr>
<td>General merchandise and retail, food specialty, etc.</td>
<td>75 DNL</td>
</tr>
<tr>
<td>Retail, restaurants, shopping centers, financial institutions, etc.</td>
<td>75 DNL</td>
</tr>
<tr>
<td>Power plants, sewage treatment plants, and base yards</td>
<td>75 DNL</td>
</tr>
<tr>
<td>Manufactured, fabricated, and storage</td>
<td>75 DNL</td>
</tr>
<tr>
<td>Manufacturing, general</td>
<td>75 DNL</td>
</tr>
<tr>
<td>Pharmaceuticals and medical</td>
<td>75 DNL</td>
</tr>
<tr>
<td>Agricultural storage and handling</td>
<td>75 DNL</td>
</tr>
<tr>
<td>Irrigation and flood control</td>
<td>75 DNL</td>
</tr>
<tr>
<td>Recreational, park, and similar uses</td>
<td>75 DNL</td>
</tr>
</tbody>
</table>

**Notes:**
- Levels in parentheses refer to notes.
- Levels = land use and related structures compatible without restrictions.
- Noise = land use and related structures are not compatible and should be prohibited.
TABLE 3 (CONTINUED)

HAWAII STATE DEPARTMENT OF TRANSPORTATION
RECOMMENDATIONS FOR LOCAL LAND USE COMPATIBILITY WITH
YEARLY DAY–NIGHT AVERAGE SOUND LEVELS (DNL)

NOTE FOR TABLE 3:

(1) A noise level of 65 DNL does not eliminate all risks of adverse noise impacts from aircraft noise. However, the 65 DNL planning level has been selected by the State Airports Board as an appropriate compromise between the ambient risk level of 55 DNL and the significant risk level of 65 DNL.

(2) Where the community determines that these uses must be allowed, noise level reduction (NLR) measures to achieve interior levels of 45 DNL or less should be incorporated into building codes and be considered in individual appraisals.

(3) Local land use planning and voluntary agreements can be expected to provide an average NLR of approximately 9 dB.

(4) Where climate and air conditioning may be required to provide additional weather in humid areas, and will not otherwise cause indoor noise problems.

(5) Since sound levels of all aircraft noise events, each of which can be checked in terms of magnitude, duration, and area, impact, noise considerations should be evaluated for the specific land use. Interior acoustical requirements and properties of the aircraft noise event. NLR requirements should not be based on the entire ENR exposure level.

(6) Measures to achieve required NLR must be incorporated into the design and construction of portions of the building used by the public for residential, office, or civic purposes areas, or where the normal noise level is low.

(7) For residential buildings, NLR requirements should be based on average noise levels greater than 65 DNL.

(8) Impact of noise level, duration, frequency, and level content of aircraft noise events must be evaluated.

directly comparable to noise criteria expressed in DNL. State DOH noise limits for preservation/residential, apartment/commercial, and agricultural/industrial lands equate to approximately 55, 60, and 75 DNL, respectively. Because the proposed airport is located on lands designated for industrial uses, DOH noise limits for industrial lands would be applicable along the project boundary lines for any stationary sources, or equipment related to industrial or construction activities. These property line limits are 70 dBA for both the daytime and nighttime periods. For multifamily use, the State DOH limits are 60 dBA and 50 dBA during the daytime and nighttime periods respectively. For single family residential use, the State DOH limits are 55 dBA and 45 dBA during the daytime and nighttime periods, respectively. These noise limits cannot be exceeded for more than 2 minutes in any 24-hour time period under the State DOH noise regulations. The State DOH noise regulations do not apply to aircraft.
CHAPTER IV. GENERAL STUDY METHODOLOGY

The noise analysis procedures delineated in References 7 through 9 were used in this study. Helicopter noise contours for 2005 and 2020 were developed. A user generated data base of helicopter noise curves and flight profiles were included with the Federal Aviation Administration (FAA) Helicopter Noise Model, Version 2.2 (HNMI), to reflect the noise monitoring data and operating conditions at the proposed facility. In addition, simulated helicopter flights to the proposed heliport site from the Waiakea area were conducted on August 24, 2001. Sound level measurements of these simulated operations were obtained at three locations to determine if the HNMI noise predictions were reasonably accurate.

The Day-Night Sound Level (DNL) noise descriptor was used to describe both the existing background ambient noise and future helicopter noise in the environs of the heliport facility. Background ambient noise measurements were obtained at eight locations in the residential and industrial areas of Waiakea which are closest to the proposed heliport. Helicopter noise contours were developed to compare the helicopter noise exposure levels with noise impact criteria and the measured background ambient noise levels.

Because the background noise levels surrounding Hilo International Airport are influenced by the noise from other aircraft operating at the airport, noise contours were also developed using the FAA Integrated Noise Model (INM) Version 6.0. The INM does not have a database for rotary wing aircraft, but user supplied data was incorporated into the model to depict helicopter operations at both the existing and proposed heliport facilities. FIGURE 2 depicts the location of the proposed heliport and the helicopter flight tracks to and from the facility in relation to existing noise sensitive land uses in the surrounding area. Helicopter ingress and egress routes to and from the proposed heliport were adjusted to avoid low level overflights of existing residential areas in Waiakea, and are expected to be flown as indicated in FIGURE 2.

Documentation of the helicopter flight tracks, operations, and noise contours associated with operations at the existing tour helicopter facility at Hilo International Airport were obtained from References 10 and 11. FIGURE 3 depicts the generalized ingress and egress routes to and from the existing tour helicopter facility. All tour helicopter operations will be relocated to the proposed heliport from the existing facility, with ingress and egress routes modified as shown in FIGURE 2. An average of 41 helicopter round trip flights (or 82 operations) per day were assumed at the proposed heliport facility in 2005, increasing to 100 helicopter operations per day in 2020. The hours of operation are expected to range from sunrise to sunset, seven days per week, with ASTAR 350 and TWINSTAR 355 helicopters being the primary rotary wing aircraft used.

The final approach flight track to the proposed facility was adjusted to avoid low level overflights of the Waiakea residential community southwest of the airport and proposed heliport facility. Final landing of the tour helicopters prior to landing at the

Figure 2: Proposed Tour Helicopter Site and Helicopter Ingress and Egress Routes
The heliport was adjusted to be parallel to Kamehameha Avenue for altitudes less than 1,000 feet above ground level, and the associated landing flight tracks are depicted in Figure 2 as flight tracks HA1, HA2, and HA3. The helicopter flight tracks shown in Figure 2 were developed after consultation with four helicopter operators, FAA Tower, and State Airports Division personnel. The straight-in landing track to Runway 3 will continue to be used by all fixed wing and military rotary wing aircraft.

The following average daily number of operations were used in developing the helicopter noise contours for the proposed heliport in CY 2009 for the Action Alternative:

b. Southwest Arrivals (Track HA1): 20.5 daily operations.
c. Southeast Arrivals (Track HA3): 41 daily operations.
d. Southeast Departures (Track HD1): 55 daily operations.
e. Northwest Departures (Track HD2): 27 daily operations.

The following average daily number of operations were used in developing the helicopter noise contours for the proposed heliport in CY 2020 for the Action Alternative:

b. Southwest Arrivals (Track HA1): 25 daily operations.
c. Southeast Arrivals (Track HA3): 50 daily operations.
d. Southeast Departures (Track HD1): 67 daily operations.
e. Northwest Departures (Track HD2): 33 daily operations.

The following were also assumed for each four helicopter flight at the proposed heliport: 10 minutes (500 seconds) of ground idle at the passenger loading pads; 3 seconds of flight idle at the passenger loading pads; and 7 seconds of hover (in ground effect) at the passenger loading pads. These values are considered to be very long, but were used to model worst case conditions at the proposed heliport. Only the HNM Version 2.2 model incorporates the helicopter noise during helicopter idle and ground movements to develop DNL contours around the proposed heliport. The FAA INM Version 6.0 does not incorporate these noise contributions during the static and taxi operations in modeling helicopter noise, so the DNL contours in the immediate vicinity of the proposed heliport are typically underestimated by the FAA INM. For this reason, helicopter and total aircraft noise levels were calculated using both the FAA INM Version 6.0 and HNM Version 2.2 at noise sensitive receptor locations near the proposed heliport facility.

For the No Action Alternative, four helicopter operations were assumed to continue at the existing facility. Total helicopter operations in 2005 and 2020 for the No Action Alternative were identical to those assumed under the Action Alternative, with the ingress and egress routes of Figure 3 used for the No Action Alternative.
Helicopter DNL contours for 65, 60, and 55 DNL were developed using the HNM Version 2.2 for the proposed heliport facility. The helicopter DNL contours developed with the HNM Version 2.2 were compared with the Action and No Action noise contours developed with the FAA INM Version 8.0. Although FAA (Reference 7) does not require the development of noise contours below the 65 DNL level, the development of the lower level contours was considered prudent to identify the areas of possible complaints and helicopter noise impact zones associated with the proposed facility. Additionally, References 7, 8, and 9 recommend that more conservative noise criteria (rather than 65 DNL) be used in evaluating the noise compatibility of new helicopter facilities.

The helicopter noise contours developed by the HNM and INM models were compared to existing land use compatibility criteria and background ambient noise levels to evaluate the potential noise impacts and complaint risks associated with the expected level of helicopter operations at heliport facility. Using the DNL noise contour results and the results of the background ambient noise measurements, evaluations were made of potential noise impacts in the health and welfare category, and of potential annoyance responses from nearby residences. Based on the above evaluations, recommendations for mitigation measures which would minimize risks of health and welfare impacts and risks of annoyance responses from nearby residences were provided. Recommendations associated with the conduct and regulation of flight operations at the facility were also provided to minimize impacts and complaint risks at outlying areas.
FIGURE 5

DBA VS. TIME HISTORY OF SOUND LEVELS AT LOCATION W-7 (0900 TO 1100 HOURS; 8/24/01)

FIGURE 6

DBA VS. TIME HISTORY OF SOUND LEVELS AT LOCATION W-7 (1100 TO 1300 HOURS; 8/24/01)
DBA VS. TIME HISTORY OF SOUND LEVELS AT LOCATION W-9 (1045 TO 1117 HOURS; 8/24/01)  

FIGURE 10

DBA VS. TIME HISTORY OF SOUND LEVELS AT LOCATION W-9 (1010 TO 1045 HOURS; 8/24/01)  

FIGURE 9
FIGURE 11: DBA vs. Time History of Sound Levels at Location W-9 (1207 To 1236 Hours; 8/24/01)

FIGURE 12: DBA vs. Time History of Sound Levels at Location W-9 (1236 To 1305 Hours; 8/24/01)
DBA VS. TIME HISTORY OF SOUND LEVELS AT LOCATION W-10 (1213 TO 1245 HOURS; 8/24/01) FIGURE 16

DBA VS. TIME HISTORY OF SOUND LEVELS AT LOCATION W-10 (1100 TO 1124 HOURS; 8/24/01) FIGURE 15
DBA VS. TIME HISTORY OF SOUND LEVELS AT LOCATION W-10 (1307 TO 1336 HOURS; 8/24/01)

FIGURE 18

DBA VS. TIME HISTORY OF SOUND LEVELS AT LOCATION W-10 (1245 TO 1315 HOURS; 8/24/01)

FIGURE 17
DBA VS. TIME HISTORY OF SOUND LEVELS AT LOCATION A (0815 TO 0845 HOURS; 8/25/01)

FIGURE 20

DBA VS. TIME HISTORY OF SOUND LEVELS AT LOCATION A (0744 TO 0815 HOURS; 8/25/01)

FIGURE 19
DBA VS. TIME HISTORY OF SOUND LEVELS AT LOCATION A (0918 TO 0950 HOURS; 8/25/01)

FIGURE 22
TABLE 4

SUMMARY OF AVERAGE (Leq) NOISE LEVELS AT MEASUREMENT LOCATIONS

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>TIME PERIOD</th>
<th>DATE</th>
<th>Leq (dBA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>W-7</td>
<td>0900 to 1300 Hours</td>
<td>8/24/01</td>
<td>58.0</td>
</tr>
<tr>
<td>W-7</td>
<td>1300 to 1422 Hours</td>
<td>8/24/01</td>
<td>61.5</td>
</tr>
<tr>
<td>W-1</td>
<td>0908 to 1008 Hours</td>
<td>8/25/01</td>
<td>63.0</td>
</tr>
<tr>
<td>W-9</td>
<td>1008 to 1127 Hours</td>
<td>8/24/01</td>
<td>63.2</td>
</tr>
<tr>
<td>W-9</td>
<td>1008 to 1127 Hours</td>
<td>8/24/01</td>
<td>63.2</td>
</tr>
<tr>
<td>W-10</td>
<td>1029 to 1124 Hours</td>
<td>8/24/01</td>
<td>57.1</td>
</tr>
<tr>
<td>W-10</td>
<td>1210 to 1336 Hours</td>
<td>8/24/01</td>
<td>59.7</td>
</tr>
<tr>
<td>L</td>
<td>1226 to 1258 Hours</td>
<td>8/25/01</td>
<td>66.5</td>
</tr>
<tr>
<td>EL</td>
<td>1305 to 1330 Hours</td>
<td>8/25/01</td>
<td>60.6</td>
</tr>
<tr>
<td>K</td>
<td>1336 to 1352 Hours</td>
<td>8/25/01</td>
<td>62.1</td>
</tr>
<tr>
<td>L2</td>
<td>1404 to 1439 Hours</td>
<td>8/25/01</td>
<td>59.3</td>
</tr>
</tbody>
</table>
It should be noted that the noise contours of FIGURE 24 were developed using the earlier Version 5.2A of the FAA INM, while the airport noise contours developed during this helicopter facility study used the latest Version 6.0 of the FAA INM. TABLE 5 presents the calculated DNL values at Locations W-1 through W-10 in the Waiea area. These locations are shown in FIGURE 24. All of the calculated values shown in TABLE 5 were obtained using the latest Version 6.0 of the FAA INM or the helicopter model FAA HNM Version 2.2. The existing noise levels of all aircraft (fixed wing plus rotary wing) operating at Hilo International Airport exceed 69 DNL at Locations W-1, W-7, and W-9, which are closest to the southwest end of Runway 3.
CHAPTER VI. HELICOPTER NOISE LEVELS

Helicopter noise contours associated with the operations of the proposed helmet were developed using the FAA INM, Version 2.2 for 2005 and 2020. In addition, several measurements were performed during the second phase near the proposed helicopter site. The analyses were performed during the month of June 2006. The predicted noise levels were used to identify the potential impact on the community. The predicted noise levels were found to be within acceptable limits.

FIGURE 12 identifies the noise events associated with the noise contours associated with the proposed helicopter. The noise contours were determined using the FAA INM. Figure 12 shows the noise level contours in the vicinity of the proposed helicopter site. The noise levels were found to be below the maximum allowable levels.

TABLE 5

COMPARISONS OF FAA INM VERSION 6.0 PREDICTIONS
AT VARIOUS COMMUNITY LOCATIONS IN WAIKEA, HAWAII

<table>
<thead>
<tr>
<th>YEAR AND SCENARIO</th>
<th>W1</th>
<th>W2</th>
<th>W3</th>
<th>W4</th>
<th>W5</th>
<th>W6</th>
<th>W7</th>
<th>W8</th>
<th>W9</th>
<th>W10</th>
</tr>
</thead>
<tbody>
<tr>
<td>CY 2000 - Existing Conditions</td>
<td>61.7</td>
<td>58.8</td>
<td>58.3</td>
<td>55.0</td>
<td>52.0</td>
<td>49.3</td>
<td>49.2</td>
<td>47.2</td>
<td>45.0</td>
<td>52.2</td>
</tr>
<tr>
<td>CY 2006 - No Action</td>
<td>62.0</td>
<td>59.2</td>
<td>59.3</td>
<td>55.3</td>
<td>53.1</td>
<td>49.6</td>
<td>61.7</td>
<td>59.3</td>
<td>60.8</td>
<td>52.9</td>
</tr>
<tr>
<td>CY 2005 - With New Helipad</td>
<td>62.3</td>
<td>59.3</td>
<td>59.5</td>
<td>57.5</td>
<td>53.3</td>
<td>53.4</td>
<td>52.6</td>
<td>59.9</td>
<td>60.9</td>
<td>53.9</td>
</tr>
<tr>
<td>CY 2005 - Change in DNL</td>
<td>0.3</td>
<td>0.1</td>
<td>0.2</td>
<td>2.2</td>
<td>0.2</td>
<td>3.8</td>
<td>0.9</td>
<td>0.8</td>
<td>0.1</td>
<td>1.1</td>
</tr>
<tr>
<td>CY 2020 - No Action</td>
<td>62.1</td>
<td>59.3</td>
<td>59.5</td>
<td>55.3</td>
<td>53.2</td>
<td>49.6</td>
<td>61.9</td>
<td>59.5</td>
<td>60.9</td>
<td>52.9</td>
</tr>
<tr>
<td>CY 2020 - With New Helipad</td>
<td>62.5</td>
<td>59.5</td>
<td>59.8</td>
<td>58.0</td>
<td>53.6</td>
<td>54.0</td>
<td>63.1</td>
<td>60.2</td>
<td>61.1</td>
<td>54.3</td>
</tr>
<tr>
<td>CY 2020 - Change in DNL</td>
<td>0.4</td>
<td>0.2</td>
<td>0.3</td>
<td>2.7</td>
<td>0.3</td>
<td>4.4</td>
<td>1.2</td>
<td>0.7</td>
<td>0.2</td>
<td>1.4</td>
</tr>
<tr>
<td>CY 2006 - HINM Model of Helipad</td>
<td>54.8</td>
<td>51.6</td>
<td>53.0</td>
<td>57.8</td>
<td>49.4</td>
<td>56.0</td>
<td>57.5</td>
<td>54.7</td>
<td>52.7</td>
<td>53.2</td>
</tr>
<tr>
<td>CY 2005 - HINM Model of Helipad</td>
<td>55.7</td>
<td>52.5</td>
<td>53.9</td>
<td>58.7</td>
<td>50.3</td>
<td>56.9</td>
<td>58.6</td>
<td>55.6</td>
<td>53.6</td>
<td>54.1</td>
</tr>
</tbody>
</table>

Because the DNL is the only significant level of noise for the proposed helicopter, the noise levels were found to be well below the maximum allowable levels. The noise levels were found to be consistent with the predicted levels.

Note: DNL = Day/Night Level.
proposed helicopter egress and ingress routes have been selected to avoid low level overflights of residential areas within Waiakea. The four helicopter operators, FAA egress routes shown in FIGURE 2 following construction of the new facility. Minimum Kanoelua Avenue and Kamahameha Avenue while transitioning to and from the heliport (between 70 to 75 dBA, Lmax) as long as the the 1,000 foot minimum altitude and ingress and egress routes of FIGURE 2 are adhered to.

Single event noise levels during touchdown, lift-off, taxi, hover, and idle operations near the heliport site should typically be less than 70 dBA as shown in FIGURES 20 through 23. Noise measurement Location A was selected to be approximately the same distance from the existing helicopter parking area as Location W-7 will be from the future helicopter parking pads.

CHAPTER VII. POSSIBLE NOISE IMPACTS AND COMPLAINT RISKS ASSOCIATED WITH THE PROPOSED TOUR HELICOPTER FACILITY

Noise contours developed with the FAA INM Version 6.0 were used to compare resulting DNL levels and potential noise impacts within the Waiakea area for the No Action and Action Alternatives. For both 2020 and 2020, 55 to 75 DNL contours were developed for four helicopter operations from the existing facility (No Action Alternative), and from the proposed heliport facility (Action Alternative). These noise contours are shown in FIGURES 27 through 30. TABLE 5 provides the computed DNL values at Locations W-1 through W-10 for the Action and No Action Alternatives for both forecast years, and also indicates the predicted increases in DNL values from the No Action to the Action Alternatives.

Forecasted increases in noise levels associated with the proposed tour helicopter should not exceed the FAA criteria value of 1.5 DNL for a significant increase all residential areas in Waiakea area. Stated in another way, the proposed tour heliport facility should not cause a significant increase in aircraft (fixed and rotary wing) noise levels in the residential areas of Waiakea. Although some residences will continue to experience aircraft noise exposure levels between 60 to 65 DNL, this condition is primarily attributable to aircraft noise sources other than the tour helicopters operating at Hilo International Airport.

Based on the forecast tour helicopter and overall airport noise contours which were developed for the Action and No Action Alternatives, it was concluded that significant noise impacts from tour helicopter operations at the proposed new facility need not occur in the Hilo International Airport environs. The primary reason for this is that adequate buffer distances between the noise sensitive receptors in Waiakea and the tour helicopters can be maintained at the proposed new facility location. In addition, significant increases in land use incompatibilities as defined by the locations of the 60 DNL contours over the Waiakea community should not occur as a result of the proposed heliport facility. For residential areas currently located inside the 60 DNL contour, such as at Locations W-7 and W-9, forecast increases in noise levels resulting from the proposed action range from 0.1 to 1.2 DNL, which do not exceed the current FAA criteria level of 1.5 DNL for significant increase.

Additional noise mitigation measures, other than those incorporated into the ingress and egress routes shown in FIGURE 2 and the requirement to maintain minimum 1,000 foot altitude above ground level when crossing Kanoelua and Industrial lands south of the proposed heliport facility as a tour helicopter Ingress/Egress corridor, risks of complaints from the residential areas in Waiakea and areas west of Kanoelua Avenue should be minimized.
CHAPTER VIII. CONSTRUCTION NOISE IMPACTS

Audible construction noise will probably be unavoidable during the entire heliport construction period. The total time period for construction is unknown, but it is anticipated that the actual work will be moving from one location on the heliport site to another during that period. Actual length of exposure to construction noise at any receptor location will probably be less than the total construction period for the entire project. Typical levels of noise from construction activity (excluding pile driving activity) are shown in FIGURE 31. The noise sensitive properties which are predicted to experience the highest noise levels during construction activities on the heliport site are the existing residences closest to the southeast end of Runway 3, which are located approximately 1,400 feet from the construction area. Adverse impacts from construction noise are not expected at these residences due to the very large buffer distances between the construction area and the closest residences.

Mitigation of construction noise to inaudible levels may not be practical in all cases due to the intensity of construction noise sources (60 to 80+ dB at 50 ft distance), and due to the exterior nature of the work (grading and earth moving, trenching, concrete pouring, hammering, etc.). The use of properly muffled construction equipment should be required on the job sites. The incorporation of State Department of Health (DOH) construction noise limits and curfew times, which are applicable on the Island of Hawaii (Reference 6), is another noise mitigation measure which can be applied to this project. FIGURE 32 depicts the allowed hours of construction which exceed the noise DOH limits of Reference 6. Noisy construction activities are not allowed on Sundays or holidays under the DOH permit procedures.

The past history of community complaints and annoyance responses regarding helicopter noise suggested that the "no reaction" response threshold for helicopter noise can be less than the 55 DNL threshold, which is associated with the protection of the public health and welfare. Based on information reported in Reference 4, the average "no reaction" response threshold for aircraft noise is approximately 5 DNL units less than the DNL associated with other background ambient noise, as long as the exposed population does not have attitudinal biases regarding the source of the noise. Variations in this "no reaction" response threshold are possible due to attitudinal biases (favorable or unfavorable) of the exposed population. For a background ambient noise level of 55 DNL, which is believed to be characteristic of the quietest areas in the project vicinity, the "no reaction" response threshold is estimated to be approximately 50 DNL for unblinded receptors. Stated in a different way— if the annually averaged DNL from the noise of helicopters operating at the proposed facility exceeds 50 DNL at the quietest noise sensitive receiver locations, the noise from the helicopter operations may cause annoyance reactions from that particular residential area. At the noise receptor locations near roadways, where the non-helicopter ambient noise components exceed 60 DNL, helicopter noise levels below 55 DNL are not expected to cause annoyance reactions from unblinded residents.

The proposed ingress and egress routes to and from the proposed heliport were mutually developed by four helicopter operators, FAA Tower, and State Airports Division personnel so as to not pass over existing residential areas at low altitudes. Risks of complaints from area residents which are associated with low level helicopter overflights should be low. In addition, the helicopter noise contours developed during this study (FIGURES 25 and 26) indicate that the 55 DNL contour should not extend into the quieter residentially zoned properties which are west of Kahanu Street. The few existing homes which are located between the southwest end of Runway 3 and Kanaelua Avenue will be located between the 55 DNL and 60 DNL helicopter noise contours (see FIGURES 25 and 26), and between the 60 DNL to 65 DNL airport noise contours (see FIGURES 28 and 30). It should be noted that these existing residences currently qualify for sound attenuation treatment due to existing airport noise in their area, and additional noise mitigation measures should not be required as a result of the development of the proposed heliport facility.

The primary noise mitigation measures recommended during operations at the proposed four helicopter facility are those operational procedures which minimize complaint risks from surrounding noise sensitive properties and which are possible within the operating constraints at the facility. One of the primary mitigation measures for reducing risks of complaints from noise sensitive properties is to avoid overflights of these properties, particularly at low altitudes of less than 1,000 ft above ground level. The proposed siting of the heliport does allow for the avoidance of low level overflights along all portions of the ingress and egress routes associated with the proposed heliport. The special ingress and egress procedures developed for the facility should be adhered to by all future users of the heliport, whenever weather and safety conditions allow.
AVAILABLE WORK HOURS UNDER DOH PERMIT PROCEDURES FOR CONSTRUCTION NOISE

FIGURE 32

DISTANCE FROM OPERATING DICEHL EQUIPMENT IN FEET

SP IN YR SCHOOL 05 10 15 20 25 30 35 40 45 50

ANTICIPATED RANGE OF CONSTRUCTION NOISE LEVELS VS. DISTANCE

FIGURE 31
APPENDIX A. REFERENCES


(4) "Information on Levels of Environmental Noise Requisite to Protect the Public Health and Welfare with an Adequate Margin of Safety," U.S. Environmental Protection Agency; EPA 550/9-74-004; March 1974.

(5) "Mandatory Seller Disclosures in Real Estate Transactions," Chapter 508D, Hawaii Revised Statutes; July 1, 1999.

(6) "Title 11, Administrative Rules, Chapter 46, Community Noise Control," Hawaii State Department of Health; September 23, 1995.


(8) "Noise Assessment Guidelines for New Helicopters," FAA AC 150/5020-2; Federal Aviation Administration; December 5, 1983.


(10) "Hilo International Airport Noise Exposure Map Report (Volume I)," Department of Transportation, Airports Division; June 2008.

APPENDIX B

EXCERPTS FROM EPA'S ACOUSTIC TERMINOLOGY GUIDE

Residential Ambient Noise

The recommended symbols for the commonly used acoustical descriptors based on equal-loudness are contained in Table 1. As in the acoustical criteria and standards used by EPA are derived from the equal-loudness level, almost all descriptor symbols use the same to indicate a level shown in Table 1.

Table 1. The equal-loudness level and the equal-loudness level which require that the symbol be specified or be specified. For convenience in those situations in which an equal-loudness descriptor is being compared to that of another descriptor, the alternative symbol in Table 1 may be used in the place of the "A". For example, a report on blast noise might wish to contrast the blast with the sound.

Although not included in the table, it is also recommended that "Ldn" and "Ldn" be used as symbols for perceived noise levels and effective perceived noise levels, respectively.

It is recommended that in their initial use within a report, each term be written in full, rather than abbreviated. An example of preferred usage is as follows:

The equal-loudness level (Ldn) was measured before and after the installation of acoustical treatment. The measured Ldn values were 65 and 75 dB, respectively.

Residential Ambiance

With regard to energy consumption over time, the term "average" should be discouraged in favor of the term "equivalent." Energy, i.e., in the designation the equivalent of sound levels for 12, 0, and 25, "equivalent" must not be stated since the closest one of 12, 0, or 25 (undefined) is by definition an average. Therefore, the designations are "day sound levels," "night sound levels," and "night-night sound levels," respectively.

The peak sound level is the logarithmic ratio of peak sound pressure to a reference pressure and the sound level is measured in sound pressure. The energy of the measured sound pressure level is given in the wave energy and power density level.

Noise Impact

In assessing noise impact, it is recommended that the "level-weighted equivalent sound level" (Ldn) replace the "equivalent sound level" (Ldn). The term "level-weighted equivalent sound level" (Ldn) shall be used for comparing the relative differences in Ldn between the alternatives.

Further, when appropriate, the "noise impact index" (NI) and "population-weighted level of hearing" (PWL) shall be used consistent with EPA's existing guidance on the assessment of environmental impact statements (1987).
### APPENDIX B (CONTINUED)

#### TABLE I

**A-WEIGHTED RECOMMENDED DESCRIPTOR LIST**

<table>
<thead>
<tr>
<th>TERM</th>
<th>SYMBOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A-Weighted Sound Level</td>
<td>$L_A$</td>
</tr>
<tr>
<td>2. A-Weighted Sound Power Level</td>
<td>$L_{WA}$</td>
</tr>
<tr>
<td>3. Maximum A-Weighted Sound Level</td>
<td>$L_{max}$</td>
</tr>
<tr>
<td>4. Peak A-Weighted Sound Level</td>
<td>$L_{Apk}$</td>
</tr>
<tr>
<td>5. Level Exceeded X% of the Time</td>
<td>$L_X$</td>
</tr>
<tr>
<td>6. Equivalent Sound Level</td>
<td>$L_{eq}$</td>
</tr>
<tr>
<td>7. Equivalent Sound Level over Time T (1)</td>
<td>$L_{eq(T)}$</td>
</tr>
<tr>
<td>8. Day Sound Level</td>
<td>$l_d$</td>
</tr>
<tr>
<td>9. Night Sound Level</td>
<td>$l_n$</td>
</tr>
<tr>
<td>10. Day-Night Sound Level</td>
<td>$l_{dn}$</td>
</tr>
<tr>
<td>11. Yearly Day-Night Sound Level</td>
<td>$l_{dn(Y)}$</td>
</tr>
<tr>
<td>12. Sound Exposure Level</td>
<td>$L_{SE}$</td>
</tr>
</tbody>
</table>

(1) Unless otherwise specified, time is in hours (e.g., the hourly equivalent level is $L_{eq(h)}$). Time may be specified in non-quantitative terms (e.g., could be specified as $L_{eq(HASH)}$ to mean the washing cycle noise for a washing machine.

**SOURCE:** EPA ACOUSTIC TERMINOLOGY GUIDE, EIA 8-64-76,

### APPENDIX B (CONTINUED)

#### TABLE II

**RECOMMENDED DESCRIPTOR LIST**

<table>
<thead>
<tr>
<th>TERM</th>
<th>A-WEIGHTING</th>
<th>ALTERNATIVE(1)</th>
<th>OTHER(2)</th>
<th>WEIGHTING</th>
<th>UNWEIGHTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sound (Pressure)</td>
<td>$L_A$</td>
<td>$L_{PA}$</td>
<td>$L_B$</td>
<td>$L_{PB}$</td>
<td>$L_p$</td>
</tr>
<tr>
<td>2. Sound Power Level</td>
<td>$L_{WA}$</td>
<td>$L_{WB}$</td>
<td></td>
<td></td>
<td>$L_w$</td>
</tr>
<tr>
<td>3. Max. Sound Level</td>
<td>$L_{max}$</td>
<td>$L_{Amax}$</td>
<td></td>
<td></td>
<td>$L_{max}$</td>
</tr>
<tr>
<td>4. Peak Sound (Pressure) Level</td>
<td>$L_{Apk}$</td>
<td>$L_{Bpk}$</td>
<td></td>
<td></td>
<td>$L_{pk}$</td>
</tr>
<tr>
<td>5. Level Exceeded X% of the Time</td>
<td>$L_X$</td>
<td>$L_{AX}$</td>
<td></td>
<td></td>
<td>$L_{BX}$</td>
</tr>
<tr>
<td>6. Equivalent Sound Level</td>
<td>$L_{eq}$</td>
<td>$L_{Aeq}$</td>
<td></td>
<td></td>
<td>$L_{Beq}$</td>
</tr>
<tr>
<td>7. Equivalent Sound Level over Time T</td>
<td>$L_{eq(T)}$</td>
<td>$L_{Aeq(T)}$</td>
<td></td>
<td></td>
<td>$L_{Beq(T)}$</td>
</tr>
<tr>
<td>8. Day Sound Level</td>
<td>$l_d$</td>
<td>$L_{Ad}$</td>
<td></td>
<td></td>
<td>$L_{Bd}$</td>
</tr>
<tr>
<td>9. Night Sound Level</td>
<td>$l_n$</td>
<td>$L_{An}$</td>
<td></td>
<td></td>
<td>$L_{Bn}$</td>
</tr>
<tr>
<td>10. Day-Night Sound Level</td>
<td>$l_{dn}$</td>
<td>$L_{Adn}$</td>
<td></td>
<td></td>
<td>$L_{Bdn}$</td>
</tr>
<tr>
<td>11. Yearly Day-Night Sound Level</td>
<td>$l_{dn(Y)}$</td>
<td>$L_{Adn(Y)}$</td>
<td></td>
<td></td>
<td>$L_{Bdn(Y)}$</td>
</tr>
<tr>
<td>12. Sound Exposure Level</td>
<td>$L_S$</td>
<td>$L_{SA}$</td>
<td></td>
<td></td>
<td>$L_{SB}$</td>
</tr>
</tbody>
</table>
| 13. Energy Average Value Over (Non-Time Domain)
   Set of Observations                      | $L_{eq(c)}$ | $L_{Acq(c)}$   |           |           | $L_{Bec(c)}$ |
| 14. Level Exceeded X% of the Total Set of (Non-Time Domain) Observations | $L_X(o)$    | $L_{Axo}$      |           |           | $L_{Bxo}$  |
| 15. Average $L_X$ Value                   | $L_X$       | $L_{AX}$       |           |           | $L_{BX}$  |

(1) "Alternative" symbols may be used to assure clarity or consistency.
(2) Only B-weighting shown. Applies also to C, D, E weighting.
(3) The term "pressure" is used only for the unweighted level.
(4) Unless otherwise specified, time is in hours (e.g., the hourly equivalent level is $L_{eq(h)}$). Time may be specified in non-quantitative terms (e.g., could be specified as $L_{eq(HASH)}$ to mean the washing cycle noise for a washing machine.

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APPENDIX E
ARCHAEOLOGICAL INVENTORY SURVEY
ARCHAEOLOGICAL INVENTORY SURVEY
HILO INTERNATIONAL AIRPORT IMPROVEMENTS
LAND OF WAIKEA, SOUTH HILO DISTRICT
ISLAND OF HAWAII' (TMK: 2-1-012: POR. 9)

By:
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and
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August 2001

Haun & Associates
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SUMMARY

At the request of Wilson Okamoto & Associates, Inc., Hana & Associates conducted an archaeological inventory survey of four parcels of undeveloped land at the Hilo International Airport, Land of Refuge, South Hilo District, Island of Hawaii (HICOR: 2-1-12, Par. 9). The objective of the survey was to satisfy historic preservation regulatory review through completion of the Department of Land and Natural Resources-State Historic Preservation Division (DLNR-SHPD), as contained within Hawaii Administrative Rule, Title 13, ISHR, Subtitle 13, State Historic Preservation Rules. The work was done in support of an Environmental Assessment.

The survey identified four sites consisting of five features. The sites consist of a complex of two late concrete slabs, a complex comprised of a terraced depression and wall, and a ranch wall. A fourth site, previously recorded at the Puna Trail, was exposed through an on-site survey area; however, no evidence of the trail remains. The sites and features conform to the traditional Hawaiian structure types expected based on previous archaeological work and historic documentary research. An expected, traditional Hawaiian agricultural feature was identified and a primary transportation route formerly traversed the area. The terraced depression and associated wall document traditional Hawaiian agricultural activity in an area that was transitional between McDannell's (1982) Coastal Settlement Zone and his Upland Agricultural Zone.

Also as expected, historic remains consisted of a ranch wall and an airport-related facility. The ranch wall probably dates to between the mid-1800s and early 1900s. The radio transmission repeater (RTR) site probably dates to between the 1930s and 1940s, prior to the airport's upgrading to accommodate jet aircraft.

Three sites were assessed as solely significant under Criterion "D." The sites have yielded information important for understanding prehistoric and historic land use in the project area. Site 21273, the Puna Trail, is assessed as not significant because it has been disturbed. The mapping, written description, photography, and test excavations at the sites adequately document them and no further work or preservation is recommended. No further work or preservation is recommended for the portion of the Puna Trail alignment in the project area. Well-preserved examples of the trail are present outside of the project area.

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INTRODUCTION

At the request of Watanabe Katsu & Associates, Inc., Heap & Associates conducted an archaeological inventory survey of four parcels of undeveloped land at the Hilo International Airport, Land of Nostalgia, South Hilo District, Island of Hawai‘i (THS: 2-112; parc.: 9; Figure 1). The objective of the survey was to identify historic preservation regulatory review inventory requirements of the Department of Land and Natural Resources—State Historic Preservation Division (DLNR-SHPD), as contained within Hawaii’s Administrative Rules, Title 13, DLNR, Subtitle 13, State Historic Preservation Rules. The work was done in support of an Environmental Assessment.

The survey fieldwork was conducted August 8 and 27, 2001, under the direction of Dr. Alan Hase. Described in this final report are the project scope of work, field methods, background information, survey findings, and significance assessment of the site with recommended further treatments.

SCOPE OF WORK

Based on DLNR-SHPD rules for inventory surveys, the following specific tasks were determined to constitute an appropriate scope of work for the project:

1. Conduct background review and research of existing archaeological and historical documentary literature relating to the project area and its immediate vicinity—i.e., including examination of Land Commission Award files, survey reports, historic maps, archival materials, archaeological reports, and other historical sources.
2. Conduct a high-intensity, 100% pedestrian survey coverage of the project area.
3. Conduct detailed recording of all potentially significant sites including soil profile drawings, written descriptions, and photographs, as appropriate.
4. Conduct limited subsurface testing (random excavations) at selected sites (a) to determine the presence or absence of potentially significant buried cultural deposits or features, and (b) to obtain suitable samples for radiocarbon age determination analyses.
5. Analyze background research and field data and

PROJECT AREA DESCRIPTION

The project area consists of four undeveloped parcels at the Hilo International Airport. The four parcels total 6.45 acres in area and are designated Survey Areas 1 through 4. The elevation of the area ranges from approximately 35 ft. to 41 ft. There are two soil types present within the area. Survey Areas 1, 2, and 4 are situated within an area of Papo'ela loamy sandy loam, on 2-5% slopes (Sato et al., 1973:66). This soil is typified by a thin, very brown, well-drained, very sandy organic soil over fragmented x-axes. It has a rapid permeability, a slow runoff, and a slight visual hazard. Sato et al. indicate that this soil is most commonly used for woodland.

Survey Area 3 is situated within an area of Kona loamy sandy loam on 6-20% slopes. This soil is similar to the Papo'ela soil except that the underlying substrate is comprised of pahoehoe rather than x-axes (Sato et al., 1973:67). Rocky outcrops occur over 25% of the soil surface. This soil is suitable for woodland, pasture and home sites.

All four survey areas exhibit varying degrees of disturbance, which likely occurred during World War II U.S. military use of the area and subsequent construction activities associated with the airport.
This disturbance is evident in numerous hardpacked piles of earth and stone and secondary growth vegetation.

Survey Area 1 is a L-shaped parcel of land located to the east of the airport terminal and the southeastern runway. The parcel measures 4.75 acres and is surrounded by a wire fence. A man-made drainage channel extends along the southern boundary of the parcel. The ground surface in this area is a very hard-packed gravel with scattered cacti. Vegetation in this area consists of palusa (Pandanus schiedeae L.), grass, (Paspalum notatum Fluegel), and dense brush and vines (Figure 2).

Survey Area 2 consists of a roughly rectangular, 6.14-acre parcel located to the south of the existing parking lot for the airport, south of 1800 Avenue and north of 2000 Avenue. The ground surface in this portion of the project area is similar to that noted in Survey Area 1. Vegetation in this area consists of palusa, dense grass, (Paspalum notatum Fluegel), and thick brush and vines (Figure 2).

Survey Area 3 is a 3.56-acre parcel located in the center of Island grove. The parcel is bounded by 1800 Avenue to the south, 2000 Avenue to the east, and the airport's runway to the west. Vegetation in this area consists of predominantly of tall grass and tree (Leucaena leucocephala) with areas of dense brush and palusa (Figure 4).

Survey Area 4 is a 18.16-acre parcel located to the north and northeast of Island grove, with developed areas situated to the south and the west. The ground surface in this portion of the project area consists predominantly of very hard-packed gravel, with very little soil. Large piles of hardpacked gravel and stones are situated around the perimeter of the parcel. Vegetation consists of thick stands of grass, palusa, and brush with large scattered oak trees (Quercus kelloggii) and brush (Quercus minor) (Figure 5).

Field Methods

The project area was subjected to a 100% surface examination with surveyors spaced at 5-10 m intervals. Traverses at each of the four corners were oriented parallel to the long axis of the parcel. The identified sites and features were flagged with pink and blue flagging tape and their locations plotted on a scaled project area map using compass and a 100 meter tape. The areas identified during the survey were subject to detailed recording consisting of the preparation of scaled plan maps, the compilation of standard reference forms, and photographic documentation. A small site tag was placed at each site and the tag's location was plotted on the scaled plan maps.

Subsurface testing during the survey consisted of the excavation of one test unit at one site (Site 20002, Feature A). The excavation unit was dug in arbitrary levels within stratigraphic layers and were terminated on bedrock. Standardized excavation records were prepared after the completion of each stratigraphic layer. No soil was present within the unit and no cultural remains were recovered. Following the excavation of the test unit, a section drawing depicting the stratigraphy was prepared, post-excavation photographs were taken, and the unit was backfilled.
ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Historical Documentary Research

The project area is situated in the ahupua'a of Waiākea in South Hilo District. The ahupua'a is one of the largest in the district covering over 93,000 acres. The ahupua'a extends along the coast from the west side of Hilo Bay to the Puna District boundary and inland to approximately 6,000 ft elevation. Much of the following is summarized from Hilo Bay: A Chronological History (Kelly et al. 1981), an extensive and thorough compendium of historical information about Hilo including Waiākea.

Hawaiian tradition and legendary accounts attest to the longstanding importance of Waiākea. The chief of the Hilo region, Kūhōkū, who resided in Waiākea, was the first to support 'Unu-i-Lfta in his campaign to unify the district of Hilo Island. Hilo with its large bay, fishponds, wet taro fields, and abundant freshwater was a population center for commerce and royalty. Kamehameha I and his court resided in Hilo in the 1790s to prepare for his planned invasion of Kahului in 1812. Kamehameha built a causeway at Hilo, reportedly consisting of 500 canoes. Kamehameha gave his favorite wife, Ke'alohi, the ili ho'oulu of Pi'opi'i in Waiākea.

Early historic accounts also document the importance of Hilo. In 1823, Ellis estimated the population to be 2,000 people in 400 houses. Ellis described the extensive use of la'au lihilihi in house construction in Hilo. La'au lihilihi was gathered from eastern Waiākea beyond the Waiakea River. He described the land as extensively cultivated with plantains, bananas, sugar cane, taro, potatoes, melons, onions, and breadfruit. Wetlands were drained into ponds (ki'i) in marshlands. Hilo was a center for trade between the peoples of Kau, Hamakua, and Kohala. Between the 1790s and 1820s, sandalwood was cut and brought to Hilo for export. Kula and poi (arrowroot) were also exported. Ellis also described coastal fishing.

In 1824, a missionary station was established in Waiākea. Soon after, churches and schools were established. Whalers began stopping at Hilo in the mid-1820s. In the 1830s, a sawmill was built, and two stores were opened. By the end of the decade, a sugar cane plantation and mill were established on Pu'ukoholā. In 1848, the Wilkes Expedition arrived in Hilo and constructed an observatory on Waiakea Point on the east side of Hilo Bay.

The Waiakea 'aina database (2000) lists 51 parcels claimed by 37 claimants within Waiākea in the mid-1820s (Figure 1). All claims are for parcels situated in the north, east, and west of the project area along the coast and immediately inland along the lower reaches of the Waiakea River less than 0.5 mi inland (Figure 1). Twenty-six parcels were awarded to 24 claimants. Chiefess Kamalualii was awarded the entire ili ho'oulu of Pi'opi'i under Land Commission Award (LCA) No. 7713. The remaining claims are for ahupua'a parcels ranging from 0.24 to 14.14 acres in area with an average of 3.8 acres. All, except five claims, were for single parcels. The estimations for several awarded ahupua'a include claims for parcels that were not awarded.

The claim testimony refer to 18 ahupua'a divisions. Five (Alkaholo, Alakaka, Kea, Pi'opi'i, and Posoakalum), are mentioned twice or more times and appear to have been the most prominent parcels of land extending inland from the coast. Alkaholo was situated next to the western ahupua'a boundary with Kaka'ako. Alakaka was next farthest north followed by Kea, Pi'opi'i, and Posoakalum. The latter was farthest north and west of Waiakea River and Fishpond. Six (Alkaholo, Kea, Pi'opi'i, Posoakalum, Posoakalum, and Alakaholo) are situated on the east side of the river, from the river mouth inland, consisting of Alakaholo, Kea, Posoakalum, Posoakalum, and Alakaholo. Kea was situated inland and west of Alkaholo and Kea. The geographic locations of the remaining three cannot be determined because they are mentioned in testimony for claims that were not awarded.

Land use described in the LCA claim testimony included agriculture, pasture, burial, and residence. Thirty-four houses are mentioned and LCA 2374 also describes the presence of a grave. Most of the claim testimony mentions cultivated fields. Crops include wet taro, sweet potatoes, breadfruit, coffee, and bananas. A hole (fumidum sp.) grave and fishpond is also mentioned.
Table 1. Land Commission Award Claims (cont)

<table>
<thead>
<tr>
<th>Lot</th>
<th>Block</th>
<th>Section</th>
<th>Claim No.</th>
<th>Awarded To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>1</td>
<td>1</td>
<td>A. Smith</td>
</tr>
<tr>
<td>2</td>
<td>B</td>
<td>2</td>
<td>2</td>
<td>B. Johnson</td>
</tr>
<tr>
<td>3</td>
<td>C</td>
<td>3</td>
<td>3</td>
<td>C. Brown</td>
</tr>
</tbody>
</table>

Figure 6. Portion of 1891 Map of Hilo (Modified from Kelly et al. 1981)
By 1837, there were three sugar cane mills in the Hilo area. Large tracts of land were put in the cane cultivation and sugar cane was also grown by individuals around their homes. In 1841, a sawmill was constructed at Waiakoloa, located on the west side of Waiakoloa Point. A sugar mill was established in Waiakoloa at the inland end of Waiakea Fishpond in the late 1870s. A railroad transportation system was constructed for the Waiakea mill between 1870 and 1890. By 1880, 1,400 acres of sugar cane were in cultivation and by the end of the decade over 6,600 acres were cultivated. In 1877, a 16 ft high tsunami attack the coast of Waiakea destroying all houses within 100 yards of the shore along with a wheat storehouse, a quarantine hospital on Corfee Island, and a bridge.

Between the 1850s and 1880s there were two sawmill facilities on the west side of Waiakolu Point, one on the Waiakea River, and on the west side of the bay at the foot of Waterhouse Street. By the 1890s, the need for improved sawmill facilities was recognized and the development of government lumber facilities began on the west side of Waiakolu Point. A shipyard was completed in 1899.

Between 1900 and 1930, the population of Hilo grew dramatically with the expansion of sugar cane cultivation, plantation production, the timber industry, and other commercial developments. In the 1920s, the Hiila Railway Company expanded the rail system to Puna and Hilo Town. A railroad which was built north of the mouth of the Waiakea River. Between 1909 and 1912, the railroad was extended to North Hilo and Hamakua Districts.

The pending opening of the Pacific Coast and anticipated increase in trans-Pacific shipping led to serious efforts to build a breakwater in sheltered port in Hilo Bay. Construction of the breakwater began in 1908. The breakwater was initially planned to be a breakwater just east of Waiakolu Island, but the plan was modified and the selected site was approximately 6,000 ft east of Cane Island. The initial plans called for a 16,000 ft long breakwater along Whiplash Reef. Some of the work was brought to a halt from quarries in Puna and Waiakoloa. The breakwater was completed in 1929.

By the 1990s, the existing railroad and government sawmill facilities were inadequate for supporting the economy. In 1912, the Territory Government constructed the construction of a new railroad to approximately one mile east of Waiakolu Island and the grading of the adjacent portion of the bay. The new railroad was extended to Puna and Hilo Town. A railroad which was completed north of the mouth of the Waiakea River. Between 1909 and 1912, the railroad was extended to North Hilo and Hamakua Districts.

The following discussion of the development of the Hilo airport is summarized from Kelly et al. (1981) and Hamwatt and Bush (2000). In 1922, 109 acres were designated as the site for Hilo Airport and $10,000,000 was appropriated for construction, with an additional 106 acres that were designated in 1945 for a Naval Auxiliary Air Station. Funding for the facility was slow because the appropriation did not include funds for equipment. This was resolved in 1927 when an additional $15,000,000 was appropriated. Much of the area had to be filled and Hawaiian Engineering Co. was contracted to construct over 20,000 cubic yards of concrete material designed from Hilo Bay during construction of the new port facility. In 1928, the airport had increased by 41 ft to accommodate the modification of the runway orientation relative to the prevailing trade winds. The airport was completed in February 1928. An additional 66 acres was added to the facility in 1929 to accommodate further expansion. In October 1929, Hilo Airfield, Ltd. began regular scheduled service between Hilo and Hilo when three trips per week.

The airport was further expanded in the 1930s including the construction of a cross-side runway, hangars, and a terminal building. Additional runways and taxiways were also completed. The expansion included portions of the adjacent Koahehu Hawaiian Homes Commission settlement where 30 homes were later demolished or relocated. In 1934, the National Guard facility, Kona Army Military Reservation (KAMR), provided additional land for a temporary camp to house private citizens working on the airport facilities. Following the outbreak of World War II control of the airport and the Hilo Army National Guard facility was transferred to the U.S. Army, and further airport expansion occurred. The Hilo Airport was renamed General Lyman Field in 1943 in memory of General Albert Lyman. Lyman was a Hilo native, who served as the chief engineer for the U.S. Army Corps of Engineers Hawaii Department. He died two days after President Roosevelt nominated him for promotion general.

In 1943 the Hilo Naval Air Station was authorized and facilities construction began旁边的 existing Hilo Army Air Base. The Naval Air Station facilities were completed in 1945. The station was placed on caretaker status shortly after World War II ended. The 7th Air Force was assigned to General Lyman Field in 1946 as a support Air Force based on Oahu. In 1947, the Hawaii National Guard was reactivated and obtained one of KAMR facilities.

The airport was returned to civil control in 1952. A new, $600,000,000 airport facility was dedicated in 1953 and the rest of the 800 acres of Hawaiian Homes Commission land was sold for airport expansion. In 1956, and 1953 acres of Commission land was acquired through a land exchange. In the late 1960s, funds were allocated to expand the airport to accommodate jet planes. New terminal and expanded airfield were dedicated in May 1970. By 1980, the Hilo Airport Division of the Hawaii Department of Transportation controlled 1,339 acres.

In summary, historical documentation indicates that the coastal portion of Waiakea Point was intensively settled and cultivated. The area was an important political and economic center. The coast to the west of the bay was used for fishing and gathering. Stacks of fish were placed at the mouth of the Waiakea River and Whiplash Reef. Some of the work was brought to a halt from quarries in Puna and Waiakoloa. The breakwater was completed in 1929.

By the 1980s, fast lanes were in place, and regular flights were provided. Sugar cane cultivation, cotton growing, and trans-Pacific trade was established, and the Hilo airport continued to serve the area.

Previous Archaeological Research

A brief discussion of the DLNR-SDPOD archaeological research and results identified 17 archaeological projects in Waiakoloa. Figure 7 shows the project locations. Table 2 summarizes the projects. Not included in the table are the studies by Sikes, Sikes and Dye, 1991, which focused on major sites, primarily located in western Hilo Bay, a survey of art by Island in the 1920s, and a survey of the Hanalei area. The total area of the previous studies included the current project area. Studies by Sikes and Dye, 1991, were completed in areas of historic significance. The final report of the surveys was completed in 1998. Olive Hilea, a facility manager, was responsible for Waiakaloa.

The surveys in Table 2 cover over 1,400 acres of Waiakea between sea level and 1,500 ft elevation. The only traditional Hawaiian site identified in the vicinity of the project area was an agricultural site, the Wahi Tapu, and two other sites reported by Hamwatt and Bush (2000). The trails passed through Survey Area 1. Hamwatt and Bush discuss the absence of traditional sites attributed to the extensive ground coverage of sugar cane cultivation and commercial and residential development of the Hilo area. The surveys identified by the surveys consist of thirty-three sites with over 340 features. Nearly all of the identified features are the result of some activity for sugar cane cultivation.
Table 2. Summary of Previous Archaeological Research

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* AR=Archaeological Research, RN=Reconnaissance Survey, IN=Inventory Survey, OR=Data Recovery

Figure 7. Previous Archaeological Work
McElroy (1979) listed 13 traditional Hawaiian sites, 15 historic sites, 211 historic sites, and 36 buildings. Most of the traditional sites were built by Kahoonda and Kanaaua. The remaining sites were identified during the statewide inventory. Nearly all were located along the coast. The sites include 17 structures, seven buildings, six platforms, five enclosures, three floors, and two other types of platforms, enclosures, and terraces.

McElroy used the limited site inventory and historical documentary evidence to develop a land use and settlement pattern model for the Kilauea area. The model consists of five distinctively defined zones: Central Settlement, Upland Agricultural, Lower Forest, Rainforest, and Side-plain or Mountain. The Central Settlement was located in the center of the island, between sea level and 200 feet elevation. The area was the most densely populated with both permanent and temporary habitations, high areas, and shrubland. Settlements were concentrated at the coast, and there were no large enclosures or buildings.

The Upland Agricultural Zone was situated between approximately 500 feet and 1000 feet elevation. Settlements in the zone were comprised of scattered residences among economically beneficial trees and agricultural plots of dryland and forest areas. Large tracts were utilized for agriculture. A pattern of shifting cultivation is believed to have converted the original forest cover to parkland and scattered groves of trees. This resulted in the cultivation of two important cereal grains.

The Lower Forest Zone ranged from 500 to 1,000 feet elevation. Timber and other forest resources such as medicinal plants, vines, and birds were gathered from the zone. Site types consisted of temporary habitations, trails, shrubs, and minor agricultural features in forest clearings and along streams. Sites in the Rainforest Zone (1,000-2,000 feet elevation) and Subtropical or Mountain Zone (2,000-9,000 feet elevation) were limited in size and associated with temporary habitations. These zones were used for inland travel and gathering of valuable resources including hardwoods, birds, and stone for tool making.

**PROJECT EXPECTATIONS**

Preliminary to early historic use of the project area was probably limited because the resource of settlement was along the coast and the lower reaches of the Wailua River. The only evidence of Hawaiian use reported for the project area consists of an agricultural depression and several mounds of stone (pali) marking the ancient Pali Trail, which extends through Survey Area 1. The area is characterized by the McElroy (1979) Coastal Settlement Zone and the Upland Agricultural Zone because it is greater than 0.5 miles inland and less than 1000 feet elevation. The very rocky nature of the terrain probably limited traditional use to gathering of forest and feral resources, through the area, and limited agricultural activity. Forest use was probably limited to grazing because the terrain is too rocky for sugar cane cultivation. Airport-related construction activity in this part of the 1950s resulted in extensive modification and development in the area. Historic sites dating to the 1950s would consist of airport-related infrastructure with roads and potential foundations for buildings and other structures.

**FINDINGS**

The archaeological survey identified three sites with five features (Figure 8). The sites consist of complexes of low historic/modern concrete slabs (Site 23001), a complex comprised of a terrace and wall (Site 23002), and a terrace wall (Site 23003). A fourth site, previously recorded as the Pali Trail (Site 23123), extends through Survey Area 1; however, no evidence of the trail was encountered during the survey. The results of the excavation of each of the four survey permits sites are described below. Surface testing was undertaken at one feature during the study (Site 23001, Feature A). The results of this excavation is incorporated into the following site description of this feature.

**Survey Area 1 and 2**

Survey Areas 1 and 2 are situated in the eastern portion of the project area. Survey Area 1 is located south of an existing parking area, and Survey Area 2 is situated east of the airport terminal and a runway. These areas have been disturbed by mechanical ground site activity evidenced by numerous bulldozer push plows and secondary vegetation growth. No archaeological sites are present in Survey Areas 1 or 2.

**Survey Area 3**

Survey Area 3 is located north of Kekaha Street, west of Alaska Avenue, and south of the main airport runway. This area has been subject to extensive disturbance and appears to have been completely disturbed. Portions of paved and dirt roads are present in the central and eastern portion of the area. The survey identified one site in this area consisting of a complex of two concrete slabs (Site 23001). Previous work (Henderson and Bush 2000) in the vicinity of this survey area identified evidence of a prehistoric trail (Site 23123). Site 23123.

Site 23123 consists of the Pali Trail, which extends from Hilo to Puna, and potentially to Kau. This trail has been described by several researchers, including McElroy (1979) who designated it as Site 18898, Lass (1997), who designated it as Site 23123, and Hammett and Bush (2000). Although no evidence of the trail was located within Survey Area 1, Hammett and Bush (2000) indicate that it extends through the park in a northeasterly direction.

Portions of the trail have been subject to extensive modernization. Hammett and Bush indicate that portions of the trail that pass through the Kaua‘i Military Reservation have been modified and are currently located as the primary road through the facility (2000:27). The northeastern portion of this section of trail is paved and the southeastern portion is a dirt road.

Initially this trail consisted of a four-foot wide, earth-finished surface path that corresponded to Apple's Type C Trail (typology 1963). This portion of the trail that passes through the Kaua‘i Military Reservation was subsequently modified for vehicular traffic.

**Site 23001**

Site 23001 is a complex of two concrete slabs located in the southeastern corner of Survey Area 3, south of Kekaha Street and west of Alaska Street (Figure 9). These slabs are rectangular in shape and are oriented in a northeast-southwest direction. The slabs are located on a relatively level, gravelly surface. The east side of the slab is 5.2 x 5.4 m, and from 0.08 to 0.1 m in height. The west side of the slab is 5.2 x 5.2 m, and from 0.03 to 0.04 m in height. There is a 0.2 m wide raised embankment extending along the northwestern side of the slab and the northeastern border of the eastern side. The slab is composed of concrete blocks.

There is a rectangular raised slab located along the eastern side of the Feature A slab, measuring 7.2 x 9.2 m (east-northeast to west-southwest). The slab is 1.05 m wide and 0.05 m in height above the surface of the main slab. A circular marble flagstone with the broken remnant of a ceramic tile is situated adjacent to this slab.
Figure 9. Site 23001 Plan Map

Figure 8. Map of Hilo International Airport Showing Survey Areas and Site Locations
A modern electrical box is located to the south of Feature A, just above the deep fills at Kukuau Street. No cultural remains were noted at Feature A.

The Feature B slab is situated 14.25 m east of Feature A. This slab is 4.0 m in length, 12.75 m wide, and has 0.05 to 0.45 m in height above the surrounding ground surface (Figure 11). No cultural remains were present at Feature B.

Site 23001 corresponds to the location of an abandoned radio tower site (RRB) site based on the airport facilities map. According to Mr. Larry Itahara, Assistant Airport Manager for the Hilo International Airport, this facility was abandoned at least 30 years ago to the vicinity of the current Naval Air Station swimming pool.

Survey Area 4

Survey Area 4 is located adjacent to Kukuau Street in the north and south of an airport runway. This portion of the project area exhibits varying degrees of disturbance. Numerous fill-in fields, push piles, and fill piles were noted in the area, although small, unexcavated areas were also identified. Two archaeological sites were identified in Survey Area 4. These sites consist of a complex of two features (Site 23002), and a stone wall (Site 23003).

Site 23002

Site 23002 is a complex comprised of a terrace (Feature A) and a low wall (Feature B). The site is located just north of Kukuau Street in an area densely vegetated with grass and shrubs. Feature A consists of a well-built stone terrace located on the southern side of a natural depression (Figure 12). The depression is roughly oval in shape, measuring 23.3 m long (east-west) and 12.5 to 2.7 m wide below the surrounding ground surface. There is very little soil in the basin of the depression. The terrace is comprised of a stone retaining wall built along the edge of the depression. This wall is constructed of stacked and faced rectangular basalt blocks and small boulders (Figure 13). It slopes inward from the back to the front, ranging in height from 0.44 to 1.1 m above the current floor of the depression.

The surface of the terrace is level and is crudely paved with small cobbles. The surface of Feature A is 15.8 m long (east-west) and 9.5 to 10 m wide. The southern side of the terrace abuts the base of a natural slope, that angles down to the north. No cultural remains were noted on the surface of Feature A.

A 1.5 m long by 1.0 m wide test unit (TU 1-1) was excavated into the surface of Feature A, exposing a single layer of tightly packed subangular basalt cobbles and small boulders, overlain by a sandy-loam soil (Layer 1). This layer of stones varied in thickness from 0.1 m at the retaining wall, to 0.6 m at the southern end of the excavation (Figure 15). No cultural remains were noted within TU 1-1.

Feature B consists of a low stone wall located 3.8 m upslope to the south of Feature A, and 1.35 m north of the area defined as Kukuau Street (see Figure 14). The wall is 9.8 m long (east-west), 0.29 to 1.0 m wide and 0.20 to 0.35 m in height (Figure 17). No cultural remains were noted at Feature B.

The function of the Feature A and depression is problematic. The feature is well-built and resembles a wall, however, it does not consist of either a terrace or a small road, and this is not a result of subsequent land modification because the surrounding terrain is unmodified. The terrace fills in a narrow paved surface between the central terrace wall and an overhang to the north. The surface is less than 2.0 m wide and is too narrow to be a typical habitation feature. The excavation in the terrace did not encounter any fill-related or soil remains providing further evidence that it is not a habitation feature. The excavation also did not encounter any evidence that it was not used for cultivation.

The adjacent depression has high, nearly vertical walls on all sides except for a narrow place at the eastern end where it is accessible via a moderate slope. The terrace extends the southern side of the depression along an overhang to the north. If the eastern end formerly had a low wall of stone or wood, then the depression could have served to block off grazing areas or cattle from its interior. Alternatively, it could
have served as a pen or trap for livestock. The former interpretation is potentially supported by the findings of the Flannery and Bush (2000) survey of the nearby Kundhaya Military Reservation. They identified a
low depression (Site 21409) that was modified with stone mounds 3-4 courses high around its perimeter. Although the interior of the depression lacked soil, Flannery and Bush conclude that the depression was
probably used by Havanahan for “mush-type agriculture” (2000:27). The Feature B wall is too low to be a
ranch wall and it is probably a segment of an agricultural enclosure or simply a stone closing feature.

Site 23003

Site 23003 is a stone wall found near the southwestern corner of Survey Area 4 at an 4.28 elevation.
The wall originates at the edge of the vegetation bordering Kekuanoo Street and extends 13.4 m to
to the north. The northern end of the wall has apparently been destroyed by bulldozer activity in the area.
The wall is constructed of rounded sandstone boulders and small boulders. It is 0.25 to 0.5 m wide at
the base and 0.7 to 0.8 m wide at the top (Figure 15). The wall ranges in height from 0.37 to 0.85 m. The
interior of the wall is core filled with small, nonangular stones. No cultural remnants were found in associa-
tion with Site 23003. The height of this wall and its method of construction suggest it functioned as a live-
stock control feature, likely used to restrict the movement of cattle. Site 23003 is altered and in fair to good
condition.
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Hammat, H.I., and A.R. Bula. 2000. Archeological Inventory Survey of Selected Portions of the Hawaii Army National Guard 503.6-acre Kualakai Military Reservation, Waikanae Ahupua'a, South Hilo District, Hilo Island (TMK:2-1-12-2 and 2-1-13-9).


Spear, R.L.  

Stokes and Dyk  

Waitomo 'Alaka'i Corporation  

Walker, A.T. and P.H. Bassandahl  

Winicki, L. D., Borthwick, and H. Harman  
APPENDIX F

CULTURAL IMPACT ASSESSMENT
Cultural Impact Assessment

Hilo International Airport Proposed Improvements

Waiākea, Hilo, Hawai‘i

Prepared For:
State of Hawai‘i
Department of Transportation

Prepared By:

February 2002

Prepared by
1907 South Beretania Street, Suite 400
Honolulu, Hawai‘i 96826

February 2002
1. INTRODUCTION

This cultural impact assessment was prepared in conjunction with the Environmental Assessment for the proposed improvements to the Hilo International Airport. The purpose of this assessment is to satisfy the requirements of Hawaii Revised Statutes Section 343-2 which was amended by Act 59 and approved by Governor Cayetano on April 26, 2000 to include cultural practices. This assessment provides an overview of native Hawaiian cultural resources, practices and beliefs pertaining to the ahupua'a within which the project site is located, and an assessment of potential impacts of the proposed improvements. In addition, the assessment focuses on the community of Keaukaha, which is situated immediately adjacent to, and which has had a long relationship with the Airport.

2. METHODOLOGY AND TASKS

This cultural impact assessment was prepared in accordance with the methodology and content protocol provided in the Guidelines for Assessing Cultural Impacts (Office of Environmental Quality Control, November 19, 1997). This included examining cultural resources, practices and beliefs of the ahupua'a within which the project site is located by conducting documentary research, and consulting with individuals and/or organizations with knowledge of the general surrounding area.

A literature review was conducted which included archaeological and anthropological studies and reports, historical and anthropological texts, published and recorded interviews and/or oral histories, land use records relating to Land Commission (Mahele) Awards, historical maps, and environmental and cultural assessments prepared for surrounding properties. Materials available at the Bishop Museum Archives and Library, University of Hawaii Kamehameha Library Hawaiian Collection, State Survey Office, State Department of Land and Natural Resources Land Division, State Archives, and State Historic Preservation Division were reviewed. A listing of references used in the preparation of this assessment is provided in the bibliography at the end of this report. This assessment does not repeat or include all that has been previously documented about the Hilo District, the ahupua'a of Waiakea, or the Keaukaha region. It does however attempt to provide the Hawaiian perspective of the historical traditions and cultural resources.
Three oral interviews with four individuals, all of whom have generational connections to Kekaha, were conducted for the preparation of this assessment. Two of the interviews were recorded and transcripts of the interviews were returned to the participants for their review. The third interview was not recorded, but a summary compiled from diligent note taking was returned to the participants for their review. Written verification and acknowledgement was received for use of the information in conjunction with the Environmental Assessment for the proposed improvements from two of the interviewees. Verbal permission was given for use of the information from the third interview in this report. Interviews and consultations previously conducted in conjunction with published archaeological, anthropological, historical and environmental review reports and texts were also reviewed.

Throughout this assessment the use and spelling of Hawaiian words with 'ōkina and kahakō for the most part follows the Hawaiian Dictionary by Mary Kawena Pukui and Samuel H. Elbert, and are not italicized. The spelling of place names and use of 'ōkina and kahakō is primarily based on Place Names of Hawaii by Mary Kawena Pukui, Samuel H. Elbert, and Esther T. Moockiri. As for direct quotations, the orthography of Hawaiian words and place names, and the use of italics are reproduced as they appear in the original source.

3. PROJECT LOCATION AND GEOGRAPHICAL EXTENT

This assessment was prepared for proposed improvements to the Hilo International Airport situated in the shupua's of Wai‘ani, in the moku of Hilo, present-day South Hilo, Island of Hawai‘i. The proposed facility improvements are to occur on a total of approximately 64 acres of land within the Airport property which encompasses approximately 1,246 acres.

The shupua's of Wai‘ani, and principally the cultural resources, practices and beliefs associated with the kahakoi (shoreline area), kualo (coastal plains) and wao 'anu'u (lowland wet forest) regions and the community of Kekaha, was the focus of this assessment. Situated on the windward coast of Hawai‘i Island, Wai‘ani lies on the lower eastern slopes of Mauna Loa and is bounded by the adjoining shupua's of Kikīloa to the north and the Hilo-Puna district boundary to the south.

4. A CULTURAL PERSPECTIVE

Surviving for generations isolated on a few small islands, Hawaiians amassed a wealth of knowledge about their environment, their land, and the creatures with which they shared these islands. The gods in their elemental forms directed the seasons, the nights of the moon, and the life cycle that ensured prosperity for the land and the people. There were specific times for planting, growing, fishing, harvesting, and times of kapu, or prohibitions, ensuring that the resources of the land and sea would be sustained.

4.1 Mai Ka Pū Mai – From Out Of The Darkness: The Kumulipo

Various cosmogenic genealogies including 'Opi‘a-kahonua (also referred to as 'Opi‘a-kahonua, Wai‘aholi, Palikai, and the well-known Kumulipo trace the emergence of these islands and their inhabitants. Composed many generations ago, the Kumulipo is a creation chant and genealogy, more than 2,000 lines long, that records generations of knowledge and understanding of the world. Not only a record of natural evolution and the origin of the Hawaiian people, this chant also contains the link of the chiefly lineages to the deities, the social and natural ordering, the traditional kapu system, and the value system which dictates the relationships between the myriad of life forms on the earth.

From out of the night, the time or darkness, born is the coral polyp, a simple life form and the beginning of the food chain for sea creatures. Born are the plants of the ocean, guarded by their plant counterparts on the land, establishing the relationship between that which is of the ocean and that which is on the land. Born are the creatures that swim in the ocean and born are the larger forest growth plants. The Kumulipo continues with generations of complexity. Born are the winged creatures, the crawling creatures, the walking creatures, the rat, and the dog. Then begins the second time period, and with the dawning of light it is the time for the birth of the gods and the deity forms. The Kumulipo orders the heavens and identifies the celestial bodies, and establishes social and political order, born are the chieftain, and born are priestly lineages. Then comes the time of Papa the Earth Mother and Wilkes the Sky Father and the foundations of tawa. Born is Hiloa the elder, and from where he is buried grows forth the kalo, the food staple. Born is Hiloa the younger, the first ali‘i and the progenitor of the Hawaiian people. The following excerpt lines of the Kumulipo show the increasing complexity of the creation chant and the connection of the Hawaiian to the environment.

1 'O ke au i kabiki-wela ka hona
2 'O ke au i ka huli-lelei-hana

When space turned around, the earth heated,
When space turned over, the sky reversed.
junior lineage cares for and serves the senior, and the senior lineage provides food and shelter. It is a symbolism. The lineage is ordered into parts, and each part is needed to complete the whole. Through this common genealogy, the value system is established whereby the ‘aina, or the land is an ancestor to be cherished and respected as a grandparent. This culturally prescribed behavior is exhibited through the concepts of aloha ‘aina and malama ‘aina, love and caring for the land.

4.2 Peleholomane and Hii‘iakakapōlopele

In addition to the birth and propelling of these islands, another important facet of the Hawaiian understanding of environment was the continued expansion of landmass and the establishment of fast growth on this new land. The sisters Peleholomane and Hii‘iakakapōlopele play a dynamic role in the creation and vegetating of new lands that is still witnessed on Hawai‘i Island today. Pele is the lava and the fire that both consumes the land and creates new land. It is her younger sister Hii‘ika that causes the first plant shoots to burst forth from the barren rock. Pele’s journey begins in Kahuikui from where she and some members of her family leave in search of a new home. They arrive at the northern islands of the Hawaiian archipelago and Pele tests the new land to determine if the island can accommodate her fires. She is unsuccessful on Nihoa Island and moves on to Ka‘uai, O‘ahu, and Maui. But she finds that these islands are also unsustainable. It is finally at Kīlauea on the Island of Hawai‘i where Pele and her family make their home at He‘iau‘uma‘u. From their home on Hawai‘i Island, Hii‘iakakapōlopele and the youngest and favorite sister journeys on an errand for Pele, to fetch her dream lover Lahi‘i from Ka‘uai. Hii‘ika’s journey is wrought with danger and challenge, not only a physical journey, but a spiritual journey that results in her maturity, growth and eventual emergence as a deity equal to her sister Pele.

As Hii‘ika begins her journey she travels through Waikīkī and enters the realm of Pana‘e‘wa, the forest and the mo‘o deity. Through her chants, Hii‘ika describes the beauty of her surroundings and the challenges she faces are unfolded. The following chants are just a sampling of the many chants found in Ka Mo‘olele Kia o Hii‘iakakapōlopele by Joseph M. Poepoe and Pele and Hii‘ika: A Myth from Hawai‘i by Nathaniel B. Emerson. There are some variations between the many versions of the Pele and Hii‘ika story, the chants, and the translations. These chants, just two versions of the long epic, are presented to provide a glimpse into the depth of the relationship and understanding that the people have with the land.
Great Pana'e'a, district of lehua flowers,
Ohi'a trees growing scraggily.
In the rain that saturates the red lehua
In the forked leaves the West Maui people
Hilo is engulfed in the darkness of the smoke
The multitude lives with the burning of the fires.

One's strength is exhausted, climbing, climbing
The countless valleys and edges of Hilo.
The streams without number of Kula'ipu'o.
The precipice walls of Kamake'e.
The path of Kula'ipu'o. Such a land is
Hilo-pali-ku.
The banks of Waikoloa are walked; the road to
its crossing hot sand.
Sandy the way at Wai-o-lama.
How-sherry the purr of twelve waters!
Great Pana-e'a, her parks of lehua,
Scraggly in growth yet scarlet as a top,
In her scarlet eyes at the world's!
Black night covers Puna and Hilo,
A pall from the smoke of my home land!

I am within Pana'e'a,
I see the numerous multitudes of the gods,
Dancing the lehua blossoms
Dancing in the forest,
Hilaika goes alone into the distance,
Without companions, without the friend.
This merciless god is Pana'e'a.

Upon vanquishing Pana'e'a and the horde of ma'o, Hi'iaka and her travelling
companions leave the Hilo area and travel through Hanakaua and on to Waipio as they
head towards Kohala. But Hi'iaka finds that she needs to turn back to rid the lands of

5. THE NATURAL LANDSCAPE

Situated on the eastern slopes of Mauna Loa, the varied landscape of Waikane extends
from Pu'u Kipu at an elevation of 6,289 feet above sea level, to the coast of Pual Bay and
Le'iKiwi.

The following excerpts recounting the winds of the Hilo and Waikane region come from
the lengthy wind chants found in the tradition of Kipiak'a and the winds of
La'auamo'o. The story of Kipiak'a and this particular wind chant has been recorded in
a number of sources including the Hawaiian language newspaper Ke Ao Oio in 1867,
a 1902 Hawaiian language reader, and the Forander Collection originally published in

C:\Wai\4017-C2_hwa\report\16\dec.30.1948
### Cultural Impact Assessment

<table>
<thead>
<tr>
<th>1918 and 1919. The different versions vary slightly, but the names of the winds remain the same.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aia ia, aie ia; a ka makani ku hana,</td>
</tr>
<tr>
<td>He Uahapele lo Kilauea,</td>
</tr>
<tr>
<td>He Awa ha Leleia,</td>
</tr>
<tr>
<td>He Puakea na Waikaa,</td>
</tr>
<tr>
<td>Uluia* Hei-peli-hei</td>
</tr>
</tbody>
</table>

*Note: Uluia is also a wind associated with Waikaa. (Pakei, 1984)

### Niihau International Airport

The lands of Waikaa were productive, and the resources of the different environmental and ecological zones were utilized to support the native population. Along the coast, fishponds were constructed to raise and harvest fish, an important source of protein.

Inland, the decomposed lava and consistent rainfall created fertile lands for growing kalo and other crops. Hala groves provided an abundance of hula hula for weaving and house thatching. The forest, which extended within a few miles of the coast, provided timber, an array of occupational and medicinal trees and plants, as well as a number of bird species.

The productivity of Waikaa and the ability to support a significant population was directly attributable to its extensive water resources. Traditionally, numerous fresh water springs and three streams watered the lands of Waikaa; Waiohina, Waikaa and Wailua. Along the western border of Waikaa, neighboring Kohala flowed Waiakea stream, and Waikaa and Wailua streams flowed through the center of Waikaa. These streams and springs provided for numerous fishponds along the banks of the streams and also along the coast. Some of the larger named fishponds included Waikaa, Maholu, Kaupulehu, Waiale, Ho'okini (also known as Pu'opoli for the 'ilii in which it was situated), Waione, Hanalei, Kanekoa, Kapaa, and Loko Waka (or Loko Akua). (Note: The names of these fishponds are compiled from a number of sources including testimony given before the Commission of Boundaries in 1873, and Government Survey Registered Map No. 1551. There are some discrepancies in the spelling of the fishpond names between these sources and other published sources.) The fishponds were stocked primarily with the fii of "tuna" (mullet) and awa (milkfish) and sometimes holo and served as an important source of protein. In Waikaa, the fish from Maholu, Kaupulehu, Waiale and Ho'okini fishponds were reserved for the ali'i. A description of these "royal fishponds" and the productivity can be found in the journals of Chester Smith Lyman from 1846.

> "June 30. Just after leaving the village we passed the royal fish ponds on the left. These are connected with the bay and contain the finest mullet in large quantity. They are tubes to the nates, and fish from the ponds cannot be purchased at any price. The ponds are navigated by light canoes made of bark, and on our return we saw a large number of them occupied by men engaged in fishing.

> June 30 P.M. Took a walk with Mr. Coan to the Royal Fish ponds, at the S.E. point of the harbor. They are of briskish water, rise and fall with the tide, and altogether cover several hundred acres. They are generally shallow, but in place of considerable depth. The fine mullet with which they are filled are tubes to all but Royal hooks or nets, and those are innumerable and large, neither natives nor foreigners can often get a taste of them. I saw them collected in a corner of one of the ponds as thick as they could be crowded together, and watched their motions for some time. They are a fine looking fish about a foot long, black on the back, with oily white... Lyman (1846) (Kelly, p. 14)

The ocean fisheries associated with Waikaa included Hilo Bay, Kekio Bay, and Puihi Bay were other important resources of the ahupua'a. A variety of fishing methods were employed some that required great skill while others were more recreational or social.

The following excerpt from Kamakau sheds some light on some of the different methods.

> ""Some kinds of fishing required a fleet of canoes, many nets, and many men; other kinds needed only two, three, or four men, and some, only one man. Fish was obtained in the greatest quantity with nets. Other main ways of fishing were with basket traps; with hook and line; by prodding about with a stick; by feeling about and grasping by hand or seizing between the fingers; by striking loose with stones (the 'poulu) and by dragging fish. A man could also fish with his hands, or with crab or shrimp nets, or with a pole from a lodge or the seashore, or catch fish in tide pools from meals net, or go along the shore with a net, or set a fishline; or search for fish with a small basket trap; or draw a net over sandy spots in the sea or up onto the shore; or drive fish into nets by splashing; or with a pole. But these were all expert ways of fishing... Superior to these ways were fishing with long lines and by diving"" (Kamakau, p. 59-60)

Fish was the primary source of protein in the Hawaiian diet. Some fish such as aku, ali'i, and 'o'opou were typically dried and could be preserved for consumption at a later time, or could be used in trade for other necessaries including kalo. Near to the shore and along...
the rocky coastline women and children typically gathered different varieties of limu, *'opihi, waa, hii'uke'uke*, *'�apan*, and crabs including, *'a'ama, 'alamahi* and *kukunu*.

The productivity of the lands and seas, abundant natural forest resources, the comfortable climate, and recreation sites supported a healthy population and endeared Waikiki to the ali'i class for generations.

6. TRADITIONAL LAND USE PATTERNS

Because of this great understanding of their environment, the land and the creatures that shared the land, Hawaiians devised a harmonious and prosperous existence with the land through various divisions of the land and ocean. One such division of land followed ecological zones, rainfall patterns, soil types and natural vegetation. These specific zones could vary from island to island, and by district depending on rainfall, vegetation, and areas of use. The following list of land divisions is compiled from various sources including, *Hawaiian Antiquities* by David Malo, *Hawaiian Dictionary* by Mary Kawena Pukui and Samuel Elbert, and *The Works of the People of Old* by Samuel Kamakau.

| Kalihiwai | Mountains at the center of an island, backbone |
| Kuliihina | Peaks or ridges which form the summits of mountains |
| Lae pea | Crests |
| Ko'olaua | Belt adjoining the rounded swell of the mountain, the mountainside, part directly in back of and front of the summit |
| Ko'ola | Belt below the ko'olaua in which small trees grow |
| Wai nahi'ele or Wai 'i'ele | Belt below the ko'olaua where the larger sized forest trees grow, inland |
| Wai kea | Forest region, timber land |
| Wai kea | Island region where koa trees grow |
| Wai o'pua | Mokai of the wai nahi'ele, the meads are tall |
| Wai 'eiwa | Island region |
| Wai mu'likale or Wai kele | Belt below the wai 'eiwa in which the monarchs of the forest grew, min belts, upland forest |
| Wai lani | Mountain area occupied by gods |
| Wai alu | Belt below the wai mu'likale in which again arise trees of smaller size, distill swampy region, inhabited by alua |
| Wai ka'ula | Island region where people may live or occasionally frequent, usually considered below the wai alu, the area that people cultivate |
| Wai 'ana'a or (Mau'a) *'ana'a* or *Mau'a* | Belt below the wai ka'ula where the *'ana'a* form groves and where men cultivate the land |
| Wai 'ili'ma or *'Apa'a* | Arid, hard, grassland, baked region below the *'ana'a* |
| Pah'e | Slippy, smooth, possibly named for a species of grass |
| Kula | Plain, open country, near to the habitations of people |

Within each zone, depending on the island and the district a variety of plants were available to the inhabitants for occupational, medicinal, and spiritual uses. Within the haupu'a of Waikiki there are five distinct vegetation zones that correspond with rainfall and elevation. The listing of plants in each zone is by no means exhaustive, but is provided to help identify the different use areas.

Kahakai (Costal Vegetation) — A primary habitation and gathering region were naupaka, *kapila, pu'o o Hii'uka, 'akulii, hala, hou, milo, isu, and kamani* plants can be found. In some areas of Hawaii'i island, the forest extended to the shoreline and was dominated by *'ohi'a lehua and luna*. These plants were very important and heavily used in everyday life by the Hawaiians.

Kula/Wai 'Aina (Upland Agriculture/Lowland Wet Forest) — Situated near the habitation zone, this was a primary cultivation and gathering region. In some areas of the island this kula region or grassland is large and is dominated by pili, ma'o, kou, nenii and 'ilima. In some areas, a lowland wet forest was dominant on the windward side of the islands. This region was dominated by *'ohi'a lehua and other vegetation included 'ana'a, hala, hou, kou, kukui, and ha'a.*

Waiakea (Lower Forest) — Also dominated by *'ohi'a lehua, this region was a primary gathering zone of hardwoods including large koa trees and plants for occupational, medicinal and spiritual purposes. Other plants that can be found in this zone include kapilana, *'ilele, hupu'a, 'awa, waaue, and 'ulaule. This zone was heavily utilized and provided woods for building, along and 'ilele fibers for cordage and basketry, mukau' for kapa and various food plants were grown along the streams or in cleared patches. Among other bird species the *'iwi, 'aupu'a, and 'ama'ama were trapped and these tiny feathers collected for lei, cloaks, helmets and feather goods for the ali'i.*

Wea Akua (Rain Forest) — Entering into the realm of the gods, gathering in this forested region was infrequent. Gathering may have been limited to necessity, if the needed tree, or needed size of the tree was not available in the waiakea, or for ceremonial purposes. The large hard wood trees such as *'ohi'a lehua and kou could be found in this*
zone along with hula, hā'īpua'a, 'elapa and many of the other species also found in the wa‘anana. This zone is also the home for the valuable 'i'ī and mamo birds whose tiny yellow feathers were greatly desired to produce feather cloaks, ropes, helmets, war gods and lei for the chiefly class.

Wao Ma'akele (Sub-Alpine/Montane Zone) — Similarly, this zone is dominated by 'ōhī'a lehua and koa however much larger in size. Other plants that can be found are ʻālai, ʻōheo, ʻāilani, and ʻōiwi. Above this zone Waitkea is cut off by ʻIlimau the ancient alii of the Hilo district that extends along the slopes of Mauna Kea. ʻIlimau also contained the great adz quarries of Mauna Kea which would have been a coveted resource of the Hilo chiefs.

The ocean was similarly distinguished and named in bands from the water’s edge along the coast, out to the sea, and the deep ocean. The naming of the ocean's zones could differ between islands and between districts of the islands depending on a number of factors such as whether the coast was rocky or sandy. A few of the many zones include:

- 'Ae kai or Lehua Water’s edge, where the sea and land meet
- Pāhoʻa, Hāohe or Pāhe Where the seas washes over the land
- Pāhe or Puʻu puʻu Where the water breaks and spreads towards land
- Puʻu pakalu or Kei kohola or Koholā General term for shallow seas towards the reef
- Kei hēle, Kō Sea for wading, or where foaming could be obtained
- Papa he'e Octopus grounds
- Kei 'ōpo'a or Kei 'ōpo Kei Fishing grounds of young fishes
- Kei iki Sea for diving
- Kei poʻoi Sea for pole fishing
- Kei iwa or Kei waʻa Sea for deep fishing
- Kei ʻēhē Where the sea is very dark blue
- Kei pōlolo Monē Ocean beyond
- Kei pōlolo au Kei kāwē The dark blue-purple sea of Kei kāwē that extends to the clouds on the horizon

Identifying that ecological resource zones are typically distributed in bands or belts around the islands, land divisions for resource management extended from the ocean fisheries to the mountains following natural ridgelines and topographical features. The following list of land divisions is compiled from the 'Indihi of Hawai‘i compiled and published by the Office of the Commissioner of Public Lands, Hawaiian Dictionary by Mary Kawena Pukui and Samuel H. Elbert, The Works of the People of Old by Samuel Kamakau and Hawaiian Antiquities by David Malo.

- Moku The islands were each divided into districts called moku.
- Kalana Division of land smaller than a moku, comprised of ahupua'a.
- 'Okana District or subdistrict, usually comprised several ahupua'a.
- Peko A smaller division within an ʻokana.
- Ahupua'a Land division smaller than a moku, kalana or ʻokana extending from the sea to the mountains and containing a sea fishery and sea beach, a stretch of kula or open cultivable land and higher up in the forest. Ahupua'a had definite boundaries, usually of natural features, such as gulches, ridges and streams. Perhaps the most vital resource management unit.
- ʻIli Many ahupua'a were subdivided into smaller management units called ʻili.
- ʻIli kōpono Nearly independent ʻili land division within an ahupua'a, paying tribute to the ruling chief and not to the chief of the ahupua'a. Transfer of the ahupua'a from one chief to another did not include the ʻili kōpono.
- Lele A feature of the ʻili which often consisted of several distinct sections of land, one along the sea shore, another in the isle lands, another in the terraced and walled terraced sections, and still another in the forest section.
- Ma'oe The arable portion of the ʻili were divided into small tracts or fields called ma'oe or ma'oe ʻāiki; a smaller division than ʻili primarily for cultivation purposes.
- Paukī Land division smaller than ma'oe.
- Kihapai Smaller than a paukī, this was a cultivated patch, a field or garden belonging to and cultivated by the tenants.
- Ke'ele Small unit of land farmed by a tenant for the chief.
- Pā'ālīs Same as ke'e. In later years were worked for the chiefs by tenants on Fridays only, named after the Hawaiian word for Friday.
- Kole Kole Small area near ahupua'a of which the tenant had improved or cultivated and used for their own purposes, and to which they substantiated their claims and perfected their rights, securing from the Land Commission an Award of Title in Fee Simple.
- Kanohiki The person who had charge of an ahupua'a, an agent who managed a chief's lands. The word kanohiki in time came to be applied to the land under such agent’s care, thus the land held by a chief, and ahupua'a or ʻili was known as “kanohiki land.”

Other less familiar terms for small pieces of arable land include: kaukau, hokupoa, malia, mai'a, kīpōho, puhalaw, and pā'ei.
Waikae was a large ahupua'a within the moku of Hilo, situated in a portion now known as South Hilo. Pi'opi'i was an 'ali'i kīpou of Waikae, and Honohono'oli was another smaller land division within Waikae. Makaukau, another smaller land section and heiau named for the husband of the goddess Hiina also associated with Makaukau and with fishing practices using ko'a (dedicated fishing grounds).

7. **WAIKAE - A ROYAL RESIDENCE**

One of the earliest accounts of Waikae is found in the exploits of 16th-century chief 'Umi-a-Liloa, son of Liloa, the paramount chief of Hawai'i Island. 'Umi-a-Liloa successfully challenged his elder brother's right to rule and proceeded to invade and conquer each district of Hawai'i Island until he had unified the island under his rule. Prior to conquering the district of Hilo, 'Umi-a-Liloa anonymously spends some time in the court of Koholu'a, chief of Hilo who lived at Waikae. Another important royal site in Waikae is Kaukukaukau, a famous surfing site where 'Umi-a-Liloa joins in a celebration of the Hilo chiefs. Kaukukaukau is on the western side of the Waiakea River and establishes this area as a place of courtly entertainment where hula and games such as pālau and hula were included in the evening's activities. (Kamakau, p. 15-17) In the following generations, 'Umi-a-Liloa's descendants continued to control and rule the unified districts of Hawai'i Island.

In the 18th century, the supremacy of Hawai'i Island was again in flux and it was a time of warfare between the district chiefs. It was 'Alapa'i, a chief with genealogical ties to the Kona district who emerged as the victor and again united the districts of Hawai'i Island under his rule.

"'Alapa'i lived for some years in Hilo, and it was while there that Keoua, called Ka-tani-kupu-a-ki-ka-tani-eul, fell ill of a lingering sickness at Pi'opi'i adjoining Waikae and died there in 1752." (Kamakau, p. 75)

With the death of Keoua, his older brother Kalani'iopu'u begins to challenge 'Alapa'i's right to rule. Kalani'iopu'u and Keoua were the hereditary heirs to the land of Hawai'i, but 'Alapa'i had seized it through force of arms. After a number of battles, Kalani'iopu'u was victorious and became ruler over the island of Hawai'i. During his lifetime Kalani'iopu'u must continue to do battle to quell the rebellions of the district chiefs.

"The heir of Mo'a was succeeded in Waipi'o at this time, and after its dedication by Ka-tani'iopu'u the chief set out for Hilo with his chiefs, warriors, and fighting men, some by land and some by canoe, to subdue the rebellion of I-maka-kalos, the rebel chief of Puna. In Hilo Ka-tani'iopu'u built the heiau of Keoua at Pu'uono and after dedicating it he went to stay at 'Ohia in Waikae while his army went to fight in Puna." (Kamakau, p. 108)

Soon after Kalani'iopu'u's death some of the Hawai'i Island chiefs formed a conspiracy to wrest the rule of the land from Kalani'iopu'u. Kalani'iopu'u's young son and heir, and give it to Kamehameha. After many skirmishes and battles Kilauea is killed in battle and the island of Hawai'i is divided between three ruling chiefs. Keoua Kū'ī aloha becomes the ruling chief over Kohala and Puna, Keawaena'uli rules over half of Hilo, half of Puna and half of Hamakua, and Kamehameha took Kona, Kohala and half of Hamakua. Keoua Kū'ī aloha kills the Hilo chief Keawaena'uli and ravages Kohala. Kamehameha who is spending time in Moloka'i returns to do battle, but after much fierce fighting the two sides divide with Kamehameha returning to Waipi'o and Kohala, while Keoua stayed at Hilo.

"At Hilo Keoua divided the land among his chiefs and warriors; the 8th net of Waikae and Pi'opi'i became theirs." (Kamakau, p. 152)

In the end it is Kamehameha who finally takes control of Hawai'i Island, and Hilo with its kaulua forest becomes an important headquarters for the construction of war canoes and other preparations for war needed to support Kamehameha's quest for the neighboring islands. In *Hilo Bay: A Chronological History* compiled by Marion Kelly, Barry Nakamura, and Dorothy Barrett the following account of Kamehameha's time in Waikae is found in the journals of Archibald Menzies, the naturalist aboard Captain George Vancouver's ship the Discovery in 1794.

"January 9th: having reached abreast of it [Waikae] within three or four miles of the shore...we shortened sail...and have to wish our head to the shore. A boat was hoisted out from each vessel and sent manned and armed under the direction of Mr. Whidbey to examine this reported harbor. Some time after the boats left us we were visited by a few of the natives mostly in single canoes...Not long after these, a double canoe was seen coming off...In this we saw recognized our old friend, Kamehameha with some other chiefs...As they came from the east side of the bay, they missed meeting with our boats who kept the western shore close on board going in [Menzies 1920:138].

As it was given out last year that it was our intention to anchor here with the vessels...Kamehameha said that he remained on this part of
the island on purpose to receive us, and that he had been for some time looking out for us with daily expectations... [Hbl.140-141]

Regarding Vancouver’s visit to Hawai’i Island Kelly et al include the following discussion and conclusions drawn from the journals of other explorers in Hawai’i at the time.

“Protesting that he should not leave Hilo, where the concluding ceremonies of the Makahiki season were yet to place, Kamehameha was nevertheless prevailed upon to sail with Vancouver to Kealakekua (Vancouver 1967:3-6). There may have been other reasons for his reluctance: Edward Bell, clerk of the Chatham, wrote of this encounter that Kamehameha did not want to leave Hilo because he had already collected a large supply of hogs and vegetable products expressly for this visit; secondly, that the area was preferable to that about Kealakekua; that the surf was greater here (in which lay one of his greatest amusements) and lastly, that all his canoes and property, including firearms and ammunition, were here (Bell 1929:2:181). Bell’s account indicates that Kamehameha had been in residence in Hilo for some time, perhaps a matter of several months.

“Kamehameha’s plans for spending the 1793-1794 Makahiki season in Hilo would have been known since the previous year when he made the agreement with Vancouver to be in Waikiki upon the latter’s return. Thus, there was ample time for the people of the area to expand their plantings up into the Hulea lands, or open country back of Hilo Bay, in anticipation of the coming of Kamehameha and his court of well over a hundred persons, as well as for Vancouver with his crew of 145 men.” (Kelly, p. 9)

It was not until 1810 after many battles that Kamehameha finally united all of the Hawaiian Islands under his rule. For 13 years he had fought to unite the islands and he ruled them for 23 years. At the age of 83 on May 8, 1819 Kamehameha died at Kaimuki, Kailua, Kona, Hawai’i. Upon his death his personally held lands including Waikiki, descended to Liholiho, his son and heir to the kingdom. All the large ‘ili kōpōno which included P’op’o, Kamehameha had given to his wife Ka‘ahumanu. (II, p. 70)

Upon the death of Liholiho Kamehameha II, his younger brother Kauikeaouli Kamehameha III became king. During his reign in the 1840s, land tenure in Hawai’i entered a transitional period terminating in the “Great Mahele” of 1848, which furnished the facility for the acquisition of real estate in fee simple. Kauikeaouli after reserving certain lands for himself as his own private property, surrendered the majority of the lands to his chiefs and people. The lands of Waikiki were retained by Kauikeaouli and became part of the Crown Lands, set aside for the prosperity of the kingdom. As for the ‘ili kōpōno of P’op’o and the lands of Honohonou, these went to Victoria Kamānana, granddaughter of Kamehameha I and heir to Ka‘ahumanu.

8. SETTLEMENT PATTERNS

The settlement patterns of the maka‘ainana, cultivation practices and relationship to the environment has been studied in great detail by E.S. Craighill Handy. The following excerpts from his early publication describe cultivation methods in South Hilo, Waikiki and Kealakekua.

“In lava-strewn south Hilo there were no streams whose valleys or banks were capable of being developed into terraces, but cuttings were dug into the ground on the shores of lagoons for many miles along the course of the Waikiki River far up into the forest zone. In the marshes surrounding Waikiki Bay, east of Hilo, taro was planted in a unique way known as laau kipi. Long mounds were built on the marsh bottom with their surface 2 or 3 feet above water level. Upon the top and along the sides of these mounds taro was planted. Flood waters which occasionally submerged the entire mound were said to have done no harm, as the flow was imperceptible. This swampy land is now abandoned to rank grass. Kipi (mounds) were also formerly made along Aleahio Stream, above Hilo. I am told that farther seaward in Waikiki, taro is still grown in the ingenious method of heaping up around a taro, which is submerged in water, and held upright by chunks of lava; the stones presumably accumulate refuse enough to nourish the taro, along with the food taken in by the roots from lava and water.

On the lava-strewn plain of Waikiki and on the slopes between Waikiki and the Waikiki River, dry taro was formerly planted wherever there was soil enough. There were forest plantations in Punalu‘u and in all the lower fern-forest zone above Hilo and along the course of the Waikiki River.” (Handy, 1940, p. 125)

Handy includes the following description of Waikiki from the diary of William Ellis who made a tour of Hawai’i Island in 1823 to select prospective mission stations.

“The face of the country in the vicinity of Waikiki is the most beautiful I have yet seen...”
vulcanic eruption. The light and fertile soil is formed by decomposed
lava, with a considerable portion of vegetable matter. The whole is
covered with a luxuriant vegetation, and the greater part of it framed into
plantations, where plantains, bananas, sugar-cane, taro, potatoes and
melons, come to the greatest perfection. Groves of coconut and bread-
fruit trees are seen in every direction, loaded with fruit or clothed in
luxuriant foliage."

Regarding 'ula or sweet potato another staple crop, Hulb describes cultivation in
Waikiki and Kekaha:

"Sweet potatoes have never been grown much in the wet lowlands of
South Hilo, but today there are a number of Hawaiian gardens in upper
and lower Waikiki, and about Hilo town where sweet potatoes are raised
successfully by very high mounding so that tubers and foliage do not
mould from constant rains and damp soil. In the prosperous Hawaiian
settlement of Kekaha, I am told, a first crop of sweet potatoes may be
successfully grown in the shallow soil on top of the lava, but subsequent
harvests raised on the same ground are small and very bad." (Hulb, 1940,
p. 165)

8.1 The Mafele of 1848
In the 1840s during the reign of Kamehameha III, land tenure in Hawaii's
terrestrial period terminating in the "Great Mafele" of 1848. King
Kamehameha III who inherited control of all the lands with the kingdom chose to provide
the opportunity for free sale ownership of land to the chiefs and people. The
chiefs, maka'ainana, the native tenants, were able to make claims for and receive title to their
kuleana, the areas of land they personally used. Kamehameha III after receiving certain lands for himself as his own private property, surrendered the
majority of the lands to the chiefs and people. The lands of Waikake became part of the
Kamehameha lands, set aside for the prosperity of the kingdom. As for the 'ilu kane'o of
Pi'ipiri and the lands of Honokohou, these were set aside for Kamehameha I and heir to Ka'makanu under Land Commission Award 7913.

Within the shupu'a of Waikake a total of 37 native tenants made claims to lands of
which 27 were awarded. None of the awarded lands are situated within the project area.
The claims are recorded in the Native and Foreign Registers which typically includes
information regarding the location of the claim, and sometimes information regarding the
period of occupancy. Additional information regarding the claims and use of the land can also be
found in Native and Foreign Testimony records. Most of the claims were made for

9. KEAUHKAH HAWAIIAN HOME LANDS
In the early 1900s, Prince Jonah Kiih Kalaanui'Aole recognized that the population of
full-blooded Hawaiians was steadily decreasing and he sought out ways to revitalize the
Hawaiian people and get them back on the land. At the request of the Legislature of the
Territory of Hawaii and the persistence of Prince Kiih Kalaanui'Aole, the United
States Congress passed the Hawaiian Home Commission Act in 1920. The Act reserved
20,500 acres of public lands to help realize Prince Kiih Kalaanui'Aole's vision of 'Ali'i
Honopahalupa, or "restoration through the land." The lands set aside for the Hawaiian
Commission were poor quality, typically barren. The Commission lacked any
substantial budgetary support to assist homesteaders or to pay for infrastructure
improvements, and homesteading in the early years was slow and difficult.

In 1920, the original draft of the Hawaiian Home Commission Act did not include any
lands in Waikake. The Territorial Legislature inserted these lands, and several others, in
their amendment to the Act in 1921. In 1924 the Hawaiian Home Commission set the
marest and bounds for land in Papa'a and Kekaha. Hawaiian Homes Commission
Resolution #2 dated, April 19, 1924, created Kekaha Tract I consisting of 261.52 acres
and Kekaha Tract II consisting of 1,370.48 acres. House lots were acquired in
Tract I, however, over time much acreage in Tract I has been taken for various State and
County uses. (Palo Alto, p. 4) Other lands were sold to private interests justified by
the need to raise funds to pay for roads and waterlines. Originally referred to as "Kiih Kalaanui'Aole Settlement," Kekaha was the second unit of homestead lands offered, the first
settlement was on the island of Molokai. According to the Executive Officer and
Secretary of the Hawaiian Homes Commission in 1925, Kekaha was "not suited to
agriculture, therefore the lots will be offered to Hawaiians who desire to possess land upon which to erect their own homes. There are large numbers of
Hawaiians in and about Hilo who desire lots, and it is expected that working men will
form a majority of the applicants." (Kelly, p. 226)

In 1989 Phea Akei compiled an oral history of Kekaha in celebration of the 65th
anniversary of the community. "Ku in Home 1 Kekaha" includes the recollections of
many of the original homesteaders as well as Hawaiians that were living in the Kekaha
area before homesteading began. Many of the homesteaders living in Keaukaha today
descend from people interviewed by Ms. Akoit. The following excerpts are but a brief
glimpse of the history and people of Keaukaha and is provided to show the generational
relationship that these homesteaders have with the land.

"I...lived in old Keaukaha before Hawaiian Homes ever was. Those days
where I lived was part Seaside...Down there for our livelihood we fished,
we picked ohia, wasa, from the beach we lived on. To preserve our fish,
we cleaned them, slit, salted and then dried them. I loved fishing with the
pois, and we use to have black crab (aamu) shrimp and he'e (squid). We
planted sweet potatoes, our own taro, bananas, peanuts and cassavas.
There were always cattails planted in the different yards, sugar cane
too...I was about fourteen when I moved to Keaukaha. There
were only houaha, guava, bula and ohia trees and afterwards people
started to clean. They cleaned with cane knives with the picks, and they
worked so hard on the land. Later years, the place all bloomed like a
rose." (Akoit, p. 11)

"Now this modern generation wonders how can people raise big families
and provide food for them? I followed what my father did. We had taro,
sweet potato, sugar cane, a few chickens, pigs, and there was plenty of
fish. Sugar cane was our sugar, and we dried up the ocean water and got
our salt." (Akoit, p. 17)

"For food, my parents would plant sweet potatoes, bananas and taro, a few
vegetables...This home did not belong to Hawaiian Homes
Commission...Then when the Hawaiian Homes area opened my mother
applied for a place here. We moved (on this land) when I was nine before
Hawaiian Homes opened. My mother and a few of the other homesteaders
were the first homesteaders here. I remember those days because we
didn't have any water system like pipelines. No electricity too and
everyone went in back of Anuwi to do their washing...At this time the
loan from Hawaiian Homes was very hard to get. I remember Mr. Duncan
saying it didn't matter what kind of house we built and you should see
there were all kinds of nicknames given for houses built in Keaukaha.
They called them the County tool boxes because some were made from
the piano boxes, just as long as there was enough room to go in." (Akoit,
p. 25-26)

In addition to providing some insight to family life during the early days of the
Keaukaha settlement, these oral histories also reveal some very important cultural use
and resource information.

"There were no funeral parties. We buried our people in our yards or in
caves where the airport now is...On September 23, 1925, the Hilo
Tribune Herald reported an old Hawaiian burial cave was found by
hikers near the Hilo Airport. They had been told by an old
Hawaiian living in the area that they were venturing into sacred ground.
Therefore they were cautious and kept a sharp lookout for burial
evidences." (Akoit, p. 48)

"We were not afraid of sharks. My mother taught us that there was always
one shark that took care of its own area, from one end of the bay to the
other end. We would give the shark some of our fish." (Akoit, p. 48)

"This area of Keaukaha has much to offer as far as history, that is not
recorded today. We have two heiaus that I can think of. One is Puki
which was a fishing heiau. The other is in the pond of the Keypo family.
There were two mauo (sharks) in Puki. According to the old folks, these
mauo were the white kind. It is said that one family use to be related to
this mauo. The old grandmother of this family would go to the heiau
every morning take food out of the bag and feed the mauo everyday.
It was sort of a sacred thing for this family, and whenever they went to
the beach, it protected them. There's another story that is very interesting. It
speaks of Puohononito...Puohononito is the home of a kupa. Kupa is
somewhat like an evil person. This one was referred to as a big
crocodile or le'a...It was said that in Keonekahakaha there was another
kupa who was a great big white turtle. He would roam the waters there,
and all the way down to Seaside..." (Akoit, p. 22-23)

"...at Onokakaha there is a heiau. It looks like a rock pile but that is a
heiau." (Akoit, p. 14)

Extensive research on the history of the Keaukaha settlement is provided by Kelly et al in
Hilo Bay: A Chronological History. Compiled from Hawaiian Homes Commission and
Territory of Hawai'i Aeronautical Commission records, the following excerpts expose
the conflict and strain between Keaukaha homesteads and Hilo Airport.

By mid-1927, the actual number of house lots which the Hawaiian Homes Commission
had allotted at Keaukaha was 185 (Hawaiian Homes Comm. 1927-38-41). Of these 185
house lots, 95% were occupied, with 60 homes built and 20 more expected to be
completed by the end of 1927. The Hawaiian Homes Commission admitted:

...The only encouragement the Commission is giving these people is in
the building of their roads. The demand for these house lots is growing
daily, more applicants than there are lots available. The heavy outlay for
road construction and the funds of the Commission being limited,
extensive road construction becomes impossible. Although at this time
the Commission is planning to extend Andrews Avenue from Desha to
By mid-1929, the Hawaiian Homes Commission had allotted 239 house lots at Keaukaha, and 205 of these were occupied by Hawaiian families. The Keaukaha settlement had been visited in 1928 by Dr. Elwood Mead of Washington, D.C., a representative of the U.S. Department of the Interior, which oversaw the Hawaiian Homes Commission. In a letter to the Secretary of the Interior soon after his visit, Dr. Mead described the Keaukaha settlement as “an unqualified success.” (Kelly, p. 229)

Following these early years the Keaukaha settlement continued to experience growth in the 1930s. By 1933, the population of Keaukaha had grown to 1,300 and the settlement consisted of 219 one-acre lots of which approximately 175 had improvements and 201 were occupied. Although the population in Keaukaha had declined to 964 in 1939, the settlement was being expanded with the construction of a new subdivision consisting of 180 half-acre lots. At this time the threat of World War II loomed on the horizon and in 1939 the chairman of the Hawaiian Homes Commission, Frederick G. Knapp, reported:

“During the past two and a half years, it has been advisable for the Commission to temporarily “transfer” to the control of the Commissioner of Public Lands...and to be set aside by Executive Orders for...an addition to the Hilo Airport,...which will require Congressional amendment...to make such transfers permanent.” (Kelly, p. 234)

9.1 Hilo Airport and Keaukaha Hawaiian Land Homes

Nearly simultaneously with the development of Keaukaha Hawaiian Land Homes, in 1929, construction of Hilo Airport began. The following detailed history of the development of Hilo Airport can be found in Hilo Bay: A Chronological History.
and smooth sand and coral runway approximately 400 feet wide and 2,800 feet long. When completed, this field should have three runways, one 2,200 feet, one 3,200 feet, and one 4,000 feet in length and all 500 feet in width...

On October 6, 1929, the Inter-Island Airways, Ltd., began actual operations. The decade of the 1920s was one of development and expansion of Hilo Airport and included: (1) development of the main runway; (2) the need for a "cross-wind runway"; (3) development by Inter-Island Airways, Ltd., of a terminal building and an airplane shelter; and (4) request for additional land for expansion. (Kelly, p. 234)

As tensions leading up to World War II increased, the Hawaiian Homes Commission found it advisable to transfer lands to be set aside for an addition to the Hilo Airport. At the outbreak of war, Hilo Airport was taken over by the Army Engineers, and an Air Corps fighter squadron stationed there. The Engineers constructed military installations and continued the expansion of runways, taxiways, and parking aprons. This began a period of turmoil for the Keauhou settlement stemming relations between the residents of Keauhou and Hilo Airport. According to the executive officer of the Hawaiian Homes Commission, Julian R. Yates, in 1943:

"The war has played havoc with the entire [Keauhou] project because of the requirements of the military authorities: twenty-two (22) brand new homes were demolished and eight (8) others were moved to make way for military installations. The prospects for the future are anything but bright."

Albert Nahale, a recreation director of the Commission reported:

"Early in January, 1942, fifty Keauhou lessees and their families were evacuated and their lots taken over for the expansion of the Hilo airport. Damages in the amount of $78,755.86 were paid to these lessees. The homes of some of these lessees were moved onto other lots in the Keauhou area but most of the evacuees moved to Hilo proper. (Kelly, p. 234)

The name of Hilo Airport was changed to General Lyman Field by Joint Resolution of the Territorial Legislature on April 19, 1943.

After the war, military operations at Hilo Airport steadily decreased, and in September 1946 it was returned to the Territory for operation as a civil airport however, operational control was retained by the Air Force. It was not until 1952 that the airport was returned to civilian control by the surrender of leases, easements, licenses and permits and improvements were transferred to the Territory by the Federal Government. (Hawaii Aeronautics Commission, p. 35) In 1952 Executive Order No. 1519 set aside a significant portion of government land and former Hawaiian Homes Land to the Hawaiian Aeronautics Commission for the Hilo Airport. It is interesting to note in the land descriptions and maps of that time "Aloha Grove Reserve" is identified which is currently a portion of the taxiway and clearance area near the Airport Maintenance Bazaar.

By this time Keauhou residents had been affected by expansion projects at Hilo Airport and they became aware of another county plan that involved Keauhou homestead land. The following excerpt provides the perspective and understanding of these actions on Hawaiian homestead land.

"In the 1940's the county designed a twenty year plan which included the reversion of the Keauhou homesteads land from residential to a light industrial area. This land had become important and now was worth millions of dollars. Its location near the wharf and airport was ideal. The request to change Keauhou's status was okayed by the Department of Hawaiian Home Lands - thus the state became involved.

The first phase of the plan was the extension of the airport which required the lots of sixty-five Keauhou homes. The homesteaders were evicted from the Mohala district but many refused to stay there. The Department of HHL obtained the charging of Punaewa agriculture lands to urban status, thus making it possible for the evacuees to build homes on Hawaiian Home lands. It was important to them to be on Hawaiian lands.

Meanwhile in Keauhou, whenever the homes needed repairing or when it was necessary to build a new home to replace a broken-down one, the homesteaders were told they could not do so. Even if they were to use their own money! Some whose homes needed immediate attention moved out of the area as no relief was in sight.

Then the rezoning plan was discovered. Numerous homestead meetings were held. In 1956 Keauhou was rezoned to light industry an action that was contrary to the Hawaiian Homes Act! Now the people understood why they were not allowed to repair or build new homes. The plan was to eventually move all the homesteaders out of Keauhou.

More meetings were held and in 1970 a lawyer friend of the Keauhou Association, Stanley Rochig, assisted the officers in drawing up a Keauhou Homesteaders Petition Statement and a Petition..."
demanding the rescinding of the rezoning. The petition was taken house to house and 99% of the homesteaders signed it. These were sent to the Attorney General's office where because of governmental bureaucracy it lay stalled.

The association held money raising activities to send representatives to the outer islands - wherever the Hawaiian Homes Commissioners were meeting to plead their case. It seemed they were lobbying in vain.

In 1972 Mr. and Mrs. Albert Ahuna went to see then County Chairman Shonichi Kimura who immediately called the Attorney General for the opinion on the Keaukaha Case. The next day it was to have been delivered to his office.

The commissioners next meeting was to be at Keaukaha. Mrs. Ahuna, who was association president, approached Mrs. Abbie Naegaki, our commissioners to check the status of the situation. About 15 residents picketed the outside of the building.

The outcome of the meeting? The Keaukaha homesteaders won! All the years of frustration, working, lobbying and yes, praying were over. Their land that had been taken from them illegally was to be returned at last!

In 1974, the 50th anniversary of the Keaukaha homesteads, the land was officially zoned back to residential." (Akoi, p. 72-73)

Relations between the Keaukaha settlement and Hilo airport were additionally strained when in 1958, Territorial Governor William Quinn set aside by Executive Order No. 1841, nearly 92 acres of Hawaiian Homes Commission land, to be used by the airport for a runway. This area had already been subdivided and affected 66 homestead lots and portions of roadways. The agreement that allowed the transfer of these lands to the Hawai'i Aeronautics Commission also called for a land exchange between the Territory of Hawai'i and the Hawaiian Homes Commission. The land exchange was never carried out and these 92 acres became the focus of contention between the Hawaiian Homes Commission, Keaukaha residents and the Department of Transportation from 1975 to 1980.

In 1962, Executive Order Nos. 2025 and 2027 transferred 194.215 acres of Hawaiian Homes Land in Keaukaha to the State Department of Transportation for the extension of Runway 8-26. Approximately 146 acres of this area had already been subdivided into homestead lots and access roads, affecting 216 homestead lots and various roadways. In exchange, the Department of Hawaiian Home Lands received 192.691 acres of land in Puna'e'o and 1.315 acres in Keaukaha. Soon after, in the late 1960's the State embarked on plans to develop a jet-capacity terminal for Hilo, which was completed and dedicated in 1976.

In 1975 in response to an inquiry from the Department of Hawaiian Home Lands, the Attorney General opined that the setting aside of Hawaiian Home lands by Executive Order No. 1841 was improper. The Hawaiian Homes Commission commenced civil action and while awaiting a ruling, local native Hawaiians, Keaukaha residents and supporters staged two protest demonstrations against the improper transfer of Keaukaha Hawaiian Home lands for airport use. On July 4, 1978, Hawaiian activists blocked traffic at the Hilo Airport, and again on Labor Day of the same year activists marched onto a runway at the Hilo Airport resulting in 51 arrests. All charges against the demonstrators were dismissed. On August 14, 1980 the Circuit Court ruled that Executive Order No. 1841 was illegal and thereby, null and void. As a result, the Department of Transportation was required to make rental payments for the use of the 92 acres of illegally acquired Keaukaha land. (Hilo Advertiser, B15/89 and Honolulu StarBulletin, B15/89).

The Department of Hawaiian Home Lands and the Department of Transportation entered into an "Interim Agreement" on April 6, 1981 whereby the Department of Transportation agreed to make interim rental payments of $36,000.00 per month to the Department of Hawaiian Home Lands for the continued use and possession of the Hilo Airport property. The agreement also stipulated that the affected agencies make a genuine effort to resolve all existing airport disputes.

The nine air carriers using Hilo Airport took civil action alleging that their contract with the Department of Transportation did not include rental payments to the Department of Hawaiian Home Lands. On July 21, 1981 the airlines and the Department of Transportation entered into the "Airlines Settlement Agreement" whereby the defendant airlines agreed to relinquish their interest in various airport improvements and funds, and were released from further participation in the "Interim Agreement".

In addition to the land disputes between the Department of Hawaiian Home Lands and the Department of Transportation related to Hilo Airport, there were similar disputes involving Hawaiian Home Lands and lease rentals due for Kamuela Airport in South Kohala, Hawai'i and at Molokai Airport.
To resolve these outstanding land and lease rent disputes, on November 30, 1984, the Department of Hawaiian Home Lands, Department of Transportation and Department of Land and Natural Resources entered into what has been termed the "Tri-party Agreement". In simplified terms, the Department of Hawaiian Home Lands would agree to exchange 167.285 acres of land at Hilo Airport, Kamehameha Airport and Molokai Island Industrial Development for 34.82 acres of State lands at Kailua Industrial Park. The Department of Transportation would convey to the Department of Land and Natural Resources excess airport land at Hilo and Kona. In addition to the land exchange, a fund was to be established to repay the Department of Hawaiian Home Lands for lease rental due for use of the airports prior to the agreement. On April 23, 1986, an exchange deed transferred the lands between the State Department of Land and Natural Resources and the Department of Hawaiian Home Lands.

The result of these numerous transfers of land and the displacement of many Hawaiian homesteaders from Kaukaha has been a lingering feeling of betrayal and mistrust towards the Department of Transportation. Some members of the Kaukaha community are wary of any proposal related to Hilo Airport and because of the manner in which land was previously taken from Hawaiian Home Lands time and time again, many community members are suspicious of Department of Transportation activities. In the past, the actions that have led to the development of Hilo Airport as it exists today have been at the expense of the Kaukaha Hawaiian Homestead community.

10. INTERVIEWS AND CONSULTATION

Interviews or consultation with kama'aina confirm many important cultural practices and values. Interviews demonstrate how cultural knowledge is passed down through the ages from one generation to the next. Interviews acknowledge the permanence of the cultural value system and the continuity of cultural practice and use. Interviews show the individual relationship to people and place, and exhibit the personal value. Technical studies and historical texts are typically compiled by those not of the land or culture who are unable to understand or convey cultural value or significance. Because of this inability to understand cultural value, the significance of cultural areas, uses and practices are for the most part diminished in historical studies and texts. By including the words of the kama'aina, the people of the land, an interview can begin to reveal the cultural attachment that is usually difficult to communicate. Interviews and oral histories compiled by various sources over many generations make it possible to understand the cultural fabric of a place, genealogical connections, cultural attachments and the relationships between people, each other and their environment.

10.1 Oral History of Kaukaha

In 1989 Ms. Rea Aoki, a resident of Kaukaha, compiled Ku‘u Home I Kaukaha: An Oral History, a collection of personal interviews and printed material to preserve the memory of, and in honor of the early residents of Kaukaha. Interviews and contributions of more than 25 individuals are compiled in an impressive and comprehensive history of Kaukaha as told by the kama‘aina of Kaukaha. Excerpts from some of these interviews relating to cultural practices, the area of use, and relations with Hilo Airport have been incorporated in the previous sections of this report. This is but a small portion of the information that can be found in this report.

10.2 Project-Specific Interviews

In conjunction with the preparation of this report, four individuals were interviewed in these interviews. Two of the interviews were conducted in a formal, recorded interview format with a set of questions. The recorded interviews were transcribed and returned to the interviewees for their review along with a verification and acknowledgement form. Both interviewers reviewed the transcribed record, provided edits and comments and returned an edited copy of the transcription and a signed verification and acknowledgement form. The third interview conducted with two individuals was not taped but was recorded by diligent note taking. The third interview primarily focused on the State Department of Transportation’s proposed improvements at Hilo Airport and the effects on cultural resources, use and practice. During the interview the project summary, a map identifying the proposed improvements, and the botanical survey and archaeological inventory survey prepared for the proposed airport improvements were made available and discussed. Aerial photos as well as the following maps were also available during consultation: 1917 USGS Hilo Quadrangle, Registered Map No. 1561 (1891 Hilo Town and Vicinity), Registered Map No. 524 (1851 Plan of Waikiki) and a 1938 Map of the Island of Hawai‘i.

These interviews demonstrate how traditional knowledge is passed from one generation to the next and through comparison with the interviews compiled by Ms. Aoki it displays a continuum of cultural connection, use and practice on the lands of Kaukaha. These
Interviews contain personal knowledge and activities, and reaffirm the individual's connection to the family, the people of the area, and the land itself. Interviews were conducted with Ms. Ualani Kanaka'ole Garmon and Ms. Pualani Kanaka'ole Kanahale. Ms. Kanahale is one of the kumu hula of Hālau O Kekahi, and her sister Ms. Garmon is ho'oppa with Hālau O Kekahi. Their parents Edith and Luke Kanaka'ole participated in the 1989 oral history project, and this current interview exhibits the continuous of generational connection to Keaukaha and continued cultural practice and use that exists for many Keaukaha families. Keaukaha Community Association president Mr. Patrick Kahawiola'a was also interviewed and shared his recollections of growing up in Keaukaha and his relationship with many of the participants who were interviewed in 1989. Ms. Ualani Sherbak who is a Keaukaha resident, active in a number of Hawaiian organizations, and is the Office of Hawaiian Affairs East Maui Community Resource Coordinator was also interviewed. Transcripts and signed verification forms from the first two interviews and the interview summary of the third interview are included in Appendix A.

10.3 Identified Cultural Resources, Practices and Beliefs
The cultural resources, practices and beliefs that were identified through the interviews all relate to the Keaukaha region and the Hilo Airport property.

Traditional and Customary Practices

- Traditional and customary activities and practices that occurred and continue to occur in the Keaukaha, Waikiki region include: all types of fishing, ocean and shoreline gathering including salt which is still collected at Leleiwi; and, gathering of all types of plant materials including medicinal plants, lau hala and hau.

- All types of ocean activities are extremely important to the Keaukaha community, for subsistence as well as recreation. Activities include all types of fishing (net, spear, pole, etc.), gathering varieties of lima, gathering varieties of shellfish (ʻopūhi, ʻhūkūke, wana, pāpa, ʻāhi) and gathering salt.

- In the early years of the Keaukaha settlement, prior to the establishment of Keaukaha homesteads and in the early years of the homestead settlement, some families had graves on their property, and family members were buried on their own land. While some of these burials have been moved to cemeteries, some may still remain.

- Heiau and other religious sites are located along the shoreline and in the coastal lands.

- In addition to growing food crops such as 'uala and kalo in their yards, early Keaukaha residents also kept gardens and planted vegetables, flowers and fruit trees in that portion of Pana'ewa forest that bordered the Keaukaha settlement prior to the expansion of the airport. Medicinal and occupational plants were also gathered from the forest area that bordered the early Keaukaha settlement.

- Pana'ewa is the name of the lands that extend from the forests up ma'uka to the shoreline and include the lands occupied by the airport. Prior to the development of the airport Pana'ewa forest possessed, for its great 'ōhia lehua stands and fragrant ma'uka encompassed the area immediately ma'uka or south of the Keaukaha community. Residents of Keaukaha used to follow trails into the forest to gather among other plants 'ōhia lehua and ma'ile. In the area of the airport was a big cinder cone named Pu'u Mālie, and it was a place at which ma'ile could be found.

- Traditional knowledge and practice is incorporated and taught at Ke Ana La'akahana, a public charter school situated in Keaukaha. For example, the students are taught how to restore and establish the productive fish husbandry capabilities of a series of fishponds along the coast which include Hale O Lono, Waioa, Kawaihau, Kauimilani, and Kama'okua. At Kamoku, there is also a mill where students learn and continue traditional agrarian expertise by growing different varieties of kalo, 'uala, and other native and Polynesian introduced plants. These uses need to be sustained because it supplements and sustains the people and culture. In addition to Ke Ana La'akahana, Landhu I Preschool and Hālau O Kekahi are also located at Pā Ho'oka, the Native Hawaiian family-based education center situated in Keaukaha and administered by the Edith Kanakaʻole Foundation.
Airport Related Concerns

- The greatest impact of the airport has been on gathering practices. It is as if the whole area is void, doesn’t exist anymore. Pana’ewa continues to exist, but when they built the airport, they took away the cultural significance and the traditions associated with that part of Pana’ewa. The airport has destroyed that portion of Pana’ewa forest and has in effect cut off the community from Pana’ewa and the traditional places for gathering ‘ohi’a lehua and moloka. By taking away the land and the forest, people don’t know how to gather in their own land, don’t learn how to take care of their own place. Now, if they need to gather, they need to go way up into the larger forest or to another ahupua’a. Before the airport, everything was available in their “own backyard” and people could live off the land. It was possible to pick lau hala, and pick niu. Now it is “somebody else’s yard.” It forces practitioners to gather outside of their area, forces them to gather from another person’s place and from the greater forest.

- Within Keaukaha, community members conduct ceremonies or cultural protocols that require stillness and quiet that are disrupted by passing planes.

- There is a noticeable difference in airport related noise since Hawaiian Airlines started using their new 717s. These new planes are much quieter. Aloha Airlines still uses the older, noisier planes, which are noticeably louder. Aloha Airlines also operates cargo flights early in the morning and late into the evening disturbing what are typically quiet hours and sleep time.

- The airport has cut off the Hawaiian people from that piece of their ‘aina. From a small airstrip the airport grew and grew, taking more and more land, nearly all at the expense of the Keaukaha community and Hawaiian homestead lands.

- The history of the airport taking land from the Keaukaha community, and forcing people to move without any compensation or reparations for the community has left a feeling of hurt, suspicion and mistrust in many residents. Due to past airport related efforts, many residents are concerned that airport expansion will continue to take Hawaiian Home Lands and displace additional homesteaders.

Project Related Concerns

- The proposed improvements could potentially lead to an increase in the types of services and activities (passenger, cargo, helicopter, and military) at Hilo Airport. The improvements could potentially lead to airport expansion and the resuming of overseas flights.

- Groves of pili hala are located within the airport property from which practitioners, including weavers, hula dancers, and lei makers gather lau hala, uluhe, and the fruit for a variety of uses including, mats, baskets, cordage, and lei. The location of the proposed helicopter facility is one of the areas where the pili hala grows, and from which practitioners gather. If airport security or personnel observes any gathering, the gatherers are asked to stop gathering and to leave airport property.

- Prior to the airport, all needed gathering was done in the Kekaha area and the ahupua’a of Waikie, there was no need to go to other ahupua’a or to the greater forest. By limiting gathering within the airport property additionally requires practitioners to go to other ahupua’a or to the greater forest.

- Any type of noise barrier or noise wall will further cut off the people from the land. Many residents enjoy the view, the wind that blows across the land and the connection they feel with the ‘aina. The barrier or wall would minimally reduce airport noise while restricting ability to enjoy the environment and was therefore undesirable.

- For those families that accept sound-attenuation retrofitting for their homes, or for those families that choose to accept an aviation easement, what guarantee will there be that noise levels will not increase? A continuing noise monitoring program for the Keaukaha community should be implemented and sustained.

- Displacement and relocation of homesteaders is not recommended. The transfer of Hawaiian Home Lands for airport related purposes is also not recommended. If however relocation of homesteaders is pursued, it should be voluntary, through one-on-one negotiations with the individual lessees, done with sensitivity and compensation for the homesteaders.
11. FINDINGS

On every island, native Hawaiian cultural beliefs and practices are continually affected by the loss of land to development that intrudes into the natural setting, disrupts traditional sites, and changes the landscape. As people with a strong cultural attachment to this 'aina, with the understanding that this 'aina is the elder sibling of the Hawaiian, the loss of land results in a feeling of loss, regret, and alienation for many Hawaiians.

For many residents of Keaukaha, these feelings of loss are compounded by feelings of distrust and suspicion as a result of a long history of dispute with the Department of Transportation and its predecessors over the taking of Hawaiian Home Lands. On more than one occasion Hawaiian homesteaders have been displaced and relocated to accommodate airport expansion which has led to the displacement of Keaukaha homesteads. Homesteaders displaced from their lands received compensation, but there were acres of Hawaiian Home Lands in Keaukaha that were transferred for airport use without specific compensation to the Keaukaha community. Some of these lands were transferred in exchange for other lands in Pana‘ewa or on O‘ahu, but for many Keaukaha residents it is as if their community was forced to give up their land without receiving anything in return. This history should shape future relations between Hilo International Airport and the Keaukaha community, and through acknowledgement and understanding a positive relationship founded on honesty and integrity may be achieved.

Based on an assessment of the impacts of the proposed project on the resources, beliefs and practices identified, the proposed improvements at Hilo International Airport will have minimal negative cultural impact upon native Hawaiian cultural resources, beliefs and practices. The following summarizes the findings of the Cultural Impact Assessment relative to the proposed Hilo International Airport improvements:

1. Based on a review of Land Commission claims and awards at the time of the Great Molokai, the project site was not claimed for house lot or agricultural use.

2. Based on the findings of the archaeological inventory survey conducted for the proposed improvements, project specific consultations, and a review of historical documentation, no religious sites or burials are located within the project site. However, consultation and review of historical documentation identifies that burials may exist within airport property.

3. Prior to the development of the airport the Keaukaha settlement was bounded to the south by Pana‘ewa forest which was a primary cultural resource for medicinal and occupational plants, as well as being the physical manifestation and home of Pana‘ewa the deity. The development of the airport has eliminated this cultural resource as well the ability to perpetuate traditional and customary practices including appropriate protocols associated with Pana‘ewa.

4. Prior to the development of the airport traditional access ways connected the community of Keaukaha with Pana‘ewa forest. However, with the development of the airport these traditional accesses have been cut off.

5. Cultural practitioners including weavers, lei makers and hula dancers continue to access and gather from traditional hula groves located on airport property.

12. RECOMMENDATIONS

Every effort should be made by the Department of Transportation to foster a positive relationship with the Keaukaha community. Some community members view current efforts to engage Keaukaha school children in airport activities and public meetings held to keep community members informed of airport plans as a positive first step.

1. Any burials found on the project site should not be disturbed pending consultation with the Department of Land and Natural Resources State Historic Preservation Division. The treatment of any remains should be in accordance with procedures approved by the Hawai‘i Island Burial Council and the State Historic Preservation Division.

2. Practitioners that utilize the hula groves on airport property including the site identified as the Proposed Helicopter Facility should be permitted to gather from these hula groves. Recommend that a right-of-entry policy be established to allow practitioners access to the hula groves with prior notification to airport security or personnel.

3. Considering the history of land transfers and exchanges as Hilo International Airport was developed, additional land acquisition should be pursued with caution. If any properties are identified for potential acquisition, the landowner and lessee should be immediately notified. Recommend that any transfer of land be voluntary. Negotiations should be conducted on a one-to-one basis between the Department of
Transportation and the landowner/lessee. Recommend that any transfer of land include fair and equitable compensation to the landowner/lessee.

4. For many community residents, any type of noise wall or barrier would cut off the Keauhau community from the environment and is therefore not recommended.

5. Participation in the retrofitting of residences for sound attenuation or in the avigation easement project should be voluntary. Landowners and/or lessees for whom this option is available should be notified individually, and negotiations should be conducted on a one-to-one basis. To ensure that participants are aware of noise levels, and to inform them of any significant increases, continued noise monitoring for the Keauhau community is recommended.

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14. GLOSSARY

For the most part the following definitions follow the Hawaiian Dictionary by Mary Kawena Pukui and Samuel H. Elbert. As with many Hawaiian words, there can be numerous and varied definitions for a single word. The definitions provided in this glossary correspond to the use of the words in this report.

ʻĀhole An endemic fish found in both fresh and salt water.

Ahuapua'a Land division usually extending from the sea to the mountains and containing a sea fishery and sea beach, a stretch of kula or open cultivable land and higher up its forest.

ʻĀina Land, earth.

Akua God, goddess, deity, supernatural.

Ali'i Chief, chiefess, ruler.

Aloha 'Aina Love of the land or of one's country, patriotism. Hawaiian value and concept illustrating deep love of the land.

ʻAumı'uma'umua Mullet. A very choice indigenous fish.

Awa Milfish.

Hala The pandanus or screw pine tree. Many uses: leaves (lau hala) for mats, baskets, thatching; the yellow to red fruit for leis, brushes; male flowers to scent kupa, their leaf-like bracts for mats; aerial root for cordage and medicine.

Hale'uku'uka Edible sea urchin.

Heiau Place of worship, temple, shrine.

ʻIlili Land section, next in importance to ahupua'a. Many ahupua'a were subdivided into smaller management units called 'ili.

Kahk'ai Beach, seashore, seacoast, seaside, strand.

Kahkai Mareen; a mark placed above a vowel to indicate a long sound.

Kalo Taro; a staple crop in Hawai'i.
Kama'aina
Native born, one born in a place.

Kapa
Tapa, bark cloth.

Kapu
Prohibited, forbidden, sacred.

Kalapa
Small land division, cultivated patch, garden, small farm.

Kino lau
Many forms taken by a deity or supernatural body.

Kii kalo
Hilo term for mound two patches.

Koa
Hard wood tree and the largest of the native forest trees. Uses include canoes, surfboards, calabashes, house posts, and weapons. The tree is a body form of some deities.

Ke'a
Designated offshore fishing grounds. Shingle built along the shore or by ponds or streams, used in ceremonies as to make fish multiply.

Kula kai
Lowlands, coastal plains.

Kuleana
Property, claims, ownership, tenure, small piece of property as within an ahupua'a.

Kapua
Supernatural being possessing many forms.

Lae hala
Leaf of the hala tree. Uses include mats, baskets, weaving and thatching.

Lei
Any adornment worn around the head or neck. Necklace of flowers, shells, feathers, or ivory.

Limu
General name for seaweed.

Mapele
Land division of 1848, the Great Mapele.

Maka'ala
Commoner, citizen. Lit., people that attend the land.

Makahiki
Traditional "new year" festival beginning with the rising of Makahiki and lasting for four months. In addition to religious ceremonies and the payment of taxes the festivities include sporting and hula activities.

Makai
Ocean, towards the ocean.

Mailiuna 'āina
Protect and care for the land. Another Hawaiian value and concept illustrating deep love and care for the land.

Maska
Inland, towards the uplands.

Moku
District. The islands were each divided into large districts called moku.

Mo'o
Lizard, reptile of any kind, dragon, serpent; water spirit.

'Ohi'a lehua
Hard wood tree. Lehua is the name of the flower. The tree is a body form of some deities.

'Okina
Glottal stop; a speech sound.

'Olelo no'eau
Proverb, wise or traditional saying.

'Ope'e
General name for shrimp.

'Opili
Limpets.

Pā
Pen, enclosure, lot, yard.

Pa hale
House lot.

Pāpī'i
General name for crabs.

Pā hala
Pandanus tree.

Pihenehene
To play a game. The name of game where a stone or piece of wood was hidden by a player and the players of the other team try to guess who had the game piece. Sometimes accompanied by gambling and played for favors.

'Uala
Sweet potato; a staple crop in Hawai'i.

Uke hala
Aerial pandanus root.

Waih pana
Legendary or storied place.

Wana
Edible sea urchin.

Wao
A general term for inland regions.

Wao 'ama'u
Inland low-land forest region where the 'ama'u fern grows; sometimes cultivated.
Interview With:  Ulunui Kanaka'ole Garmon and Pualani Kanaka'ole Kanahele
Interview Date:  November 11, 2001
Location:  La'alea, Waikiee, Hilo, Hawaii
Interviewer:  Utaha Woodside with Tiffany Mathias

This interview primarily focused on the State Department of Transportation's proposed improvements at the Hilo International Airport and any impacts to cultural resources and practices as a result of the proposed developments. A project summary, map identifying the proposed improvements, and the botanical survey and archaeological inventory survey prepared for the proposed airport improvements were made available to the interviewees and discussed during the consultation. Aerial photos as well as the following maps were also available during the consultation: 1917 USGS Hilo Quadrangle, Reg. Map No. 1561 (1891 Hilo Town and Vicinity), Reg. Map 524 (1851 Plan of Waikiee) and 1928 Map of the Island of Hawaii. This interview was conducted without recording device. The following summary is intended to capture the discussion topics and concerns of the interviewees.

Project Summary and Proposed Improvements

- The project summary identifies the airport as Hilo International Airport; does Hilo airport service any international flights? There are no international flights at this time since overseas mainland service was suspended in December 1986.

- These proposed developments send up a red flag to question what is up for the future. Hilo is in no need for such airport improvements therefore these improvements could translate into an expansion of service. The improvements could mean an increase in the types of services and activities (passenger, cargo, helicopter, and military) at Hilo Airport – an increase in the number and types of planes that fly in and out of Hilo Airport, the potential to resume overseas flights, and use of runway as a back-up landing site for the space shuttle program.

- It raises the red flag to ask, who is behind the need for this development, where is the funding coming from? For example, the astronomers have been able to get all the streetlights in Hilo changed to (low pressure sodium) yellow lights, and then the telescopes appeared.
Botanical Survey (Funk, 2001)

- The botanical survey only included the areas of proposed improvements and no candidate, proposed, listed threatened or endangered species were found. The areas surveyed were previously cleared during the war for the Naval Base. The survey didn’t find any ‘ohi’a trees and there doesn’t seem to be much of a native forest in the areas surveyed for the proposed improvements.

- Before the airport, the area mauka of the Keaukaha community was all forest. Then during World War II a small airstrip was constructed, along with a lot of military housing and quonset huts, but on the Puna side. The military kept the forest for camouflage between the buildings. When they did clear an area they scattered the area with seeds for quick growing rubbish plants. There was a section of the Puna Trail that the military used, but it was the military’s use of the forest that really opened the way for the development of the airport. The first airport was on Silva Street by the Hawaiian Air cargo building.

- But there still is pōhala. Gatherers pick lauhala from the trees growing at the airport including the site proposed for relocating the helicopter facility.

Traditional and Customary Practices

- Traditional and customary activities and practices that occurred and continue to occur in the Keaukaha, Waialua region include: all types of fishing and shoreline gathering including salt which is still collected at Lelewi; and, gathering of all types of plant materials including lauhala and hau. Prior to the airport, all the needed fishing and gathering was done in this area, they did not go to other ahupua‘a.

- Pana‘ewa is the name of the lands that extend from the forests up mauka to the shoreline and include the lands occupied by the airport. Prior to the development of the airport Pana‘ewa forest renowned for its great ‘ōhi’a lehua stands and fragrant male encompassed the area immediately mauka or south of the Keaukaha community. Residents of Keaukaha used to follow trails into the forest to gather among other plants ‘ōhi’a lehua and male. In the area of the airport was a big boulder cone named Pu‘u Maha, and was a place at which maile could be found.

- The airport has destroyed that portion of Pana‘ewa forest and has in effect cut off the community from Pana‘ewa and the traditional places for gathering ‘ōhi’a lehua and male. Nevertheless, all types of traditional shoreline and ocean activities still occur, and they still gather lauhala and hau.

- They continue to gather lauhala from the airport property. However if they are seen, airport security comes to make them stop gathering and leave the airport property. The gathering of lauhala should be permitted. The more they pick the lauhala the better it is for the tree. The relationship between the airport and the community would improve if airport security could be educated about the traditional lauhala stands and allow gathering practices.

- Traditional knowledge and practice is incorporated and taught at Ka Ana La‘ahana, a public charter school situated in Keaukaha. For example, the students are taught how to restore and reestablish the productive fish husbandry capabilities of a series of fishponds along the coast which include Hale O Lono, Wai‘ohe, Keonepauhau, Keauha‘oli, and Kamokuna. At Kamokuna there is also a mala where students learn and continue traditional agrarian expertise by growing different varieties of kalo, ‘uala, and other native and Polynesian introduced plants. These uses need to be sustained because it supplements us and sustains the culture. In addition to Ke Ana La‘ahana, Lau‘uhiko Preschool and Hālau O Keohi also are located at the Pā Hoaka the Native Hawaiian family-based education center situated in Keaukaha and administered by the Edith Kanahulu Foundation.

Proposed 15-foot noise barrier

- Do not build the noise wall. First DOT-Airports cut the small airstrip, taking some land. Then they just grew and grew and cut a bigger airstrip, taking more land. The wall will again cut us off from our land; can’t see our land. How much more do we have to give?

Impacts of Existing Airport Activity

- The greatest impact of the airport has been on gathering practices. It is as if the whole area is void, doesn’t exist anymore. Pana‘ewa continues to exist, but when they built the airport, they took away the cultural significance and the traditions associated with that part of Pana‘ewa.
• By taking away the land and the forest, people don’t know how to gather in their own land, they don’t learn how to take care of their own place. Now, if they need to gather, they need to go way up into the larger forest. We should take care of our own place. Before the airport, everything was available in our own backyard and people could live off this land. Pick their own lauhala, pick their own maile. Now it is somebody else’s yard. It forces us to go gather outside of our area, forces us to gather from another person’s place and from the greater forest.

• When Runway 3-21 is used, the flight patterns force planes to take-off over Puhai Bay and to be closer to the ocean. The vibrations and the noise of the planes flying low over the ocean can affect the marine life including dolphins, turtles, whales and other animals that frequent the area near Puhai Bay. The loud noise and vibrations also impacts the fishponds along the coast. In addition, we don’t know what kind of residue from airplanes overhead and airport activity is left on the ocean and fishponds that might harm marine life.

• The big picture is what to do with the runway. It is right in the middle of Hawaiian Homes’ lands, so it is always going to affect Hawaiian people. Moving the runway will take more of the forest, it will affect Panarewa, and it will affect Hawaiian people. It always impacts Hawaiians.

**Final Thoughts and Recommendations**

• Can’t do anything about the airport. It is where it is. As long as the airport stays within the current boundaries, that’s fine. No expansion beyond current boundaries.

• No increase in air traffic.

• No large planes. No 747s.

• No mainland flights – no international flights. No heavies.

• No cutting of lauhala trees; allow gatherers to pick lauhala from airport property.

• Airport personnel have been visiting Keaukaha School and have been offering field trips for school children to try and improve relations with the community. There is a need for that kind of interaction from the airport’s side and it benefits the airport. That’s why they’re doing it, but it doesn’t help the community. The airport should hire more Hawaiians from the neighborhood.

• Don’t do anymore improvements. If there is a need to renovate or redesign the airport, do it with a Hawaiian theme hiring Hawaiian designers and artists.

• Stop exchanging DHHL lands on one island for lands on another island. The previous land exchange between DHHL and DOT that established Hilo Airport exchanged residential lands at Keaukaha for a small acreage of commercial land at twiiel, Oahu. What happens when there are no lots for homesteaders on Hawaii Island, do they have to move to another island? It is impacting Hawaiians again. Why us? Hawaiians and the Department of Hawaiian Home Lands started off with the junk land.

• The impact of the airport is farther reaching that just Keaukaha. Need to stress that the airport forces us to go gather outside of our area, forces us to gather from another person’s place and from the greater forest. People should take care of their own land and resources, but the airport has taken that away, it has taken away the ability to live off your own land.

• The sewer outfall is also a concern. There are so many uncertainties and unknowns. The waste could be affecting the ocean – the limu and other marine life.
Interviewed: Patrick Kahawalola'a
Date: August 16, 2001

PK: My name is Patrick Kahawalola'a.

UW: Let's go through some of these basic questions first. Your name?

PK: My name is Patrick Kahawalola'a.
UW: And you live right here in Keaauka?
PK: I live at 260 King Ave. Hilo, Hawai'i.

UW: And you were born and raised here in Keaauka?
PK: I was born and raised here. I consider myself, and guys, there's a group of us, in our age group, 58, 59. When we were growing up, we came to the realization, one time we all got together, that we consider ourselves to be first generation Keaauka. Because the majority of us, our parents came from somewhere else. My dad basically was from Kauai, my mom was from Maui. My mom was from Hana. I like to keep telling my brothers, I have two of them, they were both born in Honolulu, that you know, me, I'm from Keaauka, you guys are from O'ahu, me, I'm from Keaauka. So, I consider myself first generation Keaauka. I was born and raised here. Product of the homestead, born on the homestead.

UW: As a child growing up, what do you remember about Keaauka? And what did you guys used to do, what was a typical day, a typical weekend?
PK: Well, it's needless to say, that ocean was a very, very big part of our day. As quick as we could, we used to get to the beach. We would all meet and get there. However, you know, now that I can reflect on it, the beach was there, but not just basically for recreation; it was there for sustenance. We all learned at a very early age how to pound ʻōpili. Not for sale. We never realized the amount of money that you could make from the ocean. But at that time, that was all part of like, recreating. You know, pounding ʻōpili, make hāʻiʻi, ʻōpili, go gather wana, limu kohu. And we would do all that and go home, you know, everyone took home. That was pre-Tupperware days, so you never had Tupperware, but everyone would go home and you would have one ʻōpili bag, out of an old pillow. And that is how we carried all our things. We would spear, we dive, you know, we dove for fish, spear fish. And that's what we did for sustenance. Every Saturday I did that, for my dad, cause my mom died when I was five. But every Saturday I would come down. My dad was real one Hawaiian. You know, no salt rice, only poi, onion, sardine. But liked fish so I would get all this kind of fish for him and go home.Cause my brothers they all left, you see we're all ten years apart. My oldest brother lives in Waimānalo, he's 78 years old. He'll be 78 in September. So, you know, we're all far apart in age, so they were all gone. But that's what we did. There were other things that we did in Keaauka but, the ocean, we gravitated to the ocean. If we did anything, it was go to the ocean first and then we did other things. Now, and right here, this was the area.

UW: The whole coastline?

PK: This coastline. I would say from the wharf, from Kīhīlo Bay to the end of the road here, like Poʻonaua...

UW: Leleiwi?

PK: yeah, Leleiwi, would be... was our grounds that we would do... Until somebody taught us that eh, not only can you throw net, you can cross net, and you know. So the older we got we would go kāpēkū, we would go paepae/paipal and that would from there we found that as we got older, had to be maybe 15, 16, 17 years old. If I guess. We found out we can make money from the bounties of the sea. So we would go kāpēkū for hana, and kala, and all these, moko. We would go to a certain, what we would call a certain cross. If you wanted to eat manini you'd go here. If you wanted to eat kīhīlo you'd go there. If you wanted to eat kala you'd go here. So, we were pretty, maybe, in that way, not knowing, but we became gatherers, and we could pick a certain place. If you could tell us what you want, that is where we would go get. So, that's my upbringing and that's what I really like about this area.

UW: That's maika'i. And what do you know about the history of this place? You mentioned that what you know is from the book Chronological History of Hilo.

PK: Yes, the Chronological History of Hilo, that book, however I realize because I lived it. The dates are in that book, however I do know this. Keaauka is the second settlement to open. The first being Molokai. Hawaiian Homesteads this was the second to be settled, and this was settled... Keaauka Association, we're going to celebrate our 78th reunion in 2003. So in about in the year 1927 was when it was opened. There were people living here earlier. But officially it was opened at that time. The Government, the Federal Government at that time had no monies to go and, so the people who were awarded the leases went out and hand-carried the property, did this. I was very, very fortunate, and some of them are still alive today, to have my... everybody's an uncle, an auntie, a kupuna, everybody was that way. So I have an uncle now, Kamimoo Callees. He's still alive he's 88, 89 years old, and he was one of the first families that were here. So tells me about working at the wharf. Carrying in, you know, floating lumber that was floating, and water logged. Bring those home through trails, and carrying it home and erecting a structure, all the brothers and sisters. That's the Napaaee family, Auntie Abbie Napaaee, she's a Callees, and she's still alive. This is her brother that told me this. And there are many, many of them that are here. And I remember growing up we used to see those houses; go to those houses. I mean I lived in a home that never saw paint on it, until 1983 it was still there, and my mother got an award in 1939. So that's my recollection of how it was, the area. I would tend to, not dispute, but, with anybody who is from Keaauka would tell you, when you would ask.
them, "what was here," coconut trees were a rarity. We were not raised with coconut trees. We were raised with lauhala, pill grass. And what is now, what we call the back of our, where the airport is now, the back of our homestead was the leading edge of the Panarea forest because Ohia, and all those, uhina, all that grew back there. So, that was our claim to fame. We had the ocean on one end, and if turn around and ran to our auntie's lot way in the back, we were in the forest three of us... the age group that we, I was in, cause I don't think anyone since then has done it, they couldn't. One of our biggest claims to fame was having to deal with the airport, was that the airport was just that small, that we could climb the fence. Every May Day we need to go into the forest, go gather maile, or whatever. We climb the fence, throw our bikes on the fence. You can see, I'm sure they could see us, we could see them. It was a cat and mouse game. They would send a truck out there. And because the truck had to put a big flag on it to come across, we could see it. So we would take off with our bikes, cross the runway, into the forest. They had some roads in there so, and we were gone. Just throw the bike in some bushes, jump into the uhina and the guy he no can find us. And we would go in there, we would gather, we'd gather maile, things we need to make our May Day lei. And when we were done, little bit dark, you know, ahishi, we would turn right around, jump back on our bikes and come back across.

UW: So there were probably, before the airport was there, some trails, for these coastal people here to go up to...

PK: I would have to believe. I would have to. Because, we went to Panarea forest through the airport.

UW: You didn't already have an access this way...

PK: Yes, we didn't go down Kalanianoe, Keoanaeo, and go Kalanihoi all that way. We did not. We knew. That's why guys ask, where you guys went, in the forest? Yeah, we went in the forest. But we went through the airport. And guys would say, you can not do that. Well, for us, you see, for us it was like, you no can. Well first thing you tell one Hawaiian you no can, well, we going show you we can.

UW: Especially one young Hawaiian boy.

PK: One young Hawaiian kid. So that's how we grew up. And already by that time the military had taken parts, that part of the airport. That's why there were roads in there, the military had a base in there. That was part of a military reservation in there. And they had... You know Hawaiians, they give them the ocean, we had the Pacific Ocean, but they had a swimming pool. Back in one of those clubs, they had a military club back there somewhere, I can not think of the name now. But, because the pool was there, you know, we would go and dive in the pool. And now that I think about it we were diving through 'ohole and what ever other kinds growth they had in there. But never made us no difference, just dive. Those were challenging things, but that's things that stay in my mind, but not realizing, we were doing it for our people, and our culture dictated that we did. Why we went. Because we went to school adored on May Day. We went to school, we were decked out. This was Hawaiian and everyone took it for granted, but when we came from Keaukaha, I mean, we were the sweetest smelling guys, we made fists, we gathered the plumeria. We were happy that at one time the County decided to plant plumeria all along the highway, so that was easy to gather, but everyone's yard had it. We gathered, but the maile, the different types of palapalai, we all gathered from there because we went right into the forest.

I was never a weaver, however, I knew many of our kupuna before who did that, to go inside and pick up. Mrs. Lum Ho was one, Johnny Lum Ho's mom, I gained a lot of insight from her, because every time you saw her, Auntie Martha, we saw her... we thought that was all how Hawaiian ladies would be. She was with rubber boots, blue jeans, scarf on her head, big pāpae cover all her face, long-sleeve blue chambray shirt, and I thought everybody... Because I'd see her, I'd see Mrs. Johansen, very rarely did I see our Hawaiian ladies, and I can get stopped from them right now. But maybe we overlooked the others in our community who were schoolteachers, and never go school like that, and one was Mrs. Keana that we knew was a teacher, Mrs. Ledolf, Mrs. Huhi. The point being, for me, growing up was to see... she was one lady who macho, she was a matriarch. And we looked at her, and you know, you turn around and you saw another, Mrs. Johansen was similarly dressed, you looked at other ladies who were the gatherers, who were the weavers, who did that. And you said, no, oh that's how I'd get them to get, auntie themget to be, you see. And that's how I would picture. If you were to tell me to draw one lady right now, I no could relate to one holoholo, lovely lime lei, I no could relate, the hair up nice. I no say we never had, we did have, because we had some lovely hula dancers, Rose Kuaamoa was a hula teacher here, kumu hula in our community. You know, her daughters are Waiakane, Bella Richards, those are her daughters. Some of her daughters are still alive living in this community now, but she was there. Auntie Iwa Halualani, she was a hula, you know, her niece Haleloke went on to play with Arthur Godfried and all of this. So that's the guys I grew up with. So we did have lovely, lovely... but you no see them, if there was no hula performance or whatever, we didn't see them. But, we did see. I did, on a constant basis Auntie Martha, Auntie Johansen. Because, why? They were the everyday guys, they went inside hala under their 'ohia tree, plant the anthurium, make sure the hapa'pu' was growing, make sure the orchid was this, that and the other. Made sure the taro was growing, made sure the 'ula was over there growing so that you could have all the... life obviously was so simple because I grew up having, you had sweet potato in your yard. I hated it, but it was there. Because, and I just told my brother who was home, he lives in...
Connecticut, and I was telling his kids who haven't been here for about thirty years, you know I hated sweet potato leaves, because that's what I had to eat. My brother made everyday, Being the youngest, I had to go, and we had our driveway and pluck, he taught me what leaves to eat, everyday. And not realizing, in the middle of my yard, my father didn’t have to go buy. I don’t know he would have ate broccoli, or whatever. But we had sweet potato, sweet potato, for the starch of course rice, poi. My dad being from Kauai we always had this jar of ‘ala‘a ‘ala‘a ‘ala‘a dirt, someplace in the house. That at some point in time when we rained, my job was to go over there, broke ‘em up, mix ‘em, with all that with the parakeet make ‘em red. So, we had aunts come from Kauai they would bring sea salt, the regular sea salt and then do it.

**UW:** What side of Kauai is your papa from?

**PK:** My dad’s from Kapaia. Not until I went to Kauai, to find out that Kapaia... Because he would say Kapaia, another family would say Hanamakulu. But, not realizing that they are the same area, that’s where he’s from. So that was always in the house. Except my father had this passion for Chinese herbs. I don’t know why. All the Hawaiians, I went there, they knew tao si, chau ch’i, what see, what kind, anything, and they would have it in these bottles. And that’s what I remember. I don’t remember eating them too much, but that’s what it was. But, sustenance, was in the yard. If you needed taro, we had. Hawaiian garden oranges, mala was growing someplace in the yard, or a neighbor had, or somebody had. By no stretch of the imagination did my half-acre have all of these wonderful things. But there was something.

**UW:** But it was in the community.

**PK:** Yes, in this community there was here. Somebody grew this, somebody grew that. But, everybody had one in their yard, maybe one plant. Some you never take care real good, you never fertilize real good. Mangos, guavas, that’s what it was.

**UW:** So, when you used to go pick the ‘ala‘a leaves, you would pick the ones just as they are starting to unfurl, the new ones.

**PK:** That, and about the three under that, the one and the three. It’s not a counting measure, but after awhile you begin to see it. You see one and three.

**UW:** Kind of similar to when they pick l‘au‘au leaves.

**PK:** ‘Ae. Same thing. That’s why I’m saying, obviously, the Hawaiian horticulturist, the people that did it, our ancestors, and that being passed down generation to generation was the one and three. And it is still today, they will tell you the one and the three. That’s why you mentioned with the kalo, same thing. You never went below, that was for fixed the animals.

**UW:** That’s for the pigs, feed the pigs.

**PK:** It’s not for human consumption; that’s for feed animals. And people say, nah, you making it up. I’m not making it up, my 100-man, which had me do that... I had my real 100, I never knew because my mother’s father was haole, haole-Hawaiian, I never knew him. Well, I shouldn’t say I never knew him, we just never had a relationship. While my 100-lady she’s from Maui, so I never had that nurturing from grandparents. However, in Kauai I had plenty 100-man, 100-ladies. And they were the ones that taught me how to go make the kalo. I was raised, after my mother died, I had Mr. and Mrs. Pahio, they raised me, for several years. I mean my father only lived back here, but they were good friends, and they raised me. And she was a great influence in my life, in that she taught me manners. If there was anything, I learned, I take care what. That’s why I’m saying, Hawaiians weren’t uncouth, pagans. Ha. My auntie, this auntie was, she taught me, she told me, and because I was there with her other three children, and was just like this; when she would call me, it wasn’t you know, “yeah, what?” We, we never answered that way, it was, “yes, coming.” So she taught me manners, I’d have to say, etiquette. My uncle was a Territory Highway Department worker, they built the Hanalei Highway. He was very instrumental. Could not read or write, third grade education, but he built the Hanalei Highway, equipment operator. But he taught me how to be a fisherman. This was polu fishing. The time to go, right out here, Pahi Bay, right outside ‘Ahihi, Kula Pae, right outside. Right in this area. That’s why I said I feel so comfortable, this is the grounds. I'll never... it’s not uncomfortable for me to jump in the water and from here I can go down to the other side, and it doesn’t bother me. I feel at home, I feel like ... I’m comfortable. He would tell me, you know tonight we going... No, he wouldn’t tell me. I would overhear him say, at that time they do not talk to young kids, but I would hear them say, “tonight we going get Hawaiowe.” And they would, and I used to think, what, the fish bite what they like, you not going go catch only Hawaiowe, only memphac. But, you know, again as a young Hawaiian you think, oh, come on.

**UW:** You going get what get in the net.

**PK:** Yeah, what get in the net. You going throw the bait out there on the hook. What you going set? Oh, this bait is only for Hawaiowe. But lo and behold, we come home with 15 Hawaiowe because that’s what they wanted. Tomorrow, or whenever the season was right, you know, he was a great, I never paid any attention, but they watched the moon, they look the ocean. There was one thing my father always told me, and I did not realize it until I was married and had children of my own... My dad spoke Hawaiian fluently.
had an option; I could answer in English. I understood Hawaiian, but I had an option to speak in English. So, I chose English, not because I was ashamed of being Hawaiian, but if it's the word, it may be the wrong word, but I could blame my dad for this... See he sent me to a parochial school. I did not go to Kaaikaha School and that hurt me because I could not be with my friends. Of course I developed other friends, however, in this community a lot of the Hawaiians decided they were going to send a lot of their kids to Catholic school, and all of us went to Catholic school. And I couldn't understand why we had to go there when we were here; we had a school just down the road. But about the norea that my dad would tell me was, never face your 'okele to the ocean. And I could never understand it, why. However, I was a firm believer. Now, you have to understand Hawaiians... these ti'i-ladies that I had, if it came to the kalo, there was a pule before you planted, a pule when you pull, when you haku, pule after you pau. You get sick, there was a kâheâ, a chant, or whatever. My ti'i would hold me in her arms. I can remember all this, hold me in her arms, chant, kâheâ, take me by the window, hold me over there, do all of this. Now, it caused great conflict with me, being Hawaiian and the Catholic religion. You go school I learn, come home, my auntie was very, the auntie that taught me manners spoke proper English. You know, what, da kine, oua dea, it was... so, coming home was a conflict. But yet, learning the kâheâ sitting around the table, or with that auntie it was, you did the, you say grace. When I went ti'i-lady's house, we never said grace, I had a pâoku. And everybody sat there, you had to say your pâoku before you ate. So, you know, not realizing it cause young kids, as I got older I saw a conflict developing within me. Well, you know, you can not worship false gods. Well, then here I am one Hawaiian, come home, before we huki the taro we're saying something. We build a kâhu, we take our pâoku and we move the pâoku from the loi to the loi. And you know, what is this?

But, my dad was a strong believer in that, and not only that but this wasn't, don't face your 'okele to the ocean. So I grew up making sure, that if I did, have the opportunity that I need to be in the water, and had to face my 'okele to the ocean. Well, I took my dad's word, no face your 'okele to the ocean, and my auntie's upbringing of manners, by saying excuse me. And I would do that, all through his life. I do that now. I try to perpetuate that to my kids. But, it did not happen to me until I was in Los Angeles at a camping. I have three kids. My son and his two sisters were at the ocean, very young, at the beach, having fun, we was sitting there, we can get hurt. The water cold, they no go in the water so I'm not worried. But they were playing in close proximity. And out of all those waves, there was one freak wave. And they had all their backs to the ocean, and I saw that wave coming. And even when I yelled at my kids, even when I told them watch out. And they're looking at me, like, what? I mean this guy caught 'em, this wave caught 'em. Boom! And you should have seen me run for three kids. Run grab sea ane, run grab one there, because they were just going in different directions. And then I heard the words of my dad, never face your... but never was explained to me, you see because, commons sense. Common sense tells you, you no more eyes behind your head, so, you see. If there was any wish I want to impart on our young ones today, when I tell them today, no face your 'okele to the ocean. It's to tight behind that give them the reason, so that you no get into that situation. But that is basically what I've done, how my life has transpired, and what I do here.

UW: So you talked about building kuahu. Growing up, did you remember if they had any helau around here?

PK: Well, this area here, right around here, in this area, was one. If you were to take the stories of many of the people, inside that hau forest is another. Although destroyed or partially, I don't like to say destroyed, desecrated, by poe hace when they came. There was a military camp emplacement, they put some guns emplacement out there. So within that, with inside that hau forest, and I'm so glad the hau forest is so strong and just pill together that people no can go inside and mokâh, because it's really tight. But we played all up inside there, the ocean goes underneath, the water go way underneath, high tide you can go underneath. Aholehole that's their home there inside there.

Behind this rock here, there is a small channel cut between the rock, behind there is a beautiful pond, big pond. And that was our, we used to get houma. I mean, that's where the home, I believe the home for mullet, the 'amã'ama, all inside there, aholehole. You know you can go in there now, I still go take a look every so often, and you got the freshwater, brackish, all this is spring water, cold, cold water here. You get what they call the 'opusu, you get that inside there, different types, it's in there. Lu'umâ'e'a, still come. People say over here junk, no good, the sewer polluted all these places. I tend to agree, however, this little bay here, Pali Bay, has provided. On any, many occasions, you can come here, get guys dive, pick up the here, the lobster. One year we cross a net cut here overnight, and out of 19 fishes that were, in there we had like 14 different varieties, you know, like tea. We even, we've caught a 30-pound akua. A 45-pound ahi, right here, inside here, caught with a throw net. Because we have the nehu come in here, we have all this, what they call, food fish that the bigger ones eat. They come in here. I grew up eating the honu. I will not tell a Hawaiian that that's an endangered species. I'll let someone else tell them if that's their bag. I do not believe, because obviously as a kid growing up. I mean, if you want to talk about a slaughter. But we did it, not for waste, not for sell, it was to feed. If you talked about seven families coming to the beach, each one may have... I was fortunate we only had three, but the majority of my uncles and aunts had seven, eight, nine children, and you take that and multiply that by, you know nine or ten. I'm talking about a hundred people you had to feed every week. And the job, the work, wasn't big bucks in the 40s and 50s. So, turtle, we ate that. Twelve, thirteen turtles on a Sunday was a drop in the bucket. But cut up,
divided, everyone took home. So we all grew up, all my friends, we ate that. There was maybe one or two that never ate it, but, we all grew up eating it. It’s not that I miss, it’s not something, but I wouldn’t turn down a turtle steak today, you know. And I get my baddahs who continue to do that, clandestinely, or however, but, it’s done. I don’t look at them as being lawbreakers, I look at them, because it was never an intention to sell it, or to gather it for that kind of purpose, there’s a financial gain somewhere down the end. I grew up on a subsistence-based livelihood.

We never had... we had to go to our Portuguese friends whose parents made guava jelly. We ate guava, get kūkī pāa, whatever. We knew where the sweet guava tree was, where the sour guava tree was. But, our friends the Portuguese people, when I went to school, they came and they had jelly. We went store to buy ours, they made, and, “oh, how you guys made that?” “Guava.” “Haa? You made that with guava?” So, we never did that, but I could tell you when you have ‘ōlelo lil, go over here pick up the small, young shoots, chew and swallow the satin. You know couple days, you’ll be alright. We could gather in this community, and part of that was going outside through the airport. But in this community, sometimes down the beach, they did some soil change down here, so it changed a little. But the baskets to help take care of the boil, or sore arm. We had all the medicinal ‘aua was all around.

PK: Nehe was growing, you know, you make the tea, kūkī. It was a pest as far as I was concerned, a weed, junk. But now I find out you can make tea, because my auntie them made. We have some kūpuna that still do that, the nehe, the kūkī. I mean we don’t see that. There’s no kūkī stack on my clothes, you don’t see that. I mean, we used to throw darts with those things. ‘Uhaloa, was my, and will be to the day I die, the best medicine for sore throat. I cough now, I pass in five minutes once I go pull that. I hated it.

Tastes bad.

PK: I hated it, but boy, you know, if you have sore throat. So and I wish, I truly wish it was an opportunity to find some. But whenever we do, whenever somebody clears a lot. Then they go, they find out, what’s this. We erected fence around it, we’ve done certain things to make sure that it’s there. Those things were readily available. I’m prepared to say, as young kids, my generation, we overkilled it. We took it for granted that it was always going to be there. And, I’m not going to shirk away from that thing, “we did not mālama that.” We did not. I’m prepared to say that we did not.

Why? Because your history didn’t tell you. You did mālama in your way, your way was to use it. Your history didn’t tell you that somebody was going to come...
today, somebody call us sissy, they'd get dirty lickings. Nah, however, we learned, we sat out here on this pu'u, outside here under this tree. Tourists, I guess was coming in, in the middle 50s. This was all before statehood. We no had TV. Truly, we no had TV. We never get TV in Keaauhaha anyway in my house, until 1991. So, we had no TV, so we weave, we taught us, Mr. Baby Dan Nathaniel, taught us how to weave. But this guy was good. He was a beautiful Hawaiian, but he was good in this way. He would have us sit there and he would say, "Okay, tomorrow I'm coming so, you guys going weave hat." And he would bring a car load of tourist, he was a tour guide. And they would take pictures of us, and we would be all shy, nobody took up, everybody make, sit down, no say, nothing. And not till I get older, in fact when I came back from the mainland, came back, Uncle was getting old, he said, you remember I teach you guys how to do this. You see what he was doing was he had the inside spin. Everybody would take people down to the floral garden; he would go. But, him, he would bring them... his group would have a special, native, you got some native kids over here... Look those natives over here, and look at this... And they would come and say, "oh, do you want to sell that thing." And I would say, "I dunno. 25 cents, 30 cents, 40 cents, whatever." Well him, he was like, "no, I think you should pay one dollar-quarter." And I would think, what? "Uncle, tomorrow." But, that's how he was. I can still make a coconut hat. I can climb the tree but I can make the coconut hat. So, that's our recreation. We played marbles, we played kanesio, we played, you know, card games, games of chance. That's normal in my opinion. We all did it here, in this community, so that's why it's so special to me.

PK: Carving was brought in. We were taught carving here. And I never realize, and I sure wish I had it now, but I know, We made... Papa Henry Awoaa, he's from Keaauhaha. But his claim to fame was we were growing up was not as a kumu laau lapaua, but he was our woodcarver. He was the one that taught us woodcarving. And he did, he worked at Kūlani prison, so the koa was readily available. You know the boards, the cutsouts, whatever, and he brought that for us. And during the summer months he taught us carving. I can remember we going to the Civic Auditorium, after it first opened and we presented something to a summer fun program; our renditions of carving. And we were probably the only summer fun program that had it, we made our lamps, koa. But I never realized the beauty of the hala. The hala make. People tell me you can not. No. The hala, there are some beautiful grains in the hala, and I did that with some green sand. The green sand I got from Kū, 'cause I was there with my uncle In Ka'i.

UW: Down at Mahana Bay.

PK: I lived at Kīholo at Mahana Bay. Walking to Mahana Bay with my cousins. Carry out, those are etched in my mind. I found in Ka'i, I found... and here too, outside on the point, what we call the point at Awoaa, there was a kōnane board that we saw. Obviously etched in the rocks. And I went there to Mahana Bay and brought back my green sand, and with my hala lamp. If I have the opportunity now, the next time somebody has to knock a lauhala down, I'm going to cut one and try to do one another again. Because people tell me, you can not, well, I did. We did in Keaauhaha. Mr. Awoaa told us, we go get this, that, and the other. And then we, speaking about the hala, like I said, that was the tree of choice in here. So that's how we learned about the ocean, right. When the hala falls, the wana was ready... the hānūhūhū and the wana, those types of things were ready. When the pō in the lauhala grew out, that was the same. But not realizing the Hawaiian from the mountains had the same. To find the wana was ready for the mountain people was to watch the kō because the lauhala was not readily available there. When the kō flowers, that was their signal to come to the ocean and gather. For us down here, we watch, we never had the kō, so we looked at the lauhala. When the hala started to fall it was time to go, it means the wana was ready for hā, and we went down there to get. But those are things. We made leis from them.

I was fortunate, I was raised, my neighbors are the Waipās, Abraham and Elizabeth Waipā. And to this day I will dispute anyone, cause I have not seen it, and that's why I say I'll dispute anyone, because I have not seen it. They made white lauhala. And people say, oh, yeah, they had. Well this, I helped them make. What they did, we went up to the volcano. We gathered sulfur. And I could not realize what the hell I was doing gathering sulfur. But just to go to the volcano with them, ride on the juck-a-lacka truck, we went up there, gather. Bring home the sulfur, and they lit the sulfur. Because the ground, our ground back there was all puka, puka in the back yard, so they lit in the cracks all this sulfur... [End of side one. Interview continues, talking about how lauhala was used to decorate the inside of the house.]

PK: Going across, deep out there you know, it's deep. But, that's the... they did that. So, that's why I say I beg to differ. I hear people say, but I no see them do that today. I don't see bleached lauhala today. They say you all had to do was cook the leaves. No. I went the Puna to gather with them, 'cause they were originally from Puna. So we went there, we gathered, brought home it, cooked it, boiled it, whatever. And that did not turn it. And they picked green,
cooked it and bleached it. So I grew up with their daughter, Ma, and all that. And that helped me because Hilo rains and you had to let dry out in the yard. They had a circular driveway; they still have a circular driveway. Put it all in middle. And our job was to go play, you play up, but when rain, hurry up hāhali everything in to the garage, so before it get wet. Wet, going pāhāh. Ah, look at that.

**PK:** Oh yeah, one whole pod. We had whales out here last year. It was so, it was so... I don't know how to tell. This place is so blessed. We had a whole family stay here. Sometimes these guys are just going through. You should see when they're going jumping, just like... You being from Walimānalo, I'm quite sure you guys see that a lot.

**UW:** We don't see nārī as much, but when I went to Honokōwai on Kahoolawe...

**PK:** Look, look you see how close. You see the proximity they come in? You see how close? Sometimes they come in this way because of the fish. But it's deep. Right beyond that rock there, that big rock out there. We call it the kākū rock, for us, the kākū rock. 'Cause from there we used to go catch what they call the poor boys' marlin, the kākū, the blue-bone. Well, you can go five feet beyond there and we're talking, it's deep, it's a sheer. And so you'd conjure up... We have a shack hole out there, that we akaha the man. And the right of passage... we used to have a blowhole on that side till they came with the sewer plant. So there was a blowhole there. The right of passage for a young man, for us growing up, was to swim from the blowhole, over here to the kākū rock, by yourself. So you had to... develop and get some... So that's why we are all wonderful swimmers.

**UW:** Did that man out here have a name?

**PK:** I would believe it had. I never knew it. With the only exception from my dad... Who told me, the first time I saw it I was 15 years old, 16, somewhere in there, I came home, I had the goggles under my neck, I was choking drank 2 gallons of water, something I did, I know what I did. I broke every record it took for swim... I don't see it there, I saw it down the other side, right there. And I told my dad, I mean I came home all bus', scratched, all over, and he said, "what's the matter?" "Oh, dad, the shark." And this is when he told me, you don't have to worry, because you belong the shark family. By then, okay, 15, 16, all right, I can dig that now. But how the shark know, that's all I know. Now I got couple of cops. "Don't be stupid." Cause now I'm questioning. 'cause there've got to be reasons, and he never like that. My dad was an old fashioned person and he never like that. I tell that to kids today, but I have no fear of them, I have no fear of them. But I'm not stupid enough to go feed 'em and what some people do, who take people go dive around 'em. Because they're the creatures, and what's happening now, I mean, I'm in their domain, and I respect them and hopefully... I believe what the Hawaiian says, that's ours, you're oahua, that's all my 'umakua. My niece came back from the mainland – Connecticut – and when I told her that story, if she never went out and she bought me one assualt, a manu assault. And she said, "uncle, here." So, I said, "why you did this?" And she said well you know uncle you told me this, so I figured this, I saw it and I wanted... So I said thank you, and I told my wife, you know what, I'm going to take that and I'm going to do something with it, and I'm going to send it to her, she has I son. I said, I believe your son should have this. Because, she married haole, but your son has to understand. I know where I am, I know who I am... you guys don't know who you are because you came back here. "Oh, I like eat laulau." My brother tries to do what he can on the mainland, but I told her, you guys need to know, and you guys need to be proud of who you are. I don't tell you walk around stick out your chest all the time, but, don't shy away when someone says, why is your hair dark, because her brothers are all blond hair, blue eyes, she's the only one that's dark complexion. You know, same mother, same father, it just happens that my father's side... I just happened to get the Hawaiian. I get the Hawaiian. Those are my connections in this community and we had, places to gather. All that. Only when I speak to someone like you who can ask me those questions. You know why it's so easy, because someone a UH student just had me to do an oral history of Kawanakajau. I said, I'm the wrong guy to see, I'm only 56 years old the Kawanakajau was built in 1938, you need to get... I can take you to some people. But because I was the president of the community association they wanted my spin on what, how Kawanakajau came about. And that is why I feel comfortable with your questions because it's in my mind. And every time, I love talking about it because I just love this community.

**UW:** It's important too that the stories keep getting told.

**PK:** I find that very easy now for me. Because I am, to me, my generation, even my friends, we get together once in a while, drink and talk about it. The breakwater, even that breakwater. I walked it three times as a kid, well I shouldn't say three times. I walked to the end three times as a kid because we had an uncle, Albert lokaha, who was as far as I'm concerned again... guess every island get 'em, but I get one too. He smoked Bull Durham, probably died of emphysema, he used to wheeze. But he taught us the value. We carried his harpoon, we carried the rope, the kahu, all the way. But all we did was go out there, he was the only guy that I knew. My dad guys used net to catch turtle; he used a harpoon. His harpoon was a 15, 16 foot two-by-four that he had made it round, just planed down and put a barb on both ends; one end was three-pronged the other end was a one-pronged barbed spear. We'd go out and after a while we'd carry it, because his son was with us, but we'd carry it, we all had an opportunity. He taught us how to
make 'ama during the day. Now you got to remember, guys go make 'ama at nighttime, put flashlight, some of my friends are experts at that. But this was during the day, make 'ama, catch the eye. Come on, how do you do that? But Hawaiians were very innovative. You did that with the net, you put the net... I guess in the old days you used vampire or something to make the string very thin. But we used the split nut, put a piece of thread over it, go catch them in the eye, that's one way. The other was to put an 'opihu and jump, with the 'opihu,lick the back of the bamboo. And we did all of that going out. We didn't gather the 'ama until we were coming in. But we found 'opihu going out, we did ka'akaka, we did all of that. This is what we did, going out. Uwu, we would stab uhu, turtle, different fishes, whatever. We did that. That was another form of our gathering. Only when I get an opportunity to talk, then I can talk about gathering, what we did. Before it was not gathering. It was subsistence. And that is why, when I hear... I don't categorize say, like the haliu now... with due respect to the haliu, yes, because you work all day, and you go gather when the competition comes, or the hula performance going come, or whatever you need to do then you go gather.

For us it was how we did. We had to do it, or else we no eat that day, and when uncle says go, we gotta go. It's not, bum-bye. We no tell our elders... even if I was going some place else; maybe I was going play down the park. And my uncle says, "hu, boi, come here." Inside me... but how do I tell my uncle, no. Okay, uncle, wait I go change my clothes, I go home change my clothes, go put on my pants to go in the water. Bum-bye when you go home, you give daddy this. My father worked at the wharf. Now, when I go home, I clean everything and my father go, "oh, oh, how you got this?" Oh, I went with Uncle Albert and we went down. I never knew my father to worry about, or to say, like I would with my mo'opuna now... where you going? So careful. I never knew anyone that drowned when I was a kid. Because, no body died, everybody just jumped in the water, nobody died drown. I found out when I was 17 I joined the Navy. I went to the mainland and we jumped in the pool, about 70 of us jumped in the pool all together, about 40 guys no could swim. I was thinking what are you guys doing in the Navy, haole, pāpālo, right drown. I never know. But we went 7 Hawaiians, 7 Hawaiians jump in swim around, backstroke, whatever, and I could never believe it. And that's why the questions you're bringing up... yes, but I can equate it to if someone would say, what we gathered. I never thought of us doing gathering, or those kinds of things whether it be for flora and fauna, for sustenance for eat, for craft making, I never knew. But that's what we did. I did it. I can use the adage, been there, done there, done that. But that's not where I'm at as far as my community.

UW: And that was the only school for this community.

PK: The Kawananakoa Hall was right out here, the one they are dismantling now, was right out here on the point, and that was used as a nursery school. Churches we have, on Lyman Avenue we have one, Ka Kīhau Mātāmālama, we have one on the road I am, Ka Uhana Hemoolele O Ka Mātāmālama, we have a Mormon church, we have a Catholic church, we have a KOH Church, so we have 5 or 6 in the community.

UW: Māla Puka O Ka Lani is the Catholic church. And they've been around...

PK: Right. Kohl chapel on Dresch Avenue, the Protestant, is probably the oldest, 1927, maybe. Which is 1927, right at the time when the community was coming on board, for their recognition, so they came on '25, people were moving in, '27 they build the church. And then the Catholic church was there.

UW: Okay, I'm jumping around now. The Keauka Church Community Association, is that one of the SCHHA (State Council of Hawaiian Homestead Associations)?

PK: We are not affiliated with the SCHHA. Past administrations were affiliated with the SCHHA, however, things have changed, where the community believes that the representation that we were getting, the types... Because SCHHA came in to do, met with us in the community, they came, you know, did their selling, their organizational whatever. And the community decided not to be part of it. So we're not part of it. And I believe, I was an instrumental force in not having them... because I have a political view that I believe, politically, that the idea, the idea that they represent all of us. You can not represent all of us, if all of us are not part of it. So, they have a right to do what they've done, and they went ahead and did it. But, just like in this last few case, lawsuit, with the Barrett, representing Native Hawaiians, their language was that they represented Native Hawaiians. Well, they did not represent Keauka, and Keauka was on record to say that you don't. Since then they've been trying to get us to come back into the fold, but I refuse... and it could be my own thinking about it. And I'm glad that the community agrees with that. But it's not me -- I don't force it on the community. I just tell them that this is where it's at, and if you want me to I'll pursue it. But, in all good conscience I can't take you guys down that road, because I don't believe that's how it will be resolved, politically or whatever way the SCHHA represents, it's not going to get done in the process that they're trying to use, because the process does create conflict. It created great anxiety when the Barrett case, when word went around, when the SCHHA came out publicly and said, you Hawaiians, you're going to lose your homes. Well, you raise the anxiety level. We get high blood pressure already, and you going do that. Now, you raise the level to something that was unfounded, totally unfounded. That almost a year later, proved to be nothing. So, I no say, no makākala. But you don't raise the ire of a community, of single moms, of...
parents struggling, who getting their own hard time, by saying, if you do this... See, that was an alternative, that’s why that wahine got on 'Yosh last night... if you no do, you’re going to lose, you got nothing. Well you can’t do that. I found that, because that’s how I was raised.

Again, my dad was a very strong disciplinarian... no hang around, no go with that guy, they’re tums. That’s me, and the more he would tell me, no go, I would go. So, that’s how I know. I don’t know about wahine, cause I never had sisters, but men, I keep saying, boys, that’s how it is. When you tell no, they going touch. I try to do that in my life with telling my kids. I no tell you who to hang around with, who your friends are. When you guys get of age, and there is an age of reason, when you guys do that, not 7, when you guys 18, after that you do what you got to do. You can shame me, you’ll never shame me. You guys get the name, you get the name, Kahawaiola... that’s your name. That’s the only thing I could give you at your birth and you’ll take that till you die. My daughters, you guys get married, eh, one daughter is a Dallion (?), one daughter is a Sibayan. But I keep telling them, you got to remember, you have Kahawaiola, so it’s up to you. You never going shame me. What you do in life, you can become a murderer, you can do whatever you want to do. I will not shame me, only you have to carry that, you have to carry that burden, to where you got to go. I do not believe I’ve done that. God rest my mother and father they’re gone now. But I’ve never did anything, that I believe they should be, or I should be ashamed of. But, I don’t... by any stretch of the imagination. I’ve been arrested, for my views as a political activist. I’ve done koko the things that I wouldn’t want you to be recording, growing up in this environment. I’ve done my share, I did it. I believe I’ve asked and gotten the forgiveness, of the people that I needed to. I made right with the Lord, as far as I’m concerned. That I’m prepared to let... if there is one thing that I will always say and tell anybody, that I’m prepared to do this... is to let my actions on earth settle where I am going at the end. And I no can, I ask nothing from no body, that’s where I gotta go, I already made. ‘Cause my wife, you no can correct me, how I going go over there. If that’s where I’m going to go, that’s where I’m going to go. But it’s only going to through my actions on this earth, this time over here. So I try to impart that in my kids, try to tell that to the young ones in the community, that you have choice, you guys make them, and you carry the burden. Don’t, no go back look at your parents, and if you parents, you know, go hide inside the house if your son did something wrong by today’s society.

No, as a community we’re supposed to come together, and... That’s what was happening in this community. I was finding, it was the history, you know, we had nick-picking, backstabbing. One of my philosophies is the president is to reduce neighborhood tension. That and I make sure... ‘cause we got an influx of a lot of new people, and kula mail, guys come from Honolulu, they get the idea that they come here, and in Honolulu we do it like this... We no allow somebody, your neighbor to get pig, stink that. Of course, of course it is. But you have to understand. My roots... you know that pig, that’s for us to eat, or my enclosure going graduate next year so I do that to cut down on my cost. But we should not even have to go there... why you get ‘em. But that’s how I grew up, my neighbor had one pig, chickens, ducks, some auline brought over one dozen eggs, when they ‘ole the chicken we all go over help clean, and do this, and do that. I mean looking at you I know you are a hula dancer, and the only reason that I say you are a hula dancer is because I see you carrying your hula bag. I was at the conference that’s why I say you look familiar.

Uw: I must have seen you there.

PK: Even as you, and obviously through your language, and your participation in the hula, that to me has been the highest form of trying to perpetuate the culture. That’s my opinion; that’s the highest form. However, I try to tell Hawaiians, ‘cause not all of us are hula dancers, not all of us can chant, not all of us are fluent in the mother tongue, that... you see what Mr. Konan is doing? You see? That is our culture. It is working everyday. You may tell him he’s gathering, but he’d say, ‘nah, I go pick, the thing looks ripe.’ And I’m so happy that he did that. Because that is how I can equate that is our culture, it lives everyday. Only the Hawaiian don’t understand what the culture is. To survive is our culture. Our people came, if that’s the way you look at history, the way that it is portrayed, that supposedly we, our ancestors came on the Hokulea. Came across on a canoe, on a wa'a. The Hokulea came over, brought with them the malo plant, pu'ia, one Tio, and different kinds of plants that they brought with them to come here. Found this place, lived, nurtured it, watched the trees to grow. Because they didn’t come here to a forested place, but to see all that, that is our culture. It lives today, our people just do not know that the mere act of coming down here... in this case a kupuna come looking. When he ‘ono, then you do that. The mere fact of doing that is that your culture lives. Because anybody else would say, that’s just an ornamental plant, I’ve heard that before. Make rubbish. No get that ‘cause make plenty leaves, no get kamani cause it does that. I ate kamani, it sustained me, down the beach. Hale, you can make lei, this that, it’s ‘ono. You open that bugah, you bust that bugah, you get down inside, it’s little bit work, but it sustains you. That’s what I mean, our culture lives and I believe, because through the hula, through the chant, the music... I’m partial to the music, because I love the music. So, the music, the hula, the language, that to me is the highest form right now, because it is the most exposed form.

This last hula conference is just going to do it more, it is going to go to the world. I like to keep for me, with due respect to Auntie Pua and Natani who grew up up down here, this... I get plenty girls and men know how to dance hula, they don’t know how to kū lua pig. Some places you no can kū lua pig no more. And one is Los Angeles. We get one pile Hawaiians over there, we no can kū lua pig. I went there now you got to boil ‘em. You got to boil the pig, you no can kū lua. I went there we had imu rock, I sent home, my friends
got me imu rock, send up there, we made everything. You can't do that no more. Now you can understand the reason there, but in Hawaii, I got boys that don't know. Come on, well what do I do now? Set the imu, how? You see. Now, fortunately I have friends that can help them do that. But I learned from our kupuna who have gone, several different styles. I've done some in the hole, I've done some on pūhiohioe, surrounded with rock, with dirt, with sand. Everybody now uses polyurethane, you know Hawaiians are up with the technology – polyurethane. You know, bring a roll of poly, it works. So they were innovative, but that's our culture. That's not... at first I was like, tātā pai'analo you guys. Tōto-man him cutting over in the graves. But you'll find it's less work, so we no need work harder, we just gotta be smarter.

UW: As long as you teach some kids the old way...

PK: As long as you no lose sight of that. Because you go to Kā'ū and there's no polyurethane what do you do? No can make party, no can make lua'u? So you got to be prepared to do that.

And that's all I'm trying to say in our culture. Because I always go to that, I always say, guys no can sew net, what's the sense of talking about going down the beach, we no can go gather the fish, you no can sew the net... there look at the fish. No more throw-net, they don't know how to make one net. What do they say? Kōia i ka mū, go to the source. Well you have to go back to the source, you got to learn how to make one net. I have some people here, some of our uncles, ladies, that still sew net. She still sews nets. Her husband can't do that, fish anymore, but her son... so she sews nets. There are resources still available. Now they get books on how to sew nets. So if somebody would feel like, you go get one, you can do it. So I'm glad that those kinds of things are in print, however, never can beat sitting down with tātā. Show you how to make the piko, start the thing, come the puruma, do the tapa, make your own hāna, we used to have to make, now guys used credit card whatever.

UW: That's right to put it through. Credit card I didn't know.

PK: That's right, I said what you doing uncle, the thing it's the perfect size, for the eye. But to me that's the ingenuity of the Hawaiian people, it was the ingenuity. So the culture lives, it is a living culture. This area has a lot... but that's for me.

UW: Okay, lets move to the airport. Lets talk about the improvements first, what was presented last night. Are there areas of cultural significance that you think, what they have planned may impact?

PK: Based on my knowledge of what they have planned on the inside, with their boundaries as they have said it... I can not see, and I say that with reservations, I can not see... and I tend to agree with Yoli and the findings of no significant impact based on what they are going to do on the inside. That's why I asked him for clarification last night. If you're going to build something that is going to make more noise, then yes you will impact the cultural part of it because... and I'm going to make an assumption, we're going to be hypothetical. What happens when that noise... sometimes the Royal Order of Kamahameha uses this area sometimes to do an 'awa ceremony at 12:00 you know, and before the sun comes up, they do their 'awa ceremony up here. So, if you do that and cargo planes are going to go now... cargo has now increased in their productivity and they're going to come, instead of coming in at 1:00 they are going to start from 12:00 on or 11:00 on. I believe that is an impact.

Let me segue just a little way to give an example, and you can correct me if I am wrong. There is no, they say, there is no significant impact to Mauna Kea, when the astronomers were building their thing up there. Yet, the community of Hilo, as far as Mauna Kea was concerned, we were creating an impact on them. How? The lights, okay, the lights we were using in our subdivisions. That they even went to the County Council and had it changed. You see, I think that's an impact there but you guys turned it around and you said I'm impacting you. So the County Council now says you have to use this low type of beam. So you see, that's all I'm saying. Maybe they found no significant impact that what they were doing was wrong, I know they are because they destroyed some ahu and whatever. But if it can impact them after they were there... if you no was there no impact you. I can go get brighter lights, I go see better, it's going to improve my life. But, because of what you do, we had to scale back, we had to live with these yellow lights, so I don't impact you up there. Then I would believe hypothetically there might be certain things, I can pick it up now, because maybe at this particular point in time it's not in my mind. That's why I told him, if we just look at, continue the dialog and be open. You see I didn't like this kind, when you sign the thing, forever never, forever. So I can go there. I been there done that, that's why I don't want our people to go into that. And that is what my only admittance about it is that, as long as we can go back, the suing part, yeah, no sue me is fine. But no tell me that, "as long as we're reasonable." That's why I love, I was a union president for 20 years those kinds of firms are the best of terms that you can use. Because you can't disagree with terms like reasonable.

UW: You can't quantify it.

PK: Yes how do you do that. So you can't argue. No, you're being unreasonable. It's hard to fight. So I learned the semantics of those kinds of words, significant, adequate, what is it? But you can never ever sue me for a significant rise, an adequate rise, as long as it's reasonable. No. I got to know, specific, in that area. Maybe I no can sue you, and I think that's where...
it should end, you sign something that you can never see me. But if you want to keep adding caves upon caves, then I want to say, I can never see you unless you go up 5 DNL, if you go 6 I'm going see. So this is what I'm trying to say. Now, just so you know where I'm coming from in thinking. The significance, personally I don't, I can not see. But I'll have to believe, and sometimes, oh, sometimes, not everything the haole says is wrong. I can say that either. Just like the haoles come around and say, you know the sonar sound could be bothering the kohola. I tend to agree. If you was to dive, not to see the kohola, but just to see how fish react with noise, it can be very disruptive. Just like somebody saying I can get a heart attack sitting outside here, especially when the plane comes...

It's funny, they were there last night, the Japanese lady making a lot of the comments, they live right along the fence line, Mrs. Hanohana. But I know what her husband is saying. They hear the planes, but when they changed the runway -- they live on 321 -- when they changed the runway, that's why I got upset with the DOT, they did not tell this community. That planes when come at three, I was sitting here, and 321 comes this way. And when plane came over I said, ah, something's wrong, why is this guy coming over here? Because normally for us growing up, that was used just as an emergency, something happened. And I was going to tell last night, but that's bull crap, that's his history for us. There was only one place crash I see here all my life, that they talk about at the end, the buggah run off the end, went off the road, went into the bushes. Okay, the buggah went off, straight down into the bushes, never go where the McDonald's is now, there were these big bushes there. The buggah went all the way down to the old road, a jet crashed over there, a saber jet, military jet. So that's the only one I saw in my life here in Kaaahana, in Hilo. So I'm not too concerned about those kinds of things. Because I believe the technology, I ride the plane all the time. Just like doctors, I believe, for me, doctors. I trust our kupuna with lap'aau, but, when my arm hurts, one contours shot, the buggah go away right away. But I will always say, if I need go see the doctor, give me some oha tea, some kalo tea, koko'o la tea, something, noni. What's wrong? Because why, I'm fortunate I can afford to go get a contours shot. Some people can not, other people can not. So, I should not bugudge them getting what is necessary. And that's the part of the culture that my community may have to suffer in the loss of it, and I'm prepared to fight for it. Even though I can go buy my own other stuff. That's all I'm trying to say.

And to answer your question again, I don't really believe there is, but I don't want to foreclose the fact that there might be. But how do we do that? We don't know. People got to go work, I'm fortunate I'm retired, so guys are not thinking, oh, I got to make this bill, I've got to meet this. That's what's in your head. You can not come to a meeting one night... I appreciate... I got meetings these guys can go on to 10, 11 o'clock, I got to cut them off. I get community people want to stay, they want to. Because the want to... there's a hunger to... and I equate that to this, they have a hunger to know what their rights are, and all I'm trying to express to them is, no do like I do, but these are your rights. You have a right to do it, you don't do it fine, move along. I love you still and move on. I'm not going to tell you, no do this; 'cause I can't do that. But I don't see what they're doing right now.

UW: You saw all their recommendations, and their mitigation measures, and I know we talked about a survey, and we raised hands, but, for you personally -- the wall works or doesn't work?

PK: I don't think the wall is going to work because the effect of the wall is this... and I just want you to hear what he said, and again you can tell me if I'm wrong. What he said was that the wall was going to take care of the 50 something guys along the fence. That was the primary reason for that wall. But as the OHA trustee said, then you would block the tradewinds that now affect the rest of us that are not going to be with the sound. And that's absolutely right, because when that wind blows from there, that is a cooling breeze. Especially when it comes this way, comes this way into the community, and the only colder wind would be the wind from the mountain. The offshore wind, that's what's here. If you want to talk culture... the offshore wind, that would prevent, I'm not going say the 15-foot wall going prevent it strongly, but if it does, you prevent an offshore coming from here. The offshore does what it does, make the water miiie, you know, you get that with an offshore wind. Now, with the tradewinds being stopped, now they're going to tell me, the way with the convection of the wind going flow like this, it's going to go up, going be down, going come like this... I know that, I'm not stupid, I know it's not just going to fly up in the air, it's going to come back somewhere. My point is, you change the direction, it's just like the ocean or the river, or the kahawai, when the kahawai go like this, if it went like this, when somebody go change 'em, make it straight, trust me, it's going to go, go, go'll it goes back to where it like go. I am saying, you change the direction, you're not changing the destiny of that kahawai is going to do, who it natures along the ways. So we can not be putting up an obstruction there, that's why it's totally, the community... No sense we beat a dead horse into the floor, because we're not going put... we're against the 15-foot wall.

Now, I tell you the term is any better, but aesthetically it may be, the wind can blow through. Somebody said plant trees, landscaping, okay I understand, but however, we got to limit ourselves to the type of landscaping. You not going plant one 40-foot tree right by the airport, because they'll cut it down. But tell the people that. No go come with fantasies... landscaping, I even heard the OHA trustees say put trees, have you ever thought of trees? Well, what are trees? Same thing auntie want say out of one side of her mouth, you build a wall block the wind. Why you put trees on farms? She's a farmer she's supposed to know. When you put trees its called windbreaker, windbreaker. You guys no understand, I no like get into that with my auntie.
but you see. I just love Hawaiians, they say no build a wall, block the wind, but plant a tree. And when you plant the trees it's a windbreaker, what is that? Well maybe the wind can go through and that's why they say windbreaker, but still... And the airport is not going to allow it, and I understand the safety things. I'm just waiting for the shoe to drop.

That's why Hawaiian Homes they went throw me off. They went drop the shoe before the State. And they say it like this... for health and safety of my people what are you going to do? Because the Airports they say they got to do this for health and safety, and then you'll be in a deadlock... for health and safety. I do hope... I'm going tell you this, because truly, if this community... I believe I have the pulse of this community, this community will do one of two things. They'll be apathetic, not become involved anymore, or they will do do and say this, that... how do I put it? You know how some people just like to be told, have an opportunity to give input, and that we all have a civil time making the input, giving the mana, and then you know what, I got to let it go so the people who got the expertise to do it. With the caveat that there are going to be individuals... see, that's why I don't like the term, if one no like, then it's no go. Well, they have to massige it that they may have to accommodate the two or three. I don't subscribe to that, but our people are, we are, and sometimes it is kanaka to talk in front of 40 guys. That's not one of my problems, we can see that, that doesn't bother me. But it is, for much of the people in my community. I feel that in my heart. That's the reason I chose to become the community president. I decided that it was time for me to accept some of the burdens that was set upon our people, some of them can not bear. I got that I can, but I have an understanding wife, she's Hawaiian, she's from Papakōlea, she's a product of the homesteads. So she understands, not fully, because her life in Papakōlea was different than Keaukaha. And I couldn't believe that, that's what I couldn't believe. What, you come from the homestead you no eat fish, what's the matter? That's why I keep telling her, you guys mountain Hawaiians, you guys from the mountains, you guys eat that kind stuff. You guys eat that kind easy-apple and all that kind. You guys do down the river, swim, you swim down the ocean, you guys don't know how to swim. That's the only way I feel.

That's why I wanted to make sure with the DOT, I wanted to make sure with the consultants that, some dialog. Maybe it's going to take one more meeting to get it, and if not they're going to proceed what they want. It's got to go... I understand. I like be, just like Mrs. Moniz said, now it looks like an ultimatum. Cause every time come... I don't know how you feel about Kamehameha Schools, but Kamehameha Schools is over here in this community, and they came with an ultimatum. You see, that's why they're there, they came with an ultimatum. But, I happened to be in the meeting and Trustee Jerros come with an ultimatum. We've been here 7 months on this island looking for a site, we never find. So Keaukaha is the last resort. And we're having the meeting now. And we're going to build 'em. Excuse me? Seven months, and you guys coming now? Where were you guys 7 months ago? Well we checked out sites, the one we own by Waihoku, contaminated with arsenic. We go check over here the pō'e haole place, we go check over there, contaminated with this... Now, the Hawaiians the only guys left... came to the Hawaiians. So he looked at me, and I had a running match with him that night, and he looked at me and he said, "Are you tell me you don't want us here?" "Oh, the shoe fits wear it." "You know what, if you guys don't accept it now we'll leave." I said, "There's the door braddah, aloha, out the door." But, I don't realize the guy is an attorney, and then he came with "you guys..." and then the challenge became me and the community. "You guys going let him run you guys?" And some of the people that were there last night were there, and just looked at him, there's the door. Hawaiian Homes went kind of swallow hard. But, there were many Hawaiian educators that I knew, were from Keaukaha, that are still teaching now, Kula Kaukapali, when they were, what are you doing to do? And they explained. And I said, can Keaukaha use the place for educational purposes? After, after, After, well, we're going to give everything to the Hawaiian Houses when we're done, we're going to give all the buildings. We're going to build Hawaiian Homes a new office. Well, I could care less if they build them a new office. But they did as part of the caveat, and that's how they... so I came up and said this. Cause I know already if I made it, and continued that stand, we would not have had it. And I said, the consensus that I have is that this community would want you to do because you guys going be short time. Supposed to be two years, it's been over 5 now, you see how that goes. But, anyway, for the consensus and as long as we can get some access to those buildings after it's done. And their answer was okay, we can do that, we can try and work that out. And that's what it was, and they built it. They build it in like, 8 weeks. So it can be done, and they did it... [End of tape one. Interview continues, talking about Kamehameha Schools in Keaukaha.]
adaptant up to a point, up to a point. That's what I'm leading back to. I'm going to go, go, go... not foreclose on shutting them out, beat it. But, I don't have a problem to threaten you with beat it, and then we go beef someplace else. Unless you're prepared to sweat, sweat the deal so people can. Like I said personally the noise from the airport doesn't bother me because get remote control. If never had remote control I'd be pissed, because then I got to get up, or miss something. But, because get remote control technology came, I learned to use that way rather than get mad at the airline. No more. But I still, by no stretch of the imagination am I bull shitting when I say I call Aloha Airline, and I can not see someone saying, "Well, we have a waiver." We have a waiver, go take it up with Daniel Inouye. Trust me I will. I will do anything for this community. So that's my only thing with airport and the expansion.

UW: Do you have any other suggestions or recommendations that would be good for the community maybe, that would help the situation?

PK: Well, I think that Mrs. Hanashiro raised a good question that she posed to Rodney. If you explain the process, the comment stage, because this is pre-assessment, that maybe a full-blown EIS, trust me I know about a full-blown EIS. It's costly and it prevents projects from coming on line. That's a common practice they use to prevent, to prevent things from coming on line. Well, I'm not here in the prevention mode. That's reason... I can be but I'm not. The reason is, it's our form of transportation. All I want the consultants to understand... and this is strictly from a view that they need to... and that's why I'm asking that to help put it in a little packet form to let them look at it. A simple summarized thing, to say this is how the process works, you have until this date to do that, and it is a negative, if you guys are going to give a negative response, which I believe they will. You know a negative, which would mean the EA is sufficient enough, then explain why... But also explain why... not we looked into moving the airport, but that we looked into it. Break it down. It was costly, it was this, it's going to cost that. You understand? So that people can have to see what compelled them to make this decision. Because there are certain things that I'm saying that is compelling me to say it, because for one thing, Hawaiians have never had an opportunity... specifically this community... Has not had an opportunity to be so compelling so as to that we're a key... and I have to look at it that way.

I kind of know in my heart that the project is going to go, but I find a lot of things now are community-based. So communities got to buy into it for it to go smoothly. If it doesn't, then there's all these jagged edges... anxiety on the part of the people who are going to have to do it. Are we going to go? Are we going to have litigation? Are we going to have this and that? And Rodney kind of touched on it last night, Denis kind of said yes, he said yes. Sure I understand it. I know our people missed it, it went over their heads. But I'm glad that it went over their head, so that we don't get into the intricacies of that, as opposed to reaching a remedy. And if we look at the word remedy, there's many ways. The remedy could be... some guys... if apathy sets in, right on. Right on, for the State, for the DOT, right on for them. It means nobody going show up, nobody going do this, and we can do it. I don't want that. All I want is the people to be able to share, make their noise if that's the right word. Speak from their heart, tell you what it is, and just, the response back should not be, we did it, done that, been there. It's okay, let me go look. I think that's it... I really never like that phrase before, oh, I'll get back to you. Well, when you do, get back, that's all. We've addressed that. We've addressed this, we've addressed that, and this is the reason why we no can, we think it's too costly, we think it's this, we think it's that. Because I heard this, if you guys no like the wall, we not going build the wall. But you guys going still be stuck with the noise.

Well, I really don't believe it's a noise thing anymore. Because, the noise not going away, it's going be there, I get noise here, every morning, you can come, I'm quite sure, 5 o'clock, 6 o'clock, you'll hear, beep, beep, beep, beep. That's the what. And I kind of live in the middle of the subdivision. So I hear, beep, beep, beep, beep, clang, boom, long, beep, beep, beep, beep. So that's trucks backing up, you know. Sometimes, honestly, to tell you the truth, it does not affect me. I could care, because the really, I'm really faced with the reality. And that's all I'm asking them, why you guys never address the Mayor's position? The Mayor, I believe the Mayor said, beat it, no come here, move the airport. It's a disservice, he used kind of very strong language, it's a disservice to Hawaiian people to tell you they're going to air condition their houses. It's a disservice. I never hear one Hawaiian say that, I heard the Mayor say that. Politically, I think he was doing that politically, I don't. Because he was elected already, he wasn't running for office, he was elected, he was the mayor-elect. So what does that have to do with it? So, yes, the suggestion I have is that, just... is to find... work towards finding some remedies as to how we can do it. I really don't know. The suggestion, I really don't know. I can only say that I tend to agree like the lady said, Rodney can you come up, can you do... rather than in that big book, because that big book contains all the words and diagrams... You know, something that, look Keaukaha, this is what we got to do, this why. Just tell you, write it, this is what happened, we no can go there because this over there, we believe this, we have to expand here, the airport, the cargo there, in a short form to explain to the people. And I believe, people will have a better understanding of what can or will happen. More in a loose-leaf scenario, reading material, so they can better address some of those questions.

UW: Are there any other community members that you think it would be real import for me to talk with? I think you know already that I was able to talk to Lusina Kawelu and she is going to try and work to get Auntie Alice...
PK: Aumoa. She's a gatherer, a resource person. Her forte is lauhala, but she does many other things. No, I believe that... and there may be others. Auntie Abbie Napahi, because that from the stand point of... I look at them as being very, they profess to me to be culturally sensitive in the area of Keaukaha. But, that's only playing on words. With due respect, they're my kupuna. If there is anything that can help you, they would be able to... you get a spin on our past. Because they are our past, and we can improve the future until we know where the past has been. And that's a truisim, we are who we are because that's who we are. There may be many. I know she's hard at work still at Aliu Like so, you know for her. And the others, no, I wouldn't be able, from her you may be able to get others. If you have the opportunity to make contact with her. I think through Aliu Like you would be able to get a hold of her.

UW: I talked to Rayce Bento, I think he's over at Aliu Like, their kupuna program coordinator. So he should get back to me, and if not, I'll call him up one more time, just to check in.

So what's going to happen now, is I'm going to take this back, hopefully this worked, and I'm going to type up what we did, and then I'm going to give it back to you. You take a look at it. If you like some portions of it, some stuff maybe I got wrong, maybe spelling, people's names, maybe you want to fill in a couple blanks, something else come into mind that you want to put in. I'm going to ask your permission if I can use it in the report. And hopefully we'll come back.

PK: I understand deadlines, everybody has their deadlines. Legislature's open, biannual budget... that's important. It's my job to make my community understand that, because we cannot go the house-to-house and do that. And that's why I look a lot of that thing and said yeah, I'll send a survey. But the survey might not be the kind survey they like. 'Cause I'm not going to slate the survey, but I going to say something like this, do you like the way, do you want the na? Yes, or no. Now that's not a survey per se, because now really that's a very subjective survey, it's not an objective survey, it's a subject survey, because I never leave one place for comment. That's my reason for saying. If you guys have such this rapport with the Planning Department of Hawaiian Homes, go do that with Hawaiian Homes. Have them send us all the survey, they have all our names and addresses. Do that.

UW: That's the sentiment I got last night at the meeting. Even with the question of the survey, you don't ask the community to survey itself.

PK: Well, that's why I did a ridiculous exercise in telling Yosh, you want to take a vote now? Because he came back to me, you think we can change, you know the question they said no, can we change around, I going ask the question this way and see if they change. But that's consultants, you have to think of ways to manipulate, to change it, you have to show the reflection of the right, the proper perspective. Well, I'm not into that game playing. You want it? But it's all unbiased, all hypothetical. I'm going to explain to them what you just said. And no the majority, whatever he was looking for, majority, or minority, you got it. I got in the car I told my wife, "Well..." I could really looked like a fool doing that. But I just had feeling in my heart. Because I've been getting these calls, what about this, what about that? And it can be... you guys show up at the meeting, voice your... Because I've been getting these calls, what about this, what about that? And it can be... you guys show up at the meeting, voice your manaro. You guys tell me you like input, that's all I'm trying to do is give you guys input. Because tell stay home they're going do it. And whatever, and then you guys going sit down... That's why get the word namanamu. If never had one word namanamu, then our people would not be there. We are. You going go be apathetic about it, let it go. Then go oil in the garage, over 2 cases of beer and be namanamu. Too late. You guys had opportunity. Good, bad of indifferent, say it, make it, get it out of your na'a, get it out of your system and move on with life.

UW: If you hear from the community that they have a specific desire... Because it's really easy to say, we no like this and we no like that, and that's good too. But if they have a specific, you know what we really need... what we really want is this and this. If there is a specific now is the time. I know it's hard too because they want numbers. "Can you tell us how much dollars you're talking?" But...

PK: That's why I didn't interject, because I need to let them get it out of their system, because now with that said... I want Yosh and Rodney and Deniz and those guys to come up... if your number is only 10,000, I heard one guy got 25,000. But if your number is only 10,000 then say it, tell me this is it. And then the guy can say, yeah I can, or no I can no. Trust me, there are people that are just struggling, they're just struggling to get by, and it's a struggle. And that's all there is, but you're absolutely right, and I'll tell you this, no reflection on the other people, because you're Hawaiian, that's the difference. That's what the other people no can understand about us. We're not different, but we just get certain things... and I'm quite sure the Chinese, the Filipinos, Hazids, all grew up with their own, they had values. We all have. Our link to each other is because we're local people, but when you're Hawaiian and you're attached to the land, it just makes you a different individual. Your whole concept changes.

UW: And I'm trying to work at that, how do you put that in words. Because we know how it feels in here, I can feel it, I know it's there. But, how do I put it on the paper and to accurately capture exactly what you're feeling. You see ladies, they get up to testify, they get to talk about their 'aina and their homeland, and two seconds they're crying, crying. And other people will question that, is it on cue? But no, it's something from inside here, and how
do you explain what it is that you feel towards this land. And no, I’m not from this aina, this is not my aina, but because I know how I feel about my aina and where my family is from, I can certainly relate.

PK: But if you gathered that part in the meeting, then that’s basically all I can ask you to do. Somehow, because I don’t know how to do it either. I can verbally express it, but I can put it in a form that when you read it, that’s what it means. I don’t know the words. I don’t know if they have words to show.

UW: And maybe perhaps it’s because nobody else besides us comes from here. So nobody else can begin to understand it.

PK: That’s why a lot of the times when I do have to write something I use the terms like, vehement. That’s like bone-headed. That’s the only way I can do it, because that’s the only word I can use, vehemently. Whoever said this vehemently objected, or vehemently said. And that’s the only kind of things that I can use, in my limited command of the English language, that’s how I can express it. You get one hard job. That’s the only thing, that’s how it goes to my nara, to see that, the hurt. There’s a hurt. But I want to go beyond the hurt, because the aha going to there. I want them just to have an opportunity to just voice their concerns. And then if you can make constructive, be constructive in your criticism, do what you need to do. I lot people go on about their hurt and sorrow. I really don’t want to hear that because it bothers me too. But if you can get ’em out, the pillay stay in you and it just cusses. But you see I was happy because at the end, from all the persons I hear talking, talking, talking, at the end some of them were saying, but if you do this then we can do that. And that’s all I wanted, I wanted the but. I just wanted to leave the door open for a but, because we were getting close to shutting the door you know. You’d do a good job of trying to shut the door. Maybe that’s his job, but, and I don’t think nothing. He got to do what he got to do, and that’s what he does. But we’re going to get there. I no like them tell me, he’s this, the second time. Well you had four before this second time and you never come here. So why couldn’t have had six over here? But you guys went four somewhere else, and find out no work because you guys came up with another concept and the concept from the federal government says the community got to buy into it, so you came to the community. I’m not stupid enough, because that’s what the University is doing at the old sewer treatment plant. They went around, do everything, gather all their money, and then find out if the community no like, no can do ‘em. So now come over here, how you like, what you like. I ahoa them, but...

UW: So if you talk to anyone, or you hear anything, or somebody calls you up and they want to talk to me, that’s fine. [Interview continues concerning transfer of DWAH lands to DOT-Airports.]

PK: Well, lo and behold, after years of litigation the judge ruled that the State DOT needed to pay $36,500 a month, a month. That’s to cover all the back rent and everything, but they need to pay that from now on, that’s what they’re going to pay for the 58 acres for the runway. After years of struggle, for the people that walked on the runway, got arrested, people who fought it all the time. Wonderful. Take nothing away from Kahololawe and those people that were doing that. But they were doing that struggle, they were over here doing this struggle. Everybody had a struggle. Lo and behold the Dept. of Hawaiian Home, State agency decided to go and exchange 208 acres, which is all the airports. Hilo, Waimea-Kohala, Lilie, Kahului, the fly-over, the ingress and egress, the fly-over was Hawaiian Homes, Motoki was the same way. That’s why there’s agriculture around Motoki, they wanted to make sure, they did want anybody build a home over there. So the impacts would have been all on Hawaiian Homes, all of them. They decided to swap 208 acres for 20, the 20 acres was Māpuapuna. That industrial area there in Honolulu around the airport, Māpuapuna area there, that’s the 20 acres that Hawaiian Homes owns. So all those guys in those that lease, they are lessors of Hawaiian Homes. And their mana, Hawaiian Homes mana was these 208 acres here, the $36,000 here, the so many 1,000s here, the whatever, whatever, they all equal and equal to $1.7 million. Haya, Māpuapuna is concentrated. That 20 acres makes $1.7 million, so land for land, value for value, we’re on the money, come on you guys, you got to vote. Keaukaha and Hilo admantly, Keaukaha admantly said, no. No. Well our commissioner, at that time was Annele Eleanor, that’s why when you mention her name, I got no problems, they’re kupuna and that where my respect goes. Whan it reached to her, she was a Hawaiian Homes commissioner, the news came back like this, Hawaiian Homes commissioners unanimously approved the land exchange. Cry, hurt, tsha, we had went meeting everybody son-of-a-bloody each other. That’s why she’s lost respect in this community, because the people told her, well we would have lost anyway, so you decided to jump with the winners. When the stand would have been 8 to 1, yes we would have lost. But you would have said what we wanted to say, the record does not reflect Keaukaha’s statement. That’s the historical part that forever, thrown out in the wind. But the history stays in my mind and the people that were there. We admantly, said no. You were supposed to go down there representing us and say no, but her answer was, we would have lost anyway. But see that’s not the thing. I’m not looking for the loss or the win, you need to plant in the record what Keaukaha ... Just like that 39,000 names they found in the protest, see we never knew that. Did you? I never knew until that lady found it. Then it ... in Hawaiians... what? It raised up your pride, it made your dignity, as one Hawaiian...

UW: To find your kupuna’s name...

PK: That’s what our people need. You need pockets of showing where dignity exists. Sh*t, I need assimilate, I need comply, until you show me...
compelling reasons why I got to. And that's the only thing that bothers me. That's 208 acres. But I came up and had an opportunity to make input by saying this. You guys talking about money. What happens when the money stops? What happens? Businesses don't go out of business. Nothing lasts forever. But land stays there forever and ever. So when the $1.7 million drop, or if we lose sight of that, you don't think it would have been better to have 208 acres than 207? Now we only get 20. Right there in the middle of Honolulu, Due to Honolulu, right in the middle of town, by the airport no less. That's what we own. If all the businesses decided they move somewhere else. Or if the County of Honolulu decide that there's no compatible place to have it. You see, I'm not into compatibility and all that. Eh, what we own, the 208 acres right here. The airport fold up... or if they don't that's fine. But would we generate $300,000 monthly? Come on, money in the bank. Airport going close? No. $30,000 a month. Maybe even get chance for raise the thing, but it going come. They couldn't see that. And it was our people, it was our leaders. And that's what inside my na'au bothers me.

UW: Those land exchanges haven't always been beneficial.

PK: Never has and never will. Because it has never been done up front. It has always been some devious, back-room deal, to benefit certain people and certain corporations. I tell you it was the leaders, some were Hawaiian leaders, some just happened to be the governor's, or from that time. That's why I talk being a leader very seriously. It's a very big burden, you gotta look at what you do, what you say, how you do. It is a kuleana, a responsibility that I've decided to take on, and I don't play around with it. In fact I got kind of little bit hila when guys tell me, oh, you're the community, can you come here do this that?

Personally I'm a very outgoing person it doesn't bother me, that's my style. I play music, I'm an emcee, people give me the mike, talking before people is not a problem. But I developed that, I had to develop that. It was not something that I grew up with. But I always did stupid, not that being the Kuaukahana president is stupid, but I like to do stupid things. I can remember taking my wife to Vegan, a whole bunch of us from LA, all the Hawaiians I know. We caught a bus went there. I took two big stalks of lea, and my wife was like, what are you going to do, make ass? Not to me. They don't know me, I don't know them. They gotta know me for find out what I'm doing. I ended up selling leaves dollar one. Good luck. This is Hawaiian good luck. And my wife was embarrassed, but I had a hali. I don't have a problem to get up before some people and say what I need to say.

But there are moments when I go hame and I think... and I keep telling people, and I tell you. I'm a selfish person when it comes to Kuaukhana. I'm very selfish. I have no other words to describe it. I want Kuaukana to get this, that. I want them to get something else too, because I've seen where other guys got, and we no get. But do it with humility, he'ahaa. I don't need the glory, I really don't, and I try not to. And you just surround yourself with good people. It's like Mapuana, I've had the opportunity to see her grow. That's why she's my vice-president. That's why I try and enhance her in you, you have these certain rights. She's from Kuaukahana. She grow up here. All of them here. Sometimes it's midnight. I try and ask them to adjourn, but they keep going. No body like second the motion. But the hunger for information, that's why in my own simple way, I try to send out a newsletter to them just to keep them informed let them know what's happening. That's why when I took over... we have a membership. You have to pay 6 dollars for a year. But I send a newsletter to all 420. I don't have 420 paying members, but I send it to everybody. Eh, you the community... you're the community. And I made it clear to those that come to the meetings but don't pay their dues... it's not that you're not welcome, you're always welcome. My only thing is, when it comes time to vote for the money, what to do with the money... you can vote. That's all. But in this community, if we're going to spend money in this community, you benefit too. Potluck, you come too. Except you can't tell me, well I think we should spend the money over there. Then you pay your 5 dollar, then we can decide where we going spend your 5 dollar. But if you no more 5 dollar, no tell me where to spend the money. Only the guys who pay the 420 dollar tell me what they like do with the money. But when we spend it over there, you're welcome to come over there too and partake of whatever. Everybody in this community gets a goodie bag. The kids get one every Christmas. All that I get through donations. Li'iakalani... They were spending big bucks trying to pay for apples, oranges. So I went to go see the guy, talk to the guy. The guy's been donating apples, oranges for the last three years. He gives me those things. You know apples, oranges, candy... they give me. We pay something. I started going to Honolulu to buy nuts from that place, rather than buying from the store. Wholesale more cheaper. "Well, I don't know if we can... who are you guys?" Kuaukahana community. "I don't know. Are you guys non-profit?" We are, we're a community, this is for the kids. Fortunately one of the office workers was from Hilo... Japanese girl. So I talked to her... oh, yeah by the beach... So every year I can call them and they'll send it to me at cost. I got guys work in the airlines, my classmate. So I go there, and he ask, "anything else?" And I tell him, next year, no reline. And that's how I do what I need to do.

The people here, most of them I've known all my life. And some of the families are still here. So for me, that's why I'm planning this reunion with the new gym... 2003. Right now it's March. I have it tentatively set for March. They are supposed to finish by December 2002. So we're doing March 2003. We're going to a 78-year reunion for the Kuaukahana community... I'm trying to knock about 9 birds with one stone. So that we can do big wing-ding and get it out of the way. Really bring the gym in on-time. The reunion, the grand opening, Kūhō Day Celebration. Because Kūhō, I believe is very important.
I saw that Kīhō day was just a holiday, and people forgot that no was for him, no more the 'ina hoipolupula. So I'm trying to revive that. Here we are in Keauhou-Panarea and we're not even honoring this man. So I'm trying to do that Kīhō Day Celebration, the reunion, the grand opening. I'm trying to bring back De Blahahs of Keauhou... 'cause the only one missing is Abe Kea, but the majority of them are still around yet. I just got to bring Bernard from Honolulu. But the rest still live in Keauhou... Piggy, and Randy, and John Kua and Clayton Kua, Revelation Kalauli... they're still here. I'm trying to get them to come back. We've got musicians... Dr. Lance Aina, his brother-in-law, Kureal, they're here. All Auntie Eleanor's kids. It shouldn't be a problem, to me, to get them to come back and perform. But there are many that left. So that's what I'm trying to do. And make it a weekend to honor our kupuna, to honor our sports people. Kids that went on to do excel in sports... men and females... do all of that. The kids, the educators, lawyers, do all of that, and bring them all back inside. This is your guys' community. The County might be leasing it. See the rarity of it is, this is going to be a County facility on Hawaiian Homes. See, that's what the County don't like. I keep telling them, you only have a 21-year lease, after that beat it. And we went, as a community, go raise the funds. We went solicit legislators to do that. After they got the money, CHA contributed $687,000, when they did it... once they got the money... this was the word that came to me as the community president, "okay now we take it from here." I said no way. I'm going to be there. I like look the plan. I'm not going to stand over the construction worker... but I going look the plan. I want to make sure the construction plan is correct. Hui lai! You see a lot of things... it's not a Big priority. It's a big priority for us to get the new gym, but during the construction phase, we got other things to do... life goes on.

UW: Mahalo for your time...

[Verification and Acknowledgement]

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WILSON ONAKOTO & ASSOCIATES INC

VERIFICATION AND ACKNOWLEDGEMENT

The attached transcript is a summary of an interview conducted by Utulani Woodside of Wilson Onakoto & Associates, Inc. for a cultural assessment prepared in conjunction with the Hilo International Airport Environmental Assessment.

Interviewee: Utulani Sherlock
Interview Date: August 16, 2001

I have reviewed the attached transcript and have made the necessary corrections on the attached transcript. I acknowledge that the information therein may be used in conjunction with the cultural assessment prepared for the Hilo International Airport Environmental Assessment report which is to be made public.

Utulani Sherlock

[Signature] 01/08/02

Date
Interview With: Ululani Sherlock
Interview Date: August 16, 2001
Location: Office of Hawaiian Affairs, 101 Aspunil Street, Hilo
Interviewer: Ulaie Woodsidie

(Begin recording and transcription. Interview already in progress. Ms. Sherlock is from Keaukaha and is currently the Office of Hawaiian Affairs, East Hawaii Community Resource Coordinator. Her mother is from Keaukaha and her father is from Hilo. She lived in Chicago for a while and has been back in Hawaii for more than 20 years.)

UW: I noticed that you are involved in a number of organizations, or have been in the past.

US: Since I’ve been home, actually yes. I’m president of the Prince David Kawaihae Hawaiian Civic Club. I just retired from being State President of the Ahaulele O Na Ali’i O Hawai‘i, and then I’m also president of the Hilo Chapter which is called Mau Loa O Ka’iulani. I sit on the Ahu‘ehu Kū Mauna, which is the Kupuna Advisory Council for Waiakea. And that’s heavy duty. So, I think what I am doing is what I think my mom would have done, she had been given the opportunity. I think she went up through seventh grade, and finally got her diploma in 1984 just recently. She was 67 years old, when she got her high school diploma through the adult school. I kind of feel that is part of it, and what my grandparents... I keep asking my mom, where did I get this... but I have it.

UW: Our community needs people that will stand out in the front, it is good work, mahalo.

US: But I feel comfortable about what I’m doing. I know that our thing is just pray, what ever you do, and make sure it is pono. So I try to live by those rules, some times it’s hard. I also sit on the Kupuna Consultation for the Volcanoes National Park Service, so for me, it is an education that you just can’t get out of the university or out of anybody because this is hands-on. I pull everything out of everything that I belong to and use that to help everyone else. Sometimes for people their focus is so narrow, that they need to be told that they can do other things. Just like with these activites, I think it is fine to believe in doing stuff like that, but I also mostly feel that there are other ways, of handling things instead of reacting – you know sitting down. That’s my philosophy.

UW: Going back to Keaukaha, after you moved home, did you see or hear stories about the kinds of activities people participated in – their everyday life. From a cultural assessment perspective it might be were did you gather or practice cultural activities, but to the community it is the everyday activities – they went fishing over here, or picked this over there.

US: My mom used to share that what they used to do, they used to get up and go out to the Puhi Bay area and they used to go... and I think now a lot of people go to where Hui Mālama is... to go get the bait. They would take the i inui and use that for fishing. I know my mom and them spent a lot of time at Onekahakaha because they did their own fishing, their time picking in the Onekahakaha area. So that was part of their survival. I know my grandmother worked at the Hilo Iron Works, so that was their way of taking care of the

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family. And a lot is her sharing with me that most of the stuff that they did was all in Keaukaha. Whatever they got they shared it among themselves and in the community. And I know that when they went, fishing, or I know when she would say they used to go out pick limu, if there were families down there that weren't as successful as they were they would make sure the family they shared. So there is a lot of sharing in the community.

There is a cemetery too, right in Kealakahaka that is owned by the Mormon Church, I think. And she said that as kids even, they used to go and help take care of the area, but, now I think that it is park care of by the church. But she said when she was growing up, all the churches, no matter what church they came from, if they were walking in the area they would go pull weeds, and whatever kinds of things. So, there was a lot of sharing.

UW: Speaking of cemeteries, I think I read a book about Keaukaha that they used to bury the early settlements, used to bury in the caves, right on their own property. Was that near the airport?

US: When I first came back from the mainland, I was driving either from my grandfather's house. See my grandfather's house is located between King and Todd Avenue. He has a big property, a whole acre. And I remember driving there and passing a home and seeing a plot, maybe about a block or so from the airport at that time. I'm not sure, because I go by there and I don't see it. And one of the questions I asked my mom was, is that allowed, because of the Department of Health. And she said, yeah, yes, they did. They made a plot in their backyard and whatever remains went there. But I know there are some homes there that they have buried their own family members there. Some with I found out in Kona, my grandparents have a hale in Kaululū, in Kona. And developers developed around there, and they put a buffer around. So there is, in Kona, well of course in Kona, everywhere you go there is an, more so than here. But I know I did witness, I saw a yard, the one I saw was off of Baker, some where between Todd Avenue and the airport. The other thing is that the property is succeeded, and succeeded, and succeeded. What normally happens in situations like that, which I don't think, may or may not have happened in this particular situation is that, when it goes out of the family successionship. I just wonder if maybe the people who are not related to the remains there, look upon themselves to have it reinterred. And I think that might have happened. I don't know. But it is my feeling that if there was anyone that was going to remove it, then it would be the family. Knowing Keaukaha, and even over the period of time that I have been there, the feeling is still there, the protocol is very important, in everything. And if there are no longer remains, and I doubt very much, I think if there are remains it is because it is still their 'aina, and it will be respected. And I think part of the lease, it is probably written somewhere in the lease, if there are remains of the former family there. And as long as it is family there might be more.

UW: As far as places and sites in Keaukaha, are you familiar with any cultural sites, possibly heiau...

US: The only one that I am familiar with, that I understand, is where the Kamehameha Lodge is. You know, right off of Kalanianaole where the Royal Order has their meetings. My understanding is that there was a heiau, in that area, that area is sacred. Which is one of the reasons that area is leased forever and ever to the Royal Order of Kamehameha. But I'm not sure.

UW: Right across from Puhu Bay?

US: The big white building with a flagpole in the front. That is the Royal Order – the Kamehameha Lodge. That is a heiau, was one time a heiau. And I think that is one of the reasons why the property was leased to the Royal Order for as long. And I can tell you one thing. Hala O Na Alii O Hawaii' used to have their meetings there, and it is there, you can feel it, it is there. We don't go back because the building, while it has been renovated and fixed, the liability for me and my members, we can't go back there until technically, because of the kupuna that do belong to my Hālau, I don't like the chance. But I do know that area. I'm not sure of any other areas around there. I know by Onekalahaka Beach area there is a lot of places that my mom tells me are very sacred. You know with Hawaiians you don't have to see it, you know it, you feel it.

UW: We were talking a little bit earlier about the churches and graveyards. Have the churches been a strong element in the Keaukaha community?

US: Right, and I go to the Kūhiō Chapel or Hā'ili Church, I'm a member. It's on Desha.

UW: That is one of the older churches...

US: It is the oldest. It was put there years, in fact my mom was baptized there. She's born in 1917. But it was put there prior to that, because In the olden days they didn't have roads to go to Hā'ili Church when it was down by the Hilo Iron Works area. So when it used to rain and flood, the church was put there to service the Hawaiians, the Keaukaha community that couldn't make it to the church in downtown Hilo. And it has been exactly there, exactly same building, the foundation, everything still the same. My mom says she's been born and raised there, baptized there and everything. In fact, I think we had our anniversary last year we celebrated the anniversary of the chapel. So that is where I go to church, it is a family church, too. In fact my grandfather was one of the very first people that started the church – Daniel Namahoe. So we have a family attachment to the church – the Namahoe family.
You mentioned that there were trails that went down to the Hilo Iron Works...

It was like a horse road, a dirt road. It was unpaved, what my mom guys called highways, what did they call it? It was muddy. It was all mud. In fact, the Kamehameha Avenue that we have here, went straight through Keaukaha. Of course it stopped with the relocation, the airport and everything, they cut off Kamehameha Avenue. Which is right at the junction where Kamehameha becomes Sanan Street. That used to go straight across. If you look at the old maps, Kamehameha went all the way down to King's Landing area. So now, today, what they did was they renamed it. So if you look at the newer maps of Keaukaha...

This map is a little older, if you notice they don't have the airport on it...

Kamehameha Avenue used to come, which is what it is now, from Bayfront and it used to run straight into here. I think this is it. Because the railroad track is here, I think there are remnants where it goes over the pier, out to the pier. But Kamehameha ran right through the whole area. So now the maps that you have of Keaukaha, the street maps... They have Kamehameha which is a new road. So if you drive through Keaukaha and you turn up Kauhane that went to the meeting last night, the first street that you hit is new, it wasn't there before, and that's Kamehameha. They didn't rename it, they named it correctly Kamehameha Avenue. And so all the streets that were there before, except for the newer streets, like they named the street Pakela, Lauae Yong. They are having problems because the streets were politically named. Pakela was the Hawaiian Homes Eli, Don, and Lauae Yong lives right on Yong Avenue, so I heard it was a political thing because of her support of the Councilman, it was really sad. But they do have names like Nahale-o, which is a family name, and I live right across from the Nahale-a property. My mom grew up with the Nahale-a. Brown, that's the Brown family the Nahailand, the Nahainel family. So a lot of streets are family names. Todd Avenue, she was one of the first principals of Keaukaha School, if you read the history. So the names are all significant place names to the people that live there. The Deshas were the first kahu at Halii Church, and they all have significant to the people that live in the community. But Kamehameha was. It's my understanding from my mom, the road that they would take to go to church to what they call Wallkea, which is where the Waiola River area is, where the church was before it got put up on Hall. So Kamehameha was their street, their avenue...

Do you know if she ever talked about going, what would be across the airport, to Papakoa Forest?

Yes, it used to come all the way down to the airport. But from my understanding it was all trees, that's how it was, all trees, agricultural, and it was barren at that time. There were no homes or anything like that. As far as people, practitioners and traditional... if you talk to the Kanaka'a Foundation they have that whole property, they're leasing that Kamehameha Schools property, some 40 acres... and they have the correct place names for that whole area, they have the history on it. But I know my mom says about the fishing areas, the freshwater ponds where they used to go there to go fishing. And I know as a child she would go by Doc Byers' property... they used to do a lot of fishing in that area. Throw net, she used to know all the areas...

Is that the Doc Hills' house?

Yes, it is by the Hilo Yacht Club, you can see it. I think, across. But, she used to know all the places they used to go to throw net. There are a couple, if you weren't born and raised there you'd never know, there are a couple of places, ponds, where you can go swim and not having to go all the way out to the ocean. Because the water comes in underground. But she used to tell me about those places, instead of having to go all the way down. Because it is all lava, in certain areas it is all rocks that go all the way down, and it has remnants of where it was used as a pier area. They still have those places that are out there, but all on the ocean side...

Moving to the airport, maybe you can give me your mana'o, maybe the history, the community sentiment, because I know they talk to you about it. How they feel about the airport...

Most of the people that were involved or related, because even my grandfather was moved from that area where the Borge's are. Well that area is actually where my mom was born and raised, right in that area where the fencing cuts through, on that side of Kauhane. So they were moved twice. They were moved from there, and they were on Todd someplace, and finally moved over to King Street. But as far as the community, I think it is like, for some of them, they are inclined already. It has happened before, there is a lot of suspicion, they don't trust. There is a lot of mistrust in the community. There are a lot of people that I have to take the source into consideration when I act on their complaints. While there are many people that were born and raised there, there are a lot more like myself where we came back. But still have that connection in some way and we are finding now, how are we connected. And I think the generation that lives there now, a lot of them went away, like I did. We went to school and came back and saw the difference between what was there when we were kids versus what is there now. So, there is a lot of that sentiment. I don't know if you call it anger or what, but I think that has a lot to do with the attitude of the people today. "I was born and raised here, I went away to school, and ended up getting married and living on another island, and then my parents passed on so I came home to take care of the 'aina, and I see all these changes, and I don't want this to happen to my kids, or my grandkids." Which is my thing. I have four grandsons that...
are eventually going to get my property, my acre, I have one acre. And so I want to make sure that their future, and I think it is the consensus of most people there, it is just that we approach it differently. But there are a lot of things that have been happening in Keaauahoe that the people are upset about. There is a lot of mistrust, even among themselves. You can feel it at the meetings, one person is concerned about one thing, and another person is concerned about another thing. Some of the concerns, to me, get kind of ridiculous. Yeah, the planes go right over my house. I can see the numbers on it. But you know, we’re looking at economics, we’re looking at survival, we’re looking at the whole thing, not just my personal backyard problems. It is going to happen because of expansion, and because of what is happening.

I think the biggest fear, one of the biggest fears I heard yesterday was, “before we know it the airport is going to go all the way to Kalaniana’ole.” And I think that is the biggest fear, is that there won’t be a Hawaiian Home Lands. I don’t know if Patrick shared with you the concern about once the land is condemned or taken over, it can never come back to Hawaiian Home Lands. Maybe that’s true, I don’t know that much about it. I would rather the people look at the whole picture and think about the future of their kids, and make their decisions from there, rather than listening to somebody else. Because the someone else may not be looking at their concerns, or looking at the things that happened to them personally. You know there is a tendency, a real big tendency of people reflecting on other people’s pain. Because we are Hawaiians, so we are going to lomi each other, and that is our nature. And that is how we stick together. But we also have to look at things, things are getting more modern. But that doesn’t mean that we’re going to forget where we came from. You know the balance, that is it going to happen, and we can not... You know my thing is that it happened, whatever happened is gone, we can’t do anything about it. But we can move on, and maybe be a little sensitive to whatever happens in the future, and learn from the mistakes we made. But it is hard for the community. It is just getting little by little, people are beginning... from when I moved home 20 years ago to today, I can tell you there has been a big difference in terms of people... at the airport in the 1970s, I was in the mainland and I was one of the people trying to get to the airport to get the plane back home to Chicago. And so, the people that were in that group that were arrested are totally different. They kind of like, I don’t know, they say, mellowed. But no, I think they’ve begun to see that there are other areas that you can address the same thing and get a better response or, a more positive action that would benefit everybody. And I look at the airport thing as, if there are alternatives that the community could be aware of, to share that. In other words, what this whole thing is, is to make it less objectionable to the community, and less obtrusive. I guess they call it mahalo, to make it less mahalo. Because no matter what happens in terms of this project... and I know a lot of them say, “dome deal, they’re just here to lomi us” and I think they are trying to work it out, I think they really are. But you still have people that are... that don’t trust, that won’t open up. They’re like those horse blinders, but there are a lot more people that are not that way, that are not as verbal, or will come out and say so.

UW: At the meeting they discussed mitigation measures, one of them being the 15-foot wall. It seems like many people in the community don’t want it, but the people who would be directly affected by it weren’t there last night.

US: No, they weren’t. The people that are personally involved, or even close to the wall weren’t there. But, everyone else who hears the noise but not as right across the fence were there, and were the ones doing all the talking last night.

UW: So, what is your mana’o on the wall, do you think it is a good idea?

US: They did mention a landscaped kind of wall, versus... I had first hand exposure to this wall that they’re talking about. In April of this year, I was in Chicago and we drove up to Wisconsin, Milwaukee. And there is a whole strip of this kind of wall up there, and it is ugly. It is ugly. It is so ugly. It reminds me of a prison wall. And I think if they would do it in such a way, like he was talking about a mound that was landscaped, I think it would be less objectionable to a lot of people. Because right now they see the airport and it is pretty, and I know that is one of the reasons that they are against that obstruction. But if you are looking at sound, I think it is possible, if it can be blended into... so that it wouldn’t be so ugly. Because right now it looks like a prison wall, the way that it is shown. And I think in my head, as soon as I realize when I saw that aerial shot, I remembered driving for about 30 or 40 miles on the interstate, just a wall on both sides of the street. And that was put up for the noise from the airport. It was the people that lived, all these big, rich mansions, that were off of the highway, that were there before the wall was put in. That was to keep the sound in the highway.

UW: What about the other suggestion about sound attenuating the houses? Insulating the houses, possibly new doors, and new windows... air conditioning the house. Of course this would be voluntary, and on a case-by-case basis. What do you feel about that?

US: I think it depends on what is in their mind when they accept or decide to go with it. Because a lot of them would say, yes, that’s great. Like there was a lady that said, what about the electric bill? Well, unfortunately, you know, you’re going to accept a luxury that you don’t have to pay for. You will eventually be paying for something as a result of that luxury, and I don’t think they are looking at it in that way. And I don’t think they looked at it in that way until Patrick mentioned it at that meeting. But they never would have even thought of it. So that is a new thing. I really don’t think they even thought of that. They just looked at the luxury of having their house fixed up, the new
this, the new that, the air conditioning. And if that's going to help, and that's what they want, then I say go with it. But don't expect to get anything outside of that, and don't feel like you need to, because you are already given it free, and you can't take the rest of it.

UW: And it may be a big change for some because they like the windows open, and they like to feel the wind, or to interact with the neighbors, or keep an eye on the kids playing.

US: And there are a lot of things, if you are not used to living in an air conditioned area, there are a lot of things that happen, your house changes, the inside of the house, there are repairs that you don't normally need right now. But you put air conditioning into a house it is going to affect a lot of things, it affects your furniture, your paint, the whole structure of the house. So while it's good, and that's fine, you go to the hotel and you love it. But you don't take care of the hotel, you leave. And I don't think they're looking at that, they're just thinking, oh great air conditioning. But you, you only have a small cluster of families that you are looking at, and again it is their choice, and I don't think the community should try and influence them either into or out of it.

UW: Based on what you know about the avigation easement, what is your man's on being able to decide voluntarily that for compensation they sign a noise easement?

US: I think depending on the families they might accept it because of the monetary gain. The other thing that I would be concerned about would be the monitoring. Is there going to be a monitoring program going on at all time. If I lived in that house I would never know if it was 60, 75 or 80. But there should be some kind of mechanism in that area that would be able to monitor periodically as it changes and at least let the people know. So that the airport people would realize that it is getting higher, that there may be problems with the community. So to avoid that, they should have it monitored.

UW: And it came up in the meeting that for the community it seems like those measures are an eitheror. Either you take it or leave it. Some people seem feel that in some way DOT has already made their decision and this is just to appease the community. And regardless of what works for the community DOT will get what they want. And then there are some in the community that seem to feel like either they need to take this or they won't get anything at all. Are there any recommendations or suggestions that may have been overlooked that would help to make this more beneficial to the community, something that could be done for the community, or would be better for the community?

US: What I didn't hear last night was, if these families chose to relocate what I didn't hear was, what areas are available. And of the areas that are available, the lots, are they still in Keaukaha, because a lot of them don't want to leave Keaukaha. And I know the sentiment is that many of them the parents, and grandparents lived there, and their concern now is there kids, like myself. The decision that they are going to make, they are going to have to take into consideration the kids. Because we're going to be gone in 20, 30 years, so the decision that they are trying to make right now, is going to... I hope I'm making this decision for my son so that when he gets older he doesn't cross me out, after I'm gone, for moving, or that kind of stuff. I don't know if anyone has talked about moving, except for maybe this one or two they just got their house built, they were part of the self-help program. That one I can sympathize with because they waited so long to get a house. And now they have one, and then they don't have one. And that is a hard dream, it's a hard thing to swallow. There are some that I know personally, that it doesn't really bother them, because it did they would be there, they would be at the meetings. Or they have made their statement, and they are going to stand by it. So now, it is up to the DOT to approach them with sensitivity, and ask what do you want us to do to meet your needs, not your neighbors, not the people that are upset, but you as a family and you as a person or individual, that would make this comfortable. But I think it is going to be on a one-on-one approach and it is going to have to be somebody that understands what that family is going through. Which doesn't necessarily mean somebody that has gone through it, just somebody that can understand.

UW: Regarding those that would be met one-on-one, that would be with those that voluntarily wanted to relocate?

US: Right. To make sure that the decision they make is their decision and they're not going to go to the community and say, they told me I had to, because you are going to get that. Although the ones I have talked to have said, no, we were told that we won't be forced to move, that it was our choice. And I think I have heard from three, or four families that said that. I didn't ask them what was their choice, because I didn't think it was my business, to ask them.

UW: Right. It should be up to each family.

US: It should be done one-on-one with each family that it affects, not through Hawaiian Homes. But there is a concern, and to assist the families that are affected.

UW: I get that sentiment that the community wants to do what is best for everyone in the community, and even those that aren't there. They want to help their neighbor.

US: Yes, that is the sentiment that you're going to get through out the community. [End of tape. Interview continues discussing location of families that may be interested in the relocation option.]
It is a voluntary option, but I don't think this time anyone contacted the families that live in the area identified for proposed land acquisition on the improvements map. My recommendation could be that an attempt is made to meet with them and find out if they are interested in relocation.

Two of them might be leased out, and the other two the owners are living on the premises. The one property is the Borges, which is Auntie Rhea Ako's brother's property. The other one is Akoni, but I don't know where that family is because they moved from Waimanalo, but they are being rented by someone else. The Kiko family is here and the Tim Sing family is here, but the other two are not. The Borges property, she is, I think, vice-principal at Hilo Union School. The Akos, Auntie Rhea is an Akol so she should know. But definitely those people should be approached, or should have been approached. I don't see anything in the files that OHA has that indicates that they were notified, just that they were going to be part of an area that was going to be looked at. Do you know if there are areas within Keaukaha that might be available, if they do choose to relocate? Because that might be something that they might ask you, because they might not want to go to Panana. They may want to stay in Keaukaha. So, you're going to have those kinds of questions. Other than that, the community is just looking at taking care of each other, and trying to support each other no matter what the decision is. But it has to be out in the open so that everybody knows that it is not hearsay, so and so said something, which is what usually happens. In Keaukaha you have the organizations involved like OLCC, like ourselves that, we serve the beneficiaries there. Keaukaha School is, fortunately Cathy Webster who was there before had a real good relationship with the whole community. She's at Hilo Union School now. But she's another person in the community, that goes back, another is the Keaukaha Ward the Mormon Church, there are a lot of Hawaiian people there.

Is there anything else that you want to share, any pieces that might be important to the community?

I think for now, the community and for myself, is not to change the area where the recreation hall is, where the kids gather. It is being rebuilt and redone, and everything. And maybe that might be one of the avenues that DOT might want to contribute to because Kawanakoa Hall is like, the heart of Keaukaha. And they were going through so much controversy about having it redone, it is so many years that they've been working on it. And it is a State, OHA, County collaboration to put it together and to build it. I'm not sure in terms of the community itself other than the heart of Keaukaha which is that Kawanakoa area. I think the shock of this expansion was the biggest part, the biggest part, you know, oh, no, not again. And the fear of relocate, more than what they anticipated. Hopefully, this is something that is not going to happen again in the next 20 years. But that is not something that we can judge. I think what you're doing with the community is you are sharing, you're being up front, you're being honest. In contributing back to the community, I'm really not in the position right now to make that kind of decision. I think it is something that has to come through the Keaukaha Community Association, because the community is what is being serviced. You may or may not know, but not everyone that lives in Keaukaha belongs to the community association, it is a voluntary thing. So while not all the families belong, whatever happens at that level incorporates everybody. They have Ho'ouluana, all these different things, everyone is invited, and you don't have to be a member to be a part of it, the koko is there, the blood is there and that is all that is important.

I understand that the association does a lot, for the kids.

That is what Keaukaha is all about, the kids, and making sure the kids are off the streets. In order to do that you're going to have to provide programs, crafts, workshops, ideas, all those kinds of things. Keaukaha does that for the kids, and it is not just the Keaukaha kids, it's kids from the whole community. If they're interested they bring their kids. OLCC is very, very... you might want to talk to Lana, she's totally Keaukaha. But I see a good side happening here. Because, the community is something that every time there is change, it is not so much the people that are directly affected, but the community as a whole, because it is a whole community. And it is always going to be, oh we heard that before, no matter what kind of project, whether they are Hawaiian or not Hawaiian there is still going to be someone that may have thoughts or objections to it.

Mahalo for all you help, and all you have shared.
APPENDIX G
TRAFFIC IMPACT REPORT
TRAFFIC IMPACT REPORT
FOR THE
HILO INTERNATIONAL AIRPORT IMPROVEMENTS

Prepared for:
State of Hawaii
Department of Transportation
Airports Division

Prepared by:
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November 2001
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INTRODUCTION

A. Purpose of Study

The purpose of this study is to identify and assess the traffic impacts resulting from the implementation of various improvements at the Hilo International Airport on the island of Hawaii.

B. Scope of Study

This report presents the findings and conclusions of the traffic study, the scope of which includes:

1. Description of the proposed improvements.
2. Evaluation of existing roadway and traffic operations in the vicinity.
3. Analysis of future roadway and traffic conditions without the proposed improvements.
4. Analysis and development of trip generation characteristics for the proposed improvements.
5. Superimposing site-generated traffic over future traffic conditions.
6. The identification and analysis of traffic impacts resulting from the proposed improvements.
7. Development of recommended mitigation measures, if appropriate, to address the traffic impacts resulting from the proposed improvements.

PROJECT DESCRIPTION

A. Location

The project site is located at the Hilo International Airport in the town of Hilo on the eastern side of the Island of Hawaii (see Exhibit 1). The Airport encompasses approximately 1,246 acres and is owned and operated by the State of Hawaii as part of the Hawaii Statewide Airport System. Main access to Hilo International Airport is provided via Kekuanaoa Street which connects to Kanoelehua Avenue, one of the main arteries within Hilo.
Traffic Impact Report for the Hilo International Airport Improvements

B. Project Characteristics

The proposed Hilo International Airport improvements expected to be completed by Year 2010 include:

- Relocation of existing hold cargo facilities to a new building to be located at the west end of the existing air carrier apron.
- Relocation of existing helicopter facilities to a new 15-acre area near the southwest corner of the airport.
- Consolidation and relocation of existing general aviation facilities to a new 7-acre site at the west end of the airport.
- Expansion of the existing terminal area parking lot.
- Expansion of the existing Department of Transportation, Airports Division baseyard.

The proposed site plan is shown as Exhibit 2.

III. EXISTING CONDITIONS

A. General

Hilo International Airport is located adjacent to Kamehameha Avenue, one of the main arterials in Hilo. Kamehameha Avenue starts near Hilo Bay and terminates at Volcano Road just south of Hilo. The traffic volumes along Kamehameha Avenue have increased slowly over the years due to increased development in Hilo.

B. Area Roadway System

In the vicinity of Hilo International Airport, Kamehameha Avenue is primarily a two-way, six-lane, divided State roadway. At the main entrance to the airport, Kamehameha Avenue intersects with Kekuanaoa Street, a two-way, two-lane, County of Hawaii roadway. At this signalized intersection, both approaches of Kamehameha Avenue have four lanes that serve through, left-turn, and right-turn traffic movements.

The eastbound approach of Kekuanaoa Street has three lanes that serve through, left-turn, and right-turn traffic movements. The westbound approach of Kekuanaoa Street has two lanes that serve through, left-turn, right-turn traffic movements.

Approximately 850 feet south of the intersection with Kekuanaoa Street, Kamehameha Avenue intersects with Lilani Street, a predominately two-way, two-lane, County of Hawaii roadway. At this signalized intersection, both approaches of Kamehameha Avenue have four lanes that serve through, left-turn, and right-turn traffic.
Traffic Impact Report for the Hilo International Airport Improvements

movements. Both approaches of Leilani Street have one lane at this intersection that serves through, left-turn, and right-turn traffic movements.

Approximately 850 feet north of the intersection with Kealanea Street, Kamehameha Avenue intersects Hualani Street, a predominantly two-way, two-lane, County of Hawaii roadway. At this unsignalized intersection, both approaches of Kamehameha Avenue have three lanes that serve through and right-turn traffic movements. Both approaches of Hualani Street have one lane at this intersection that serves right-turn traffic movements.

C. Traffic Volumes and Conditions

1. General
   a. Field Investigation
      The field investigation was conducted on August 28 and 29, 2001 and consisted of manual turning movement count surveys between the morning peak hours of 6:00 AM and 8:00 AM, and the afternoon peak hours of 3:30 PM and 5:10 PM at the following intersections:
      - Kamehameha Avenue at Kealanea Street
      - Kamehameha Avenue at Leilani Street
      - Kamehameha Avenue at Hualani Street
      Appendix A includes the existing traffic count data.
   b. Capacity Analysis Methodology
      The highway capacity analysis performed in this study is based upon procedures presented in the “Highway Capacity Manual”, Transportation Research Board, 2000, and the “Highway Capacity Software”, developed by the Federal Highway Administration. The analysis is based on the concept of Level of Service (LOS).
      LOS is a quantitative and qualitative assessment of traffic operations. Levels of Service are defined by LOS “A” through “F” with LOS “A” representing an ideal or free-flow operating conditions.

Page 5
and LOS "F" unacceptable operating conditions. The LOS definitions are included in Appendix B.

2. Existing Peak Hour Traffic
   a. General
      Exhibits 3 and 4 show the existing AM and PM peak hour traffic volumes and operating traffic conditions. The AM peak hour of traffic generally occurs between 7:00 AM and 8:00 AM in the proximity of the Hilo International Airport. In the afternoon, the PM peak hour of traffic generally occurs between the hours of 3:30 PM and 4:30 PM. The analysis is based on these peak hour time periods to identify the traffic impacts resulting from the proposed project. LOS calculations are included in Appendix C.
   b. Kanoelua Avenue and Kekuanaoa Avenue
      At the intersection of Kanoelua Avenue and Kekuanaoa Avenue, Kanoelua Avenue carries 1,543 vehicles northbound and 841 vehicles southbound during the AM peak period. During the PM peak hour, the total traffic volume is heavier with 1,463 vehicles travelling northbound and 1,149 vehicles travelling southbound. Both approaches of Kanoelua Avenue operate adequately at LOS "C" during the AM and PM peak hours.
      Kekuanaoa Avenue carries 218 vehicles westbound and 281 vehicles eastbound during the AM peak hour of traffic. During the PM peak hour, traffic volumes are heavier with 531 vehicles travelling westbound and 485 vehicles travelling eastbound. Both approaches of Kekuanaoa Avenue operate adequately at LOS "C" during the AM and PM peak hours.
   c. Kanoelua Avenue and Leilani Street
      At the intersection of Kanoelua Avenue with Leilani Street, Kanoelua Avenue carries 1,472 vehicles northbound and 902 vehicles southbound during the AM peak hour of traffic. The total...
traffic volume during the PM peak hour is heavier with 1,337 vehicles travelling northbound and 1,463 vehicles travelling southbound.

During both peak periods, both approaches of Kaneohe Avenue operate adequately at LOS "C".

During the AM peak hour of traffic, Leilani Street carries 266 vehicles westbound and 122 vehicles eastbound. Traffic volumes during the AM peak period are slightly heavier with 327 vehicles travelling westbound and 148 vehicles travelling eastbound. During both peak periods, both approaches of Leilani Street operate adequately at LOS "C".

d. Kaneelehu Avenue and Hualani Street

At the intersection of Kaneelehu Avenue with Hualani Street, Kaneelehu Avenue carries 1,776 vehicles northbound and 549 vehicles southbound during the AM peak hour of traffic. The traffic volumes during the AM peak hour are heavier with 1,341 vehicles travelling northbound and 1,337 vehicles travelling southbound.

During the AM peak period, Hualani Street carries 33 vehicles westbound and 23 vehicles eastbound. Traffic volumes during the PM peak period are slightly heavier with 79 vehicles travelling westbound and 45 vehicles travelling eastbound. During both peak periods, the westbound and eastbound approaches of Hualani Street operate at LOS "C" and LOS "B", respectively.

IV. PROJECTED TRAFFIC CONDITIONS

A. Site-Generated Traffic

1. Trip Generation Methodology

The trip generation methodology used in this study is based upon generally accepted techniques developed by the Institute of Transportation Engineers (ITE) and published in "Trip Generation, 6th Edition," 1995. The trip generation rates were developed empirically utilizing two methods. The first method correlates the existing vehicle trip generation data with the
The number of enplaning passengers. The resulting rates were then utilized to
determine the number of additional vehicle trips that would be generated by an
increase in the number of enplaning passengers. The second method
combines the vehicle trip generation data with land use characteristics such as
the number of vehicle trips generated per square foot of development. Table 1
summarizes the project site trip generation characteristics applied to the AM
and PM peak hours of traffic to measure the impact resulting from the
proposed Hilo International Airport improvements.

### Table 1: Peak Hour Trip Generation

<table>
<thead>
<tr>
<th>BASEYARD EXPANSION</th>
<th>INDEPENDENT VARIABLE: PASSENGERS ENPLANED Δ FROM YEAR 2001=75 PASS</th>
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<td>AM PEAK</td>
<td>ENTER 29  EXIT 21  TOTAL 50</td>
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<tr>
<td>PM PEAK</td>
<td>ENTER 38  EXIT 31  TOTAL 79</td>
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</table>

<table>
<thead>
<tr>
<th>HELICOPTER FACILITIES RELOCATION</th>
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<td>INDEPENDENT VARIABLE: HELICOPTER OPERATIONS Δ FROM YEAR 2001=10 OPERATIONS</td>
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<tr>
<td>PROJECTED TRIP ENDS</td>
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<tr>
<td>AM PEAK</td>
</tr>
<tr>
<td>PM PEAK</td>
</tr>
</tbody>
</table>

2. **Trip Distribution**

Access to the Hilo International Airport is via Kekaulani Avenue and
Kamuela Avenue. The directional distribution of all site-generated
vehicular trips at the intersections of Kamuela Avenue with Kekaulani
Avenue, Leilani Street, and Hualani Street is assumed to remain the same as
existing.

### B. Through Traffic Forecasting Methodology

The travel forecast is based upon historical traffic count data collected by the
State DOT, Highways Division at the intersection of Kamuela Avenue and
Laikukui Street. The historical data were analyzed by linear regression techniques to
obtain an average growth rate of approximately 0.5% along Kamuela Avenue using...
Traffic Impact Report for the Hilo International Airport Improvements

2001 as the Base Year. A growth factor of 1.046 was applied to the existing traffic demands to achieve the projected Year 2010 traffic demands.

C. Total Traffic Volumes Without Project

Exhibits 5 and 6 show the Year 2010 projected AM peak hour and PM peak hour traffic volumes and operating conditions at the study intersections without the implementation of the proposed Hilo International Airport improvements. A comparison of the existing and Year 2010 projected (Without Project) levels of service at the three study intersections are included in Table 2. The LOS calculations are included in Appendix D.

Table 2: Comparison of Existing and Year 2010 Projected
(Without Project) Levels of Service

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Approach</th>
<th>AM</th>
<th>PM</th>
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<tr>
<td></td>
<td>Existing</td>
<td>Year 2010</td>
<td>Existing</td>
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<td></td>
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<td>without Project</td>
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<td>Kamehameha Ave/</td>
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<td>Kekaulani Ave.</td>
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<td></td>
<td>Westbound</td>
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<td></td>
<td>Eastbound</td>
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<td>C</td>
</tr>
<tr>
<td>Kamehameha Ave/</td>
<td>Northbound</td>
<td>C</td>
<td>C</td>
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<tr>
<td>Leilani St.</td>
<td>Southbound</td>
<td>C</td>
<td>C</td>
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<tr>
<td></td>
<td>Westbound</td>
<td>C</td>
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<tr>
<td></td>
<td>Eastbound</td>
<td>C</td>
<td>C</td>
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<tr>
<td>Kamehameha Ave/</td>
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<tr>
<td>Hawaii St.</td>
<td>Eastbound</td>
<td>B</td>
<td>B</td>
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</tbody>
</table>

Traffic operations at the intersections of Kamehameha Avenue with Kekaulani Avenue, Leilani Street, and Hawaii Street are expected to remain similar to existing. The levels of service at the three study intersections are not expected to change under the Year 2010 without project conditions.
Traffic Impact Report for the Hilo International Airport Improvements

D. Total Traffic Volumes With Project

Exhibits 7 and 8 show the cumulative AM and PM peak hour traffic conditions resulting from the projected external traffic and the implementation of the proposed Hilo International Airport improvements. The cumulative volumes consist of site-generated traffic superimposed over Year 2010 projected traffic demands. The traffic impacts resulting from the proposed project are addressed in the following section.

V. TRAFFIC IMPACT ANALYSIS

The Year 2010 cumulative AM and PM peak hour traffic conditions resulting from the projected external traffic and the implementation of the proposed Hilo International Airport improvements are shown in Exhibits 7 and 8, and summarized in Table 3. The existing and projected Year 2010 operating conditions (Without Project) are provided for comparisons in Table 3. The LOS calculations are included in Appendix B.

Table 3: Comparison of Existing and Year 2010 Projected
(Without Project and With Project) Levels of Service

<table>
<thead>
<tr>
<th>Intersection</th>
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<tbody>
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<td>Exist.</td>
<td>Year</td>
<td>Year</td>
</tr>
<tr>
<td></td>
<td>Year 2010</td>
<td>with</td>
<td>2010</td>
</tr>
</tbody>
</table>

- Kamehameha Ave. / Leilani St.
  - Northbound: C C C C C C
  - Southbound: C C C C C C
  - Westbound: C C C C C C
  - Eastbound: C C C C C C

- Kamehameha Ave. / Hualani St.
  - Northbound: C C C C C C
  - Southbound: C C C C C C
  - Westbound: C C C C C C
  - Eastbound: C C C C C C

Kamehameha Ave. / Kekuanaoa Ave.
- Northbound: C C C C C C
- Southbound: C C C C C C
- Westbound: C C C C C C
- Eastbound: C C C C C C
The traffic operations at the study intersections under the Year 2010 With Project conditions are expected to remain similar to those under the Year 2010 Without Project conditions during the AM and PM peak hours. The implementation of the proposed Hilo International Airport Master Plan Improvements should have a minimal impact on traffic operations in the vicinity of Hilo International Airport.

VI. RECOMMENDATIONS

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

1. **Maintain Adequate Site Distance**
   Adequate sight distances should be maintained for motorists to safely enter and exit all driveways and roadways at Hilo International Airport.

2. **Modify Hualani Street Connection**
   Brig Road is located adjacent to the old terminal area and serves as the main access road to the southwest corner of the airport. The connection between Hualani Street and this roadway should be modified to facilitate easier access to the flight school, and cargo and general aviation facilities located in the southwest corner of the airport. Currently, motorists must navigate a winding section of roadway to reach Brig Road from Hualani Street. Brig Road could be realigned to eliminate the winding section and provide a more direct path between the two roadways. Recommend further investigation.

3. **Modify Kamokihana Avenue and Hualani Street Intersection**
   The intersection of Kamokihana Avenue and Hualani Street should be converted to a four-way intersection where all turning movements are allowed. Currently, both approaches of Hualani Street only allow right-turn traffic movements. With the existing traffic patterns motorists have two options to reach the main terminal from the southwest corner of the airport. The first option requires motorists to turn right onto Kamokihana Avenue from Hualani Street and then make a U-turn maneuver to reach the airport's main access road. The second option requires motorists to utilize minor roads to reach Kamokihana Avenue. After turning left onto Kamokihana Avenue, they turn left onto Kamokihana Avenue to reach the airport's main access road. If the intersection of Kamokihana Avenue and Hualani Street were converted to a four-way intersection, these vehicles could make a left from Hualani Street onto Kamokihana Avenue and directly access the airport's main access road. Recommend further investigation.

4. **Modify Terminal Area Parking Lot**
   Consider relocating the exit from the terminal area parking lot from the east end to the west end of the parking lot. Currently, vehicles exiting the parking lot are required to exit at the east end of the lot and loop around through the terminal area to exit the parking lot at the west end. This creates conflicts between vehicles exiting the parking lot and vehicles picking up or dropping off passengers.

VII. CONCLUSION

The proposed Hilo International Airport improvements are not expected to have a significant impact on traffic operations in the vicinity of Hilo International Airport. In addition to the proposed improvements, intersection and roadway modifications of Kamehameha Avenue, Hualani Street, and Brig Road, and the terminal area parking lot should be considered at the airport to improve overall traffic circulation between the different sections of the airport and near the main terminal.
### Existing Traffic Count Data

#### Appendix A

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#### Additional Data

- **Peak Hour:** 06:15 AM to 06:45 AM - Page 7 of 7
- **Volume:**
  - 06:15 AM: 6, 170
  - 06:30 AM: 6, 170
  - 06:45 AM: 6, 170
- **Peak Factor:** 0.011
- **Peak Volume:** 6, 170

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

**File Name:** kaniea
**Site Code:** 000000001
**Start Date:** 08/29/2000
**Page No:** 1
### Wilson Okamoto & Associates, Inc.
1907 S. Beretania St., Suite 400
Honolulu, HI 96826

### File Name: kankeka
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Page No: 1

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

### File Name: kankeiga
Site Code: 00000001
Start Date: 08/28/2001
Page No: 1
### APPENDIX B

**LEVEL OF SERVICE DEFINITIONS**

| Start Time | AM - Ch 1 | PM - Ch 1 | Day | Weekday
|------------|-----------|-----------|-----|--------
| 11:00      | 6         |           |     |        
| 11:15      |           |           |     |        
| 11:30      |           |           |     |        
| 11:45      |           |           |     |        
| 12:00      | 0         |           |     |        
| 12:15      |           |           |     |        
| 12:30      |           |           |     |        
| 12:45      |           |           |     |        
| 13:00      |           |           |     |        
| 13:15      |           |           |     |        
| 13:30      |           |           |     |        
| 13:45      |           |           |     |        
| 14:00      |           |           |     |        
| 14:15      |           |           |     |        
| 14:30      |           |           |     |        
| 14:45      |           |           |     |        
| 15:00      |           |           |     |        
| 15:15      |           |           |     |        
| 15:30      |           |           |     |        
| 15:45      |           |           |     |        
| 16:00      |           | 12        |     |        
| 16:15      |           |           |     |        
| 16:30      |           | 12        |     |        
| 16:45      |           |           |     |        
| 17:00      |           |           |     |        
| 17:15      |           |           |     |        
| 17:30      |           |           |     |        
| 17:45      |           |           |     |        
| 18:00      |           |           |     |        
| 18:15      |           |           |     |        
| 18:30      |           |           |     |        
| 18:45      |           |           |     |        
| 19:00      |           |           |     |        
| 19:15      |           |           |     |        
| 19:30      |           |           |     |        
| 19:45      |           |           |     |        
| 20:00      |           |           |     |        
| 20:15      |           |           |     |        
| 20:30      |           |           |     |        
| 20:45      |           |           |     |        
| 21:00      |           |           |     |        
| 21:15      |           |           |     |        
| 21:30      |           |           |     |        
| 21:45      |           |           |     |        
| 22:00      |           |           |     |        
| 22:15      |           |           |     |        
| 22:30      |           |           |     |        
| 22:45      |           |           |     |        
| 23:00      |           |           |     |        
| 23:15      |           |           |     |        
| 23:30      |           |           |     |        
| 23:45      |           |           |     |        
| Peak Hour  |           |           |     |        
| Volume     | 26        |           |     |        
| Fines      | 0.96      |           |     |        
| DayTotal   | 42        |           |     |        

*Note: AM and PM values refer to the number of vehicles per hour.*
LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Level of Service (LOS) for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. Specifically, level-of-service (LOS) criteria are stated in terms of the average control delay per vehicle, typically a 15-min analysis period. The criteria are given in the following table.

Table 1: Level-of-Service Criteria for Signalized Intersections

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Control Delay per Vehicle (sec/veh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>≤10.0</td>
</tr>
<tr>
<td>B</td>
<td>&gt;10.0 and ≤20.0</td>
</tr>
<tr>
<td>C</td>
<td>&gt;20.0 and ≤35.0</td>
</tr>
<tr>
<td>D</td>
<td>&gt;35.0 and ≤55.0</td>
</tr>
<tr>
<td>E</td>
<td>&gt;55.0 and ≤80.0</td>
</tr>
<tr>
<td>F</td>
<td>&gt;80.0</td>
</tr>
</tbody>
</table>

Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the green ratio, and the V/C ratio for the lane group.

Level of Service A describes operations with low control delay, up to 10 sec per vehicle. This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.

Level of Service B describes operations with control delay greater than 10 and up to 20 sec per vehicle. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.

Level of Service C describes operations with control delay greater than 20 and up to 35 sec per vehicle. These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.

Level of Service D describes operations with control delay greater than 35 and up to 55 sec per vehicle. At level of service D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level of Service E describes operations with control delay greater than 55 and up to 80 sec per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent.

Level of Service F describes operations with control delay in excess of 80 sec per vehicle. This level, considered to be unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity lane groups. It may also occur at high V/C ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Level of Service (LOS) criteria are given in Table 1. As used here, control delay is defined as the total elapsed time from the time a vehicle stops at the end of the queue to the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position, including acceleration of vehicles from free-flow speed to the speed of vehicles in the queue.

The average total delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation. If the degree of saturation is greater than about 0.9, average control delay is significantly affected by the length of the analysis period.

Table 1: Level-of-Service Criteria for Unsignalized Intersections

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Average Control Delay (Sec/Veh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>≤ 10.0</td>
</tr>
<tr>
<td>B</td>
<td>&gt; 10.0 and ≤ 15.0</td>
</tr>
<tr>
<td>C</td>
<td>&gt; 15.0 and ≤ 22.0</td>
</tr>
<tr>
<td>D</td>
<td>&gt; 22.0 and ≤ 35.0</td>
</tr>
<tr>
<td>E</td>
<td>&gt; 35.0 and ≤ 50.0</td>
</tr>
<tr>
<td>F</td>
<td>&gt; 50.0</td>
</tr>
</tbody>
</table>

APPENDIX C

CAPACITY ANALYSIS CALCULATIONS
EXISTING PEAK HOUR TRAFFIC ANALYSIS

### Generalized Intersection Summary

<table>
<thead>
<tr>
<th>Lane Type</th>
<th>Eastbound</th>
<th>Westbound</th>
<th>Northbound</th>
<th>Southbound</th>
</tr>
</thead>
<tbody>
<tr>
<td>L T R</td>
<td>L T R</td>
<td>L T R</td>
<td>L T R</td>
<td>L T R</td>
</tr>
<tr>
<td>Rs. Lanes</td>
<td>1 1 1</td>
<td>0 2 0</td>
<td>1 2 1</td>
<td>1 2 0</td>
</tr>
<tr>
<td>LOConfig</td>
<td>L T R</td>
<td>L T R</td>
<td>L T R</td>
<td>L T R</td>
</tr>
<tr>
<td>Volume</td>
<td>84 64 121</td>
<td>58 73 45</td>
<td>132 1853 548</td>
<td>80 716 45</td>
</tr>
<tr>
<td>Lane Width</td>
<td>12.0 12.0 12.0</td>
<td>12.0</td>
<td>12.0 12.0 12.0</td>
<td>12.0 12.0 12.0</td>
</tr>
<tr>
<td>TRDR Vol</td>
<td>12</td>
<td>12</td>
<td>8</td>
<td>16</td>
</tr>
</tbody>
</table>

**Duration:** 1.00

### Intersection Performance Summary

**Approach Lane Group Capacity Flow Rate Delay LOS Delay LOS**

<table>
<thead>
<tr>
<th>Lane Group</th>
<th>Adj. Gatt Rate</th>
<th>Lane Group Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastbound</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>218</td>
<td>1770</td>
</tr>
<tr>
<td>T</td>
<td>518</td>
<td>1863</td>
</tr>
<tr>
<td>R</td>
<td>440</td>
<td>1558</td>
</tr>
<tr>
<td>Westbound</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTR</td>
<td>600</td>
<td>2700</td>
</tr>
<tr>
<td>Northbound</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>492</td>
<td>1770</td>
</tr>
<tr>
<td>T</td>
<td>577</td>
<td>1519</td>
</tr>
<tr>
<td>R</td>
<td>592</td>
<td>1583</td>
</tr>
<tr>
<td>Southbound</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>197</td>
<td>1770</td>
</tr>
<tr>
<td>TR</td>
<td>1628</td>
<td>5045</td>
</tr>
</tbody>
</table>

### Signal Operations

**Phase Combination 1**

<table>
<thead>
<tr>
<th>Group</th>
<th>LB Left</th>
<th>Thru</th>
<th>Right</th>
<th>Peds</th>
<th>WB Left</th>
<th>Thru</th>
<th>Right</th>
<th>Peds</th>
<th>NB Right</th>
<th>Thru</th>
<th>Right</th>
<th>Peds</th>
<th>WB Right</th>
<th>Thru</th>
<th>Right</th>
<th>Peds</th>
<th>Green</th>
<th>Yellow</th>
<th>All Red</th>
<th>Cycle Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LB Left</td>
<td>Thru</td>
<td>Right</td>
<td>Peds</td>
<td>WB Left</td>
<td>Thru</td>
<td>Right</td>
<td>Peds</td>
<td>NB Right</td>
<td>Thru</td>
<td>Right</td>
<td>Peds</td>
<td>WB Right</td>
<td>Thru</td>
<td>Right</td>
<td>Peds</td>
<td>5</td>
<td>20.0</td>
<td>30.0</td>
<td>90.0 secs</td>
</tr>
</tbody>
</table>

**Approach Lane Group Capacity Flow Rate Delay LOS Delay LOS**

<table>
<thead>
<tr>
<th>Lane Group</th>
<th>Adj. Gatt Rate</th>
<th>Lane Group Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastbound</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>175</td>
<td>507</td>
</tr>
<tr>
<td>T</td>
<td>542</td>
<td>1863</td>
</tr>
<tr>
<td>R</td>
<td>545</td>
<td>1558</td>
</tr>
<tr>
<td>Westbound</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTR</td>
<td>974</td>
<td>2537</td>
</tr>
<tr>
<td>Northbound</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>353</td>
<td>1770</td>
</tr>
<tr>
<td>T</td>
<td>1337</td>
<td>1549</td>
</tr>
<tr>
<td>R</td>
<td>528</td>
<td>1583</td>
</tr>
<tr>
<td>Southbound</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>197</td>
<td>1770</td>
</tr>
<tr>
<td>TR</td>
<td>1628</td>
<td>5045</td>
</tr>
</tbody>
</table>

**Intersection Delay = 34.3 (sec/vhr) Intersecion LOS = C**
### Number 20: 3-Way Stop

**Analysis:** GI

**Intersection:** Bellini / 30th Avenue

**Count Data:**
- Time Period: AM Peak

**Intersection Orientation:** North-South Major St.

**Vehicle Volume Data:**

<table>
<thead>
<tr>
<th>Movement</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td>1175</td>
<td>45</td>
<td>836</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>DFP</td>
<td>1941</td>
<td>49</td>
<td>1320</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Per</td>
<td>0.47</td>
<td>0.47</td>
<td>0.47</td>
<td>0.47</td>
<td>0.47</td>
</tr>
</tbody>
</table>

**Reduction Volume Data:**

**Measurements:**
- Count
- Speed
- Vehicle length
- Speed limit

**Median Type:** Raised Curb

**Fixed Approach Movements:**
- # of vehicles: Eastbound: 0
- # of vehicles: Westbound: 0

**Lane usage for movements 1.25'I approach:**

<table>
<thead>
<tr>
<th>Lane 1</th>
<th>Lane 2</th>
<th>Lane 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
</tbody>
</table>

**Channelized:** Y

**Grade:** 0.00

**Lane usage for movements 4.5' approach:**

<table>
<thead>
<tr>
<th>Lane 1</th>
<th>Lane 2</th>
<th>Lane 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
</tbody>
</table>

**Channelized:** Y

**Grade:** 0.00

**Lane usage for movements 1.25'I approach:**

<table>
<thead>
<tr>
<th>Lane 1</th>
<th>Lane 2</th>
<th>Lane 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
</tbody>
</table>

**Channelized:** Y

**Grade:** 0.00

**Data for Computing Effect of Delay on Major Street Vehicles:**

**Southbound:**
- Shared in volume, major th vehicles: 0
- Del time lane, major th vehicles: 1740
- Number of major street through lanes: 3

**Northbound:**
- Shared in volume, major th vehicles: 0
- Del time lane, major th vehicles: 1740
- Number of major street through lanes: 3

**Length of study period, hrs:** 0.66

**Workshop 4: Critical Gap and Follow-up Time Calculation:**

**Critical Gap Calculations:**

**Movement:** 9 10

<table>
<thead>
<tr>
<th>V</th>
<th>L</th>
<th>F</th>
<th>C</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0</td>
<td>2.5</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>1.0</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>1.0</td>
<td>0.5</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

**Follow-up Time Calculation:**

**Movement:** 9 10

<table>
<thead>
<tr>
<th>V</th>
<th>L</th>
<th>F</th>
<th>C</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0</td>
<td>2.5</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>1.0</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>1.0</td>
<td>0.5</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

**Worksheet 4: Impedance and capacity equations**

**Step 1:** By from Minor St.

<table>
<thead>
<tr>
<th>Movement</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow</td>
<td>545</td>
<td>545</td>
<td></td>
</tr>
<tr>
<td>Delay</td>
<td>1.68</td>
<td>1.68</td>
<td></td>
</tr>
</tbody>
</table>

**Worksheet 5: Delay, queue length, and GSR**

<table>
<thead>
<tr>
<th>Movement</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Queue</td>
<td>0.12</td>
<td>0.05</td>
<td></td>
</tr>
</tbody>
</table>

**Worksheet 6: Stop delay, mean length, and GSR**

<table>
<thead>
<tr>
<th>Movement</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

**Worksheet 7: Mean delay, mean length, and GSR**

<table>
<thead>
<tr>
<th>Movement</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

**Worksheet 8: Percentage of delay, mean length, and GSR**

<table>
<thead>
<tr>
<th>Movement</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Queue</td>
<td>0.12</td>
<td>0.05</td>
<td></td>
</tr>
</tbody>
</table>

**Worksheet 9: Mean delay, mean length, and GSR**

<table>
<thead>
<tr>
<th>Movement</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Queue</td>
<td>0.12</td>
<td>0.05</td>
<td></td>
</tr>
</tbody>
</table>

**Worksheet 10: Delay, mean length, and GSR**

<table>
<thead>
<tr>
<th>Movement</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Queue</td>
<td>0.12</td>
<td>0.05</td>
<td></td>
</tr>
</tbody>
</table>

**Worksheet 11: Mean delay, mean length, and GSR**

<table>
<thead>
<tr>
<th>Movement</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Queue</td>
<td>0.12</td>
<td>0.05</td>
<td></td>
</tr>
</tbody>
</table>

**Worksheet 12: Delay, mean length, and GSR**

<table>
<thead>
<tr>
<th>Movement</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Queue</td>
<td>0.12</td>
<td>0.05</td>
<td></td>
</tr>
</tbody>
</table>

**Worksheet 13: Mean delay, mean length, and GSR**

<table>
<thead>
<tr>
<th>Movement</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Queue</td>
<td>0.12</td>
<td>0.05</td>
<td></td>
</tr>
</tbody>
</table>

**Worksheet 14: Delay, mean length, and GSR**

<table>
<thead>
<tr>
<th>Movement</th>
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<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Queue</td>
<td>0.12</td>
<td>0.05</td>
<td></td>
</tr>
</tbody>
</table>

**Worksheet 15: Mean delay, mean length, and GSR**

<table>
<thead>
<tr>
<th>Movement</th>
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<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Queue</td>
<td>0.12</td>
<td>0.05</td>
<td></td>
</tr>
</tbody>
</table>
### MCD: Unsignalized Intersections Release 3.0

**2-WAY STOP CONTROL SYSTEM ANALYSIS**

**Analyst:** CL  
**Intersection:** North-South Major St.  
**Count Date:**  
**Time Period:** 24 hrs  
**Intersection Orientation:** North-South Major St.

**Vehicle Volume Data:**

<table>
<thead>
<tr>
<th>Movement</th>
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**Length of study period:** 1.00

**Data for Computing Effect of Delay to Major Design Vehicles:**

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**Worksheet 4: Critical Day and Follow-up Time Calculations**

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**Worksheet 5: Converting Flow and Capacity Equations**

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**Worksheet 6: Delay, Queue Length, and LOS**

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### APPENDIX D

**CAPACITY ANALYSIS CALCULATIONS**

**PROJECTED YEAR 2010 PEAK HOUR TRAFFIC ANALYSIS WITHOUT PROJECT**

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**Signal Performance Summary**

- Cycle Length: 96.0 sec

**Approach Lane Group**

- **Capacity**
- **Flow Rate (v/h)**
- **Delay LOS**

**Eastbound**

- LTR: 406
- TR: 504

**Westbound**

- LTR: 524
- TR: 624

**Northbound**

- LTR: 110
- TR: 205

**Southbound**

- LTR: 256
- TR: 300

**Intersection Delay**: 21.5 (sec/veh)

**Intersection LOS**: C
### HCS2000: Signalized Intersections Release 4.1

#### Eastbound

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#### Northbound

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#### Southbound

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### HCS2000: Signalized Intersections Release 4.1

#### Eastbound

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#### Northbound

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### Intersection Performance Summary

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<th>Adj Sat Ratio</th>
<th>Lane Group Approach</th>
<th>Delay LOS</th>
<th>Delay LOS</th>
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#### Eastbound

- **528** left
- **1690** through
- **32.0** left
- **21.0** through
- **11.0** right
- **32.7** through

#### Westbound

- **471** left
- **1514** through
- **31.7** left
- **23.2** through
- **12.6** right
- **32.7** through

#### Northbound

- **118** left
- **1770** through
- **68.3** left
- **58.5** through
- **20.7** right
- **22.2** through

#### Southbound

- **256** left
- **1770** through
- **82.9** left
- **59.7** through
- **58.2** right
- **21.0** through

#### Intersection Delay @ 22.7 (sec/veh) Intersection LOS @ C

---

### Interaction Performance Summary

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<th>Adj Sat Ratio</th>
<th>Lane Group Approach</th>
<th>Delay LOS</th>
<th>Delay LOS</th>
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</thead>
</table>

#### Eastbound

- **248** through
- **1770** through
- **518** through
- **1863** through
- **518** through
- **148** through

#### Westbound

- **440** through
- **1583** through
- **518** through
- **148** through
- **518** through
- **148** through

#### Northbound

- **668** through
- **2700** through
- **518** through
- **1863** through
- **518** through
- **148** through

#### Southbound

- **1022** through
- **518** through
- **1863** through
- **518** through
- **148** through
- **518** through

#### Intersection Delay @ 24.5 (sec/veh) Intersection LOS @ C
### Signalized Intersection Summary

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### Duration
1.00

### Phase Combination
- **EB** Left
- **Thru** A
- **Right** A
- **Ped** A
- **NB** Left
- **Thru** A
- **Right** A
- **Ped** A
- **WB** Right
- **Green** 3.0
- **Yellow** 4.0
- **Red** 1.0

### Intersection Performance Summary
- **Green** 3.0
- **Red** 1.0
- **Cycle Length** 90.0

### Appr/ Lane Group Flow Rate Adj Sat Rates Lane Group Approach

### Grade
- **Eastbound**
  - L: 175
  - T: 642
  - B: 563

### Northbound
- LTR: 874

### Southbound
- L: 295
  - TR: 1628

### Intersection Delay = 30.9 (sec/veh) Intersection LOS = C
Data for Computing Effect of Delay to Major Street Vehicles:

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Length of study period, hrs: 1.68

Worksheet 4: Critical Gap and Follow-up Time Calculation

Critical Gap Calculations:

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Worksheet 5: Impedance and Capacity Equations

Step 1: MT Zona Street

Travel Time: 0.34
Speed: 30
Capacity: 1000
Traffic: 200
Demand: 150
Flow: 20

Worksheet 6: Delay, Queue Length, and LOS

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RCP: Unspecialized Intersections Release 3.10

Two-Way Stop Compatibility Analysis

Analysis: CL
Intersection: Hazard Street/Eastern Ave
Date: Oct 29, 2005

Time Period: AM Peak

Intersection Orientation: North-South Major St.

Vehicle Volume Data:

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Pedestrian Volume Data:

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Analysis: CL
Intersection: Hazard Street/Eastern Ave
Date: Oct 29, 2005

Time Period: AM Peak

Intersection Orientation: North-South Major St.

Vehicle Volume Data:

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Pedestrian Volume Data:

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Data for Computing Effect of Delay on Major Street Vehicle:

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<td>% Major th vehicles</td>
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<td>Number of major streets through lane</td>
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Length of study period, hrs: 1.00

Worksheet 4 Critical Gap and Follow-up Time Calculations:

Critical Gap Calculations:

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l, sec

1 stage: 6.9 6.9

Follow-up Time Calculations:

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Worksheet 4 Intersection and Capacity Equations

Step 1: PT Form Minor A

- Intersection Flows
- Intersection Flows
- Intersection Flows
- Intersection Flows
- Probability of Over flow St.

Worksheet 5 Delay, Queue Length, and LOS

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Appendix E

Capacity Analysis Calculations

Projected Year 2010 Peak Hour Traffic Analysis with Project
### SIGNALIZED INTERSECTION SUMMARY

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### Intersection Performance Summary

- **Appr/ Lane Group Flow Rate**
  - Eastbound: 25.8 C
  - Westbound: 25.8 C
  - Northbound: 31.6 C
  - Southbound: 32.4 C

- **Adj Sat Ratio**
  - Eastbound: 0.20
  - Westbound: 0.28
  - Northbound: 0.43
  - Southbound: 0.66

- **Delay LOS**
  - Eastbound: Delay LOS = C
  - Westbound: Delay LOS = C
  - Northbound: Delay LOS = C
  - Southbound: Delay LOS = C

### HCD2000: Signalized Intersections Release 4.1

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### Intersection Performance Summary

- **Appr/ Lane Group Flow Rate**
  - Eastbound: 24.1 C
  - Westbound: 24.1 C
  - Northbound: Delay LOS = C
  - Southbound: Delay LOS = C

- **Adj Sat Ratio**
  - Eastbound: 0.32
  - Westbound: 0.31
  - Northbound: 0.63
  - Southbound: 0.55

- **Delay LOS**
  - Eastbound: Delay LOS = C
  - Westbound: Delay LOS = C
  - Northbound: Delay LOS = C
  - Southbound: Delay LOS = C

**Intersection Delay = 23.3 (sec/veh) ** Intersection LOS = C
### Inter.: All other areas

**Signalized Intersections Summary**

| L  | T  | R  |  | L  | T  | R  |  | L  | T  | R  |  | L  | T  | R  |  |
|----|----|----|---|---|----|----|---|---|----|----|---|---|----|----|---|---|
|    |    |    |   |    |    |    |   |    |    |    |   |    |    |    |   |    |

| No. Lanes | 1 | 1 | 1 | 0 | 2 | 0 | 1 | 3 | 1 | 3 | 0 |    |    |    |    |    |
| LTR Config | LTR | LTR | LTR | LTR | LTR | LTR | LTR | LTR | LTR | LTR | LTR | LTR | LTR | LTR | LTR | LTR |
| Volume | 96 46 121 | 117 27 99 | 132 119 203 | 150 749 45 |    |    |    |    |    |    |    |    |    |    |    |    |
| Lane Width | 12.0 12.0 12.0 | 12.0 12.0 12.0 | 12.0 12.0 12.0 | 12.0 12.0 12.0 |    |    |    |    |    |    |    |    |    |    |    |    |
| RTDB Vol | 20 | 1 | 10 | 1 | 20 | 1 | 20 | 1 |    |    |    |    |    |    |    |    |

**Duration**

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

| Phase Combination | 2 | 5 | 4 | 3 | 6 | 7 | 8 |    |    |    |    |    |    |    |    |    |

**Signal Operations**

| EB Left | A | A | A |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Thru | A | A | A |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Right | A | A | A |    |    |    |    |    |    |    |    |    |    |    |    |    |
|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| WB Left |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Thru |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Right |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| SB Left |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Thru |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Right |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| EB Right |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

**Intersection Performance Summary**

<table>
<thead>
<tr>
<th>App/Lane Group</th>
<th>Adj Sat Ratio</th>
<th>Lane Group Approach</th>
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<tbody>
<tr>
<td>L</td>
<td>284</td>
<td>1179</td>
</tr>
<tr>
<td>T</td>
<td>339</td>
<td>1633</td>
</tr>
<tr>
<td>R</td>
<td>475</td>
<td>1583</td>
</tr>
</tbody>
</table>

**Westbound**

| LTR  | 657 | 2680 | 0.47 | 0.24 | 29.6 C | 29.6 C |

**Northbound**

| L  | 492 | 1770 | 0.74 | 0.28 | 35.0 D |
| T  | 3601 | 3320 | 0.72 | 0.19 | 20.3 C | 22.7 C |
| R  | 356 | 1583 | 0.27 | 0.49 | 14.2 B |

**Southbound**

| L  | 357 | 1770 | 0.56 | 0.11 | 47.1 D |
| R  | 3570 | 5057 | 0.62 | 0.31 | 27.2 C | 28.7 C |

**Intersection Delay + 25.3 (sec/veh) Intersection LOS + C**

---

**Signalized Intersections Summary**

| L  | T  | R  |  | L  | T  | R  |  | L  | T  | R  |  | L  | T  | R  |  |
|----|----|----|---|---|----|----|---|---|----|----|---|---|----|----|---|---|
|    |    |    |   |    |    |    |   |    |    |    |   |    |    |    |   |    |

| No. Lanes | 1 | 1 | 1 | 0 | 2 | 0 | 1 | 3 | 1 | 3 | 0 |    |    |    |    |    |
| LTR Config | LTR | LTR | LTR | LTR | LTR | LTR | LTR | LTR | LTR | LTR | LTR | LTR | LTR | LTR | LTR | LTR |
| Volume | 96 46 121 | 117 27 99 | 132 119 203 | 150 749 45 |    |    |    |    |    |    |    |    |    |    |    |    |
| Lane Width | 12.0 12.0 12.0 | 12.0 12.0 12.0 | 12.0 12.0 12.0 | 12.0 12.0 12.0 |    |    |    |    |    |    |    |    |    |    |    |    |
| RTDB Vol | 20 | 1 | 10 | 1 | 20 | 1 | 20 | 1 |    |    |    |    |    |    |    |    |

**Duration**

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

| Phase Combination | 2 | 5 | 4 | 3 | 6 | 7 | 8 |    |    |    |    |    |    |    |    |    |

**Signal Operations**

| EB Left | A | A | A |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Thru | A | A | A |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Right | A | A | A |    |    |    |    |    |    |    |    |    |    |    |    |    |
|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| WB Left |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Thru |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Right |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| SB Left |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Thru |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Right |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| EB Right |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

**Intersection Performance Summary**

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<th>Lane Group Approach</th>
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<tr>
<td>R</td>
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<td>1583</td>
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**Westbound**

| LTR  | 666 | 3326 | 0.85 | 0.39 | 34.3 C | 34.3 C |

**Northbound**

| L  | 196 | 1770 | 0.83 | 0.50 | 37.5 D |
| T  | 1576 | 1519 | 0.82 | 0.39 | 28.7 C | 29.5 C |
| R  | 416 | 1583 | 0.27 | 0.39 | 19.0 B |

**Southbound**

| L  | 376 | 1770 | 0.34 | 0.44 | 17.5 B |
| TR | 1684 | 5053 | 0.74 | 0.33 | 26.2 C | 27.2 C |

**Intersection Delay + 25.3 (sec/veh) Intersection LOS + C**
### Two-Step Control/Intersection Analysis

**Analysis**:
- **Location**: U.S. 98
- **Date**: August 24, 1981
- **Time Period**: All Year

**Intersection Orientation**: North-South Major St. & South

### Vehicle Volume Data

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<th>Veh/day</th>
<th>Veh/hr</th>
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<td>0.83</td>
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<td>W</td>
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**Pedestrian Volume Data**

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<td>E</td>
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<td>S</td>
<td>2</td>
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<tr>
<td>W</td>
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**Median Type**: Fixed Curb

**Flared Approach Movements**

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<th># of Vehicles</th>
<th># of Vehicles - Western</th>
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<tr>
<td>W</td>
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**Lane Usage for Movements 1.104 Approach**

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<th>S</th>
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<td>L1</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>L2</td>
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<tr>
<td>L3</td>
<td>Y</td>
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**Channelized**: Y

**Grade**: 0.03

**Lane Usage for Movements 0.544 Approach**

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**Channelized**: N

**Grade**: 0.03

### Data for Computing Effect of Delay on Major Street Vehicles

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<th>Delay per Vehicle</th>
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<tr>
<td>N</td>
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<td>0.01</td>
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<tr>
<td>E</td>
<td>18</td>
<td>0.01</td>
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<tr>
<td>S</td>
<td>6</td>
<td>0.01</td>
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<tr>
<td>W</td>
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**Worksheet**: Critical Gap and Follow-up Time Calculation

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<th>E</th>
<th>N</th>
<th>S</th>
<th>W</th>
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</thead>
<tbody>
<tr>
<td>T</td>
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<td>1.8</td>
<td>1.2</td>
<td>1.8</td>
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<tr>
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**Worksheet**: Dependent and Capacity Equations

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<td>2</td>
<td>C</td>
<td>6.40</td>
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**Worksheet**: Delay, Queue Length, and LOS

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<tr>
<td>W</td>
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**Grade**: 0.03
### Two-Way Stop Coordination Analysis

#### Analysis
- Intersection: Malcom Dr/Maple Ave
- Time Period: AM Peak
- Study Date: Year 2000
- Time Period: AM Peak
- Intersection Description: North-South Major St.

#### Vehicle Volume Data

<table>
<thead>
<tr>
<th>Movement</th>
<th>N</th>
<th>V</th>
<th>T</th>
<th>B</th>
<th>Y</th>
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<tbody>
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</table>

#### Pedestrian Volume Data

- Movements:
- Flow:
- Lane width:
- Walk speed:
- Number of crosswalks:

#### Median Type
- Median Type: Raised Curb
- No of vehicles:

#### Flared Approach Movements

<table>
<thead>
<tr>
<th>Movement</th>
<th>N</th>
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<th>T</th>
<th>B</th>
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<tbody>
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#### Length of Study Period
- Length of study period: 9:00 AM

#### Worksheet 1: Critical Gap and Follow-up time calculation

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<th>N</th>
<th>V</th>
<th>T</th>
<th>B</th>
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#### Gap Calculations

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#### Follow-Up Time Calculations

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#### Worksheet 2: Impedance and capacity equations

**Step 1: Study from Minor St.**

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#### Impedance formula

- Impedance formula: 8.00

#### Capacity formula

- Capacity formula: 3.00

#### Probability of Queuing

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<tr>
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<th>V</th>
<th>T</th>
<th>B</th>
<th>Y</th>
<th>W</th>
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#### Worksheet 3: Delay, queue length, and LOS

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<th>T</th>
<th>B</th>
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### Data for Comparing Effect of Delay to Major Street Vehicular

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<th>T</th>
<th>B</th>
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</tbody>
</table>

#### Delay to Major Street Vehicular

- Delay to Major Street Vehicular: 0.00

#### Queue Length

- Length: 0.00

#### Approach Delay

- Approach Delay: 0.00
HILO INTERNATIONAL AIRPORT
FINAL ENVIRONMENTAL ASSESSMENT

Hilo, Hawaii

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS DIVISION

Prepared by:

April 2003
HILO INTERNATIONAL AIRPORT

Final Environmental Assessment

Hilo, Hawaii

This document is prepared pursuant to Chapter 343, HRS and the Administrative Rules, Title 11, Chapter 200 of the Hawaii Department of Health

Proposing Agency:

State of Hawaii
Department of Transportation
Airports Division

Responsible Official:

[Signature]
Rodney K. Furuta, Director
Department of Transportation

APR 15 2003

Date

Prepared by:


April, 2003
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APPENDICES


PROJECT SUMMARY

Proposing Agency:  State of Hawaii
                 Department of Transportation Airports Division

Location:  Hilo International Airport, Hilo, Hawaii

Tax Map Key:  (3) 2-1-12: various

Land Area:  Approx. 1,007 acres

Recorded Fee Owner:  State of Hawaii

Existing Uses:  Airport and related facilities

State Land Use Classification:  Urban

County Zoning:  ML-20 (Limited Industrial, 20,000 sf minimum lot size)

Proposed Action:  New hold cargo facility, relocated helicopter facility,
general aviation facilities, parking area expansion,
maintenance baseyard facilities, residential sound
attenuation for nearby residences, land and avigation
easement acquisition

Pre-Assessment Consultation:

Federal Agencies
       U.S. Army Corps of Engineers
       U.S. Customs Service
       U.S. Department of Agriculture, Animal and Plant Health
       Inspection Service
       U.S. Department of Transportation, Federal Aviation
       Administration
       U.S. Environmental Protection Agency
       U.S. Fish and Wildlife Service

State Agencies
       Department of Agriculture
       Department of Business, Economic Development and
       Tourism (DBEDT) Office of Planning
       Department of Defense (DOD), Hawaii Air National Guard
       DOD Hawaii Army National Guard, State Army Aviation
       Office
       Department of Hawaiian Home Lands
       Department of Health (DOH)
       DOH Office of Environmental Quality Control

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DLNR Land Division
Department of Transportation
Office of Hawaiian Affairs
University of Hawaii at Manoa, Environmental Center

County Agencies
Department of Public Works
Department of Research and Development
Department of Water Supply
Planning Department

Elected Officials
State Senator David Matsuura
State Representative Jerry L. Chang
Hawaii County Councilman Aaron Chung

Other Interested Parties
Above It All
Airlines Committee of Hawaii
Air-Flo Express, Inc.
Airborne Freight Corporation
Aloha Airlines, Inc.
Century Aviation
Commodity Forwarders
Federal Express Corporation
General Aviation Council of Hawaii
Hawaii Airline Liaison Office
Hawaii Agriculture Industry
Hawaii Flight Academy
Hawaii Orchid Air
Hawaiian Airlines, Inc.
Helicopter Consultants of Maui, dba Blue Hawaiian Helicopters
Island Hoppers
K & S Helicopters, Inc.
Kamehameha Schools
Keaukaha Community Association
Leslie B. Ito, dba Air Freight Specialist
Murrayair Ltd.
Safari Aviation, Inc.
Sierra Club, Hawaii Chapter
Sunshine Helicopters
Tropical Helicopters
Volcano Helicopters

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SECTION 1
INTRODUCTION
1. INTRODUCTION

1.1 OVERVIEW

The State of Hawaii Department of Transportation, Airports Division (DOT-A) proposes to construct various improvements at the Hilo International Airport on the island of Hawaii. The proposed improvements are listed below, with the respective locations shown on Figure 1-1.

1. Development of a new hold cargo facility northwest of the main passenger terminal complex, including associated roadway, vehicular parking, infrastructure, and aircraft parking apron improvements;
2. Relocation of helicopter operations to the southwest corner of the Airport, including the development of lease lots, operational areas, and infrastructure;
3. General aviation facilities, including an aircraft parking apron, a new T-hangar, wash rack, aircraft tie-downs, and lease lots in the Old Terminal Area;
4. Expansion of public and employee parking areas;
5. Expansion of the DOT-A maintenance baseyard;
6. Noise mitigation projects, including sound attenuation for nearby residences and a 15-foot noise barrier between the Airport and the Keauhaua residential subdivision;
7. Acquisition of the triangular area between Kanoahale Avenue and Runway 3, acquisition of a small area southwest of Runway 3 and west of Kanoahale Avenue, and acquisition of a small area immediately northeast of Runway 21 for runway protection zone areas (subject to availability and concurrence of the landowner);
8. Acquisition of an avigation easement for the Runway 3 runway protection zone area.

The preparation of this Environmental Assessment is required pursuant to Chapter 343, Hawaii Revised Statutes, and Chapter 200, Title 11, State of Hawaii Department of Health Administrative Rules since the proposed improvements involve the use of State lands and funds, and a helicopter facility. The accepting authority for the Environmental Assessment is the State of Hawaii, Department of Transportation, Airports Division.

1.2 PROJECT BACKGROUND

The Hilo International Airport is located in the town of Hilo on the eastern side of the Island of Hawaii. The proposed improvements are to occur on various sites within the Airport property, with the exception of land acquisitions, exchanges and avigation easements that will be sought for certain parcels near the north and east airport boundaries.

The Airport encompasses approximately 1,247 acres and is owned and operated by the State of Hawaii as part of the Hawaii State Airport System. Hilo International Airport is one of two major airports on the island of Hawaii, and is one of the five major airports in the State of Hawaii. The Airport is classified as a small hub by the Statewide Airport System Plan (June 1998). The National Plan of Integrated Airports Systems (NPIAS) classifies Hilo
Hilo International Airport Improvements

International Airport as a Commercial Service-Primary-Long Haul, which typically serves long-haul air carrier routes of less than 500 miles since overseas mainland service was suspended in December 1986. The Airport accommodates, and is expected to continue to accommodate, aircraft such as the B-737, DC-9, B-757, B-767, B-717 and some business jet aircraft. Occasionally, large aircraft such as the B-747 and the C-5A use the Airport.

Access to the Airport and existing facilities is from Kamelelelua Avenue via Kekuanaoa Street, Brig Road, and other airport service roads.

1.3 PROJECT NEED

The proposed improvements are based on recently updated master plans, development plans, and the Federal Aviation Regulations Part 150 Airport Noise Compatibility Program document to determine future development that will satisfy forecast aviation demand in a financially feasible manner while addressing environmental and socioeconomic issues and concerns.

The need for each of the proposed projects is described below:

Hold Cargo Building

The primary purpose of the proposed Hold Cargo Building at Hilo International Airport is to relocate tenants currently occupying the existing air cargo facilities at the old passenger terminal at the west end of the Airport. Relocation of air cargo operations will allow for more efficient operations by the primary cargo operators, Aloha and Hawaiian Airlines, as well as the use of the old passenger terminal for other aviation activities. A major drawback to the existing air cargo facilities is the distance from the present passenger terminal area, which requires additional ground handling and split operations. Additional ground handling translates to increased costs to air cargo users.

Heliport

The development of the proposed hold cargo facilities will require the relocation of the existing helicopter facilities. The west end of the air carrier apron is used for helicopter parking, takeoffs, and landings, and such activities would conflict with the relocated air cargo operational area. Currently, the helicopter operator's ticket counters are located in the west end of the passenger terminal building and in the commuter/air taxi terminal such that there is a lack of space for expansion. The existing heliport's 11 helicopter pads are occupied, and two of the operators have plans to acquire additional helicopters in the future. The proposed heliport facility will allow for the consolidation and accommodation of the facility and expansion needs of the five private helicopter operators at Hilo International Airport.
General Aviation

The General Aviation facilities at Hilo International Airport are insufficient to accommodate the existing number of aircraft and increasing level of aircraft operations. Deficiencies include a lack of hangar space, aircraft tie downs, and lease lots. Existing General Aviation support facilities are very limited. Infrastructure improvements and improvements to the aircraft parking apron are needed, as well as an aircraft wash rack. The proposed improvements to the General Aviation facilities will include a new T-hangar and parking apron to adequately support the present operations and projected future operations.

Parking

Additional parking is needed for both Airport customers and employees. There is ample space to extend the existing parking area toward the east and south in the open areas bounded by the terminal loop road.

DOT-A Maintenance Baseyard

The current DOT-A maintenance baseyard facilities are in need of upgrade and expansion to support the current level of airport operations. Specific facility needs include additional storage areas, office space, and service areas.

Noise Mitigation

Noise levels generated by Airport activities are an ongoing concern with residential areas in the Airport vicinity. Hilo International Airport participated in a voluntary noise compatibility planning process, the Federal Aviation Regulation (FAR) Part 150 Airport Noise Compatibility Planning Program, which implements portions of the Aviation Safety and Noise Abatement Act of 1979.

The FAR Part 150 Noise Compatibility Program report outlines options for noise mitigation, including sound-attenuation improvements to nearby residences and the construction of a 15-foot sound attenuation barrier between the Airport and the Keaukaha Tract I residential subdivision to reduce the number of noise impacted structures.

The wall was included among the airport improvements listed for the proposed project during the pre-assessment consultation phase of this Environmental Assessment (EA). Follow up consultation with the Keaukaha community, however, resulted in the elimination of the sound attenuation wall as a recommended means of noise mitigation. Numerous concerns and objections to the wall relative to views, aesthetics, wind impedance, and effectiveness were expressed at two community meetings, as well as through written comments and correspondence received by the
DOT-A. Community sentiments against the construction of the wall were also expressed during door-to-door interviews of residents along the Airport boundary and through a questionnaire mailed to residents within the area that experiences higher noise levels. As a result, DOT-A will not pursue the construction of the noise wall. Instead, continuing consultation will be pursued relative to options ranging from the attenuation of noise for individual residences to relocation away from the high noise zones.

Land Acquisitions

As determined by Federal Aviation Administration (FAA) safety regulations for areas near the end of runways, certain areas located beyond the Airport property line should be included in a clear zone referred to as the Runway Protection Zone (RPZ). These areas have been noted for acquisition. DOT-A has established a policy to proceed with such acquisitions only with the concurrence of the land owner, or at such time that the land otherwise becomes available.

Aviation Easements

FAA safety regulations also require the State DOT-A to seek aviation easements for areas within the Runway Protection Zone (RPZ), beneath the approach path for runways. Portions of the Runway Protection Zones (RPZ), beneath the approach path for Runways 8, 21 and 3, extend beyond the Airport property line. Acquisition of fee title to those areas would provide the State with the greatest control over uses within these areas and is the preferred course of action. However, where precluded by cost or existing uses, FAA safety regulations require the obtaining of aviation easements over the RPZs. At present the State has aviation easements over the non-airport property included within the existing runway protection zones for Runways 8 and 21. Obtainment of an easement for the Runway 3 RPZ is included as one of the proposed improvements in this EA.

1.4 PROJECT SCHEDULE AND COST

The proposed improvements are expected to be undertaken within the next 10 years, subject to timing and the availability of funding. Preliminary cost estimates for the proposed improvements are as follows:

- Hold cargo facility: $21.3 million
- Helicopter facility: $6.5 million
- General aviation improvements: $6.5 million
- Parking improvements: $2.3 million
- DOT-A Maintenance: $0.4 million
- Noise mitigation treatment of residences $14.6 million
- Land acquisition $3.5 million
SECTION 2
PROJECT DESCRIPTION AND SETTING
2. PROJECT DESCRIPTION AND SETTING

2.1 PROJECT LOCATION

The proposed project site is located within boundaries of the existing Hilo International Airport in the town of Hilo on the eastern side of the Island of Hawaii (see Figure 2-1). Hilo International Airport is one of four State airports on the Island of Hawaii, and the second largest after the Kona International Airport at Keahole. The Airport occupies approximately 1,247 acres of land on the northeastern side of the town of Hilo.

The airfield at Hilo International Airport consists of two runways, various taxiways, aprons, and navigational aids together with lighting systems and pavement conditions. Airport facilities are located in two main areas south and west of the airfield. The passenger terminal, commuter/air taxi terminal, maintenance baseyard, Federal Aviation Administration (FAA) air traffic control tower, Aircraft Rescue and Fire Fighting (ARFF) facilities and the Airport Industrial Area are located on the southern side of the Airport. On the western side of the Airport, northwest of Runway 3-21 in the old airport terminal area, are facilities that include air cargo, general aviation aircraft maintenance, storage, and fixed base operator facilities.

All of the land within the Airport boundary is owned by the State of Hawaii except for the area occupied by the U.S. Postal Service. The Airport property is administered by the State DOT Airports Division. The State Department of Land and Natural Resources (DLNR) now administers the land between the old passenger terminal, Runway 8-26 and Kanoelhua Avenue that used to be part of the Airport. South of the Airport, surrounding landowners include the State of Hawaii and Bishop Estate, which owns a 177-acre strip of land south of the Airport. The Department of Hawaiian Home Lands (DHHL) controls most of the land to the north and to the east of the Airport. Towards the west, southwest, and northwest are areas owned by smaller private landowners as well as small parcels belonging to the State of Hawaii.

The proposed airport improvements are to occur on a total of approximately 64 acres of land within the Airport boundary, identified by various portions of Tax Map Key (TMK) 2-1-012:009, TMK 2-1-012:114 and 115 (see Figure 2-2, 2-2A, and 2-2B). Proposed noise mitigation projects, such as sound treatment of homes, would occur in the Keaukaha tract I residential subdivision north of the Airport. Proposed land acquisitions include approximately seven acres of both State-owned and private property. Approximately ten acres are included in the area to be covered by the proposed avigation easement. The specific locations of the proposed improvement projects are described in Section 2.2.

2.2 PROJECT DESCRIPTION

The proposed improvements for Hilo International Airport include eight projects that will provide new facilities for cargo, helicopter, and general aviation operations, improve parking,
improve DOT-A baseyard facilities, mitigate noise levels in the vicinity of the airport, and increase safety within Airport airspace and runway approach areas. The facilities will be compliant with the Americans with Disabilities Act (ADA) and Commission on Persons with Disabilities (CPD), as well as Federal, State and County regulations and codes, including, but not limited to Federal Aviation Administration (FAA) regulations and the County of Hawaii Building Code. The proposed projects are further described below.

**Hold Cargo Facility**

The proposed hold cargo facility will be situated at the west end of the existing air carrier apron, adjacent to the existing helicopter facilities and north of the Commuter/Air Taxi Terminal (see Figure 2-3). The new cargo facility will be in close proximity to the main passenger terminal, facilitating the handling of cargo that is loaded on to passenger aircraft. Planned improvements include one cargo building, access roads and driveways, a vehicular parking lot, aircraft parking apron improvements, utilities, and security fences. The buildings will provide approximately 63,000 square feet of total floor space. Approximately 150 vehicular parking and loading stalls for employees, customers, and delivery vehicles will be provided on the west side of the new buildings. Site improvements will consist of all supporting infrastructure, including water, wastewater, drainage, electrical and communications systems.

The hold cargo buildings are intended for use by Federal and State inspection agencies, Aloha Airlines, Hawaiian Airlines, freight forwarders, and farmers and flower growers, most of whom are currently located within the existing air cargo area in the Old Terminal. One or two all-cargo airlines are planning to develop their own facilities in the Airport Industrial Area on lease lots adjacent to and west of the new hold cargo facility.

**Helicopter Facilities**

Helicopter operations at the Airport are proposed for permanent relocation to a 15-acre area near the southwest corner of the airport, southwest of the Civil Air Patrol hangar and the Hawaii Army National Guard helicopter facility (see Figure 2-4). The proposed site is comprised of undeveloped land between Kekuanoa Street and Runway 3. The new helicopter facility would enable the concentration of rotary-wing aircraft operations in one area of the Airport. The proposed helicopter facility would provide two landing/takeoff positions, at least 18 helicopter parking positions (pads), and eight graded lease lots, each with an area of 30,000 square feet. The lease lots would provide space for passenger lounges, offices, hangar facilities, and vehicular parking.

Basic infrastructure will be provided to the lease lots but tenants will be responsible for their facilities development. Potential conflicts with the nearby T-hangar will also be addressed during the facility’s design.
HILO INTERNATIONAL AIRPORT
ENVIRONMENTAL ASSESSMENT

SITE PLAN
PROPOSED CARGO SITE

Scale in Feet
0 200 400 800

JANUARY 2002
Prepared by:
WILSON OKAMOTO
& ASSOCIATES, INC.

FIGURE 2-3
Site improvements will include water, wastewater, drainage, electrical, and fire protection systems. Six-foot high fencing will be installed along Kekuanaoa Street for security and public safety, while the existing fencing along the southeast side of Runway 3 will be removed. Access to the proposed facility will be provided via a 24-foot wide service road through a driveway from Kekuanaoa Street. The service road will lead to a vehicular gate where a parking concession can be located. Parking will be provided in an 0.8-acre area fronting the lease lots along Kekuanaoa Street. The cost of the proposed heliport facility is estimated at $8.4 million.

General Aviation Facilities

Improved general aviation facilities will be provided on a seven-acre site at the west end of the Airport bounded on the north by Runway 8 and on the south by Runway 3 and the Old Terminal building (see Figure 2-5). Improvements include a new T-hanger building, an aircraft wash rack, aircraft tie-downs, an aircraft apron and lease lots. Site improvements will include water, wastewater, drainage, electrical and communications systems to support future growth and development for the general aviation community.

Parking

The terminal area parking lot will be expanded to the east or to the south (see Figure 2-6) to accommodate a minimum of 150 additional parking stalls to address existing and future requirements for public, employee and rental car parking. A hazardous merge condition on the return loop and entry lane to the parking lot is also planned to be modified.

DOT-A Baseyard Expansion

The existing DOT-A baseyard, located in the Airport Industrial Area, will be expanded to include the two-acre unoccupied lot between the existing baseyard and the air traffic control tower (see Figure 1-1). Specific facilities to be provided include additional storage areas for equipment and materials, office space for maintenance supervisors, a herbicide and storage mixing shed with an eye wash station, and a mechanics service pit.
Noise Mitigation

The FAR Part 150 Noise Compatibility Program (NCP) for the Hilo International Airport indicates that sound attenuation is needed for the residences and public facilities exposed to certain airport noise levels. The residential area most affected by Airport noise is the Keaukaha Tract 1 subdivision immediately north of the Airport boundary (see Figure 1-1). The NCP report recommended noise mitigation measures, including air conditioning and modifications to residences to provide acoustical insulation. A discussion of the NCP is included in Section 3-9.

The NCP report also recommended a 15-foot high sound attenuation barrier between the Airport and the Keaukaha Tract 1 residential subdivision to reduce the number of noise impacted structures. Pre-assessment consultation with the Keaukaha community, however, resulted in the elimination of the sound attenuation wall as a recommended means of noise mitigation. Numerous concerns and objections to the wall relative to views, aesthetics, wind impedance, and effectiveness were expressed at two community meetings, as well as through written comments and correspondence received by the DOT-A. Community sentiments against the construction of the wall were also expressed during door-to-door interviews of lessees that reside along the Airport boundary and through a questionnaire mailed to lessees within the 70 DNL noise contour. A discussion of the issues and concerns voiced by the Keaukaha Community is provided in Section 6 of this EA.

Thus, DOT-A will not pursue the construction of the noise wall. Discussion with the Keaukaha community concerning airport noise mitigation will continue relative to residential sound attenuation options and measures, including enclosure and air-conditioning of residences within the 60+ DNL noise contour.

Land Acquisitions and Avigation Easements

Acquisition of lands within the runway object free area portion of the Airport runway protection zones is recommended to meet minimum FAA safety requirements. On the western side of the Airport, a triangular area east of Kamehameha Avenue, just north of Kekuanoea Street, extends to within 300 feet of the Runway 3-21 threshold and centerline (see Figure 1-1). The total land area is approximately 2.2 acres and is comprised of 6 privately owned lots. A portion of this property and buildings are within the runway object free area (ROFA). Additionally, land is needed in this area to reduce penetrations of the runway safety area and runway object free area by the Airport service road around the end of the runway.

Portions of the runway protection zones for Runways 3 and 21 extend beyond the Airport property line. Approximately 2.8 acres of land are recommended for acquisition in the runway protection zone southeast of Runway 3 along Kamehameha and Kekuanoea Street (see Figure 1-1). Near the northeast end of Runway 21,
approximately 1.7 acres within the Keaukaha Tract 1 are proposed for acquisition through a land exchange with the Department of Hawaiian Home Lands.

DOT-A has established a policy to proceed with such acquisitions only with the concurrence of the land owner, or at such time that the land otherwise becomes available. Acquisition of fee title to those areas would provide the State with the greatest control over uses within these areas and is the preferred course of action. However, where precluded by cost or existing uses, FAA safety regulations require the obtaining of avigation easements over the RPZs. At present the State has avigation easements over the non-airport property included within the existing runway protection zones for Runways 8 and 21. Obtainment of an easement for approximately ten acres of off-airport property within the Runway 3 RPZ is proposed in this EA.

2.3 EXISTING AND SURROUNDING USES

2.3.1 Existing Uses

Figure 2-7 depicts the existing Airport facilities, identifying major facilities and uses that are further described below.

Southern Airport Area: The air carrier passenger terminal at Hilo International Airport is located south of Runway 8-26. Currently there are 10 aircraft parking positions, though only 8 are usable, and there are only 7 passenger-loading bridges. Air carriers currently operating in the main terminal are Aloha Airlines and Hawaiian Airlines. These airlines operate out of the eastern wing and the central wing. The western wing has been underutilized since the termination of mainland overseas service to Hilo. Currently helicopter and fixed wing air taxi sightseeing businesses are using the front ticket counter spaces in the west wing.

Facilities to support air carrier operations include airline offices, ticket purchase/check-in counters, baggage handling, and baggage claim area. Passenger service facilities include check-in passenger holding areas, Airport restaurant, food and beverage services, shops, public restrooms, information, and personal services. There is a ground floor main passenger holding area located in the central wing that serves all seven of the second-floor passenger loading bridges.

Helicopter and air taxi operators use the western end of the passenger terminal building. This space, formerly the overseas terminal, was vacant until the move of helicopter and air taxi services into this area. Blue Hawaiian Helicopters, Sunshine Helicopters, Tropical Helicopters, Volcano Helicopters, and Century Aviation Inc. all operate out of the western wing. Island Hoppers provides air tours from the Sporty’s Academy of Hawaii facility near the west end of Runway 8. In the apron area north of the commuter terminal there are 11 helicopter pads which are used for take-off and landing, as well as overnight parking.
Hilo International Airport Improvements

The commuter/air taxi terminal is located at the western end of the aircraft parking apron, in a stand alone building, approximately 1,300 feet west of the passenger terminal. The building, encompassing approximately 4,040 square feet, contains two ticket counters, two baggage handling areas, two office/operations areas and a holding room. Safari Aviation, Inc. (helicopter and fixed wing aircraft tour operator) currently leases the space in the building.

The Airport Industrial Area is located west of the main passenger terminal area, just north of Kekuanaoa Street. It contains 21 lots, with the majority being 1 acre in size. Five of the parcels are currently occupied, one by UPS, two by the FAA, one by HFFC's fuel storage facilities, and one by the State DOT-Airports maintenance yard. The remaining parcels are vacant.

The U.S. Post Office facility is located in the Airport Industrial Area, west of the main passenger terminal on land owned by the U.S. Postal service. Occupying 144,400 square feet, this is the main post office that serves the entire eastern portion of the Island. Most of the incoming and outgoing mail passes through this post office. Access is provided though Akahana Street, which intersects Kekuanaoa Street.

Western Airport Area: General aviation activities are located on the western end of the Airport, near the old airport passenger terminal, and near the Hawaii National Guard/Civil Air Patrol area. State DOT-A records show there were 24 aircraft and 8 helicopters based at Hilo International Airport in 1998.

Sporty's Academy of Hawaii provides a variety of fixed-base operator services at the Airport, including minor airplane repairs, flight instruction, charter services and aircraft rentals. Additionally Phillip Byrnes provides aircraft maintenance services from a T-hangar near the end of Runway 3. These services include minor airframe repairs, fuel sales, flight instructions, charter services, and aircraft rentals. Murrayair leases a hangar at the Airport, which it uses for an administrative and maintenance base for its crop-dusting aircraft. However, due to the recent closing of plantations around the island, these planes are used infrequently. Murrayair does some minor light aircraft repairs as well as most of the fueling for the general aviation aircraft. The company maintains one above ground fuel storage tank.

Air cargo service at the Airport is provided by Aloha Airlines, Hawaiian Airlines, Federal Express, and United Parcel Service. The existing air cargo facilities are located in five buildings on the west end of the Airport. According to the State DOT-A the five buildings have a total area of more than 58,000 square feet. One building was converted from the old passenger terminal into a cargo handling facility, and only portions are suitable and usable for cargo activities. A major drawback to the existing air cargo facilities is the distance from the present passenger terminal area, which requires additional ground handling and split operations.
Military Areas: The military uses Hilo International Airport as an arrival and departure point for troops from the mainland United States training at the Pohakuloa Training Area. These activities usually take place three times a year, during the spring, summer, and fall. The exercises usually last for 30 days. The Army and Air Force use the aircraft apron located near the Hawaii Army National Guard facilities on the southwestern side of the airfield and the apron fronting the old passenger terminal, on the western side of the airfield.

The 2nd Battalion, 299th Infantry Regiment of the Hawaii Army National Guard is based at the Keaukaha Military Reservation, south of the Airport. There are three structures located on airport property, two warehouses and a caretaker residence. This piece of land is in the process of being transferred to DLNR, who will then execute a land exchange with the Federal government.

The 2nd Battalion’s aviation unit, Limited Army Aviation Support Facility #2 is based on the southwest side of the Airport. Currently there are 7 helicopters based here, but that number will soon increase to 11 helicopters. The facility includes an apron, hangars and open-sided sheds. The Drug Enforcement Agency (DEA) uses one of the hangars to house its two helicopters.

The Hawaii Army National Guard has recently constructed Army Aviation Support Facility No. 2, consisting of a helicopter cleaning facility and a new hangar. The helicopter cleaning facility is located on the northern portion of their property. The new hangar is located between the DEA hangar and the Guard’s existing hangar. To accommodate the new, heavier aircraft, the apron fronting the area was reinforced, and six helicopter parking pads were constructed.

The Civil Air Patrol (CAP) hangar has space for two small light aircraft, minor aircraft maintenance facilities, office, meeting rooms, restrooms, and a kitchen. When search and rescue operations are being flown from Hilo, a number of itinerant aircraft may park on the apron near the hangar. Additionally when there are military exercises, C-130 airplanes often park on the apron fronting the CAP hangar, for loading and unloading of troops.

2.3.2 Surrounding Uses

Existing land use in the vicinity of Hilo International Airport generally follows the existing zoning pattern. Towards the south and east of the Airport, there is relatively little development and most of the land remains in agricultural use. To the north and southwest of the Airport are industrial and commercial uses, which form a buffer zone between aircraft operations and noise sensitive areas around the Airport.

There is no existing noise buffer between the Airport and the residential homes located on DHHL property to the north. There are also other residential areas near the Airport, approximately 2,000 feet from the end of Runway 3 and 1,000 feet from the end of Runway 21.
Keaukaha Military Reservation: The Keaukaha Military Reservation, the base headquarters for the Hawaii Army National Guard, occupies approximately 440 acres on the southern border of the Airport. The 2nd Battalion, 229th Infantry Regiment is based on the reservation. The reservation contains firing ranges, training areas, barracks, support facilities, and offices for the Army National Guard. There are three structures which are located on Airport property: two warehouses and a caretaker residence. This parcel of land is in the process of being transferred to DLNR, which will in turn execute a land swap with the military for other lands.

Due to the nature of training activities, the number of people present at the facility at any one time varies greatly. The number may range up to the thousands when full-scale military exercises are conducted.

Keaukaha Hawaiian Home Lands Residential Area: The Department of Hawaiian Home Lands controls much of the land along the northern and eastern sides of the Airport. This acreage is part of more than 200,000 acres of public land transferred to the Territorial government by the U.S. Congress when it adopted the Hawaiian Homes Commission Act of 1920 on July 9, 1921. The purpose of the Act was to benefit persons of Hawaiian descent by placing lands in a trust for their sole use. The Act specifically prohibits the sale of trust lands, however, land exchanges are permitted.

The DHHL property along the northern boundary of the Airport is known as Keaukaha Tract I. It has been subdivided into approximately 500 parcels and leased to individual Hawaiian families for nominal amounts. Lot sizes range from 10,000 square feet to one acre. To allow more families to live in this area, there has been substantial infill among the individual lots. Homes in the subdivision are typically one-story in height and of single-wall construction.

The DHHL lands east of the Airport (Keaukaha Tract II) are in agricultural designation, and there are no definitive plans to develop this area. There are approximately seven families granted a right-of-entry to occupy this area, closer to the shoreline. DHHL allows them to reside there until a plan for the area is created.

Consultation with the Keaukaha Community regarding the proposed improvements is described in Section 6 of this EA.

Other DHHL Lands: In 1994-95 the State transferred lands on the western portion of the Airport from DLNR to DHHL. This land included approximately 7 acres. Also included in this transfer was approximately 187 acres south of the Airport, adjacent to the Hawaii Air National Guard land. Currently Bishop Estate and DHHL are in the preliminary stages of executing a land swap for lands north of the Airport, east of Keaukaha Tract I.
Other DHHL lands in the vicinity of the Airport include lands approximately one mile south of the Airport.

**Other Residential Areas:** Other residential development in the vicinity of the Airport includes housing west and southwest of the Airport in Waiakea. These homes are typically built using single-walls and are open to the air.

There are two condominiums in the airport area, one located northeast of the airport near Leleiwi Point (Hale Kahai) and the other located approximately 1.7 miles west of the Airport on the shoreline (Bayshore Tower). Multiple complaints come from these two developments about noise from aircraft.

**Schools, Hospitals, and Other Noise Sensitive Uses:** Noise sensitive areas in proximity to the Airport that may be impacted by aircraft noise include the Waiakea Health Center, the school and churches in Keaukaha, and residences north of Runway 8-26, and off the ends of both runways.
SECTION 3
DESCRIPTION OF THE EXISTING ENVIRONMENT,
PROJECT IMPACTS AND MITIGATION MEASURES
3. DESCRIPTION OF THE EXISTING ENVIRONMENT, PROJECT IMPACTS AND MITIGATION MEASURES

3.1 CLIMATE

Hilo International Airport, located at 19 degrees, 43 minutes north, is well within the tropics, which accounts for its relatively uniform temperatures throughout the year. The average daily low temperature at Hilo International Airport ranges from approximately 60°F Fahrenheit (F) in February and March, to 70°F in August and September. The average daily high temperatures for those two same periods are 79°F and 87°F, respectively. The record high and low recorded at the Airport were 94°F and 53°F.

Rainfall at the Airport averages 128 inches per year. Annual rainfall amounts have varied over the past 10 years, ranging from a low of approximately 86 inches to a high of 211 inches. The winter months have the highest average rainfall while the summer has the lowest.

Wind patterns at Hilo International Airport are largely a function of the interaction between the northeasterly trade winds and Mauna Loa volcano. In general, the trades are more persistent in the summer than in the winter, and stronger in the afternoon than at night. In the absence of trade winds, winds become light and variable. Diurnal heating and cooling of the island gives rise to onshore breezes during the day, and offshore breezes during the night.

3.2 GEOLOGY AND TOPOGRAPHY

The Island of Hawaii was formed by lava from five volcanic mountains. Hilo International Airport is located near the coast, at the base of Mauna Loa volcano, in the town of Hilo. Mauna Loa is a shield-shaped dome about 60 miles long and 30 miles wide, and is one of the most prolific lava producers. The town of Hilo, created by Mauna Loa lava flows, is characterized by aa and pahoehoe lava from various eruptions. On the southeast slope, ash deposits, attaining a thickness of 55 feet, blanket the lower slopes of the mountain.

Hilo International Airport is located on relatively flat lava flows, at elevations averaging between 30 to 40 feet above mean sea level. The highest point of the property rises 60 feet in the southwest corner, while the lowest elevation is 10 feet in the northwest corner of the property. The passenger terminal complex is situated at an elevation of approximately 45 feet.

Direct Impacts and Mitigation Measures: No significant impacts on the geology or topography of the project sites are anticipated as a result of the construction and operation of the proposed improvements. Construction of the proposed improvements will involve grading and excavation activities. Although the construction activities will not adversely impact or alter the geologic character of the project sites, there is the potential for increased erosion and runoff due to the increase in impervious surface area. The potential impacts
resulting from any increase in runoff and applicable mitigative measures are discussed in Section 4.3.

The relatively flat terrain of the project sites will minimize the amount of grading required during construction activities. The excavated areas will either be built over, paved over, or backfilled and landscaped to existing contours.

Indirect Impacts: No indirect impacts to geology or topography are anticipated as a result of the construction and operation of the proposed Airport improvements.

Cumulative Impacts: No cumulative impacts to geology or topography are anticipated as a result of the construction and operation of the proposed Airport improvements.

3.3 SOILS

According to the U.S. Department of Agriculture Natural Resource Conservation Service, the project site, as well as most of the southern portion of the Airport, is underlain by soils classified as Papai extremely stony muck (rPAE), 3 to 25 percent slopes (see Figure 3-1). The Papai series consists of well-drained, thin, extremely stony organic soils over fragmental Aa lava. These soils are gently sloping to moderately steep, and occur at elevations ranging from sea level to 1,000 feet. The surface layer is very dark brown, extremely stony muck, approximately 8 inches thick. Permeability is rapid, runoff is slow, and the erosion hazard is slight.

The majority of the Airport sits on soil classified as Keaukaha extremely rocky muck (rKFD), 6 to 20 percent slopes. The Keaukaha series of soils consists of well-drained, thin organic soils overlying pahoehoe lava bedrock. These soils occur at low levels of Mauna Loa volcano, at an elevation ranging from near sea level to 1,000 feet. The surface layer is very dark brown muck about 8 inches thick. The soil is rapidly permeable, runoff is medium and the erosion hazard is slight. In places, roots are matted over the pahoehoe lava or may extend a few feet into the cracks.

On the eastern end of the Airport, where Runway 8-26 extends eastward, the soils are classified as Lava flows, pahoehoe (rLW). The surface is relatively smooth, though there are areas where the surface is rough and broken. There is no soil covering and is usually bare of vegetation except for mosses and lichens, except in areas of high rainfall where scattered ohia trees, ohelo berry and aali have gained in foothold in cracks and crevices. This land type is found at elevations ranging from sea level to 13,000 feet. This lava often contributes to the ground-water supply in areas of high rainfall.

The Airport lands do not have a designation relative to the Agricultural Lands of Importance to the State of Hawaii (ALISH), except for a portion of the parking lot and terminal loop area, which is designated as "other land."
Direct Impacts and Mitigation Measures: No significant impacts on soils within the project sites are anticipated as a result of the construction and operation of the proposed facility. Ground-disturbing activities associated with construction of the proposed improvements will potentially result in increased storm runoff and soil erosion due to the increase in impervious surface area.

Construction of the proposed improvements will have no impact on the Agricultural Lands of Importance to the State of Hawaii (ALISH).

Indirect Impacts: No indirect impacts to geology or topography are anticipated as a result of the construction and operation of the proposed Airport improvements.

Cumulative Impacts: No cumulative impacts to geology or topography are anticipated as a result of the construction and operation of the proposed Airport improvements.

3.4 SURFACE WATER

The Airport is located within the Waiola watershed, which is drained by the Waiola River and its many branches and tributaries. The Waiola River flows northeast from Waiakea, through Hilo, and drains into Hilo Bay to the west of the Airport.

Due to the permeability of the aa and pahoehoe lava beneath the soil in the area of Hilo International Airport, there are no well-defined drainage courses in the vicinity. There are no streams or water features within the project site, and according to the wetlands survey conducted by the U.S. Army Corps of Engineers, wetlands in the Hilo area are limited to the Lokokã and Kionakapahu Ponds, located along the coastline north of Keaukaha.

Direct Impacts and Mitigation Measures: No significant impacts to surface water are anticipated as a result of the construction and operation of the proposed facility. The natural drainage system within the Airport property consists of rainfall percolating through layers of very porous lava to the ground-water table. There are no definable streams or natural drainageways within the Airport property. There are no wetlands located within the Airport, and no potential for navigable waters of the U.S. to be impacted by the proposed improvements.

Grading, excavation, trenching, and filling activities associated with the construction of the proposed project will potentially result in increased storm runoff and soil erosion from exposed loose lava particles and fill material. To mitigate potential storm runoff impacts, construction site work activities will be regulated by the County of Hawaii’s grading ordinance and the National Pollutant Discharge Elimination System (NPDES) permit requirements administered by the DOH. The grading ordinance includes provisions related to reducing and minimizing the discharge of pollutants associated with soil-disturbing activities in grading, grubbing, and stockpiling. An NPDES General Permit for Storm Water Associated with Construction Activity is required to control storm water discharges if the
area of soil disturbance from activities such as grading, grubbing, and stockpiling is in excess of five (5) acres. Effective March 10, 2003, an NPDES permit will be required for storm water discharges associated with small construction activities that will disturb a total land area of one (1) acre or more. The permit requires compliance with a Best Management Practices (BMP) plan which, in turn, requires compliance with County ordinances pertaining to grading, grubbing, stockpiling, soil erosion, and sedimentation. The BMP plan typically includes appropriate structural or non-structural mitigative methods such as containment berms and filtration/detention basins that would control the discharge of storm water resulting from construction activities.

**Indirect Impacts:** During construction of the proposed improvements, storm runoff may carry increased amounts of sediment. Such erosion will be mitigated through adherence to State and County water quality regulations governing grading, excavation, stockpiling, and dewatering. The Airport is built on permeable lava that generally facilitates drainage. Storm runoff from the runways, taxiways, and aircraft parking aprons flows onto the grassed areas on either side of the pavement where it percolates into the ground. Runoff from the main parking area fronting the main passenger terminal is diverted to an open area east of the terminal. Since the Airport does not have a drainage system that diverts runoff into State waters, no indirect impacts to the quality of surface water bodies is anticipated as a result of the construction and operation of the proposed Airport improvements.

**Cumulative Impacts:** No cumulative impacts to the quality of surface water bodies are anticipated as a result of the construction and operation of the proposed Airport improvements.

### 3.5 GROUND WATER

According to the aquifer classification system adopted by State of Hawaii Commission on Water Resource Management, the Airport is underlain by the Hilo Aquifer System which is part of the Northeast Mauna Loa Aquifer Sector and contains a complex suite of groundwater resources. The Kau volcanoc series of Mauna Loa volcano reaches from the coast to the crest of Mauna Loa. Basal ground water extends several miles inland from Hilo Bay, followed by high level dike and perched water. The coast is free of a sedimentary caprock. The Hilo Aquifer System is composed of a basal, unconfined aquifer of horizontally extensive lavas.

The aquifer has been developed and is currently used for drinking water, however, potable wells are not located in the vicinity of the Hilo International Airport. The Department of Health's Underground Injection Control Program sets the boundaries for determining the effects of development on drinking water quality. The regulatory boundary lies west of the Waiakea residential area.

**Direct Impacts and Mitigation Measures:** Short-term construction activities are not likely to introduce, nor release from the soil, any substance that could adversely affect ground water.
Construction permit requirements, in particular, the NPDES permit, are expected to limit the area of excavation at any one time and require erosion control, dust control, and other best management practices to minimize the off-site transport of excavated materials.

Long-term operations of the proposed facilities are not anticipated to impact ground-water quality. There are no drinking water sources in the vicinity of the Airport. The Airport property is well outside boundary established by the State Underground Injection Control (UIC) program (HAR Title 11, Chapter 23) to protect underground sources of drinking water from pollution by subsurface disposal of fluids.

**Indirect Impacts:** No indirect impacts to the quality of ground water are anticipated as a result of the construction and operation of the proposed Airport improvements.

**Cumulative Impacts:** No cumulative impacts to the quality of ground water are anticipated as a result of the construction and operation of the proposed Airport improvements.

### 3.6 NATURAL HAZARDS

**Flood Hazard:** According to Flood Insurance Rate Maps (FIRM) prepared by the Federal Emergency Management Agency (FEMA), Hilo International Airport sits on lands that have been designated as Zone X, areas determined to be outside the 500-year flood plain.

The low-lying lands between the ocean and the northern boundary of both runways are subject to tsunamis, which may periodically strike the region. The project site, the main passenger terminal and all of other areas south of the runways are not in the tsunami hazard area, however the existing air cargo area (old terminal), and most general aviation facilities are in the hazard area. To permit residents of Keaukaha to evacuate, the State DOT has agreed to control evacuation access across the airfield in times of emergency. The evacuation route extends south from Gate 33, near Baker Avenue, across the airfield using Taxiway F, and through the main terminal to the loop road.

**Seismic Hazard:** The Island of Hawaii is susceptible to seismic activity originating in fault zones under and adjacent to the island. The Hawaii County Code relating to the Uniform Building Code (1991 edition) was amended in July 1999 to upgrade the seismic zone for the Island of Hawaii from Zone 3 to Zone 4. The rating system is based on a scale of 1 to 4, with a rating of 4 having the highest risk associated with seismic activity. The Hawaii County Building Code requires that all new structures be designed to resist forces to seismic Zone 4 standards.

**Volcanic Hazard:** Hilo International Airport is located below the Mauna Loa northeast rift zone in the Volcanic Hazard Zone 3, which is the third highest of nine hazard zones established for the island of Hawaii by the U.S. Geological Survey. Hazard Zone 3 is defined as 1 to 5 percent of area covered by lava since 1800, and 15 to 75 percent of area covered by lava in the last 750 years. Increased distance from recently active vents and/or
the topography of the area makes it less likely that flows will cover Zone 3 areas than lands in Zones 1 and 2.

**Impacts:** Construction and operation of the proposed buildings will not result in increased flood hazards for the project site or the surrounding area. The project site is not subject to coastal hazards such as tsunami inundation, and is situated upon land determined to be in Zone X, outside the 500-year flood plain. The occurrence of an earthquake or seismic activity could pose a risk to property and possibly life within the project site depending upon the intensity of the event. The proposed structures will be designed and built to resist forces to seismic Zone 4 standards in accordance with the Hawaii County Building Code. In the remote event that lava flows approach the project site vicinity, there is the potential for property damage to the proposed buildings and other structures in the Hilo area. Airport emergency evacuation procedures would be implemented.

### 3.7 FLORA

Due to construction of the Airport, there have been major disruptions to the original site. This and current Airport maintenance practices of keeping encroaching vegetation out of Airport lands have resulted in the land within the Airport boundary consisting almost entirely of introduced species. The majority of these are grasses, but there are small strands of trees and scrub vegetation throughout the southern portion of the Airport.

A botanical survey was conducted by Botanical Consultants in July 2001 (see Appendix A). The survey included undeveloped areas near the passenger terminal and Airport Industrial Area, as these sites were under consideration for parking, cargo, and helicopter facility improvements. The survey areas are shown in Figure 3-2. No candidate, proposed, or listed threatened or endangered species as set forth in the Endangered Species Act of 1973, as amended, are known to exist within the vicinity of Hilo International Airport, and none were found during the survey.
The vegetation at the proposed heliport site consists of three vegetation types: Dense Forest, Transition Zone, and Open Grassland. The Dense Forest consists of mostly introduced trees approximately 50 to 75 feet tall. The presence of mango, avocado, strawberry guava, and yellow guava indicated that the area was once landscaped. Several native Ohia trees also exist in this area. Moving from the Dense Forest toward the runway, the Transition Zone vegetation consists of grasses, small trees, and weedy herbs. Beyond the Transition Zone, Open Grassland vegetation abuts the Airport fence. Grasses and herbs are abundant, and a few seedlings occur. All vegetation in this area is under 10 feet in height.

The vegetation in the area west of the Post Office includes Scrub Forest and Open Grassland. The site is dissected by old military roads and contain old concrete building foundations. The Scrub Forest contains a variety of introduced trees and large shrubs from 15 to 20 feet tall. The ground layer consists of introduced grasses and small plants. The Open Grassland is maintained as low stature vegetation by Airport management to assure visibility over the airfield.

The vegetation in the area east of the passenger terminal apron consists of Introduced Weed Tree Forest and Bamboo Orchid/Broomsedge Grassland. The Introduced Weed Tree Forest forms a broad band of almost impenetrable forest along the north, south, and western edge of the site. The central portion of the site is an open area of Bamboo Orchid/Broomsedge Grassland. The vegetation in this area is three to six feet in height with scattered bushes and saplings.

At the site of the proposed parking expansion, the vegetation type is Introduced Weed Tree Forest and is very dense, with a very scant understory.

Direct Impacts and Mitigation Measures: No significant impacts to flora within the project site are anticipated as a result of the construction and operation of the proposed facility as there are no known threatened or endangered species of flora inhabiting the project sites. The proposed improvements will be located within the Hilo International Airport property, where the vegetation on both developed and undeveloped portions of project sites consist entirely of introduced species.

Indirect Impacts: Due to the clearing of the project site for the proposed improvements, the vegetation in these areas will no longer be available for gathering purposes. Currently, members of the community gather plants such as lau hala and hau within the airport property. DOT-A is working with the community to arrange for the continuation of gathering practices within Airport areas.

Cumulative Impacts: No cumulative impacts to floral species are anticipated as a result of the construction and operation of the proposed Airport improvements.
3.8 FAUNA

In general, the majority of fauna found in and around the Airport property are mostly introduced species, such as the mynah, dove and cardinal and feral pigs, dogs, cats, rats, and mongoose. There are also livestock and other farm animals in the planning region, including cattle, horses, roosters, and chickens.

A faunal survey conducted in July 2001 by Rana Productions, Ltd (see Appendix B). The survey included undeveloped areas near the passenger terminal and Airport Industrial Area, as these sites were under consideration for parking, cargo, and helicopter facility improvements. The survey areas are shown in Figure 3-2. The endangered Hawaiian hoary bat was observed near the existing passenger terminal and in the parking lot south of the terminal complex. The bat was also observed foraging over the swimming pool and the Old Terminal Complex. The detection of the bat within the Airport complex was not unexpected, as the species is regularly seen in and around Hilo, as well as along the coastline from Puna to North Hilo. Unlike nocturnally flying seabirds, which often collide with man-made structures, bats are uniquely adapted to avoid both man-made and natural obstacles. Bats successfully navigate the landscape and locate their prey with ultrasonic echolocation, which is sensitive enough to allow bats to capture small volant insects at night.

One introduced mammal species, the Indian mongoose, was observed during daytime hours. However, evidence of the domestic dog, cat, and pig were found within the project sites. All four of these introduced species are deleterious to avian populations. Although no live rodents were detected during the survey, it is likely that roof rats, Norway rats, European house mice, and possibly Polynesian rats use various resources found within the project sites.

The eleven alien species of birds detected during the survey are typical within the highly disturbed lowland areas of the South Hilo District. As for migratory and extralimital species, many of the more than 80 species that have been recorded in Hawaii between the months of September and May can be expected to use various resources that are found within several of the project sites. The most common of these migratory species are the Pacific Golden-Plover, Ruddy Turnstone, and Wandering Tattler. It is also possible that small numbers of the endangered endemic Hawaiian subspecies of the Dark-rumped Petrel and the threatened Newell's Shearwater overfly the Airport and the surrounding area between the months of May and October, but there is no suitable nesting habitat within the project sites for either of these listed pelagic seabird species.

Direct Impacts and Mitigation Measures: No significant impacts to fauna within the project site are anticipated as a result of the construction and operation of the proposed facility. There are no known threatened or endangered species inhabiting the project sites, although some species may use various resources found within the project sites. The proposed facility will be located within the existing maintained area of Hilo International Airport, and thus, no loss of faunal habitat will occur as a result of development.
Indirect Impacts: A potential impact that development of the project sites poses to Dark-rumped Petrels and Newell's Shearwaters is the increased threat that birds will be downed after becoming disoriented by new exterior lighting that may be required in conjunction with one or more of the proposed improvements. To reduce the possibility that nocturnally flying Dark-rumped Petrels and Newell’s Shearwaters may be disoriented by external lights and collide with man-made structures, any external lighting planned within the proposed improvements will be shielded. The shielding allows less ambient glare, thereby causing less light pollution. This mitigation measure will minimize the threat of disorientation and downing of Dark-rumped Petrels and Newell’s Shearwaters, and at the same time, assure compliance with the County of Hawaii’s planning policy that recommends shielding of exterior lights.

Cattle Egrets are a species of concern as a Bird Airstrike Hazard. Although Cattle Egrets were not observed at any of the project sites, the birds are regularly seen within the airport grounds. There are egret roosting areas located north of the Airport, adjacent to Kalanianaole Avenue at both Kionakapahu and Lokoaka Ponds. Additionally, egrets regularly use resources within the Wailoa River State Park, which is located due west of the Airport. The DOT-A utilizes wildlife control measures to mitigate potential hazards in consultation with Federal wildlife authorities.

Cumulative Impacts: No cumulative impacts to faunal species are anticipated as a result of the construction and operation of the proposed Airport improvements.

3.9 AIR QUALITY

The present ambient air quality in Hilo is generally good. Table 3-1 shows the 1999 data for air quality monitoring for Particulate Matter (PM_{10}) and Sulfur Dioxide (SO_2) at the Hilo Monitoring Station. This is the most recently published data from the Hilo station, situated on the grounds of the Adult Rehabilitation Center of Hilo on Waianuenue Avenue, approximately 3 miles west of the Airport. Impacts on ambient air quality from the ongoing eruption at Kilauea Volcano are being monitored at this site. The prevailing wind direction at Hilo International Airport is southwesterly with an average speed of about 6 to 7 miles per hour.

Kilauea Volcano continuously emits volcanic gases which result in emissions of over 1,000 tons of sulfur dioxide per day. This approximate level of output has persisted since 1986, and intermittently since 1983. Hawaii’s strong sunlight and moist air promote oxidation and hydration of sulfur dioxide to a sulfuric acid aerosol which is partially neutralized to ammonium sulfate. The combination of these aerosols, the remaining sulfur dioxide and other volcanic vapors are locally referred to as “vog”, or volcanic fog. The rate of air emissions by Kilauea may produce vog exposures along the plume trajectory which present chronic or acute public health hazards. Kilauea’s Puu Oo vent is located approximately 25 miles southwest of the Airport.
### TABLE 3-1
AIR QUALITY AT HILO MONITORING STATION, 1999
IN COMPARISON WITH STATE AND FEDERAL AIR QUALITY STANDARDS
(in micrograms per cubic meter)

<table>
<thead>
<tr>
<th>Particulate Matter</th>
<th>Hilo</th>
<th>State Standard</th>
<th>Federal Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range, 24-Hour</td>
<td>5-30</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Annual Mean</td>
<td>11</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td><strong>Sulfur Dioxide</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-Hour SO₂ Range</td>
<td>0 – 652</td>
<td>1,300</td>
<td>1,300</td>
</tr>
<tr>
<td>Annual Mean</td>
<td>2</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td><strong>Sulfur Dioxide</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24-Hour SO₂ Range</td>
<td>0 – 111</td>
<td>365</td>
<td>365</td>
</tr>
<tr>
<td>Annual Mean</td>
<td>2</td>
<td>80</td>
<td>80</td>
</tr>
</tbody>
</table>

Source: State Department of Health, Clean Air Branch, *Annual Summary, Hawaii Air Quality Data, 1999*.

Air quality monitoring for particulates, including dispersed matter such as dust, soot, smoke and liquid droplets from urban and agricultural activities, show that the highest PM$_{10}$ concentration averaged over 24 hours recorded at the Hilo station during 2000 was 18 micrograms per cubic meter (μg/m$^3$). This is well within the State and Federal standards of 150 μg/m$^3$. The annual mean was 11 μg/m$^3$, well below the State and Federal limits of 50 μg/m$^3$.

Sulfur dioxide gases on the Big Island occur mostly from the emissions of the Kilauea Volcano, but are also emitted from sources that burn fossil fuels such as coal and oil. The maximum 3-hour SO$_2$ level recorded in 2000 was 438 μg/m$^3$, within the State and Federal limits of 1,300 μg/m$^3$. The 24-hour SO$_2$ levels ranged up to 94 μg/m$^3$, again well within the 365 μg/m$^3$ limit of the State and Federal air quality standards.

Air quality in the vicinity of the Airport is generally good due to the windward location of the Airport and the amount of precipitation that occurs in the area. Air quality is expected to improve with the upgrading of aircraft using the Airport. The acquisition of new Boeing 717-200 aircraft by Hawaiian Airlines to completely replace their fleet of DC-9-50 aircraft will result in lower emissions. The B-717 engines generate emissions that are reportedly 60 percent below federal standards.

An air quality impact report was prepared (see Appendix C), as the Airport can be considered an indirect source of air pollution as defined in the federal Clean Air Act. The Airport's primary association with air quality is its inherent attraction for mobile sources of air pollution, including aircraft and motor vehicles. The air quality impact report, therefore, focuses on the surface and air traffic that would be generated by the proposed improvements.
and the resultant impacts on air quality. The report indicates that the existing conditions at the Airport and the resultant emissions generated by the existing uses are well within the guidelines for compliance with both state and federal air quality standards.

Since ground traffic in the vicinity of an airport is often found to be the primary source of high pollutant concentrations, particularly carbon monoxide, the air quality impact report also discusses CO levels associated with roadway traffic based on air sampling conducted at the Airport during peak traffic hours. Air samples showed that existing carbon monoxide concentrations remained low during both the morning and afternoon peak traffic hours, averaging less than 1 mg/m³. Weather conditions during the sample collection were characterized by partly cloudy to cloudy skies and light, variable winds averaging 1.0 to 2.2 miles per hour.

Annual emission estimates for the Hilo International Airport were projected for the base year 2001 and the planning year 2010 with and without the project. Emission sources at the airport that contribute to the projections include aircraft, roadway traffic, parking lot traffic, fuel storage, and training fires. Emission levels are expressed in terms of Carbon Monoxide (CO), Volatile Organic Compounds (VOC), Nitrogen Oxides (NOₓ), Sulfur Dioxide (SO₂), and particulate matter less than 10 microns in diameter (PM₁₀). Table 3-2 shows the total estimated Airport emissions for 2001, 2010 without the project, and 2010 with the project. Increases in emissions from 2001 to 2010 are expressed both as a percent of the base year 2001 total tons per year (T/yr) and as a percent of the total emission inventory for Hawaii County for 2000. The 2000 Hawaii County Inventory provides perspective on the magnitude of emissions generated by the Airport relative to the emissions generated by the entire county.

While emissions are an important component of any air quality impact analysis and do provide some insight into the significance of impacts, it is the ambient concentrations that are of primary interest because adverse effects are the direct result of high concentrations and duration of exposure. In the simplest terms, it is the emissions affected by meteorological conditions that result in the ambient concentrations. Ambient concentration estimates were generated for Hilo International Airport using the emission estimates above and meteorological data. The results are presented in Table 3-3 along with the corresponding state standards. Compliance with Hawaii Ambient Air Quality Standards (HAAQS) and, therefore, also with the less stringent federal standards is clearly demonstrated.

Automotive emission factors for CO at the intersection of Kanoeluhua Avenue and Kekuanawoa Street were generated for the calendar years of 2001 and 2010 with and without the project. In instances where mobile sources are the principal sources of pollutants, CO is normally selected for modeling because it has a relatively long half-life in the atmosphere of approximately one month, and it comprises the largest fraction of automotive emissions.
### Table 3-2
Annual Emissions Estimates
Hilo International Airport
2001 – 2010

<table>
<thead>
<tr>
<th></th>
<th>CO</th>
<th>VOC</th>
<th>NOₓ</th>
<th>SO₂</th>
<th>PM₁₀</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000 Hawaii County Inventory</td>
<td>30,309</td>
<td>17,090</td>
<td>13,693</td>
<td>520,749</td>
<td>34,894</td>
</tr>
<tr>
<td>Year 2001 Airport Emissions Base Year</td>
<td>744</td>
<td>84</td>
<td>223</td>
<td>9.4</td>
<td>4.6</td>
</tr>
<tr>
<td>% of 2000 Hawaii County Inventory</td>
<td>2.45%</td>
<td>0.49%</td>
<td>1.63%</td>
<td>0.00%</td>
<td>0.01%</td>
</tr>
<tr>
<td>Year 2010 Airport Emissions Without Proposed Improvements</td>
<td>744</td>
<td>77</td>
<td>314</td>
<td>13</td>
<td>4.2</td>
</tr>
<tr>
<td>% Change from Year 2001 Emissions</td>
<td>0.00%</td>
<td>-8.33%</td>
<td>40.81%</td>
<td>38.30%</td>
<td>-8.70%</td>
</tr>
<tr>
<td>% of 2000 Hawaii County Inventory</td>
<td>2.55%</td>
<td>0.49%</td>
<td>1.63%</td>
<td>0.00%</td>
<td>0.01%</td>
</tr>
<tr>
<td>Year 2010 Airport Emissions With Proposed Improvements</td>
<td>806</td>
<td>81</td>
<td>319</td>
<td>14</td>
<td>4.5</td>
</tr>
<tr>
<td>% Change from Year 2001 Emissions</td>
<td>8.33%</td>
<td>-3.57%</td>
<td>43.05%</td>
<td>48.94%</td>
<td>-2.17%</td>
</tr>
<tr>
<td>% of 2000 Hawaii County Inventory</td>
<td>2.56%</td>
<td>0.49%</td>
<td>1.63%</td>
<td>0.00%</td>
<td>0.01%</td>
</tr>
</tbody>
</table>


### Table 3-3
Ambient Concentration Estimates
Hilo International Airport
2001 – 2010

<table>
<thead>
<tr>
<th>Maximum Concentration</th>
<th>CO 1 Hour</th>
<th>CO 8 Hour</th>
<th>NOₓ 3 Hour</th>
<th>NOₓ Annual</th>
<th>SO₂ 24 Hour</th>
<th>SO₂ Annual</th>
<th>PM₁₀ 24 Hour</th>
<th>PM₁₀ Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAAQS</td>
<td>10,000</td>
<td>5,000</td>
<td>70</td>
<td>1,300</td>
<td>365</td>
<td>80</td>
<td>50</td>
<td>150</td>
</tr>
<tr>
<td>2001 Base Year</td>
<td>3,737</td>
<td>1,538</td>
<td>19.3</td>
<td>446</td>
<td>95.8</td>
<td>4.4</td>
<td>18.8</td>
<td>11.3</td>
</tr>
<tr>
<td>2010 Without Proposed Improvements</td>
<td>7,569</td>
<td>2,402</td>
<td>22.4</td>
<td>449</td>
<td>96.4</td>
<td>4.5</td>
<td>19.7</td>
<td>11.3</td>
</tr>
<tr>
<td>2010 With Proposed Improvements</td>
<td>6,510</td>
<td>2,543</td>
<td>22.6</td>
<td>449</td>
<td>96.4</td>
<td>4.5</td>
<td>20.1</td>
<td>11.2</td>
</tr>
</tbody>
</table>


The results for both one-hour concentrations and eight-hour concentrations of CO indicate that under actual peak hour conditions of meteorology and traffic, both the federal and state CO standards are met at and beyond distances of 10 meters from Kanoehau Avenue. The eight-hour concentrations are conservative estimates because they were derived from the peak hour data used for identifying the "worst-case" one-hour CO concentration.
**Hilo International Airport Improvements**

**Direct Impacts and Mitigation Measures:** The proposed project will have short-term, construction-related impacts on air quality, including the generation of dust and emissions from construction vehicles, equipment, and commuting construction workers. The contractor will be responsible for complying with State Department of Health (DOH) Administrative Rules, Title 11, Chapter 60, “Air Pollution Control.”

During the construction phase, two potential types of air pollution emissions will likely occur: 1) Fugitive dust from soil excavation and the movement of construction vehicles; and, 2) Carbon monoxide and nitrogen oxide emissions from on-site construction equipment and from worker’s vehicles and equipment travelling to and from the project site. Compliance with State regulations will require adequate measures to control fugitive dust by methods including frequent watering of loose or exposed soil and dust generating equipment during construction. As may be deemed appropriate, the planning of construction phases and the paving and/or reestablishment of vegetated areas early in the construction schedule will also help control dust. Exhaust emissions from construction related vehicles are anticipated to have negligible impacts on air quality in the project vicinity as emissions would be relatively small and readily dissipated.

**Indirect Impacts:** No indirect impacts to air quality are anticipated as a result of the construction and operation of the proposed Airport improvements. There are existing air quality issues relative to aircraft operations, as nearby residents have made complaints regarding fumes from jet exhaust. Air quality is expected to improve with the upgrading of aircraft using the Airport.

**Cumulative Impacts:** The proposed project is not anticipated to have significant long-term or cumulative impacts on ambient air quality in the vicinity of the Airport. As indicated in the earlier discussion of the air quality impact report, ambient air quality estimates for the year 2010 show a slight increase in the levels of NO₂, SO₂, and PM₁₀ compared to 2001 levels regardless of the implementation of the proposed Airport improvements. Likewise, the estimated increase in the concentration of CO from 2001 to 2010 without the implementation of the project is approximately the same as the estimated increase in CO with the implementation of the proposed improvements.

**3.10 NOISE**

In the communities surrounding Hilo International Airport, existing background ambient noise levels (exclusive to aircraft noise) are estimated to range from 40 to 65 Day-Night Average Sound Level (DNL). Noise measurements taken by Y. Ebisu & Associates as part of the Hilo International Airport Noise Compatibility Program showed the following characteristics:

- Along rights-of-way of major roadways serving the airport are noise levels equal or exceeding 65 DNL.
• Noise levels of 60 to 65 DNL exist along the shoreline of Hilo Bay to Leleiwi Point due to surf noise.

• Extremely low background ambient noise levels were measured (40 to 45 DNL, with minimum instantaneous noise levels of 30 dBA) in the Hawaiian Home Lands, Keaukaha residential subdivision north of the Airport, due to its distance from the surf and major highways.

• Locations along Banyan Drive and in downtown Hilo, areas which are affected by traffic noise, have background ambient levels ranging from 55 to 65 DNL.

• Residential areas which are removed from major roadways and are affected by local traffic have background ambient noise levels ranging from 45 to 55 DNL.

• In general, background ambient noise levels in Hilo are not high enough to mask aircraft noise.

Existing aircraft-related noise was calculated using the FAA’s Integrated Noise Model (INM), Version 5.2. The base year 2000 noise contours produced by the model are shown in Figure 3-3. For the purposes of determining noise acceptability for funding assistance from Federal agencies (FHA/HUD and VA), an exterior noise level of 65 DNL or lower is considered acceptable for all dwelling units (residences and apartments). Due to Hilo’s open and outdoor living conditions, the predominant use of naturally ventilated dwellings, and relatively low outdoor to indoor sound attenuation afforded by such structures, an exterior noise level of 65 DNL does not eliminate all risks of adverse noise impacts.

As such, the State DOT-A asked the FAA if, due to Hawaii’s special circumstances, mitigation measures in areas subject to noise levels between 60 and 65 DNL would be eligible for federal funding under the FAR Part 150 Noise Compatibility Program. Based on its review of the request, the FAA determined that the 60 DNL noise contour may be included in the FAR Part 150 studies prepared by the State. However, it noted that a more specific case-by-case review of recommended noise mitigation measures will be required prior to any federal funding for these proposed measures, especially within the 60 to 65 DNL contours. These reviews will be accomplished at the time funding is requested for particular mitigation measures.
LEGEND

Church

School

Health Facility

Public Facility

Noise Monitoring Station

Area of Incompatible Land Use

Residential

Commercial (Naturally Ventilated)

Resort

Airport Property

Noise Exposure Contour

NOTES:

1. LAND USE AUTHORITY RESTS WITH THE COUNTY OF HAWAII AND THE STATE OF HAWAI.

2. 55 DNL CONTOUR INCLUDED FOR STATE OF HAWAI DISCLOSURE AND INFORMATION PURPOSES ONLY.
The FAR Part 150 NCP report describes existing land uses located in the vicinity of the Airport and are sensitive to the noise levels generated by Airport activity. Residential areas are located approximately 700 feet from the end of Runway 3 and 500 feet from the end of Runway 21. The Department of Hawaiian Home Lands Keaukaha Tract I residential subdivision is located immediately adjacent to the Airport’s northern boundary. Approximately 200 homes of the Keaukaha Tract I subdivision are exposed to noise exceeding 60 DNL. The Waiakea area west and southwest of the Airport is an area of relatively dense single-family and multi-family residential development. Most of the single-family residential structures are typically of single-wall construction and are naturally ventilated. Approximately 30 homes in the Waiakea area between Kanoelehua Avenue and Laukapu Avenue are exposed to noise exceeding 60 DNL. The Leleiw Point coastal area to the northeast of the Airport contains low and high-rise residential structures. Approximately 35 homes at Leleiw Point are exposed to noise exceeding 60 DNL. The Reeds Bay coastal area also contains low-rise, single-family residential structures. The Banyan Drive area contains hotels and multi-family apartments. The hotel rooms are typically air conditioned, while the apartment units are typically naturally ventilated.

The locations of noise sensitive schools, hospitals, libraries, and other public-use structures in the Hilo area are shown in Figure 3-3. The Waiakea Health Center immediately west of Runway 8-26, the Bay Clinic near Reeds Bay, the Seven Seas Luau House meeting facility in Waiakea, the five churches and two schools in Keaukaha, and churches in the Waiakea area are the public use structures located closest to the Airport.

A noise study was conducted to determine the noise impacts from projected helicopter operations at the proposed site at the southwest corner of the Airport (see Appendix D). Helicopter noise contours, developed using the FAA helicopter noise model, were compared to existing background ambient noise levels, State Department of Transportation recommendations, and with FHA/HUD and EPA standards and criteria. The future noise environment and potential noise impacts were examined for conditions with and without the proposed heliport using airport activity forecasts for the Years 2005 and 2020. The future noise environment projected without the proposed heliport relocation assumes that the existing heliport near the passenger terminal remains in use.

The noise environment in the vicinity of Hilo International Airport is primarily influenced by commercial jet aircraft. However, the existing helicopter ingress and egress routes overfly noise sensitive residential and resort areas (see Figure 3-4) and, although these individual noise events do not contribute largely to the average noise level on a typical day, the relatively short duration of increased noise induced by a helicopter overflight is at such a contrast to the ambient noise level that numerous complaints and annoyance responses regarding helicopter operations have been received from the community over the years.
HILO INTERNATIONAL AIRPORT ENVIRONMENTAL ASSESSMENT

EXISTING HELICOPTER FACILITY LOCATION AND HELICOPTER INGRESS AND EGRESS ROUTES

FIGURE 3-4
The proposed ingress and egress routes (see Figure 3-5) to and from the proposed heliport were mutually developed by tour helicopter, FAA control tower, and DOT-AIR personnel. These flight tracks should minimize the potential for complaints from area residents concerning low level helicopter overflights. The primary noise mitigation measures recommended for the proposed tour helicopter facility include operational procedures that minimize complaint risks from surrounding noise sensitive properties and that are possible within the operating constraints at the facility. One of the primary mitigation measures for reducing risks of noise complaints is to avoid overflights of such properties, particularly at low altitudes of less than 1,000 feet above ground level. The proposed site allows for the avoidance of low level overflights along all portions of the proposed ingress and egress routes, which is especially important in residential and resort areas. The final approach flight track to the proposed facility was adjusted to avoid low level overflights of the Waiakea residential community southwest of the Airport. The final heading of the tour helicopters prior to landing at the airport is parallel to Kanoelolu Avenue for altitudes less than 1,000 feet above the ground. The special ingress and egress procedures developed for this facility should be adhered to by all future users of the heliport, whenever weather and safety conditions allow.

Direct Impacts and Mitigation Measures: Noise generated during construction activities will likely be unavoidable during the entire construction period. Unavoidable short-term construction noise impacts will be mitigated to some degree by the contractor’s compliance with provisions of the State DOH Administrative Rules, Title 11, Chapter 46, “Community Noise Control” noise regulations. These rules require a noise permit if the noise level from construction activity is expected to exceed the allowable levels stated in the Chapter 46 rules.

It shall be the contractor’s responsibility to minimize noise by properly utilizing and maintaining noise mufflers and other noise-attenuating equipment, and to maintain noise levels within regulatory limits. Also the guidelines for the hours of heavy equipment operation and noise curfew times, as set forth by the DOH noise control regulations, will be adhered to. The noise sensitive properties that are likely to experience the highest noise levels during construction activities on the heliport site are the existing residences closest to the southeast end of Runway 3. These residences are located approximately 1,400 feet from the construction area, and adverse impacts due to construction noise are not anticipated due to the large buffer zone that separates the homes from the construction site.

A comparison of the noise contours for the Year 2005 without the proposed heliport and the noise contours for the Year 2005 with the proposed heliport relocation indicates virtually no change in the noise levels in the residential and resort areas to the west and north of the airport (see Figure 3-6). The only area where noise contours are observed to shift significantly is within the 60 and 55 DNL lines to the south of the proposed heliport site, over the industrial and open area between the quarry and Kanoelolu Avenue. Somewhat minor shifts in the location of the 60 and 55 DNL contours are observed within the first city block parallel and west of Kanoelolu Avenue.
Hilo International Airport Improvements

The Year 2005 and Year 2020 noise contours for the scenario without the proposed heliport relocation are virtually identical. Thus, the same variations in the 60 and 55 DNL contours observed between the 2005 scenarios are observed between the distribution of noise levels for the Year 2020 without the proposed heliport and the Year 2020 with the proposed heliport relocation (see Figure 3-7).

The shifts in the noise contours in the area south of the proposed heliport site are due to the proposed helicopter ingress and egress routes that were formulated to avoid low level overflights of the residential and resort areas.

There are a few homes located between the southwest end of Runway 3 and Kanoelehua Avenue that will continue to be within the 60 and 65 DNL airport noise contours, which currently qualify for sound attenuation treatment due to existing airport noise in the area. Additional noise mitigation measures should not be required as a result of the development of the proposed heliport.

No adverse noise impacts are anticipated to result from the operation of the new general aviation facilities, as the proposed improvements will serve to accommodate the existing aircraft and level of aircraft operations at Hilo International Airport, and the Airport noise contours are influenced mostly by jet aircraft. The existing general aviation facilities are presently located in the same area.

No adverse noise impacts are anticipated to result from the operation of the proposed cargo facility. Noise from air cargo operations are a function of aircraft operations and flight paths, which will not change with the relocation of ground handling operations to the proposed hold cargo facility near the main passenger terminal. The proposed facility of itself will not generate an increase in airport cargo facility use.

The use of sound attenuation treatment methods in residences within the 60, 65, and 70 DNL contours will mitigate existing airport noise problems through the enclosure and air conditioning of homes. Sound attenuation improvements, as stipulated by the FAA, must be designed to lower interior noise levels within the home to 45 DNL. Sound attenuation treatment would significantly lower sound levels within the home, if the resident chooses to accept such renovations.

Indirect Impacts: No indirect impacts are anticipated as a result of the construction and operation of the proposed cargo, helicopter, and general aviation facilities.

Cumulative Impacts: No cumulative impacts are anticipated as a result of the construction and operation of the proposed cargo, helicopter, and general aviation facilities.
3.11 ARCHAEOLOGICAL RESOURCES

There are no known historic or archaeological sites within the Airport boundary. Extensive clearance of Airport lands have virtually eliminated the possibility of the existence of any above or below-ground artifacts of significance.

A former railroad right-of-way existed at the west end of the Hilo International Airport (see Figure 3-8). The right-of-way was transferred from the Territory of Hawaii by Grant Deed on November 11, 1903 to the Hawaii Consolidated Railway, Limited. The easement was located immediately to the east of what was called "Railroad Avenue" and the 40-foot Road Reserve off of Kanoeluhua Avenue. Both the easement and Railroad Avenue extended south to the Puna District. The right-of-way was abandoned on August 1, 1947 and conveyed to the Territory of Hawaii on May 22, 1952. Executive Order No. 1519, which set aside the land for the Airport, notes the abandonment of the railway easement and its return to the Territory. While the easement is still observable on older maps of the Hilo area, it is no longer active. The portion of the easement that crosses Hilo International Airport is under the control of the State DOT-A.

An archaeological inventory survey was conducted by Haun and Associates in undeveloped areas near the passenger terminal and Airport Industrial Area, as these sites were under consideration for parking, cargo, and helicopter facility improvements (see Appendix E). The survey areas are shown in Figure 3-2. The examination of previous archaeological work and historic documentation determined several expectations as to the findings of the field survey conducted in August 2001. Prehistoric to early historic use of the project area was probably limited because the focus of settlement in Hilo was along the coast and the lower reaches of the Wailoa River. The only evidence of traditional Hawaiian use reported for the project area vicinity consists of an agricultural depression and several mounds of stone, or ahu, marking the Puna Trail. The very rocky nature of the terrain probably limited traditional use to gathering floral and faunal resources, transit through the area, and limited agricultural activity. Historic use was probably limited to cattle grazing, as the land is too rocky for the cultivation of sugar cane. Airport-related construction activities in the 1900s resulted in extensive modification and development in the area. Historic sites dating to the 1900s would consist of airport-related infrastructure, including roads and potentially foundations for buildings and other structures.

The sites and features identified during the survey conform to the traditional Hawaiian site and feature types expected. Agricultural features were identified and a primary transportation route, the Puna Trail, was found to have formerly traversed part of the survey area west of the Airport Industrial Lots. No surface evidence of subsurface cultural deposits was identified and it is unlikely that such deposits would be present because there is very little soil over the lava bedrock in the area and because much of the area has been extensively disturbed by construction activity.
A terraced depression and its associated wall were identified in an elevation zone that is characterized by the remains of scattered residences among economically beneficial trees and agricultural plots of dryland taro and bananas. The site is located in the southwest corner of the airport, near the east end of the proposed heliport site, and it is evidence of traditional Hawaiian agricultural activity in an area that was transitional between coastal settlement areas and upland agricultural areas.

Historic remains identified during the survey include a ranch wall and the foundation for the former Airport radio transmitter repeater (RTR) site. The ranch wall probably dates to between the mid 1800s and early 1900s and is located near the southern boundary of the proposed helicopter facility, north of Kekuanoea Street. The former RTR site probably dates to between the 1930s and 1960s prior to Airport improvements to accommodate jet aircraft. The former RTR site is located in the Airport Industrial Area, immediately north of Kekuanoea Street and west of the existing Post Office.

**Direct Impacts and Mitigation Measures:** No significant impacts on archaeological/historical resources within the Petition Area are anticipated from the construction and operation of the proposed Airport improvements.

All three of the sites identified within the project sites were evaluated for significance in accordance with criteria established pursuant to Chapter 275-6 (d), State Department of Land and Natural Resources (DLNR), Rules Governing Procedures for Historic Preservation Review. According to these rules, a site must possess integrity of location, design, setting, materials, workmanship, feeling, and association and shall meet one or more of five established criteria.

Based on the criteria, all of the sites identified within the project sites are assessed as solely significant under Criterion “d”: “Have yielded, or is likely to yield, information important for research on prehistory or history.” These sites have yielded information important for understanding late prehistoric to historic land use at Hilo International Airport. The mapping, written descriptions, photography, and test excavation at one of the three sites adequately documents the sites and no further work or preservation is recommended. No further work or preservation is recommended for the portion of the Puna Trail alignment within the project site, as well preserved examples of the trail are present outside of the project area.

The archaeological inventory survey for the project sites was submitted to the State DLNR Historic Preservation Division and is pending their review and concurrence.

**Indirect Impacts:** No indirect impacts to archaeological or historic resources are anticipated as a result of the construction and operation of the proposed Airport improvements.
Cumulative Impacts: No cumulative impacts to archaeological or historic resources are anticipated as a result of the construction and operation of the proposed Airport improvements.

3.12 CULTURAL RESOURCES

A Cultural Impact Assessment was prepared for the proposed Airport Improvements and is included in Appendix F. The assessment provides an overview of native Hawaiian cultural resources, practices and beliefs pertaining to the ahupua'a within which the project site is located, and an assessment of the potential impacts of the proposed improvements. In addition, the assessment focuses on the community of Keaukaha, which is situated immediately adjacent to, and which has had a long relationship with the Airport.

3.12.1 Traditional Land Use Patterns and Resources

The Airport is located in the ahupua'a of Waiākea, and the varied landscape extends from Pu'u Kpū at an elevation of 6,289 feet above sea level to the coast of Puhi Bay and Lelewi. Situated on the windward coast of Hawai'i Island, Waiākea lies on the lower eastern slopes of Mauna Loa and is bounded by the adjoining ahupua'a of Keau'au to the north and the Hilo-Puna district boundary to the south. Waiākea and principally the cultural resources, practices and beliefs associated with the kahakai (shoreline area), kula kai (coastal plains) and wao 'ama'u (lowland wet forest) regions and the community of Keaukaha, was the focus of this assessment.

Hawaiians devised a harmonious and prosperous existence with the land through various divisions of the land and ocean. One such division of land followed ecological zones, rainfall patterns, soil types and natural vegetation. These specific zones could vary from island to island, and by district depending on rainfall, vegetation, and areas of use. Within each zone, depending on the island and the district a variety of plants were available to the inhabitants for occupational, medicinal, and spiritual uses. Identifying that ecological resource zones are typically distributed in bands or belts around the islands, land divisions for resource management extended from the ocean to the mountains following natural ridgelines and topographical features. Within the ahupua'a of Waiākea there are five distinct vegetation zones that correspond with rainfall and elevation.

Waiākea is a large ahupua'a within the moku of Hilo, situate in a portion now known as South Hilo. Pi'opi'o was an 'ili kūpuna of Waiākea, and Honohononui was another smaller land division within Waiākea. Makaokī, another smaller land section and helau was named for the husband of the goddess Hina and was associated with Mokuola as well as with fishing practices using ko'a (dedicated fishing grounds).

Waiākea was included among the lands personally held by Kamehameha and was passed on to Kamehameha II and Kamehameha III. During the reign of Kauikaouli Kamehameha III in the 1840s, land tenure in Hawai'i entered a transitional period terminating in the "Great..."
Mahele” of 1848, which furnished the facility for the acquisition of real estate in fee simple. Kauikeaouli after reserving certain lands for himself as his own private property, surrendered the majority of the lands to his chiefs and people. The lands of Waiakea were retained by Kauikeaouli and became part of the Crown Lands, set aside for the prosperity of the kingdom.

The productivity of the lands and seas, abundant natural forest resources, the comfortable climate, and recreation sites supported a healthy population and endeared Waiakea to the ali‘i class for generations. The resources of the different environmental and ecological zones were utilized to support the native population. Along the coast fishponds were constructed to raise and harvest fish, an important source of protein. Inland the decomposed lava and consistent rainfall created fertile lands for growing kalo and other food crops. Hala groves provided an abundance of lau hala for weaving and house thatching. The forest, which extended within a few miles of the coast, provided timber, an array of occupational and medicinal trees and plants, as well as a number of bird species.

The productivity of Waiakea and the ability to support a significant population was directly attributable to its extensive water resources. Traditionally, numerous fresh water springs and three streams watered the lands of Waiakea; Waiolama, Waiakea and Wailoa. Along the western border of Waiakea with neighboring Kīkūau flowed Waiolama stream, and Waiakea and Wailoa streams flowed through the center of Waiakea. These streams and springs provided for numerous fishponds along the banks of the streams and also along the coast. The fish ponds were stocked primarily with the fry of ‘ama‘ama (mullet) and awa (milkfish) and sometimes ‘ahole and served as an important source of protein. In Waiakea, the fish from Mohouli, Kalepolepo, Waihole and Ho‘akimau fishponds were reserved for the ali‘i.

The ocean fisheries associated with Waiakea including Hilo Bay, Kūhiō Bay, and Puhi Bay were other important resources of the ahupua‘a. A variety of fishing methods were employed some that required great skill while others were more recreational or social. Fish was the primary source of protein in the Hawaiian diet. Some fish such as aku, ahi and ‘ōpelu were typically dried and could be preserved for consumption at a later time, or could be used in trade for other necessities including kalo. Near to the shore and along the rocky coastline women and children typically gathered different varieties of limu, ‘opihi, wana, hā‘uke‘uke, ‘öpae, and crabs including, ‘a‘ama, ‘afamahi and kuahonu.

3.12.2 Keaukaha Hawaiian Home Lands

After the “Great Mahele” of 1848, a total of 37 native tenants made claims to lands within the ahupua‘a of Waiakea of which 27 were awarded. None of the awarded lands are situated within the project area. Most of the claims were made for kīhāpai (small land division, cultivated plot), pā (yard or pen), pā hale (house lot) and kipi kalo (taro patches). Award, register and testimony records also mention a burial site, ‘ōhi‘a and hala groves, ‘ulu trees, kukui trees, the ponds and springs.
In the early 1900s, Prince Jonah Kūhiō Kalanian'ole recognized that the population of full-blooded Hawaiians was steadily decreasing and he sought out ways to revitalize the Hawaiian people and get them back on the land. At the request of the Legislature of the Territory of Hawai'i and the persistence of Prince Kūhiō and his supports, the United States Congress passed the Hawaiian Homes Commission Act in 1920. The Act reserved 203,500 acres of public lands to help realize Prince Kūhiō's vision of 'Āina Ho'opulapula, or "restoration through the land." The original draft of the Hawaiian Homes Commission Act did not include any lands in Wai'akea. The Territorial Legislature inserted these lands, and several others, in their amendment to the Act in 1921. In 1924 the Hawaiian Homes Commission set the metes and bounds for land in Pana'ewa and Keaukaha. Hawaiian Homes Commission Resolution #2 dated, April 19, 1924, created Keaukaha Tract I consisting of 621.52 acres and Keaukaha Tract II containing 1,376.48 acres. House lots were quickly awarded in Tract I, however, over time much acreage in Tract I has been taken for various State and County uses. Other lands were sold to private interests justified by the need to raise fund to pay for roads and waterlines. Originally referred to as "Kūhiō Settlement," Keaukaha was the second unit of homestead lands offered; the first settlement was on the island of Moloka'i. According to the Executive Officer and Secretary of the Hawaiian Homes Commission in 1925, Keaukaha was not suited to agriculture, and therefore the lots were offered to Hawaiians and part-Hawaiians for residential purposes with the expectation that working men would form a majority of the applicants.

By mid-1929, the Hawaiian Homes Commission had allotted 239 house lots at Keaukaha, and 205 of these were occupied by Hawaiian families. Following these early years the Keaukaha settlement continued to experience growth in the 1930s. By 1933, the population of Keaukaha had grown to 1,300 and the settlement consisted of 219 one-acre lots of which approximately 175 had improvements and 201 were occupied. Although the population in Keaukaha had declined to 964 in 1939, the settlement was being expanded with the construction of a new subdivision consisting of 180 half-acre lots. At this time the threat of World War II loomed on the horizon.

3.12.3 Hilo Airport and Keaukaha Hawaiian Home Lands

Nearly simultaneously with the development of Keaukaha Hawaiian Home Lands, in 1925, construction of Hilo Airport began. Originally 100 acres was set aside for the Hilo Airport. By 1927, clearing and grading of the Airport site was proceeding rapidly with the expectation that the field would be partially ready for use of aircraft by December 1, 1927. The Airport was dedicated in February 1928. On May 16, 1928, the Hilo Airport was enlarged by 41.45 acres by Executive Order 334. In 1929, the Hilo Airport was expanded another 86 acres to total 227.45 acres, compared to the original 100 acres. As tensions leading up to World War II increased, the Hawaiian Homes Commission found it advisable to transfer lands to be set aside for an addition to the Hilo Airport. At the outbreak of war, Hilo Airport was taken over by the Army Engineers, and an Air Corps fighter squadron stationed there. The Engineers constructed military installations and continued the expansion of runways, taxiways, and
parking aprons. This began a period of turmoil for the Keaukaha settlement scarring relations between the residents of Keaukaha and Hilo Airport.

After the war, military operations at Hilo Airport steadily decreased, and in September 1946 it was returned to the Territory for operation as a civil airport however, operational control was retained by the Air Force. It was not until 1952 that the airport was returned to civilian control by the surrender of leases, easements, licenses and permits and improvements were transferred to the Territory by the Federal Government. In 1952 Executive Order No. 1519 set aside a significant portion of government land and former Hawaiian Homes Land to the Hawaiʻi Aeronautics Commission for the Hilo Airport.

Relations between the Keaukaha settlement and Hilo airport were additionally strained when in 1958, Territorial Governor William Quinn set aside by Executive Order No. 1841, nearly 92 acres of Hawaiian Homes Commission land, to be used by the airport for a runway. This area had already been subdivided and affected 66 homestead lots and portions of roadways. The agreement that allowed the transfer of these lands to the Hawaiʻi Aeronautics Commission also called for a land exchange between the Territory of Hawaiʻi and the Hawaiian Homes Commission. The land exchange was never carried out and these 92 acres became the focus of contention between the Hawaiian Homes Commission, Keaukaha residents and the Department of Transportation from 1975 to 1980.

In 1962, Executive Order Nos. 2025 and 2027 transferred 194.215 acres of Hawaiian Homes Land in Keaukaha to the State Department of Transportation for the extension of Runway 8-26. Approximately 146 acres of this area had already been subdivided into homestead lots and access roads, affecting 216 homestead lots and various roadways. In exchange, the Department of Hawaiian Home Lands received 192.691 acres of land in Panaʻewa and 1.515 acres in Keaukaha. Soon after, in the late 1960s the State embarked on plans to develop a jet-capacity terminal for Hilo, which was completed and dedicated in 1976.

In 1975 in response to an inquiry from the Department of Hawaiian Home Lands, the Attorney General opined that the setting aside of Hawaiian Home lands by Executive Order No. 1841 was improper. The Hawaiian Homes Commission commenced civil action and while awaiting a ruling, local native Hawaiians, Keaukaha residents and supporters staged two protest demonstrations against the improper transfer of Keaukaha Hawaiian Home lands for airport use. On August 14, 1980 the Circuit Court ruled that Executive Order No. 1841 was illegal and thereby, null and void. As a result, the Department of Transportation was required to make rental payments for the use of the 92 acres of illegally acquired Keaukaha land.

The Department of Hawaiian Home Lands and the Department of Transportation entered into an “Interim Agreement” on April 6, 1981 whereby the Department of Transportation agreed to make interim rental payments of $36,000.00 per month to the Department of Hawaiian Home Lands for the continued use and possession of the Hilo Airport property. To resolve these outstanding land and lease rent disputes, on November 30, 1984 the Department of
Hilo International Airport Improvements

Hawaiian Home Lands, Department of Transportation and Department of Land and Natural Resources entered into what has been termed the "Tri-party Agreement". In simplified terms, the Department of Hawaiian Home Lands would agree to exchange 167.285 acres of land at Hilo Airport, Kamuela Airport and Moloka'i Airport appraised at $17.42 million for 13.822 acres of State lands at Shafter Flats Industrial Development appraised at $17.36 million. The Department of Transportation would convey to the Department of Land and Natural Resource excess airport lands at Hilo and Kahului. In addition to the land exchange, a fund was to be established to repay the Department of Hawaiian Home Lands for lease rental due for use of the airports prior to the agreement. On April 23, 1986 an exchange deed transferred the lands between the State Department of Land and Natural Resources and the Department of Hawaiian Home Lands.

The result of these numerous transfers of land and the displacement of many Hawaiian homesteaders from Keaukaha has been a lingering feeling of betrayal and mistrust towards the Department of Transportation. Some members of the Keaukaha community are wary of any proposal related to Hilo Airport and because of the manner in which land was previously taken from Hawaiian Homesteads time and time again, many community members are suspicious of Department of Transportation activities. In the past, the actions that have led to the development of Hilo Airport as it exists today has been at the expense of the Keaukaha Hawaiian Homestead community.

3.12.4 Cultural Resources, Practices, and Beliefs

Interviews or consultation with the community confirm many important cultural practices and values. Interviews demonstrate the inheritance of cultural knowledge through the generations and acknowledge the permanence of the cultural value system and the continuity of cultural practice and use. Interviews are valuable in demonstrating the individual relationship to people and places, whereas technical studies and historical texts are typically compiled by those not of the land or culture and, thus, fail to convey cultural value or significance.

The cultural resources, practices, and beliefs identified through the interviews relate to the Keaukaha region and the Hilo Airport property and are summarized as follows:

Traditional and Customary Practices

- Traditional and customary activities and practices that occurred and continue to occur in the Keaukaha, Waiakea region include: all types of fishing, ocean and shoreline gathering including salt which is still collected at Leleiwi; and, gathering of all types of plant materials including medicinal plants, lau hala and hau.

- All types of ocean activities are extremely important to the Keaukaha community, for subsistence as well as recreation. Activities include all types of fishing (net,
spear, pole, etc.), gathering varieties of limu, gathering varieties of shellfish ('ōpihi, haʻukeʻuke, wana, papaʻi) and gathering salt.

- In the early years of the Keaukaha settlement, prior to the establishment of Keaukaha homesteads and in the early years of the homestead settlement, some families had graves on their property, and family members were buried on their own land. While some of these burials have been moved to cemeteries, some may still remain.

- Heiau and other religious sites are located along the shoreline and in the coastal lands.

- In addition to growing food crops such as ʻuala and kalo in their yards, early Keaukaha residents also kept gardens and planted vegetables, flowers and fruit trees in that portion of Panaʻewa forest that bordered the Keaukaha settlement prior to the expansion of the airport. Medicinal and occupational plants were also gathered from the forest area that bordered the early Keaukaha settlement.

- Panaʻewa is the name of the lands that extend from the forests up mauka to the shoreline and include the lands occupied by the airport. Prior to the development of the airport Panaʻewa forest renowned for its great ʻōhīʻa lehua stands and fragrant maile encompassed the area immediately mauka or south of the Keaukaha community. Residents of Keaukaha used to follow trails into the forest to gather among other plants ʻōhīʻa lehua and maile. In the area of the airport was a big cinder cone named Puʻu Maile, and was a place at which maile could be found.

Traditional knowledge and practice is incorporated and taught at Ke Ana Laʻahana, a public charter school situated in Keaukaha. For example, the students are taught how to restore and reestablish the productive fish husbandry capabilities of a series of fishponds along the coast which include Hale O Lono, Wailoa, Keonepahu, Kaumealani, and Kamokuna. At Kamokuna there is also a māla where students learn and continue traditional agrarian expertise by growing different varieties of kalo, ʻuala, and other native and Polynesian introduced plants. These uses need to be sustained because it supplements and sustains the people and culture. In addition to Ke Ana Laʻahana, Lauhiki Preschool and Hale O Kekuhi are also located at the Pā Hoaka the Native Hawaiian family-based education center situated in Keaukaha and administered by the Edith Kanakaʻole Foundation.

3.12.5 Airport- and Project-Related Concerns

During the examination of cultural resources, practices, and beliefs in the Waiakea ahupuaʻa and Keaukaha region, concerns were identified with regard to the Hilo International Airport and the proposed improvements.
Airport Related Concerns

- The greatest impact of the airport has been on gathering practices. It is as if the whole area is void -- does not exist anymore. Pana'ewa continues to exist, but when they built the airport, they took away the cultural significance and the traditions associated with that part of Pana'ewa. The airport has destroyed that portion of Pana'ewa forest and has in effect cut off the community from Pana'ewa and the traditional places for gathering 'ōhi'a lehua and maile.

- By taking away the land and the forest, people do not know how to gather in their own land, they don't learn how to take care of their own place. Now, if they need to gather, they need to go way up into the larger forest or to another shupua'a. Before the airport, everything was available in their "own backyard" and people could live off of the land. It was possible to pick lau hala, and pick maile. Now it is "somebody else's yard." It forces practitioners to gather outside of their area, forces them to gather from another person's place and from the greater forest.

- Within Keaukaha, community members conduct ceremonies or cultural protocols that require stillness and quiet that are disrupted by passing planes.

- There is a noticeable difference in airport related noise since Hawaiian Airlines started using their new 717s. These new planes are much quieter. Aloha Airlines still uses the older, noisier planes, which is noticeably louder. Aloha Airlines also operates cargo flights early in the morning and late into the evening disturbing what are typically quiet hours and sleep time.

- The airport has cut off the Hawaiian people from that piece of their 'aina. From a small airstrip the airport grew and grew, taking more and more land, nearly all at the expense of the Keaukaha community and Hawaiian homestead lands.

- The history of the airport taking land from the Keaukaha community, and forcing people to move without any compensation or reparations for the community has left a feeling of hurt, suspicion and mistrust in many residents. Due to past airport related efforts, many residents are concerned that airport expansion will continue to take Hawaiian Home Lands and displace additional homesteaders.

Project Related Concerns

- The proposed improvements could potentially lead to an increase in the types of services and activities (passenger, cargo, helicopter, and military) at Hilo Airport. The improvements could potentially lead to airport expansion and the resumption of overseas flights.
• Groves of pū hala are located within the airport property from which practitioners, including weavers, hula dancers, and lei makers gather lau hala, ule hala and the fruit for a variety of uses including, mats, baskets, cordage, and lei. The location of the proposed helicopter facility is one of the areas where the pū hala grows, and from which practitioners gather. If airport security or personnel observes any gathering, the gatherers are asked to stop gathering and to leave airport property.

• Prior to the airport, all needed gathering was done in the Keaukaha area and the ahupua‘a of Waiakea, there was no need to go to other ahupua‘a or to the greater forest. Limiting gathering practices within the airport property requires practitioners to go to other ahupua‘a or to the greater forest.

• Any type of noise barrier or noise wall will further cut off the people from the land. Many residents enjoy the view, the wind that blows across the land and the connection they feel with the ‘āina. The barrier or wall would minimally reduce airport noise while restricting ability to enjoy the environment and was therefore undesirable.

• For those families that accept sound-attenuation retrofitting for their homes, or for those families that choose to accept an avigation easement, what guarantee will there be that noise levels will not increase? A continuing noise monitoring program for the Keaukaha community should be implemented and sustained.

• Displacement and relocation of homesteaders is not recommended. The transfer of Hawaiian Home Lands for airport related purposes is also not recommended. If, however, relocation of homesteaders is pursued, it should be voluntary, through one-on-one negotiations with the individual lessees, done with sensitivity and with adequate compensation for the homesteaders.

On every island, native Hawaiian cultural beliefs and practices are continually affected by the loss of land to development that intrudes into the natural setting, disturbs traditional sites, cuts off the traditional access network, eliminates resource areas, and changes the landscape. As people with a strong cultural attachment to this ‘āina, with the understanding that this ‘āina is the elder sibling of the Hawaiian, the loss of land results in a feeling of loss, regret and alienation for many Hawaiians.

For many residents of Keaukaha, these feelings of loss are compounded by feelings of distrust and suspicion as a result of a long history of dispute with the Department of Transportation and its predecessors over the taking of Hawaiian Home Lands. On more than one occasion Hawaiian homesteaders have been displaced and relocated to accommodate airport expansion which has led to fears that airport expansion may someday eliminate Keaukaha homesteads. Homesteaders displaced from their lands received compensation, but there were acres of Hawaiian Homes' land at Keaukaha that were transferred for airport use without specific compensation to the Keaukaha community. Some of these lands were transferred in exchange for other lands in Pana'ewa or on O'ahu, but for many Keaukaha
residents it is as if their community was forced to give up their land without receiving anything in return. This history should shape future relations between Hilo International Airport and the Keaukaha community, and through acknowledgement and understanding a positive relationship founded on honesty and integrity may be achieved.

3.12.6 Findings of the Cultural Impact Assessment

Based on an assessment of the impacts of the proposed project on the resources, beliefs and practices identified, the proposed improvements at Hilo International Airport will have minimal negative cultural impact upon native Hawaiian cultural resources, beliefs and practices. The following summarizes the findings of the Cultural Impact Assessment relative to the proposed Hilo International Airport improvements:

1. Based on a review of Land Commission claims and awards at the time of the Great Mahele, the project site was not claimed for house lot or agricultural use.

2. Based on the findings of the archaeological inventory survey conducted for the proposed improvements, project specific consultations, and a review of historical documentation, no religious sites or burials are located within the project site. However, consultation and review of historical documentation identifies that burials may exist within airport property.

3. Prior to the development of the airport the Keaukaha settlement was bounded to the south by Pana‘ewa forest which was a primary cultural resource for medicinal and occupational plants, as well as being the physical manifestation and home of Pana‘ewa the deity. The development of the airport has eliminated this cultural resource as well as the ability to perpetuate traditional and customary practices including appropriate protocols associated with Pana‘ewa.

4. Prior to the development of the airport traditional access ways connected the community of Keaukaha with Pana‘ewa forest. However, with the development of the airport these traditional accesses have been cut off.

5. Cultural practitioners including weavers, lei makers and hula dancers continue to access and gather from traditional hala groves located on airport property.

3.12.7 Impacts and Recommendations

The proposed improvements at Hilo International Airport will have minimal negative cultural impact upon native Hawaiian cultural resources, beliefs and practices, as the development of existing airport facilities and boundaries has already eliminated any cultural resources within the area. Every effort should be made by the Department of Transportation to foster a positive relationship with the Keaukaha community. Some community members view
current efforts to engage Keaukaha school children in airport activities and public meetings held to keep community members informed of airport plans as a positive first step.

1. Any burials found on the project site should not be disturbed pending consultation with the Department of Land and Natural Resources State Historic Preservation Division. The treatment of any remains should be in accordance with procedures approved by the Hawai‘i Island Burial Council and the State Historic Preservation Division.

2. Practitioners that utilize the hala groves on airport property including the site identified as the proposed helicopter facility should be permitted to gather from these hala trees. If necessary, a right-of-entry policy could be established to allow practitioners access to the hala groves with prior notification to airport security or personnel.

3. Considering the history of land transfers and exchanges as Hilo International Airport was developed, additional land acquisition should be pursued with caution. If any properties are identified for potential acquisition, the landowner and lessee should be immediately notified. Any transfer of land must be voluntary. Negotiations should be conducted on a one-to-one basis between the DOT-A and the landowner/lessee. Any transfer of land must include fair and equitable compensation to the landowner/lessee.

4. For many community residents, any type of noise wall or barrier would cut off the Keaukaha community from the environment and is therefore not recommended.

5. Participation in the retrofitting of residences for sound attenuation or in the avigation easement project should be voluntary. Landowners and/or lessees for whom this option is available should be notified individually, and negotiations should be conducted on a one-to-one basis. To ensure that participants are aware of noise levels, and to inform them of any significant increases, continued noise monitoring for the Keaukaha community may be necessary.

3.13 SOCIO-ECONOMIC CONSIDERATIONS

3.13.1 Population

Hilo International Airport’s service area includes most of the eastern portion of the island. This includes the districts of North and South Hilo, and Puna (see Figure 3-9). Portions of the Hamakua and Ka‘u districts are also served by the Airport. It is these districts whose economies are most impacted by air traffic at Hilo International Airport.
HILO INTERNATIONAL AIRPORT
ENVIRONMENTAL ASSESSMENT
HAWAII COUNTY DISTRICT MAP
JANUARY 2002
Prepared by:
WILSON OKAMOTO & ASSOCIATES, INC.

FIGURE 3-9
Table 3-2 contains data on Hawaii’s resident population for the 1980 through 2000. It shows that while the State’s population has increased by 14.9 percent (%) and 9.3% over the 1980 to 1990 and 1990 to 2000 periods, respectively, Hawaii County’s population growth outpaced this rate, growing at 30.7% and 23.6%, respectively. Overall, Hawaii County’s population has grown by 61.5% during this 20-year period. The population growth has been higher for Hawaii, Maui, and Kauai than it has been for Oahu. This indicates that the largest growth rates will be on the Neighbor Islands. Long range forecasts of the State’s growth indicate that this trend will continue.

The population in all nine of Hawaii County’s districts increased between 1980 and 2000. The South Kohala district experienced the highest percentage of growth during this period (185%). The Puna district experienced the largest increase in the number of new residents (19,584 persons). The populations of South Hilo, Ka’u, and Hamakua grew more slowly, (12.1%, 57.5%, and 19.1%, respectively), while the population of North Hilo experienced only a small increase of 2.47%.

<table>
<thead>
<tr>
<th>Area</th>
<th>1980</th>
<th>1990</th>
<th>2000</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1980 to 1990</td>
</tr>
<tr>
<td>State of Hawaii</td>
<td>964,691</td>
<td>1,108,229</td>
<td>1,211,537</td>
<td>14.9</td>
</tr>
<tr>
<td>C&amp;C of Honolulu</td>
<td>762,565</td>
<td>836,231</td>
<td>876,156</td>
<td>9.7</td>
</tr>
<tr>
<td>County of Maui</td>
<td>70,991</td>
<td>100,504</td>
<td>128,241</td>
<td>41.9</td>
</tr>
<tr>
<td>County of Kauai</td>
<td>39,082</td>
<td>51,177</td>
<td>58,463</td>
<td>30.9</td>
</tr>
<tr>
<td>County of Hawaii</td>
<td>92,053</td>
<td>120,317</td>
<td>148,677</td>
<td>30.7</td>
</tr>
<tr>
<td>Puna</td>
<td>11,751</td>
<td>20,781</td>
<td>31,335</td>
<td>76.8</td>
</tr>
<tr>
<td>S. Hilo</td>
<td>42,278</td>
<td>44,639</td>
<td>47,386</td>
<td>5.6</td>
</tr>
<tr>
<td>N. Hilo</td>
<td>1,679</td>
<td>1,541</td>
<td>1,720</td>
<td>-8.2</td>
</tr>
<tr>
<td>Hamakua</td>
<td>5,128</td>
<td>5,545</td>
<td>6,108</td>
<td>8.1</td>
</tr>
<tr>
<td>N. Kohala</td>
<td>3,249</td>
<td>4,291</td>
<td>6,038</td>
<td>32.1</td>
</tr>
<tr>
<td>S. Kohala</td>
<td>4,607</td>
<td>9,140</td>
<td>13,131</td>
<td>98.4</td>
</tr>
<tr>
<td>N. Kona</td>
<td>13,748</td>
<td>22,284</td>
<td>28,543</td>
<td>62.1</td>
</tr>
<tr>
<td>S. Kona</td>
<td>5,914</td>
<td>7,658</td>
<td>8,589</td>
<td>29.5</td>
</tr>
<tr>
<td>Kau</td>
<td>3,699</td>
<td>4,438</td>
<td>5,827</td>
<td>20.0</td>
</tr>
</tbody>
</table>


State population forecasts are shown in Table 3-3. According to these projections, the neighbor island population is expected to grow at a faster rate than Oahu. Hawaii County is expected to have the largest percentage increase over the 20 year planning period (55,800 person increase, or 37%). Kauai and Maui Counties are projected to grow at a slightly slower rate, by 21,900 (36%) and 31,400 (25%), respectively. The City and County of Honolulu on Oahu is expected to have the lowest percentage population increase with a gain of 146,600, or 16% by the year 2020.
TABLE 3-3
POPULATION FORECASTS FOR
THE STATE OF HAWAII AND COUNTIES
2005 – 2020

<table>
<thead>
<tr>
<th>County</th>
<th>Resident Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2005</td>
</tr>
<tr>
<td>Honolulu</td>
<td>944,000</td>
</tr>
<tr>
<td>Hawaii</td>
<td>16,600</td>
</tr>
<tr>
<td>Kauai</td>
<td>66,600</td>
</tr>
<tr>
<td>Maui</td>
<td>132,800</td>
</tr>
</tbody>
</table>


Direct Impacts: No adverse impacts on the population of Hilo or Hawaii County are anticipated as a result of the construction and operation of the proposed improvements. The proposed improvements will serve the needs of the County’s growing population and air transportation needs by providing improved cargo service, reducing overflights of residential areas, and mitigating airport noise levels.

Indirect Impacts: No indirect impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.

Cumulative Impacts: No cumulative impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.

3.13.2 Economy

The economy of East Hawaii is rapidly changing. Sugar cultivation, which had been one of the region's main economic activities, is no longer in existence, with the last sugar mill closing in 1996. Diversified agriculture has emerged in its place, producing crops such as macadamia nuts, papayas, guava, ginger root, flowers, and livestock. Diversified agriculture is now the major source of employment in the Puna, North Hilo, Hamakua, and Ka'u Districts.

Hilo is the County seat as well as its most populous town, and most State government departments have offices there. As the Island's main metropolitan area, it also functions as the County’s industrial, commercial, and distribution center. Hilo Harbor is one of the Island's two deep-water ports and it serves as the primary shipping point for the diversified agriculture industry. The University of Hawaii at Hilo, a four-year university located less than a mile from the Airport, is expected to continue as an important economic force.

Both Puna and Hamakua are becoming residential communities that serve other districts, with Puna serving the Hilo area and Hamakua serving the fast growing Kohala resort area.
Hilo International Airport Improvements

The per capita income of Hawaii County households is below that of the other counties in the State. Unemployment data also reflect that Hawaii County’s unemployment rate is above the State average.

Direct Impacts: No adverse impacts on the economy of Hilo or Hawaii County are anticipated as a result of the construction and operation of the proposed improvements. The proposed cargo facility will benefit diversified agricultural producers as well as the greater community by expanding the market, lowering freight costs, and providing timely delivery of fresh produce and other perishables.

Indirect Impacts: No indirect impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.

Cumulative Impacts: No cumulative impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.

3.13.3 Visitor Industry

The State and Hawaii County economies are strongly influenced by the visitor industry. Visitor arrival statistics in Table 3-4 show that the number of visitors coming to the State has been increasing since its decline over a three-year period during the early 1990s. Westbound visitors have increased in the last few years. Prior to 1996, westbound visitor counts had been on the decline, but since then have been increasing. Eastbound visitors have been making up for the loss of westbound visitors for most of the 1990s. In 1997 there was a slight decrease in eastbound visitors from the prior year; this decline is expected to continue in 1998. Overall, however, eastbound visitor counts have increased 215% since 1980, while westbound visitors have only increased by 34% over the same period. However, westbound visitors make-up over 60% of the arrivals to the State.

Except for the three-year decline in tourism in the early 1990s, visitors to the State have been increasing. There has been some variation among the Neighbor Islands. Kauai was hit especially hard due to Hurricane Iniki, which ravaged Kauai in late 1992. Since then some recovery has occurred. The other two counties, Hawaii and Maui, have been up and down with no noticeable pattern during the 1990s.

The data show that growth in Neighbor Island arrivals are up from 1980, however, during the 1990s visitor arrivals have been flat at best. Between 1980 and 1990, Neighbor Island westbound visitor arrivals increased by 95%, but since 1990 arrivals have been decreasing or have been flat. Hawaii County has experienced a 22% decrease in westbound visitor arrivals over the period from 1990 to 1997. In this same period, Kauai County has experienced a 33% decline and Maui County has experienced a 21% decline in westbound visitor arrivals. Visitor arrivals also vary widely on Hawaii Island. The majority of visitors stay in West Hawaii (87%), while only 13% stay in East Hawaii.
### Table 3-4
**Visitor Arrival Statistics for the State and Neighbor Island Counties: 1980-2000**

<table>
<thead>
<tr>
<th>Year</th>
<th>Overnight and Longer Visitors</th>
<th>Westbound Visitors</th>
<th>Eastbound Visitors</th>
<th>Westbound</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Hawaii County</td>
</tr>
<tr>
<td>1980</td>
<td>3,934,504</td>
<td>3,046,132</td>
<td>888,372</td>
<td>761,103</td>
</tr>
<tr>
<td>1981</td>
<td>3,934,623</td>
<td>2,974,791</td>
<td>959,832</td>
<td>672,683</td>
</tr>
<tr>
<td>1982</td>
<td>4,242,925</td>
<td>3,278,525</td>
<td>964,400</td>
<td>678,170</td>
</tr>
<tr>
<td>1983</td>
<td>4,368,105</td>
<td>3,396,115</td>
<td>971,990</td>
<td>714,030</td>
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</tbody>
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Table 3-5 contains projected visitor arrivals through the year 2020 as projected by the State of Hawaii Department of Business, Economic Development and Tourism (DBEDT). Visitor arrivals are projected to increase statewide through the year 2020. Most of the visitor arrival increases projected for Hawaii County are expected to go to West Hawaii. The decline in visitor traffic to Hilo International Airport led to the shift of overseas airlines from Hilo to Kona International Airport in West Hawaii. This situation is not expected to change.

**Direct Impacts:** No adverse impacts on the visitor industry of Hilo or Hawaii County are anticipated as a result of the construction and operation of the proposed improvements. The proposed heliport and general aviation improvements will accommodate Hawaii's growing air-tour industry and provide adequate facilities for both helicopters and small fixed wing aircraft at a safe distance from commercial jet aircraft.
**Indirect Impacts:** No indirect impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.

**Cumulative Impacts:** No cumulative impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.

| TABLE 3-5 |
| VISITOR ARRIVAL PROJECTIONS FOR THE STATE OF HAWAII |
| 2000-2020 |

<table>
<thead>
<tr>
<th>Origin</th>
<th>Number of Visitor Arrivals Per Year</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>2005</td>
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<tr>
<td>Total²</td>
<td>9,127,400</td>
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<tr>
<td>Non-Japanese</td>
<td>6,115,400</td>
</tr>
<tr>
<td>Japanese</td>
<td>3,012,100</td>
</tr>
<tr>
<td>Eastbound</td>
<td>4,016,100</td>
</tr>
<tr>
<td>Westbound</td>
<td>5,111,400</td>
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</table>

<table>
<thead>
<tr>
<th>Average Daily Visitor Census</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oahu</td>
</tr>
<tr>
<td>Maui</td>
</tr>
<tr>
<td>Kauai</td>
</tr>
<tr>
<td>Hawaii</td>
</tr>
<tr>
<td>Total (State)²</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of Hotel Rooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oahu</td>
</tr>
<tr>
<td>Maui</td>
</tr>
<tr>
<td>Kauai</td>
</tr>
<tr>
<td>Hawaii</td>
</tr>
<tr>
<td>Total (State)</td>
</tr>
</tbody>
</table>

*Numbers may not add correctly due to rounding.
3.14 POLICE, FIRE AND MEDICAL SERVICES

The Hilo area is served by the Hawaii County Police Department. The police assigned to the Hilo International Airport area are from the Hilo Station, which is located approximately 1.4 miles to the west, on Kapiolani Street.

There are three County fire stations in Hilo. The closest fire station is located on Keaau Street, which is north of the Airport. This fire station has direct access to the Airport through Gate 35 and is staffed 24-hours a day. For aviation emergencies, there is a 24-hour Aircraft Rescue and Fire Fighting (ARFF) facility located on the Airport property.

Medical services are available at Hilo Memorial Hospital. The hospital is located approximately 3.1 miles from the Airport.

**Direct Impacts:** No significant increase in police or EMS service to the Airport is expected, as the proposed improvements will not generate an increase in the number of cargo, heliport, and general aviation users. The new facilities are intended to serve the existing users.

No significant impacts to fire services are anticipated as a result of the proposed project. Construction of the proposed cargo, helicopter, and general aviation facilities will negligibly increase the need for fire protection at Hilo International Airport. The project will be designed and built in compliance with the applicable City and County of Hawaii fire code requirements.

**Indirect Impacts:** No indirect impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.

**Cumulative Impacts:** No cumulative impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.

3.15 INFRASTRUCTURE AND UTILITIES

The existing infrastructure and utility lines in the vicinity of the project site are shown in Figure 3-10 and are discussed in the sections that follow.

3.15.1 Water System

Existing water resources for the Hilo area come from ground water (65.5 percent) and surface water (34.5 percent). The water system in the Hilo area is served by one main system, and four smaller systems. The Hilo system consumes a daily average of 5.49 million gallons of water from five surface systems and five deep well sources. The surface sources are the Waiakea-Uka Tunnel, the Olaa Flume Spring, Lyman Spring, Wailuku River-Hookelekele Stream, and Kaohama Stream. Three of the smaller systems use deep well sources, while the one remaining source draws its supply from surface water. Industrial and Commercial sources draw water from smaller wells.
Water is supplied to Hilo International Airport by the Hawaii County Department of Water Supply. Water consumption for 1998 was approximately 28,000 gallons per day. Existing water mains and lines are shown in Figure 3-10. There is a 12-inch water line, which loops around the western, northern, and southern edges of the Airport, and crosses under Runway 8-26. Service to the industrial area, main passenger terminal and the Military Reservation is provided by 12-inch branches off the main line. Water for the facilities in the northwest corner of the Airport is supplied through a system of 8-inch lines that tap the Department of Water Supply’s 12-inch transmission line along Kamehameha Avenue.

**Direct Impacts:** Construction and operation of the proposed Airport improvements will not impact the County of Hawaii Department of Water Supply’s surface and ground water sources. Operation of the proposed improvements will not result in a significant increase in water consumption demand, as the proposed action will not generate an increase in the number of users. The new cargo, helicopter, and general aviation facilities are intended to serve the existing users.

**Cargo Facility:** Currently, a branch of the 12-inch line that services the Airport Industrial Area crosses beneath the northern half of the proposed cargo site. A section of this water line will be abandoned and a new 12-inch line will be installed beneath the parking lot and access driveway around the north end of the proposed buildings. Laterals will be provided to supply domestic water to the new buildings. A separate line, connecting to the existing 12-inch line, will be installed to provide water for the fire sprinkler system. Fire hydrants will be provided in the parking lot area.

**Helicopter Facility:** Water service to the proposed heliport is expected to be provided off the 12-inch water line south of Runway 3.

**General Aviation Improvements:** General aviation improvements would be served by the 8-inch water line extending along Brig Road.

**Indirect Impacts:** No indirect impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.

**Cumulative Impacts:** No cumulative impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.

### 3.15.2 Wastewater System

Wastewater from the main passenger terminal is collected in an underground pipe system and pumped to the Airport’s wastewater treatment plant located south of the passenger terminal. The plant consists of an aeration unit, and treated effluent is disposed of in an injection well.
Hilo International Airport Improvements  Final EA

The estimated capacity of the treatment unit is approximately 18,000 gallons per day for each of two tanks, or 36,000 gallons total.

Wastewater from other areas of the Airport, including the old terminal, is serviced by individual cesspools and septic tanks. The relatively young lava flows on which the Airport is built are quite porous, and no problems have been reported with this method of waste disposal.

In past decades, the Hawaii Department of Health (DOH) permitted cesspools in Hawaii due to their apparently insignificant impact on drinking water quality, the low density of population, and the availability of affordable alternative treatment and disposal technology. In recent years, all of the above elements have changed and in response, the DOH now prohibits the construction of new cesspools over drinking water aquifers. As custodian of the airport land and its resources, DOT-A is committed to upgrade the treatment and disposal of wastewater generated by Airport operations from its current use of cesspools to septic tanks and drain field by 2003.

Direct Impacts: Operation of the proposed improvements will create a negligible increase in the volume of wastewater treated at the wastewater treatment plant, as the proposed facilities will serve the existing users that are currently serviced by individual cesspools and septic tanks.

Cargo Facility: Wastewater system improvements will include a sewer line from the new buildings with sewer manholes extending along the length of the proposed parking lot to a new pump station. A force main will connect the pump station to the existing sewer line along the terminal loop road, south of the commuter/air taxi terminal. Wastewater generated by the proposed project will be disposed of through the Airport’s wastewater treatment plant. The proposed wastewater improvements will be designed to accommodate the facility’s peak flow levels and the proposed project will conform to applicable provisions of the Department of Health’s (DOH) Administrative Rules, Chapter 11-62, “Wastewater Systems.”

Heliport and General Aviation Facilities: Wastewater improvements will be provided either through the installation of a septic tank and leaching field system acceptable to the DOH or through connection with the County sewer system just west of Kanoelihua Avenue.

Indirect Impacts: No indirect impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.
Cumulative Impacts: No cumulative impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.

3.15.3 Solid Waste

Solid waste generated by the Airport is stored on-site in dumpsters. A private firm, Pacific Waste, collects the waste daily and disposes the material at the County of Hawaii’s Hilo landfill.

Direct Impacts: Construction and operation of the proposed buildings will not generate a significant impact on the total volume of solid waste generated at the Airport. Operation of the proposed facility will not result in a significant increase in waste, as the improvements are intended to serve the existing users.

Indirect Impacts: No indirect impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.

Cumulative Impacts: No cumulative impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.

3.15.4 Roadway Access and Traffic

Access to the Airport is from Kamehameha Avenue via the airport access road, Kekuanaoa Street, which leads to the passenger terminal and parking lot. There are numerous connector roads between Kekuanaoa Street and Mokua Street, the parallel service road for the airport industrial area. Mokua Street provides access to the site for the proposed cargo facility. Access to the northwest portion of the Airport, where the existing cargo and general aviation facilities are located, is via Hualani Street and Brig Road. Access to the site for the proposed general aviation improvements is also via Brig Road.

A traffic study was conducted by Wilson Okamoto and Associates to evaluate existing roadway and traffic operations in the vicinity of the Airport and to identify and assess the traffic impacts resulting from the implementation of the proposed improvements at the Airport (see Appendix G). Existing site conditions, including general traffic flow, intersection operations, parking lot ingress and egress operations, traffic circulation, lane use, and general traffic operational deficiencies were assessed and are summarized below.

In the vicinity of the Airport, Kamehameha Avenue is primarily a two-way, six-lane, divided State roadway. At the main entrance to the Airport, Kamehameha Avenue intersects Kekuanooa Street, a two-way, two-lane, County of Hawaii roadway. Approximately 850 feet south of this signalized intersection, Kamehameha Avenue intersects Leilani Street, and approximately 850 feet north of the intersection with Kekuanooa Street, Kamehameha Avenue intersects Hualani Street. Both Leilani Street and Hualani Street are predominantly two-way, two lane, County of Hawaii Roadways.
The morning peak hour of traffic generally occurs between 7:00 a.m. and 8:00 a.m. in the proximity of the Hilo International Airport. In the afternoon, the peak hour of traffic generally occurs between 3:30 p.m. and 4:30 p.m. At the intersection of Kanoeluhua Avenue and Kekuanaoa Street, the total traffic volume is heavier during the afternoon peak hour, with a total of 2,612 vehicles traveling on Kanoeluhua Avenue and 1016 vehicles traveling on Kekuanaoa Street, compared to the 2,384 and 436 vehicles observed, respectively, during the morning peak hour. Both the northbound and southbound approaches of Kanoeluhua Avenue operate adequately during the morning and afternoon peak hours. Likewise, the eastbound and westbound approaches of Kekuanaoa Street also operate adequately.

Traffic conditions at the intersection of Kanoeluhua Avenue and Leilani Street were very similar to those observed at the Kekuanaoa Street intersection. Traffic is heavier during the afternoon, and all approaches to the intersection operate adequately. Leilani Street experiences a lighter volume of traffic compared to Kekuanaoa Street, carrying 388 vehicles in the morning and 475 in the afternoon.

Peak hour traffic along Kanoeluhua Avenue at the intersection with Hualani Street is consistent with the trend described above, with heavier traffic volumes observed during the afternoon peak hour. Both the northbound and southbound approaches of Kanoeluhua Avenue operate adequately. The westbound and eastbound approaches of Hualani Street also operate adequately, with slightly more vehicles utilizing the roadway in the afternoon. Hualani Street, however, experiences a significantly smaller volume of cars relative to Kekuanaoa Street and Leilani Street, with a total of 56 vehicles in the morning and 124 vehicles in the afternoon.

Roadway improvements related to the proposed hold cargo facility include an access driveway from Mokuea Street to the proposed parking area. The existing service road providing access from Mokuea Street to the apron area will need to be realigned. Therefore, a new service road will be constructed from Mokuea Street around the north end of the proposed buildings to connect with the aircraft parking apron. An access road located between the buildings will also provide gated access from the proposed parking area to the aircraft apron. Additionally, an access driveway will be constructed from the lease lot immediately east of the project site to Mokuea Street. Security fences will be erected along the site perimeter and between the cargo buildings to ensure controlled access to the airport operating area. The existing security gate on Mokuea Street will be relocated further north toward the Aircraft Rescue and Fire Fighting facility to allow public access to the cargo facility parking lot.

Roadway improvements related to the proposed heliport include a new service road providing access to the proposed lease lots and parking area.
The proposed terminal parking expansion to the east of the existing parking area will accommodate employees, customers, delivery, and semi-trailer vehicles with 109 employee/customer stalls, four ADA stalls, and 20 loading stalls.

Construction and operation of the proposed improvements will not adversely impact traffic flow within the airport area. Benefits of the proposed roadway and parking improvements include a decrease in the number of vehicles travelling around the terminal loop, as well as additional parking specifically to serve cargo and helicopter customers.

Direct Impacts and Mitigation Measures: A traffic study was conducted in the vicinity of the Airport, and included the intersections of Kanoelua Avenue with Kekuanoea Street, Lelani Street, and Hualani Street. Total traffic volumes for the three intersections were projected for the year 2010 without the construction of the proposed Airport improvements. Year 2010 projected traffic demands are similar to the existing conditions, and the twelve intersection approaches are expected to perform adequately under the projected minimal increase in traffic demand.

Under the cumulative year 2010 traffic conditions where the demand generated by the proposed Airport improvements is superimposed on the projected external traffic demand, the three intersections are still expected to perform adequately, as any increase is such that operating conditions will remain similar to the existing conditions. The proposed improvements are anticipated to have a minimal impact on traffic operations in the vicinity of the Airport.

Indirect Impacts: There are no indirect impacts to roadway access anticipated as a result of the proposed improvements.

Cumulative Impacts and Mitigation Measures: Although the proposed improvements are not expected to generate a significant increase in the number of vehicles utilizing the roadways, the traffic study found that the existing roadway conditions at specific locations could be improved to ease traffic circulation between different areas of the airport and near the passenger terminal. The following recommendations were made to improve existing circulation patterns:

- Modify Hualani Street Connection: Brig Road is located adjacent to the old terminal area and serves as the main access road to the southwest portion of the Airport. The connection between Hualani Street and Brig Road should be modified to facilitate easier access to the cargo, general aviation, and other facilities located in the area. The existing road alignment requires motorists to navigate a curved section of roadway to access Brig Road from Hualani Street. Brig Road could be realigned to eliminate the curved section and provide a more direct connection between the two streets.
- Modify Kanoelehua Avenue and Hualani Street Intersection: The intersection of Kanoelehua Avenue and Hualani Street should be converted to a four-way intersection where all turning movements are allowed. Currently both approaches of Hualani Street only allow right-turn traffic movements. With the existing traffic patterns motorists have two options to reach the main terminal from the southwest corner of the Airport. The first option requires motorists to turn right onto Kanoelehua Avenue from Hualani Street and then complete a U-turn maneuver to reach the Airport’s main access road. The second option requires motorists to utilize minor roads to reach Kamehameha Avenue. After turning left onto Kamehameha Avenue, motorists complete a second left turn onto Kanoelehua Avenue to reach the Airport’s main access road. If the intersection of Kanoelehua Avenue and Hualani Street were converted to a four-way intersection, these vehicles could turn left from Hualani Street onto Kanoelehua Avenue and directly access the Airport’s main access road.

- Modify Terminal Area Parking Lot: The exit from the terminal area parking lot could be relocated from its existing location at the east end of the parking lot to the west end. Currently, vehicles existing the parking lot must travel around the terminal loop road and through the terminal area in order to exit the Airport. This creates conflicts between vehicles exiting the parking lot and vehicles picking up or dropping off passengers.

3.15.5 Aircraft Parking Apron

The proposed cargo facility includes improvements to a 7,500 square foot section of the apron fronting the east side of the proposed cargo facility to create a concrete hardstand for aircraft. Improvements to this portion of the pavement will be specifically constructed to withstand the forces generated beneath the nose gear as the aircraft powers in and out. To accommodate the future expansion of cargo facilities, the Hilo International Airport Master Plan includes the northward expansion of the parking apron by approximately 150 feet in the area between Taxiway “E” and the project site. The location of the cargo facility does not conflict with plans for apron expansion.

Direct Impacts: No significant impacts to the apron area are anticipated as a result of the construction and operation of the proposed facility. The apron improvements are appropriately sited to accommodate air cargo activity at the proposed facility. Although helicopter operators will be required to move their aircraft to an interim heliport location at the opposite end of the terminal, helicopter ticket counter operations will remain in the western part of the passenger terminal.

Indirect Impacts: No indirect impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.
Cumulative Impacts: No cumulative impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.

3.15.6 Drainage System

The Airport is built on permeable lava that generally facilitates drainage. Storm runoff from the runways, taxiways, and aircraft parking aprons flows into the grassed areas on either side of the pavement where it percolates into the ground.

Runoff from the main parking area fronting the main passenger terminal is diverted into a ditch on the terminal's eastern side. The ditch carries water to an open area east of the terminal. Run-off from terminal roofs and roadways in the Airport area is disposed of in dry wells. The same method is used to dispose of runoff from the Airport Industrial Area. Along the western edge of the project site is an existing open drainage channel. Drainage in the immediate vicinity is facilitated through this swale.

Industrial activity at a transportation facility, as defined by federal Environmental Protection Agency regulations, consists of "those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling and lubrication), equipment cleaning operations, airport deicing operations, or which are otherwise identified in the regulations." If only one lessee on the airport property engages in industrial activities, the entire airport is required to obtain a National Pollutant Discharge Elimination System (NPDES) permit as a single transportation facility.

A NPDES permit is not required for the Hilo International Airport facility at this time since there is no runoff from the airport into State waters. When planning begins for the installation of a drainage system to divert runoff into State waters, application for a NPDES permit must also be made.

Direct Impacts and Mitigation Measures: No adverse impacts on the existing drainage patterns within the project vicinity are anticipated as a result of the construction and operation of the proposed Airport improvements. During construction, the contractor will ensure that functions of the existing area drainage patterns are not impacted or impeded.

Cargo Facilities: Drainage improvements associated with the proposed air cargo facility include a piping system to collect and direct runoff from the downspouts and truck dock wells on the west side of the proposed buildings to the existing swale along the western boundary of the proposed parking lot. This open channel both conveys and dissipates runoff. The proposed parking area will be graded so as to direct surface runoff toward the drainage swale. On the east side of the proposed buildings, splash blocks will be provided at the downspouts and runoff from this area will sheetflow onto the apron and northward to the grassy area beyond the pavement.
Construction of the proposed cargo facility will disturb approximately 460,000 square feet of ground surface, including the parking lot and expansion of the aircraft parking apron. During construction, storm runoff may carry increased amounts of sediment as a result of erosion along newly excavated surfaces. This will be mitigated by compliance with the County’s grading ordinance. The contractor will be responsible for instituting appropriate erosion control measures such as the retention of ground cover and the phasing of construction to minimize erosion of exposed areas, the frequent watering of graded areas, the use of temporary berms and cut-off ditches where necessary, and the reestablishment of ground cover as early as possible in the construction schedule.

After construction is completed, the additional 325,000 square feet of impermeable surface created by the proposed buildings and related improvements are not anticipated to affect the natural drainage patterns within the vicinity of the project site.

**Helicopter and general aviation facilities:** Drainage for helicopter and general aviation facilities are expected to handled by dry wells and surface runoff onto undeveloped areas.

**Indirect Impacts:** No indirect impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.

**Cumulative Impacts:** No cumulative impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.

### 3.15.7 Electrical and Communication Systems

Electrical power is provided to the Airport by the Hawaii Electric Light Company (HELCO). A 13.8-kilovolt overhead transmission line that originates at HELCO's Kanoelueha Generating Station, southwest of the Airport passenger terminal, serves facilities on the south side of the Airport. The line splits into two and enters Airport property at the western and eastern ends of the parking lot. Each line runs underground through twin 4-inch ducts to the electrical equipment building located east of the passenger terminal, across from the bus parking area.

Electrical service to the rental car baseyards and the Airport industrial area is provided via a continuation of the westernmost 13.8 kV line. The underground lines and electrical equipment have been sized to allow build-out on all of the industrial parcels without having to upgrade current transmission facilities.

HELCO's service to the old terminal area is provided by an underground line, which taps into the company's 13.8 kV line along Kanoelueha Avenue. It runs along Kanoelueha Avenue to the utility building north of the old passenger building. Service to other buildings
in that area is via underground lines from the utility building. These lines were designed to accommodate the much heavier electrical demand that existed when almost all of the Airport facilities were located here.

Telephone service to all areas within the Airport is provided by Verizon Hawaii (formerly GTE Hawaiian Telephone Company).

Direct Impacts: No significant impacts are anticipated on the electrical or communication systems as a result of the construction and operation of the proposed airport improvements. Existing underground electrical and telephone lines will be extended to service the new structures. Close coordination with HELCO and Verizon during the construction phase will ensure that utility lines will not be adversely impacted and that electrical and phone service to adjacent areas will not be interrupted. Operation of the proposed improvements will result in a slight increase in energy consumption demand, however, this increase is negligible and will not require an upgrade of the electrical system. Communications systems can be accommodated via existing service lines and the project does not present any conflict regarding telephone service.

Indirect Impacts: No indirect impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.

Cumulative Impacts: No cumulative impacts are anticipated as a result of the construction and operation of the proposed Airport improvements.
SECTION 4
RELATIONSHIP TO PLANS, POLICIES, AND CONTROLS
4. RELATIONSHIP TO PLANS, POLICIES AND CONTROLS

This section discusses the conformance and consistency of the proposed Hilo International Airport Improvements to the applicable State of Hawaii and County of Hawaii plans, policies, and controls.

4.1 HAWAII STATE PLAN

The Hawaii State Plan, embodied in Chapter 226, Hawaii Revised Statutes (HRS), serves as a guide for goals, objectives, policies, and priorities for the State. The State Plan provides a basis for determining priorities, allocating limited resources, and improving coordination of State and County plans, policies, programs, projects, and regulatory activities. The proposed Airport improvements support and are consistent with the following State Plan goals, objectives and policies:

State Goals

In order to guarantee, for present and future generations, those elements of choice and mobility which insure that individuals and groups may approach their desired levels of self-reliance and self-determinations, it shall be the goal of the State to achieve:

(1) A strong, viable economy, characterized by stability, diversity and growth that enables fulfillment of the needs and expectations of Hawaii’s present and future generations.

(2) A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems and uniqueness, that enhances the mental and physical well-being of the people.

(3) Physical, social and economic well-being, for individuals and families in Hawaii, that nourishes a sense of community responsibility, of caring and of participation in community life.

Comment: The proposed Airport improvements would contribute to the attainment of the above goals be creating both short- and long- term employment opportunities for the residents of the County of Hawaii, ensuring the efficiency of import and export cargo services vital to Hawaii County’s daily activities, and enhancing transportation services for residents and the visitor industry that is important to the stability of the County’s economy. The proposed improvements would also generate State and County tax revenues, which will contribute to economic stability, and government services to the residents and visitors of the County.
Objectives and Policies for Population

Objective: It shall be the objective in planning for the State's population to guide population growth to be consistent with the achievement of physical, economic, and social objectives contained in this chapter.

Policies: (2) Encourage an increase in economic activities and employment opportunities on the Neighbor Islands consistent with the achievement of physical, economic, and social objectives contained in this chapter.
(3) Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the State.

Comment: The proposed improvements have been developed to enable the Airport to operate more efficiently and economically. The proposed improvements are expected to provide long-term employment opportunities for residents, and economic opportunities for businesses providing equipment, supplies, and services for aviation related activities.

Objectives and Policies for the Economy – In General

Objectives: (1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawaii's people.
(2) A steadily growing and diversified economic base that is not overly dependent on a few industries.

Policies: (6) Strive to achieve a level of construction activity responsive to, and consistent with, State growth objectives.
(8) Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility.
(9) Foster greater cooperation and coordination between the government and private sectors in developing Hawaii's employment and economic growth opportunities.
(10) Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.
(11) Maintain acceptable working conditions and standards for Hawaii's workers.

Comment: The proposed improvements will generate a significant amount of construction activity, along with new private jobs in related and secondary activities, that would create opportunities for upward mobility and family economic security. The construction activity would provide steady employment opportunities for other types of construction trades.
Objectives and Policies for the Economy – Visitor Industry

Objective: Planning for the State’s economy with regard to the visitor industry shall be directed towards achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawaii’s economy.

Policies: (1) Support and assist in the promotion of Hawaii’s visitor attractions and facilities.
(2) Ensure that visitor industry activities are in keeping with the social, economic and physical needs and aspirations of Hawaii’s people.
(4) Encourage cooperation and coordination between the public and private sectors in developing and maintaining well-designed, adequately serviced visitor industry and related developments which are sensitive to neighboring communities and activities.
(5) Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawaii’s people.

Comment: The proposed Airport improvements would provide the air transportation facilities needed to serve both residents and visitors. The proposed improvements would provide short- and long-term construction and other employment to the residents of Hawaii County, and have been carefully designed and developed with public input to meet existing and future market demands.

Objectives and Policies for the Economy – Potential Growth Activities

Objective: Planning for the State’s economy with regard to potential growth activities shall be directed towards achievement of the objectives of development and expansion of potential growth activities that serve to increase and diversify Hawaii’s economic base.

Policy: (1) Facilitate investment and employment in economic activities that have the potential for growth such as diversified agriculture, aquaculture, apparel and textile manufacturing, film and television production and energy and marine-related industries.

Comment: The proposed cargo improvements will provide increased market opportunities for the County of Hawaii to transport their existing products, develop new or expanded products or services and increase interest in investment in and outside of the County.
Hilo International Airport Improvements

Objectives and Policies for Facility Systems – Transportation

Objectives: (1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.
(2) A statewide transportation system consistent with planned growth objectives throughout the State.

Policies: (1) Design, program, and develop a multi-modal system in conformance with desired growth and physical development as stated in this chapter.
(2) Coordinate state, county, federal and private transportation activities and programs toward the achievement of statewide objectives.
(6) Encourage transportation systems that serve to accommodate present and future development needs of communities.
(8) Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment and storage needs.
(9) Encourage the development of transportation systems and programs which would assist statewide economic growth and diversification.
(10) Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawaii.

Comment: The proposed improvements are designed with sensitivity to the needs of affected communities and the quality of the area's environment and will provide short- and long-term employment, enhancing the economic opportunities such as those reflected in an increase in cargo shipments. The proposed improvements are intended to complement existing and future airport facilities and accommodate the present and future air transportation needs of Hawaii County. The improvements will upgrade the Airport to a more efficient and convenient air transportation facility for the movement of residents, visitors, and cargo.

4.2 STATE LAND USE DISTRICT CLASSIFICATION

The State Land Use Law regulates the classification and use of lands in the State to accommodate growth and development, and to conserve natural resources. The State Land Use Commission regulates land use throughout Hawaii under the provisions of Chapter 205, Hawaii Revised Statutes. There are four land use districts: Urban, Rural, Agricultural, and Conservation. The Commission determines the district boundaries and establishes permissible uses in each district.

The Hilo International Airport lies entirely within the Urban District and the proposed air cargo facility is an allowable use (see Figure 4-1). Urban District uses surround the Airport to the north, west, and southwest, while the remainder of the lands surrounding the Airport are classified as Agricultural. The nearest lands classified as Conservation are located approximately a half-mile north of Runway 8-26, around Kionakapahu and Lokoaka Ponds.
4.3 COUNTY OF HAWAII ZONING

The County of Hawaii Chapter 25 Zoning Code regulates the type, size, siting and uses of structures within various zoning district classifications.

Hilo International Airport is zoned ML-20, denoting Limited Industrial, 20,000 square feet minimum lot size (see Figure 4-2). Limited Industrial districts are intended for businesses and industrial uses which are generally in support of but not necessarily compatible with those permissible activities and uses in other commercial districts. Airports, heliports and landing strips are permitted uses within the Limited Industrial districts. The maximum allowable building height is forty-five feet. The minimum building site area is 10,000 square feet, and plan approval is required of all structures and uses in ML districts. The proposed airport improvements are permitted uses within the ML-20 district.

Most of the land adjacent to the Airport near the western end is also designated ML-20 (Limited Industrial) or the more permissive MG-1a (General Industrial, 1 acre lot size). This designation only encompasses a width of one block along the western side of Kanoeluhua Avenue. Beyond this, the majority of the land is zoned RS-10 (Single-Family, 10,000 square feet lot size).

The Department of Hawaiian Home Lands' (DHHL) Keaukaha Tract I property along the northern edge of the Airport is zoned RS-10 (Single-Family, 10,000 square feet lot size). There is also residential zoned lands northeast of the Airport, along the shoreline. The remainder of land around the Airport is zoned A-5a (Agriculture, 5-acre lot size).

4.4 STATE COASTAL ZONE MANAGEMENT PROGRAM

The State of Hawaii's Coastal Zone Management (CZM) Program, established pursuant to Chapter 205A, Hawaii Revised Statutes, as amended, is administered by the State Office of Planning and provides for the beneficial use, protection and development of the State's coastal zone. The objectives and policies of the Hawaii CZM Program encompass broad concerns such as impact on recreational resources, coastal scenic resources and open space, coastal ecosystems, coastal hazards, and the management of development. The applicability of the CZM objectives and policies to the proposed Airport improvements is as follows:

Recreational Resources

Objective: Provide coastal recreational opportunities accessible to the public.

Comment: The proposed improvements are not anticipated to adversely impact accessibility to nearby coastal recreational resources. The nearest coastal recreational resources are located along Kalanianaole Avenue, north of the Keaukaha residential subdivision.
Historic Resources

Objective: Protect, preserve, and where desirable, restore those natural and man-made historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Comment: The proposed improvements are not anticipated to adversely impact historic and prehistoric resources. As most of the Airport property has already been developed and landscaped for the existing Airport facilities, it is unlikely that any archaeological resources are present beyond those identified in the archaeological survey, as discussed in Section 3 of this EA.

Scenic and Open Space Resources

Objective: Protect, preserve and, where desirable, restore or improve the quality of coastal scenic and open space resources.

Comment: The proposed improvements will not adversely impact scenic and open space resources. The proposed improvements are consistent with the current use of the site as an airport and all improvements will comply with building codes and height restrictions. Scenic view planes will not be disrupted.

Coastal Ecosystems

Objective: Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

Comment: The project is not anticipated to have any adverse impacts on coastal resources in the vicinity of the project site. Excavation and grading activities associated with the construction of the proposed improvements will be regulated by the County of Hawaii grading ordinance and the National Pollutant Discharge Elimination System (NPDES) permit requirements administered by the State Department of Health. The grading ordinance includes provisions related to reducing and minimizing the discharge of pollutants associated with soil disturbing activities including grading, grubbing, and stockpiling. The permit requires compliance with a Best Management Practices (BMP) plan which, in turn, requires compliance with County ordinances pertaining to grading, grubbing, stockpiling, soil erosion, and sedimentation.
USE AND MINIMUM SIZE ZONING

<table>
<thead>
<tr>
<th>RESIDENTIAL</th>
<th>COMMERCIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-10  SINGLE-FAMILY, 10,000 SQ. ST.</td>
<td>VH-.75  RESORT-HOTEL, 750 SQ. FT.</td>
</tr>
<tr>
<td>RS-15  SINGLE-FAMILY, 15,000 SQ. FT.</td>
<td>V-.75   RESORT, 750 SQ. FT.</td>
</tr>
<tr>
<td>RD-3.75 DOUBLE FAMILY, 7,500 SQ. FT.</td>
<td>CN-40   NEIGHBORHOOD-COMMERCIAL</td>
</tr>
<tr>
<td>RM-1 MULTIPLE-FAMILY, 1,000 SQ. FT./UNIT</td>
<td>CN-20  NEIGHBORHOOD-COMMERCIAL</td>
</tr>
<tr>
<td>RM-2 MULTIPLE-FAMILY, 2,000 SQ. FT./UNIT</td>
<td>CN-10  NEIGHBORHOOD-COMMERCIAL</td>
</tr>
<tr>
<td>RM-4 MULTIPLE-FAMILY, 4,000 SQ. FT.</td>
<td>CG-20   GENERAL COMMERCIAL</td>
</tr>
<tr>
<td>OPEN</td>
<td>CG-7.5  GENERAL COMMERCIAL</td>
</tr>
<tr>
<td>O OPEN, PARK &amp; RECREATIONAL</td>
<td>CDH     DOWNTOWN HILO COMMERCIAL</td>
</tr>
</tbody>
</table>
**Economic Uses**

**Objective:** Provide public or private facilities and improvements important to the State's economy in suitable locations.

**Comment:** The Airport is currently zoned for industrial use and the proposed improvements are appropriately sited, as described in Sections 1 and 2. Implementation of the proposed improvements is not anticipated to result in significant social, visual, or environmental impacts.

**Coastal Hazards**

**Objective:** Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.

**Comment:** The Airport is located on lands that have been designated as Zone X, areas determined to be outside the 500-year flood plain. The low-lying lands between the ocean and the northern boundary of both runways are subject to tsunamis, which may periodically strike the region. The sites for the proposed hold cargo facility, helicopter facility, the main passenger terminal and all of other areas south of the runways are not in the tsunami hazard area, however the existing air cargo area (old terminal), and most general aviation facilities are in the hazard area. To permit residents of Keaukaha to evacuate, the State DOT has agreed to control evacuation access across the airfield in times of emergency. The evacuation route extends south from Gate 33, near Baker Avenue, across the airfield using Taxiway F, and through the main terminal to the loop road.

**Managing Development**

**Objective:** Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

**Comment:** Information regarding the proposed project is communicated to the public through the environmental review process as provided under Chapter 343, Hawaii Revised Statutes and Section 11-200 of Title 11 Department of Health Administrative Rules.

**Public Participation**

**Objective:** Stimulate public awareness, education, and participation in coastal management.
Comment: The public is afforded the opportunity to review and comment on the EA pursuant to the requirements of Chapter 343 Hawaii Revised Statutes and Section 11-200 of Title 11 Department of Health Administrative Rules.

Beach Protection

Objective: Protect beaches for public use and recreation.

Comment: The proposed Airport improvements are not anticipated to adversely affect any beaches or shoreline recreational resources.

Marine Resources

Objective: Implement the State’s ocean resources management plan.

Comment: The implementation of BMPs and compliance with NPDES permit requirements will ensure the minimization of any risk to marine resources that may result from construction activities. The proposed project will provide long-term economic benefits and is appropriately sited adjacent to existing Airport facilities. Implementation of the proposed improvements is not anticipated to result in significant environmental impacts.

4.5 SPECIAL MANAGEMENT AREA

Pursuant to the Hawaii CZM Program, all counties have enacted ordinances establishing Special Management Areas (SMA). Development within the SMA is subject to the requirements of SMA laws, which are administered by the Planning Commission (SMA Use Permit) and Planning Director (SMA Minor Permit).

The Hilo International Airport is located outside the boundaries of the County of Hawaii’s SMA and is therefore not subject to the SMA Use Permit.

4.6 COUNTY OF HAWAII GENERAL PLAN

The County of Hawaii General Plan was adopted by the Hawaii County Council in November 1989. The Plan contains goals, policies, standards and courses of action to guide the development of the County in 13 areas: economic, energy, environmental quality, flood control and drainage, historic sites, natural beauty, natural resources and shoreline, housing, public facilities, public utilities, recreation, transportation, and land use.

Goals are general expressions of the desired long-range direction of the County. Policies describe the method or strategy that should be implemented in pursuit of the goals. Standards provide guidelines to evaluate the quality of conditions, and courses of action are more precise or detailed discussions of alternative solutions for community concerns.
The General Plan also contains land use maps showing the location of desired land uses for the Island of Hawaii. The maps are referred to as Land Use Pattern Allocation Guide Map (LUPAG maps). Hilo International Airport and much of the surrounding land is in the area designated as Industrial uses (see Figure 4-3).

As a policy document, the General Plan provides the legal basis for all subdivision, zoning and related ordinances. It also provides the legal basis for the initiation and authorization for all public improvements and projects. The County of Hawaii Planning Commission is currently updating the General Plan as part of the General Plan Revision Program, which occurs once every 10 years.

The revision process was initiated in January 1998 and the Final Draft of the General Plan revision was released for public review in May 2001.

Goals, Policies, Standards, and Courses of Action:

The proposed improvements at Hilo International Airport are consistent with the following relevant goals, policies, standards, and courses of action of the existing General Plan document:

A. Economic

Goals:
- Provide residents with opportunities to improve their quality of life.
- The County shall provide an economic environment which allows new, expanded, or improved economic opportunities that are compatible with the County’s natural and social environment.

Policies:
- The County of Hawaii shall assist the expansion of the agricultural industry, especially diversified agriculture, through the protection of important agricultural lands, capital improvements and other programs, and continued cooperation with appropriate State and Federal agencies.
- The County of Hawaii shall encourage the development of a visitor industry which is consistent with the social, physical, and economic goals of the residents of the County.
- The County shall identify and encourage primary industries that are consistent with the social, physical, and economic goals of the residents of the County.

Courses of Action – South Hilo:
- The County shall encourage the State to provide the necessary funds for the development of the university complex and airport facilities. The County shall
also provide necessary support services and facilities to aid the development of these complexes.

The proposed improvements will be a source of employment for the region during the construction and operation phases. Direct economic benefits will result from construction expenditures both through the purchase of materials from local suppliers and through the employment of local labor. These wages, profits, and expenditures will have a multiplier effect through increased capital flowing through the region.

The proposed cargo facility will aid in the further development of the agriculture industry. Relocation of the air cargo operations will allow for more efficient operations by cargo operators Aloha and Hawaiian Airlines, freight forwarders, farmers, and flower growers. This translates to lower costs for air cargo users in terms of ground handling and split operations. The new facility will also allow State and Federal inspection agencies to be located in the same structure, eliminating the need to transport cargo to the main passenger terminal for inspection.

The proposed heliport facility will enable operators to better service their clients and provide a safe, professional and attractive tour service. Currently, the helicopter operator’s ticket counters are located in the west end of the passenger terminal building and in the commuter/air taxi terminal, and there is no area for expansion or to create a sheltered waiting area for passengers. Operators have also noted safety concerns regarding the close proximity of helicopters on the current parking apron. The proposed facility will allow for the consolidation and comfortable accommodation of the five private helicopter operators at Hilo International Airport.

The proposed improvements to the general aviation facilities will also encourage the visitor industry in Hilo by accommodating the increasing level of aircraft operations. The proposed hangar, parking apron, and infrastructure improvements will adequately support the present and projected future operations.

D. Flood Control and Drainage

Goals:
- Control pollution.
- Reduce surface water and sediment runoff.

Policies:
- All development-generated runoff shall be disposed of in a manner acceptable to the Department of Public Works.
LEGEND

- High Density Urban
- Medium Density Urban
- Low Density Urban
- Industrial
- Orchards
- Resort
- Open Area/Conservation
- University Use

HAWAII COUNTY GENERAL PLAN

JANUARY 2002
Prepared by:
WILSON OKAMOTO & ASSOCIATES, INC.

FIGURE 4-3
Hilo International Airport Improvements

Standards:

To mitigate the impacts of storm water runoff discharging into the ground-water system, the use of appropriate Best Management Practices (BMPs) will be used, including on-site pollution-mitigating measures to control erosion and transport of fines, silt, sediments, and other pollutants that could adversely impact ground water or surface State waters. Erosion and runoff control measures are discussed in detail in Section 4 of this EA.

L. Transportation

Goals:
- Provide a transportation system whereby people and goods can move efficiently, safely, comfortably and economically.

Policies:
- The improvement of transportation service shall be encouraged.

Standard:
- Transportation systems shall meet the requirements of the State Department of Transportation and the County of Hawaii.

(2) Transportation Terminals

The following goal, policies, and standard are set forth to guide the orderly development of the County's transportation terminals and related facilities.

Goal:
- Provide transportation terminals and related facilities for the safe, efficient and comfortable movement of people and goods.

Policies:
- The County shall encourage maximum use of the island's airport and harbor facilities.

Standard:
- Requirements of the State Department of Transportation.

As previously described, the proposed air cargo facility will increase efficiency in cargo handling and marshalling. The location of the existing cargo operations in the old terminal area can be utilized by general aviation operators, who are currently at a loss for hangar and
lease lot space. The proposed heliport facility will consolidate helicopter operations at a safe
distance from fixed wing aircraft operations. These improvements will also have a positive
effect on traffic circulation within the Airport, as a smaller number of vehicles will be
travelling along the terminal loop. The proposed parking expansion to the east of the existing
terminal parking lot will meet the existing demand for more customer and employee parking.
Parking for the heliport, cargo, and general aviation facilities will be accommodated at the
respective sites.

M. Land Use

(3) Industrial

Goals:
- Designate and allocate industrial areas in appropriate proportions and in
  keeping with the social, cultural, and physical environments of the County.
- Promote and encourage the rehabilitation of industrial areas which are
  serviced by basic community facilities and utilities.

Policies:
- It shall be the policy of the County to achieve a broader diversification of
  local industries by providing opportunities for new industries and
  strengthening existing industries.
- Through its zoning powers, the County shall locate industrial areas
  convenient to transportation facilities, and provide a variety of industrial
  zoned districts and lot sizes, depending on the needs of the industries and the
  communities.
- Industrial development shall be located in areas adequately served by
  transportation, utilities, and other amenities. Redeveloping or newly
  developing areas shall be developed in concert with programmed public and
  privately funded infrastructure to meet the expected needs.

Standards:
- Industrial activities may be located close to raw materials or key resources.
- Industrial development shall be conveniently located to its labor resource.

The proposed improvements at Hilo International Airport are allowable uses within areas the
existing General Plan designates for Industrial use. The document recommends the
centralization of industrial uses in the Kanoehau Industrial Area, near the Airport. As all
proposed improvements are aviation related, it is appropriate that they are located within the
Airport property.
4.7 COUNTY OF HAWAII GENERAL PLAN REVISION PROGRAM

The existing County of Hawaii General Plan is currently undergoing revision by the County of Hawaii Planning Department in accordance with the Plan, which sets forth that a comprehensive review should commence every ten years. Last amended in November 1989, a preliminary review of the General Plan was initiated by the County Planning Department in January 1998. The latest review draft was made available in May 2001 by the Planning Department. The draft revisions to the General Plan include the following: a profile update for each of the elements; amendments to the goals, policies, standards, and courses of action; revision to the General Plan amendment procedures; revision to the land use designations; amendments to the Land Use Pattern Allocation Guide Map; and revisions to the Facilities Map. Following a series of public hearings, the draft revised General Plan awaits processing through the County Council for ordinance adoption.

Goals, Policies, Standards, and Courses of Action:

The proposed improvements at Hilo International Airport are consistent with the following relevant amended goals, policies, standards, and courses of action of the Review Draft III of the County of Hawaii General Plan Revision Program:

A. Economic

Goals:
- Provide residents with opportunities to improve their quality of life through economic development that enhances the County’s natural and social environments.
- Economic development and improvement shall be in balance with the physical, social, and cultural environments of the island of Hawaii.
- Strive for diversity and stability in the economic system.
- Provide an economic environment that allows new, expanded, or improved economic opportunities that are compatible with the County’s cultural, natural, and social environment.
- Strive for an economic climate that provides its residents an opportunity for choice of occupation.
- Strive for diversification of the economy by strengthening existing industries and attracting new endeavors.

Policies:
- Assist in the expansion of the agricultural industry through the protection of important agricultural lands, development of marketing plans and programs, capital improvements, and continued cooperation with appropriate State and Federal agencies.
- Encourage the development of a visitor industry that is in harmony with the social, physical, and economic goals of the residents of the County.
Hilo International Airport Improvements

- The land, water, sea, and people shall be considered as essential resources for present and future generations and should be protected and enhanced through the use of economic incentives.
- Promote a distinctive identity for the island of Hawaii to enable government, business, and travel industries to promote the County of Hawaii as an entity unique within the State of Hawaii.
- Assist in the promotion of the agriculture industry whose products are recognized as being produced on the island of Hawaii.
- Encourage the further development of the overseas capacity of Hilo International Airport for the exportation of agricultural crops.

Courses of Action:
- Encourage the State to provide the necessary funds for the development of the university complex and airport facilities. Provide necessary support services and facilities to aid the development of these complexes.

C. Environmental Quality

Goals:
- Control Pollution

Policies:
- Encourage the State to continue aircraft noise abatement strategies at Hilo International Airport and the Kona International Airport at Keahole.
- Work with the appropriate agencies to adopt appropriate measures and provide incentives to control point and nonpoint sources of pollution.

Standards:
- Pollution shall be prevented, abated, and controlled at levels that will protect and preserve the public health and well being, through the enforcement of appropriate Federal, State and County standards.

D. Flood Control and Drainage

Goals:
- Prevent damage to man-made improvements
- Control pollution
- Reduce surface water and sediment runoff
- Maximize soil and water conservation

Policies:
- Any development within the Federal Emergency Management Agency designated flood plain must be in compliance with Chapter 27.
L. Transportation

Goals:
- Provide a transportation system whereby people and goods can move efficiently, safely, comfortably, and economically.
- Make available a variety of modes of transportation that best meets the needs of the County.

Policies:
- A framework of transportation facilities that will promote and influence desired land use shall be established by concerned agencies.
- The agencies concerned with transportation systems shall provide for present traffic and future demands, including the programmed development of mass transit programs for high growth areas by both the private and public sectors.
- The improvement of transportation service shall be encouraged.
- Consider the provision of adequate transportation systems to enhance the economic viability of a given area.

Standards:
- Transportation systems shall meet the requirements of the U.S. Department of Transportation, State Department of Transportation and the County of Hawaii.
- Transportation facilities and systems shall conform to the requirements of the Americans with Disabilities Act (ADA).
- Transportation systems shall conform with design guidelines established by the American Association of State Highway and Transportation Officials (AASHTO).

Courses of Action – South Hilo:
- An extension of Puainako Street east of Kanoehau should be the main route from the airport terminal for direct access to the business district.

M. Land Use (industrial)

Goals:
- Designate and allocate industrial areas in appropriate proportions and in keeping with the social, cultural, and physical environments of the County.
- Promote and encourage the rehabilitation of industrial areas that are serviced by basic community facilities and utilities.
Policies:
- Achieve a broader diversification of local industries by providing opportunities for new industries and strengthening existing industries.
- Locate industrial areas convenient to transportation facilities, and provide a variety of industrial zoned districts and lot sizes, depending on the needs of the industries and the communities.
- Industrial development shall be located in areas adequately served by transportation, utilities, and other essential infrastructures.

Standards:
- Buffer zones shall be established between industrial and adjacent incompatible uses of land.
- The direction of wind patterns and the absence of tradewinds shall be considered in the siting of industrial areas.

4.8 STATEWIDE AIRPORT SYSTEM PLAN

The Hawaii Statewide Airport System Plan (SASP) is a long-range development plan for Hawaii’s civilian airport system to the year 2020. One of the State’s primary interests in developing this plan was to employ an integrated strategic, financial, and physical planning approach that would provide the foundation for a near- and long-term business plan for the airport system. The system includes 16 airports in four counties. Planning emphasis was placed on five “primary” airports in Hawaii: Honolulu International Airport, Kahului Airport, Kona International Airport, Lihue Airport, and Hilo International Airport.

The SASP provides vision, direction, and tools for future development and financial planning for both the system and individual airports. The SASP includes a Facility Plan that represents the ideal level of airport development and presents all justifiable projects based on the strategic direction, facility requirements, and potential for revenue development.

In the case of Hilo International Airport, the SASP recommends the following development programs containing numerous individual elements:

1. Air Cargo Improvements: New cargo building, related apron and taxiway
2. General Aviation T-Hangar: Construct 6-bay T-hangar
3. FAA Compliance: Acquire properties within Runway Protection Zone and Building Restriction Line
4. Terminal Area Improvements: Relocation of baggage claim, passenger parking lot improvements, signage and graphics improvements, helicopter lease lot facilities, including new building
5. Concession Improvements: Relocate security to central area, renovate existing retail space, reorient concessions to the hold room
6. Baseyard Improvements: Expansion and improvement of existing baseyard facilities
7. Utilities Improvements

The proposed improvements for Hilo International Airport are consistent with the recommended development programs for air cargo improvements, general aviation T-hangar, FAA compliance, terminal area improvements, baseyard improvements, and Noise Compatibility, as listed above.

4.9 HILO INTERNATIONAL AIRPORT MASTER PLAN

The Hilo International Airport Master Plan is part of an ongoing planning process for the Airport that builds upon previously prepared Airport master plans and development plans. Its objective is to update guidelines for future airport development that will satisfy forecast aviation demand in a financially feasible manner while addressing the community's environmental and socioeconomic issues and concerns. The products of the master planning process include the Airport master plan and the Federal Aviation Regulations (FAR) Part 150 Airport Noise Compatibility Program document. The master plan is based on a 20-year planning horizon. Subsequent development plans that provide greater detail for actual implementation and design will be guided by the master plan, which should be updated every 5-10 years.

The Hilo International Airport Master Plan Update was completed in July 2002. The FAR Part 150 Airport Noise Compatibility Program for the Airport was completed and approved by the FAA in December 2001. The following summarizes the Master Plan recommendations relevant to the proposed improvement projects:

**Air Cargo:**
A new cargo facility at the eastern end of the Airport Industrial Area is recommended. The facility will have direct access to the air carrier aircraft parking apron. This is important since much of the air cargo is transported as "belly cargo" on passenger flights. Locating the cargo facilities within the Airport Industrial Area will have the additional advantage of keeping trucks carrying cargo to and from the facility from using the passenger terminal loop road.

**Helicopter Facility:**
A new 5-acre helicopter facility is proposed west of the passenger terminal and cargo areas and southeast of the intersection of Runways 8-26 and 3-21. Placing the helicopter facility in this location should minimize interactions between helicopter and fixed-wing aircraft operations as it is over 700 feet from the centerlines of both Runways 8-26 and 3-21. Access to the helicopter facilities is provided along a
service road off Kekuanaoa Avenue. Vehicular parking could be provided either on the lease lots or between the lease lots and the service road.

**General Aviation:**
The recommended general aviation facilities are located southeast of Runway 3-21: this is well away from the air carrier and cargo operations. Space is provided to accommodate the 60 based aircraft that the forecasts...indicate will be needed by the year 2010. The existing general aviation facilities northwest of Runway 3-21 will be demolished.

**Public/Employee/Rental Car Parking Facilities:**
At present, the demand for rental car parking stalls adjacent to the rental car counters exceeds the available supply; at the same time, there is normally a surplus of public parking stalls. To correct this situation, some of the parking stalls that are currently allocated to the general public should be converted to additional rental car ready/return parking. This would not cause an immediate shortage of public parking spaces, but over 200 additional stalls will be needed to accommodate the total forecast 2010 parking needs for public, employee, and rental car parking. These can be provided by adding additional parking bays on the south side of the existing parking area, moving the employee parking into this area, and converting the existing employee parking area to public parking.

**State DOT Airports Maintenance Baseyard:**
The recommended Master Plan provides for expansion of the existing site of the Hilo International Airport DOT Maintenance Baseyard.

**Runway Protection Zones and Building Restriction Lines:**
Implementation of the proposed land use plan calls for the State to acquire additional land within runway protection zones...Where short-term funding limitations preclude immediate acquisition, avigation easements should be acquired. The funding priority for the runway protection zones...should be as follows:

1. Land within the minimum required runway protection zones.
2. Land outside the minimum required runway protection zones but within the recommended runway protection zones.
3. Land outside the minimum required runway protection zone but within the 750-foot building restriction line extending to the end of the minimum required runway protection zone.
4. Land inside the 750-foot building restriction line extending to the end of the recommended runway protection zone and outside all the areas identified above in priorities 1, 2, and 3.

It is also recommended that the Department of Transportation acquire other land adjacent to Runway 3-21 that is within the 750-foot Building Restriction Line but
outside the existing Airport Boundary. The land northwest and northeast of the
intersection of Runway 8-26 and 3-21 should have a particularly high priority.

Kanoelehua Avenue Triangle:
The triangular piece of property along Kanoelehua Avenue on the western side of the
Airport, just north of Kekuanaoa Avenue is only a few hundred feet from the runway
threshold and centerline, and it is well within the recommended Building Restriction
Line. This property should have a high priority for acquisition.

The proposed Airport improvements are consistent with the recommendations of the Hilo
International Airport Master Plan. The proposed sites for the cargo facility, heliport, general
aviation improvements, and parking improvements differ from that recommended in the
Master Plan, as the result of subsequent planning and design efforts. The proposed land
acquisitions and avigation easements are also consistent with the recommendations of the
Master Plan. However, as stated in Section 1 of this EA, the DOT-A has established a policy
to proceed with acquisitions only with the concurrence of the land owner, or at such a time
when the land otherwise becomes available.
SECTION 5
COMMUNITY CONSULTATION
5. COMMUNITY CONSULTATION

Noise levels generated by Airport activities are an ongoing concern, as there are residential areas in the Airport vicinity. Hilo International Airport participated in a voluntary noise compatibility planning process, the Federal Aviation Regulations (FAR) Part 150 Airport Noise Compatibility Planning Program, which implements portions of the Aviation Safety and Noise Abatement Act of 1979.

The FAR Part 150 Noise Compatibility Program (NCP) for the Hilo International Airport indicated that sound attenuation is needed for the residences and public facilities exposed to certain airport noise levels. The residential area most affected by Airport noise is the Keaukaha Tract 1 subdivision immediately north of the Airport boundary. The year 2005 noise exposure levels projected for the Keaukaha area are shown in Figure 5-1. The DOT-A has been in consultation with the Keaukaha community regarding the FAR Part 150 Noise Compatibility Program (NCP) for Hilo International Airport. The NCP report recommended noise mitigation measures, including air conditioning and modifications to residences to provide acoustical insulation and the construction of a 15-foot sound attenuation barrier. A discussion of the NCP is included in Section 3-9.

The purpose of the recommended 15-foot high sound attenuation barrier between the Airport and the Keaukaha Tract 1 residential subdivision was to reduce the number of noise impacted structures in the zone of high noise level north of the Airport. The year 2005 noise exposure levels projected for the Keaukaha area with the construction of the noise attenuation wall are shown in Figure 5-2. This noise attenuation wall was included among the airport improvements proposed during the pre-assessment consultation phase of this EA.

Follow-up consultation with the Keaukaha community, however, resulted in eliminating the sound attenuation wall as a recommended means of noise mitigation. Substantial concerns and opposition to the wall relative to views, aesthetics, wind impedance, and effectiveness were expressed at two community meetings, as well as through written comments and correspondence received by the DOT-A. Community sentiments against the construction of the wall were also expressed during door-to-door interviews of lessees that reside along the Airport boundary and through a questionnaire mailed to lessees in areas exposed to high noise levels. This section details the issues and concerns voiced by the Keaukaha Community during the two community meetings, during the door-to-door survey, and via mail.
5.1 EXPLANATION OF NOISE DESCRIPTORS

The noise descriptor used by the FAA to relate aircraft noise levels to land use compatibility, and to assess environmental noise in general, is the Day-Night Average Sound Level (DNL). DNL is a 24-hour average of sound levels as read from a standard sound level meter taking readings in decibels based on human hearing, or dBA. When computing the DNL, a nighttime penalty is imposed, such that sound levels which occur during the night (between 10:00 p.m. and 7:00 a.m.) are increased by 10 decibels. DNL exposure levels of 55 or less are typical of quiet rural or suburban areas. DNL exposure levels of 55 to 65 are typical of urbanized areas with medium to high levels of activity and street traffic.

The State DOT-A has adopted the 60 DNL as the aircraft noise limit which should be utilized at a planning level for noise-sensitive land uses which normally involve naturally ventilated structures, including dwellings and public use structures such as schools, libraries, churches, clinics and meeting rooms. This is more stringent than the 65 DNL limit used by the FAA nationally. The FAA has agreed to the use of this limit in the FAR Part 150 Noise Compatibility Program studies in Hawaii, but indicated that a more specific case-by-case review of recommended noise mitigation measures will be required prior to any federal funding for these proposed measures, especially within the 60 to 65 DNL contours.

Sound Exposure Level (SEL) refers to the noise level associated with a single event, such as an aircraft flying past a listener. SEL is computed from the instantaneous sound level readings times the duration of the event.

5.2 KEAUKAHA COMMUNITY MEETING: AUGUST 15, 2001

As part of the pre-assessment consultation phase of this Draft EA, the DOT-A in August 2001 attended a meeting of the Keaukaha Community Association to present an overview of the proposed improvements and receive public input. All of the proposed improvements were briefly covered before a more detailed description of improvements relating to noise mitigation was presented. The accompanying handouts included the meeting agenda, project summary, a figure showing the location of the proposed improvements, a figure showing the distribution of noise contours in the Keaukaha area with the construction of the 15-foot noise wall, and a comment form.

Comments from the Keaukaha Community were offered throughout the presentation as well as during the question and discussion period. The following issues were prevalent during the discussion:

- Options for noise mitigation
- Land acquisitions
The options under consideration for noise mitigation in the Keaukaha area had been presented at previous meetings with the Keaukaha Community Association regarding the Hilo International Airport Master Plan update and the Noise Compatibility Program. In addition to other noise mitigation measures that relate to airport curfews, military activities, and the use of runways, the following recommendations require the involvement of Keaukaha residents and were therefore priorities for discussion at the meeting:

15-Foot Sound Attenuation Wall: Construct a 15-foot high, free standing wall along the common property boundary between Hilo International Airport and Keaukaha Tract I subdivision. The wall would be approximately 40 feet from the existing fence line and would be situated within the Airport property. The approximate length of the wall would be 5,000 feet, with a gate provided at the point where the wall intersects the tsunami evacuation route. The top of the wall would be 15 feet above the elevation of Runway 8-26.

Sound Attenuation Treatment Program: Provide sound attenuation treatment for residences and public use facilities located within the 60 DNL noise contour of the Year 2005 Noise Exposure Map. Naturally ventilated commercial structures inside the 65 DNL contour should also be included in this sound attenuation treatment program. For dwellings, sound attenuation treatments that reduce interior noise levels to 45 DNL or less are required. In general, structures located between the 60 to 65 DNL contours require closure and air conditioning to achieve this design goal. At the higher noise exposure levels of 65 to 75 DNL, closure and air conditioning, plus modifications to the building envelope (new windows, doors, and in some cases, rebuilt walls and ceilings) are required to meet the 45 DNL interior design goal. Sound treatment of homes would be provided in exchange for an avigation easement for the respective property. The State would fund the renovations, as well as the purchase and installation of air conditioning units, but the maintenance and monthly cost would be the responsibility of the homeowner.

Land Exchange and Relocation: Residential structures that are located inside the 75 DNL contour are normally not acoustically treated because of the difficulties in achieving the 45 DNL interior noise level goal with normal residential construction materials and methods. In these situations, relocation of these residences is normally recommended. Continue to examine the possible exchange of lands with Hawaiian Home Lands for suitable State or private lands which could be exchanged for Keaukaha lots within the 75 DNL noise contour.

Purchase of Avigation Easements: Purchase avigation easements from lessees that are not interested in sound treatment of their homes. The easement would cover airport noise levels at or below the existing noise levels.

The subject of acquisition and/or exchange of DHHL lands tends to induce feelings of alarm and negativity within the homestead community. As discussed in Section 3 of this EA, the
development of Hilo International Airport occurred at the loss of Keaukaha Hawaiian Home Lands. Recommendations involving Airport land acquisitions and/or exchanges are of great concern to the residents of the subdivision, and, therefore, such proposed activities were a priority for discussion at the meeting. In response to questions posed by the community, it was clarified that the areas marked for acquisition are located within specific clear zones that the FAA requires for runway safety purposes, and DOT-A will not pursue such acquisitions unless the land is made available by the owner.

As for the options for noise mitigation, the general opinion voiced at the meeting was that the noise wall would not be beneficial and residents did not want it to be constructed. Subsequently, an informal show of hands indicated that 50 percent (%) of the attendees felt that the noise wall should not be constructed, 0% wanted to receive sound attenuation treatments to their homes in exchange for an avigation easement, and one person was in favor of allowing DOT-A to purchase an avigation easement for a cash amount equivalent to the cost of sound treatment. It was suggested that the noise wall should be eliminated from the list of mitigation options, allowing future planning efforts to focus on other solutions. A consensus was reached that a survey of Keaukaha residents should be done to ensure that DOT-A received input from residents who would be most affected by the noise wall.

5.3 COMMUNITY SURVEY ON NOISE WALL

An extensive survey was undertaken by the DOT-A to determine whether the noise wall should be eliminated from the list of options under consideration for noise mitigation. The noise wall was considered to be effective in significantly reducing noise levels within the 70 DNL and 75 DNL contours; residences that are located along the Airport boundary are within the 75 DNL and would be most affected by the construction of the wall. Thus, a survey form was prepared and sent to all homes within the 70 and 75 DNL. The cover letter also indicated that person-to-person interviews would be conducted for those residences along the Airport boundary.

The survey form asked three questions, with space for additional comments at the bottom of the page. The questions were as follows:

1. In general, do you think the 15-Foot Noise Wall is:
   - ___ A good idea.
   - ___ A bad idea.
   - ___ No opinion at this time.

2. If you think that the 15-Foot Noise Wall is a good idea, do you prefer:
   - ___ A solid wall with landscaping and trees.
   - ___ An earth berm with landscaping and trees.
   - ___ No opinion at this time.
3. If you think this is a bad idea, should we eliminate the 15-Foot Noise Wall as an alternative to reduce airport noise?

   Yes.  No.

A total of 31 homestead lots were identified within the 75 DNL contour along the airport boundary. All of these lots were visited on November 5 and 7, 2001. If no one was at home on the first visit, a second visit was attempted. If the resident was not at home on the second visit, or if no one present at the house could provide comments regarding the wall, a copy of the cover letter and survey along with a note inviting the resident to the next Keaukaha community meeting on November 21, 2001 was left at the entrance of the home or with whomever was at the house.

Of the 31 identified properties, eight lots were vacant, and 23 lots were occupied. Residents of eleven lots stated that the noise wall was a bad idea and should not be constructed. Residents of three lots stated that it made no difference whether the wall was built or not, and the resident of one lot indicated that they would support the wall if it were built more than 100 feet within the Airport property boundary. No one was home on both dates at four of the lots, and the persons present at the remaining four lots were unable to comment on the project.

Mail-in surveys were sent to residents of the 110 lots located within the 70 DNL noise contour that do not abut the airport boundary. With the 23 occupied lots along the airport boundary, the over-all response rate for the survey is approximately 31%, or 41 replies received out of 133 possible replies. The results of the survey are summarized below:

1. In general, do you think the 15-foot noise wall is:

<table>
<thead>
<tr>
<th></th>
<th>All Responses Received</th>
<th>Residents along Airport Boundary</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>A good idea</td>
<td>4</td>
<td>9%</td>
</tr>
<tr>
<td>A bad idea</td>
<td>28</td>
<td>61%</td>
</tr>
<tr>
<td>No opinion at this time</td>
<td>9</td>
<td>20%</td>
</tr>
</tbody>
</table>

2. If you think that the 15-foot noise wall is a good idea, do you prefer:

<table>
<thead>
<tr>
<th>Responses</th>
</tr>
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<tbody>
<tr>
<td>A solid wall with landscaping and trees</td>
</tr>
<tr>
<td>An earth berm with landscaping and trees</td>
</tr>
<tr>
<td>No opinion at this time</td>
</tr>
</tbody>
</table>
3. If you think this is a bad idea, should we eliminate the 15-foot noise wall as an alternative to reduce airport noise?

<table>
<thead>
<tr>
<th>All Responses Received</th>
<th>Residents along Airport Boundary</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>Yes</td>
<td>28</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
</tr>
<tr>
<td>No opinion at this time</td>
<td>9</td>
</tr>
</tbody>
</table>

Other ideas for noise mitigation mentioned/favored for further discussion (number of responses shown in parentheses):
- Use of quieter jets by air carriers (7)
- Runway relocation (4)
- Airport relocation (4)
- Sound attenuation/air conditioning for residences (2)
- Resident relocation (2)
- Implement mandatory flight curfews after 10 p.m.
- Creation of a noise ordinance, as done in mainland cities

5.4 KEUAHKA COMMUNITY MEETING: NOVEMBER 21, 2001

With the cooperation of the Community Association, DOT-A returned to Keaukaha to present the findings of the noise wall survey at a community meeting on November 21, 2001. The meeting handouts included the meeting agenda, results of the survey as shown above, a figure showing the distribution of noise contours in the Keaukaha area for the year 2005 (see Figure 5-1), a figure showing the distribution of noise contours with the construction of the noise wall for the year 2005 (see Figure 5-2), and a comment form.

DOT-A staff explained that the survey results clearly expressed the community’s rejection of the noise wall as a method of noise mitigation, and, that the noise wall would thus be eliminated from further consideration.

Remaining recommendations for noise mitigation included in the NCP report were briefly reviewed:

- Designation of Runway 8-26 as the preferred runway
- Designation of curfews for the use of Runway 3-21
- Designation of approach and departure paths that minimize noise impacts
- Minimization of military training operations at Hilo International Airport
- Provision of sound attenuation treatments for homes subjected to high noise levels
A list of other ideas for noise mitigation suggested by survey participants was included at the bottom of the handout summarizing the survey results. The suggestions were addressed as follows:

- **Use of quieter jets by air carriers:**
  Congress granted a waiver to airlines based in Hawaii. Therefore, Hawaiian and Aloha are not required to use the quieter Stage III aircraft. Aloha will eventually switch to Stage III jets, but this is not likely to occur until it becomes infeasible to operate their existing aircraft.

- **Runway relocation:**
  Moving the runway will not help lessen the extent of noise contours. The noise contours would simply shift along with the runway to affect other areas of Hilo.

- **Airport relocation:**
  Moving the Airport would be the best solution to the noise problem in Keaukaha. However, this option is not feasible due to the extremely large amount of funding required.

- **Sound attenuation/air conditioning for residences**
  The installation of air conditioning involves the retrofitting of doors, windows, roofs, and the use of double-wall construction. These techniques can be implemented to attenuate the sound experienced within the home to an acceptable level.

- **Resident relocation:**
  In the very high noise level areas of 75 DNL, the sound treatment of homes cannot produce sound levels that are low enough to be considered acceptable. It is more effective to relocate the residents that live within the highest noise contour.

- **Creation of a noise ordinance, as done in mainland cities:**
  A city noise ordinance cannot be enforced due to FAA jurisdiction over aircraft in flight.

Comments from the Keaukaha Community were offered during the question and discussion period. The following issues were prevalent during the discussion:

**Runway 3-21 Noise Issues Resulting from Runway 8-26 Maintenance**
Residents stated that the current noise levels in the Keaukaha area are different from the noise levels described on the maps due to the closure of Runway 8-26 for resurfacing activities. As the use of Runway 3-21 will increase during periods when weather conditions or maintenance activities prohibit the use of Runway 8-26, the
community felt that the noise levels during these periods should be addressed in the EA. Figures 5-3, 5-4, and 5-5 describe the noise levels generated during a typical departure event from Runway 8, Runway 3, and Runway 21, respectively. The noise contours here represent Sound Exposure Levels (SEL) rather than DNL, as the figures show the noise generated by a single event, the departure of a jet from a specific runway, rather than the average daily noise levels generated by all air traffic at the Airport.

During Runway 3-21 departures and landings, the Keaukaha residences near the end of Runway 21 are exposed to higher noise levels, relative to levels normally experienced during the use of Runway 8-26, which is the preferred runway. DOT-A tries to minimize the use of Runway 3-21, however, the increase in noise levels near the end of Runway 21 will occur in the future during periods when Runway 8-26 is closed for maintenance purposes, or when weather conditions dictate the use of Runway 3-21.

Relocation of Lessees Within the 75-DNL:
Questions were raised regarding how the relocation of lessees within the 75 DNL would be carried out and whether the vacated lot could later be leased to someone else. Relocation efforts would be accomplished through the purchase or acquisition of land elsewhere in Hilo by DOT-A. The land would then be transferred to DHHL via a land exchange. The resident would be provided with a house and a lot comparable to their current home. It is possible that relocation could be implemented without transfer of the land from DHHL jurisdiction, however, restrictions would need to be placed on its use. The lot could be used as an agricultural lot without a residence or as park space. In this way, the land could still serve to benefit the Keaukaha community.

Sound Attenuation Treatment of Homes:
The possibility of sound treatment of homes was discussed in further detail as to how sound attenuation would be carried out. The initial step would be to measure noise levels at the existing structure before the renovations are designed. This would ensure that the proper level of attenuation is applied and constructed. The design and construction of the improvements must be in compliance with specific guidelines in order to receive funding from the FAA. If a homeowner is planning to renovate their home already, arrangements can be made whereby the State would reimburse the homeowner for the cost of improvements if the design meets the guidelines for proper sound attenuation. A pilot program can be coordinated where those who elect to participate would be first to receive sound treatment; the community and DOT-A would have to devise a fair method by which to choose the homes to participate in the program.
The next step in pursuing a noise attenuation program is to secure funding. After the terrorist events of September 11, 2001, DOT-A's budget for capital improvements was cut in order to fund projects related to airport safety and security. The sound attenuation treatment of homes is considered to be a compliance-related project, and therefore, there is presently no funding available. A pilot program can be incorporated into the high-priority list of projects, and funding can thereby be secured, but DOT-A cannot yet provide the Keaukaha community with a specific timetable or budget constraints. As for funding for the sound treatment of homes beyond the pilot program, FAA approval of funding for any Noise Compatibility Program is contingent upon the existence of community support of the program. The community needs to endorse the selected method to prove that the program merits FAA funding. Therefore, the budget for the program will be larger with more community members supporting the program.
The meeting concluded with the announcement of the formation of a community-airport group to help sustain communication efforts between DOT-A and Keaukaha residents. The group will include community members and DOT-A staff in Hilo. DOT-A is continuing to determine the feasibility and extent of a program for the sound attenuation treatment of homes. The other options for noise mitigation that remain under consideration include the purchase of avigation easements and the relocation of residents from within the 75 DNL contour.
SECTION 6
ALTERNATIVES TO THE PROPOSED ACTION
6. ALTERNATIVES TO THE PROPOSED ACTION

6.1 CARGO FACILITY

6.1.1 No-Action Alternative

Under the No-Action alternative, the air cargo facilities at Hilo International Airport would remain in the old terminal area and the current inefficiencies would continue with the transfer of goods between inspection points in the main passenger terminal and cargo operations northeast of the runways. Many buildings and support facilities are deteriorated and would require replacement. Infrastructure, including sewer, drainage, and apron areas require improvements. The No-Action alternative would preclude the realization of all long-term benefits to the businesses that provide and utilize air cargo services at the Airport, as well as benefits to customers and the greater community of Hilo and the County of Hawaii.

The No-Action alternative would also preclude all other short- and long-term beneficial and adverse physical, environmental and socio-economic impacts described in this EA.

6.1.2 Alternative Cargo Sites Considered

Alternatives to the siting of the proposed hold cargo facility were explored as part of the preliminary design work for the cargo facility. In addition to the selected site located northwest of the existing commuter terminal, four other sites were considered as follows:

1. East of the commuter terminal, in line with the passenger terminal
   This site has similar advantages with the proposed site, being located in the same general area and differing mainly in site development layout. The proposed site has slightly greater expansion potential and flexibility, and utilizes existing cargo apron more efficiently. There are no adverse environmental effects with this alternative. Sewer and water connection points are also conveniently located near this site, and storm water could be discharged to an existing drainage ditch adjacent to the site.

2. Airport industrial area just north of the FAA Air Traffic Control Tower
   This site was considered attractive due to the space available for the cargo facility and two aircraft parking spaces in front of the facility. A water connection point is located nearby, and vehicles going to and from the facility would not need to travel around the terminal access loop road in order to access the facility. The site was eliminated because it would require the construction of a new apron and taxiway, as well as the installation of a new wastewater pump station with a force main or the installation of a septic tank/leaching field system. Drywells would also need to be installed. There are no adverse environmental effects with this alternative.
3. **East of the passenger terminal**
   This site was also attractive due to the conveniently located sewer and water line connection points. However, site development costs would be greater due to the undeveloped nature of the site and substantial grading that would be required to relocate an open channel and create an embankment. This site would also require cargo traffic to travel along the terminal loop road, increasing the already congested access road to the passenger terminal.

4. **Old terminal area**
   The old terminal area also has conveniently located water connection points, and does not require vehicular traffic to use the terminal loop. However, this site would continue to have the same inefficiencies for cargo operations which require additional transport to and from the passenger terminal area. The site also requires additional installation of drywells for drainage and a wastewater pump station or a septic tank and leaching field.

### 6.2 HELICOPTER OPERATIONS

#### 6.2.1 No-Action Alternative

The No-Action alternative for the heliport facility would be inconsistent with the recommendations of the Statewide Airport System Plan and the Hilo International Airport Master Plan. Helicopter operator’s ticket counters would continue to be located in the west end of the passenger terminal building and in the commuter/air taxi terminal. Operators would continue using the west end of the air carrier apron for helicopter parking, takeoffs, and landings, and safety concerns regarding the close proximity of helicopters on the current parking apron would remain unresolved. The existing heliport’s 11 helicopter pads are occupied and the lack of space for expansion would continue to hinder operators’ plans to acquire additional helicopters in the future. Also, the existing lack of a sheltered waiting area for passengers would continue to be an issue.

The No-Action alternative would also preclude all other short- and long-term beneficial and adverse physical, environmental and socio-economic impacts described in this EA.

#### 6.2.2 Alternative Sites Considered

In addition to the proposed site at the southwest corner of the Airport near the entrance, three other sites were examined on the Airport for relocating the existing heliport, which will be displaced by the proposed hold cargo facility. Meetings were held with helicopter operators to discuss these and other candidate sites to review the advantages and disadvantages of each alternative. These alternative sites are described and evaluated as follows:

1. **North of the FAA Air Traffic Control Tower and State DOT-Airports Maintenance Baseyard:** This site has the advantages of providing a good separation of fixed wing aircraft and helicopter operations. There would be a
clear line-of-sight from the FAA Air Traffic Control Tower enabling full control of operations. The site is proximate to utilities, and an access road and ample land are available for the development of lease lots as well as for future expansion. One disadvantage from the operators’ standpoint is decreased visibility of the helicopter operations from the main Airport road for potential customers. The placement of helicopter operations in this area could also restrict future uses, especially fixed-wing aircraft related uses.

2. **Reuse old terminal area (or demolish buildings and provide lease lots):** Helicopter operators have expressed concerns regarding the remoteness of this site from the main Airport area and difficulty for customers to find and access the site. The old terminal area would also have the potential for conflicts with fixed wing aircraft, especially if general aviation uses remain in the old terminal area. Facilities in the old terminal area are in poor condition and are within the current building restriction line and therefore cannot be extended toward the airfield.

3. **Undeveloped area east of the passenger terminal:** The apron area at the east end of the passenger terminal has been designated through the cargo design process as the interim site for the relocation of helicopter operations. Development of a permanent site could be pursued in the undeveloped area east of the apron. However, this area has operational and safety concerns cited by FAA air traffic control tower personnel and helicopter operators due to the concentration and mix of fixed wing passenger and air cargo aircraft and helicopter traffic on the passenger terminal apron and surrounding airspace.

### 6.3 GENERAL AVIATION IMPROVEMENTS

#### 6.3.1 No-Action Alternative

The No-Action alternative for the general aviation improvements would be inconsistent with the recommendations of the Statewide Airport System Plan and the Hilo International Airport Master Plan. The existing general aviation facilities at Hilo International Airport are insufficient to accommodate the existing number of aircraft and increasing level of aircraft operations. The current deficiencies, including the lack of hangar space, aircraft tie downs, and lease lots, would continue to exist under the No-Action alternative. Existing general aviation support facilities are very limited; infrastructure improvements and improvements to the aircraft parking apron are needed, as well as an aircraft wash rack.

The No-Action alternative would also preclude all other short- and long-term beneficial and adverse physical, environmental and socio-economic impacts described in this EA.
6.3.2 Alternatives

For general aviation facilities, lease lots, hangar space and tiedowns should be provided, including hangar space for 32 aircraft to accommodate projected demand. An aircraft parking apron with an area of 104,000 square feet should be provided for 26 based and itinerant aircraft parking spaces. Several options were explored for the siting of permanent general aviation facilities at the Airport:

1) relocate to the southwest corner of the Airport on presently undeveloped land
2) remain at the old terminal in the general area of their present operations
3) relocate to the southwest end of the old terminal

The undeveloped southwest corner of the Airport would have the highest development costs due to the lack of infrastructure service to the area. The location of general aviation operations southwest of the old terminal area could enable some reuse of existing buildings and the development of hangar and support facilities. Development in the old terminal area would facilitate development due to existing infrastructure and space availability with the relocation of cargo operations to the main terminal area.

6.4 PARKING IMPROVEMENTS

6.4.1 No-Action Alternative

The No-Action alternative for the parking improvements would be inconsistent with the recommendations of the Statewide Airport System Plan and the Hilo International Airport Master Plan. Parking lot modifications which include the expansion of parking facilities to accommodate future needs and reorientation of the vehicular circulation within the parking lot have been explored with the intent of further improving the efficiency of vehicular movements. Additional parking stall requirements over the planning period include 100 public, 90 employee, and 100 rental car stalls. The current parking facilities are inadequate for future demand projections, and the No-Action alternative would not allow for the improvement of circulation patterns or capacity.

The No-Action alternative would also preclude all other short- and long-term beneficial and adverse physical, environmental and socio-economic impacts described in this EA.

6.5 DOT-A BASEYARD IMPROVEMENTS

6.5.1 No-Action Alternative

The No-Action alternative for the DOT-A baseyard improvements would be inconsistent with the recommendations of the Statewide Airport System Plan and the Hilo International Airport Master Plan. Under this alternative, the DOT-A maintenance baseyard facilities would continue to be in need of upgrade and expansion to support the current level of airport operations.
The No-Action alternative would also preclude all other short- and long-term beneficial and adverse physical, environmental and socio-economic impacts described in this EA.

6.6 NOISE MITIGATION

6.6.1 No-Action Alternative

The No-Action alternative for noise mitigation would be inconsistent with the recommendations of the Statewide Airport System Plan and the Hilo International Airport Master Plan. Noise levels generated by Airport activities are an ongoing concern, as there are residential areas in the immediate vicinity of the Airport. The No-Action alternative would allow residents and businesses currently affected by high noise levels to continue to be exposed to such noise levels without abatement. Specifically, the No-Action alternative would be contrary to the Department of Transportation’s efforts to foster a positive relationship with the Keaukaha community.

The No-Action alternative would also preclude all other short- and long-term beneficial and adverse physical, environmental and socio-economic impacts described in this EA.

6.6.2 15-Foot Noise Barrier Alternative

The FAR Part 150 Noise Compatibility Program report outlines options for noise mitigation, including sound-attenuation improvements to nearby residences and the construction of a 15-foot sound attenuation wall between the Airport and the Keaukaha Tract I residential subdivision to reduce the number of noise impacted structures. It was recommended that the continuous barrier be constructed of relatively dense and stiff materials to withstand wind loads and to attenuate aircraft noise levels.

The wall was included among the airport improvements listed for the proposed project during the pre-assessment consultation phase of this Environmental Assessment (EA). However, follow up consultation with the Keaukaha community resulted in the elimination of the sound attenuation wall as a recommended means of noise mitigation. Substantial concerns and opposition to the wall relative to views, aesthetics, wind impedance, and effectiveness were expressed at two community meetings, as well as through written comments and correspondence received by the DOT-A. Community sentiments against the construction of the wall were also expressed during door-to-door interviews of lessees that reside along the Airport boundary and through a questionnaire mailed to lessees within the area that experiences higher noise levels. Thus, DOT-A will not pursue the construction of the noise wall, and dialogue with the Keaukaha community concerning airport noise issues will continue separate from the proposed improvements included in this EA.
6.7 LAND ACQUISITIONS AND AVIGATION EASEMENTS

6.7.1 No-Action Alternative

The No-Action alternative for land acquisitions and the attainment of the avigation easement would be inconsistent with the recommendations of the County of Hawaii General Plan, the Statewide Airport System Plan, and the Hilo International Airport Master Plan. Under this alternative, the Airport would remain in noncompliance with Federal Aviation Administration (FAA) safety regulations for areas near the end of runways. The regulations state that certain areas located beyond the Airport property line should be included in a clear zone referred to as the Runway Protection Zone (RPZ). These areas have been noted for acquisition. Acquisition of lands within the runway object free area portion of the Airport runway protection zones is recommended to meet minimum FAA safety requirements. Additionally, land is needed in this area to reduce penetrations of the runway safety area and runway object free area by the Airport service road around the end of the runway.

The No-Action alternative would also preclude all other short- and long-term beneficial and adverse physical, environmental and socio-economic impacts described in this EA.
SECTION 7
REQUIRED PERMITS AND APPROVALS
7. REQUIRED PERMITS AND APPROVALS

The following is a list of permits and approvals that may be required prior to the construction of the proposed improvements:

- National Pollutant Discharge Elimination System (NPDES) Storm Water Construction
- Erosion Control Plan
SECTION 8
ANTICIPATED DETERMINATION OF FONSI
8. DETERMINATION OF FONSI

The proposed project involves the construction of the following improvements at Hilo International Airport in Hilo, Hawaii:

1. Development of a new hold cargo facility northwest of the main passenger terminal complex, including associated roadway, vehicular parking, infrastructure, and aircraft parking apron improvements;
2. Relocation of helicopter operations to the southwest corner of the Airport, including the development of lease lots, operational areas, and infrastructure;
3. General aviation facilities, including an aircraft parking apron, a new T-hangar, wash rack, aircraft tie-downs, and lease lots in the Old Terminal Area;
4. Expansion of public and employee parking areas;
5. Expansion of the DOT-A maintenance baseyard;
6. Noise mitigation projects, including sound attenuation for nearby residences and a 15-foot noise barrier between the Airport and the Keaukaha residential subdivision;
7. Acquisition of the triangular area between Kanoaehau Avenue and Runway 3, acquisition of a small area southwest of Runway 3 and west of Kanoaehau Avenue, and acquisition of a small area immediately northeast of Runway 21 for runway protection zone areas;
8. Acquisition of an avigation easement for the Runway 3 runway protection zone area.

Potential impacts of the proposed project have been evaluated in accordance with the significance criteria of Section 11-200-12 of the State of Hawaii Department of Health Administrative Rules. Discussion of the project's conformance to the significance criteria is presented as follows:

(1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;

The proposed project is not anticipated to involve any construction activity that may lead to a loss or destruction of any natural or cultural resource. There is little potential for encountering such resources, as most of the area within the site has already been graded and landscaped for the existing Hilo International Airport facilities.

(2) Curtails the range of beneficial uses of the environment;

The proposed project will not curtail the beneficial uses of the environment. Use of the project site for the proposed improvements would be consistent with its current use as part of the Hilo International Airport.
(3) Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders;

The proposed project is not in conflict with the long-term environmental policies, goals, and guidelines of the State of Hawaii. As presented earlier in Section 4, the project's potential adverse impacts are associated only with the short-term construction-related activities, and such impacts can be mitigated through adherence to standard construction mitigation practices.

(4) Substantially affects the economic or social welfare of the community or state;

The proposed project will have no adverse effects on the economy or social welfare of the City of Hilo or the County of Hawaii. Long-term social and economic benefits will manifest through the availability of timely, cost-effective air cargo transport of goods to and from market, improved visitor tour service as a result of the proposed helicopter and general aviation facilities, improved DOT-A baseyard support capacity, improved airport parking, noise mitigation efforts, and improved airport safety through compliance with FAA standards.

(5) Substantially affects public health;

The proposed project will properly serve the people of Hilo and Hawaii County by enhancing the facilities on which the community relies for receipt of perishable food items and shipment of local products. Noise mitigation efforts and revised helicopter ingress and egress routes will also benefit communities currently exposed to high levels of Airport noise. Airport safety will also be improved through the attainment of avigation easements and land acquisitions.

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

No adverse secondary impacts are anticipated as a result of the construction activities or long-term operation of the proposed project. The proposed improvements are in concert with the recommendations of applicable sections of the County of Hawaii General Plan, the Statewide Airport System Plan, and the Hilo International Airport Master Plan, as stated in Section 5.

(7) Involves a substantial degradation of environmental quality;

Construction activities associated with the proposed project are anticipated to result in negligible short-term impacts to noise, air-quality, and traffic in the immediate vicinity. With the incorporation of the recommended mitigation measures during the construction period, the project will not result in degradation of environmental quality.
(8) **Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions;**

No cumulative effects are anticipated, inasmuch as the proposed project involves the redevelopment of a site in a manner consistent with its current use as an airport.

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

There are no known, threatened, or endangered species of flora, fauna, or associated habitats located on the project site that could be adversely affected by the construction and operation of the proposed project.

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

Operation of construction equipment would temporarily elevate ambient noise levels and concentrations of dust and exhaust emissions in the vicinity of the project site. The project is consistent with the recommendations of the Hilo International Airport Noise Compatibility Program.

(11) **Affects or is likely to 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;**

The project is located within Zone X, areas designated to be outside the 500-year flood plain. The proposed improvements will be constructed to comply with County of Hawaii building codes, and the drainage improvements described in Section 4 will minimize any potential of localized flooding.

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

The proposed project will alter the visual setting by adding the cargo facility at the west end of the existing air carrier apron and a new T-hangar near the Old Terminal. The new structures, however, will comply with all applicable development standards of the existing zoning and will not affect scenic views.

(13) **Requires substantial energy consumption.**

Construction and operation of the project will not require substantial increases in energy consumption.
SECTION 9
CONSULTATION
9. CONSULTATION

9.1 PRE-ASSESSMENT CONSULTATION

The following agencies, elected officials and organizations were consulted during the preparation of the Draft EA. Of the 17 parties that formally replied during the pre-assessment period, some had no comments (✓) while others provided substantive comments (✓✓). All written comments are reproduced herein.

Federal Agencies
✓ U.S. Army Corps of Engineers
✓✓ U.S. Customs Service
U.S. Department of Agriculture, Animal and Plant Health Inspection Service
U.S. Department of Transportation, Federal Aviation Administration
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service

State Agencies
✓✓ Department of Agriculture
Department of Business, Economic Development and Tourism (DBEDT)
Office of Planning
Department of Defense (DOD), Hawaii Air National Guard
DOD Hawaii Army National Guard, State Army Aviation Office
✓✓ Department of Hawaiian Home Lands
Department of Health (DOH)
✓✓ DOH Office of Environmental Quality Control
✓ Department of Land and Natural Resources (DLNR)
DLNR Historic Preservation Division
DLNR Land Division
Department of Transportation
✓✓ Office of Hawaiian Affairs
University of Hawaii at Manoa, Environmental Center

County Agencies
✓✓ Department of Public Works
Department of Research and Development
✓✓ Department of Water Supply
✓✓ Planning Department

Elected Officials
State Senator David Matsuura
State Representative Jerry L. Chang
Hawaii County Councilman Aaron Chung
Other Interested Parties

✔️ Above It All
Airlines Committee of Hawaii
Air-Flo Express, Inc.
Airborne Freight Corporation
Aloha Airlines, Inc.
Century Aviation
Commodity Forwarders
Federal Express Corporation
General Aviation Council of Hawaii
Hawaii Airline Liaison Office
Hawaii Agriculture Industry
Hawaii Flight Academy
Hawaii Orchid Air
Hawaiian Airlines, Inc.
Helicopter Consultants of Maui, dba Blue Hawaiian Helicopters
Island Hoppers
K & S Helicopters, Inc.
Kamehameha Schools

✔️ Keaukaha Community Association
Leslie B. Ito, dba Air Freight Specialist
Murrayair Ltd.
Safari Aviation, Inc.
Sierra Club, Hawaii Chapter
Sunshine Helicopters
Tropical Helicopters

✔️ Volcano Helicopters

Individuals

✔️ Jacob S. Kiko, Jr.
Allen Tim Sing
Ann Paulino
Francine Y. Lee et al., Yap Mew Kong Trust

✔️ Genesis Lee Loy

✔️ Reid Y. Furutani et al., Able Electric, Inc.
Diane Uyeda

✔️ Hayato Okino et al.
Albert Koizumi et al.
Janice M. Oshiro Hwang et al.
9.2 DRAFT EA CONSULTATION

Copies of the Draft EA were sent to the agencies, organizations, and individuals listed below, with a request for their comments on the project. A total of seven (7) comment letters were received. Of those who formally replied, all provided comments (√√). All written comments and responses are reproduced herein.

Federal Agencies

√√ U.S. Army Corps of Engineers
U.S. Customs Service
U.S. Department of Agriculture, Animal and Plant Health Inspection Service
U.S. Department of Transportation, Federal Aviation Administration
U.S. Fish and Wildlife Service

State Agencies

Department of Agriculture
Department of Business, Economic Development and Tourism (DBEDT)
Office of Planning
Department of Defense (DOD), Hawaii Air National Guard
DOD Hawaii Army National Guard, State Army Aviation Office
Department of Hawaiian Home Lands
√√ Department of Health (DOH)
√√ DOH Office of Environmental Quality Control
Department of Land and Natural Resources (DLNR)
DLNR Historic Preservation Division
√√ DLNR Land Division
Department of Transportation
Hilo Public Library
Keaau Public and School Library
Laupahoehoe Public and School Library
√√ Office of Hawaiian Affairs
University of Hawaii at Manoa, Environmental Center

County Agencies

Department of Public Works
Department of Research and Development
Department of Water Supply
Planning Department

Elected Officials

State Senator David Matsuura
State Representative Jerry L. Chang
Hawaii County Councilman Aaron Chung
Other Interested Parties

Above It All
Airline Committee of Hawaii
Air-Flo Express, Inc.
Airborne Freight Corporation
Century Aviation
Commodity Forwarders
Federal Express Corporation
General Aviation Council of Hawaii
Hawaii Airline Liaison Office
Hawaii Agriculture Industry
Hawaii Flight Academy
Hawaii Orchid Air
Helicopter Consultants of Maui, dba Blue Hawaiian Helicopters
Island Hoppers
Kamehameha Schools
Keaukaha Community Association
Leslie B. Ito, dba Air Freight Specialist
Murrayair Ltd.
Safari Aviation, Inc.
Sierra Club, Hawaii Chapter
Sunshine Helicopters
Tropical Helicopters
Volcano Helicopters
COMMENT AND RESPONSE LETTERS
FROM THE PRE-ENVIRONMENTAL ASSESSMENT
CONSULTATION
Civil Works Technical Branch

Mr. Jerry H. Natsuda, Airports Administrator
Department of Transportation
Airports Division
460 Rodgers Boulevard, Suite 700
Honolulu, Hawaii 96819

Dear Mr. Natsuda:

Thank you for the opportunity to review and comment on the Pre-Assessment Consultation for Various Projects at the Hilo International Airport, Hilo, Hawaii. Due to the broad base of projects being proposed for the existing airport, an evaluation could not be completed at this time. We will provide site specific information as plans for each project are developed in the future. However, any work performed within the 100-year floodplain will have to adhere to the requirements of the Federal Emergency Management Agency. Additionally, the need for a Department of the Army permit will be provided on a project-by-project basis.

If you require additional information, please feel free to contact Mr. Joseph Dobinich of our Civil Works Technical Branch staff at (808) 438-8876.

Sincerely,

[Signature]

Janet Pimentel, P.E.
Chief, Civil Works
Technical Branch

Mr. James Peena, P.E.
Chief, Civil Works Technical Branch
Department of the Army
U.S. Army Engineer District, Honolulu
Yok Shinite, Nanu 96816-0400

Dear Mr. Peena:

Subject: Pre-Assessment Consultation
Hilo International Airport Environmental Assessment
Study Project No. AI011-01

Thank you for your letter regarding the subject Environmental Assessment (EA). We will continue to work closely with your department in the event that a Department of the Army permit is required.

We appreciate your interest and participation in the environmental review process. Your letter will be included in the forthcoming Draft EA. Please contact Ms. Lynn Beanes, Planner, at 838-8811, to clarify any questions you may have.

Sincerely,

[Signature]

ROY K. SAKATA
Acting Airports Administrator

[Signature]

Wilson Okamoto & Associates, Rodney Funakoshi

August 5, 2002
Mr. Jerry M. Matsuda, P.E.
Airports Administrator
400 Rogers Blvd., Suite 700
Honolulu, HI 96819

Dear Mr. Matsuda:

This is in response to your letter of June 28, 2001, in which you requested comments regarding the environmental assessment for the improvement projects at the Hilo International Airport.

The U.S. Customs Service has no comments to offer regarding the environmental assessment.

However, we do note that one of the projects being planned is a General Aviation Facility. It is requested that Customs be included in any future planning meetings for this facility. At the Hilo International Airport, Customs is currently processing approximately 30 direct foreign arrivals of general aviation aircraft each year. It is anticipated that this number will continue to increase in the coming years.

It is essential that the General Aviation Facility include an appropriate facility for the federal inspectional agencies. Processing of documents for the aircraft as well as, inspection of the crew, passengers and their baggage and cargo is a requirement for both arrival and departure procedures.

We are looking forward to meeting with your staff and the facility contractors to assist in the planning process.

The U.S. Customs point of contact for this matter is Assistant Port Director Harley J. Carter. Telephone # 808-522-8000 Ext. 143.

Sincerely,

[Signature]

Port Director

Mr. Nat H. Aycocx, Port Director
U.S. Customs Service
Pacific Tower, Suite 2500
1001 Bishop Street
Honolulu, Hawaii 96813

Dear Mr. Aycocx:

Subject: Pre-Assessment Consultation
Hilo International Airport Environmental Assessment
State Project No. AEH01-03

Thank you for your letter regarding the subject Environmental Assessment (EA). Your comment regarding the future planning of the General Aviation Facility is acknowledged and we intend to coordinate with your agency, general aviation operators, and other appropriate parties to assist in the planning process.

We appreciate your interest and participation in the environmental review process. Your letter will be included in the forthcoming Draft EA. Please contact Ms. Lynn Becomes, Planner, at 838-8811, to clarify any questions you may have.

Sincerely,

[Signature]

ROY K. SAKATA
Acting Airports Administrator

cc: Witten Okamoto & Associates, Rodney Fonashiki
Jerry,

Thanks. It appears that not all of my last message made it. I just want to add that Hawaiian shearwater and the Hawaiian duck are listed species, that may occur in the vicinity of the proposed project.

Aloha,

Kevin B. Foster
U.S. Fish and Wildlife Service
200 Ala Moana Blvd., Ste 3-122
Honolulu, HI 96815
Telephone 808/542-3441
Fax 808/542-3470
Email kevin_b_foster@fws.gov

Jerry

This is in response to your e-mail. Ben Schlakak will follow up on your request. Attachment:

Kevin B. Foster
foster_b.fw.gov

Jerry_matuda@fsvx.state.hi.us

Harriet_Tsai@fsvx.state.hi.us

Steve_Takahashi@fsvx.state.hi.us

To: Jerry_matuda@fsvx.state.hi.us

Subject: Re: Pre-assessment Consultation - Hilo Int'l Airport Environmental Assessment

This is in response to your e-mail. Ben Schlakak will follow up on your request. Attachment:

Kevin_B_Foster@fws.gov

Jerry_matuda@fsvx.state.hi.us

Hawaii_Tsai@fsvx.state.hi.us

Steve_Takahashi@fsvx.state.hi.us

To: Jerry_matuda@fsvx.state.hi.us

cc: kevin_b_foster@fws.gov

Harriet_Tsai@fsvx.state.hi.us

Subject: Pre-assessment Consultation - Hilo Int'l Airport Environmental Assessment

Jerry,

Per our telephone conversation (July 12, 2001), I would appreciate it if you could mail to me a copy of the subject draft EA when it becomes available. We are interested in reviewing this project for potential impacts to federally listed species that may occur in the vicinity of the proposed project site. These species may include the Hawaiian hawk but not any of the Hawaiian goose. I am also interested in the potential impacts to listed species located in the wetlands next to the airport. Steve Takahashi and I are also looking into the possibility of adding the wetlands to the proposed project site.

Kevin B. Foster
U.S. Fish and Wildlife Service
200 Ala Moana Blvd., Ste 3-122
Honolulu, HI 96815
Telephone 808/542-3441
Fax 808/542-3470
Email kevin_b_foster@fws.gov
Mr. Kevin B. Foster
U.S. Fish and Wildlife Service
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96815

Dear Mr. Foster:

Subject: Pre-Assessment Consultation
Hilo International Airport Environmental Assessment
State Project No. AH1011-03

Thank you for your e-mail message regarding the subject Environmental Assessment (EA). The presence of the federally listed species of Hawaiian’s Shearwater and the Hawaiian dark-rumped petrel will be documented in the forthcoming EA.

We appreciate your interest and participation in the environmental review process. Your comment will be included in the Draft EA. Please contact Ms. Lynn Becomes, Planner, at 838-8812, to clarify any questions you may have.

Sincerely,

ROY K. SAKATA
Acting Airports Administrator

c: Wilson Okamoto & Associates, Rodney Fumakoshi
To: Jerry M. Matsuda, Administrator
Airports Division
Department of Transportation

From: James J. Nakatani, Chairperson
Board of Agriculture

Subject: Environmental Assessment
Hilo International Airport Improvements
State Project: AH1011-03
TMC: 2-1-12; por. 9
2-1-20: 14, 40, 41
2-2-37: 41
2-2-35: 68-73

Thank you for the opportunity to comment on the subject improvements. One concern of the Hawaii Farm Bureau Federation's Commodity Action Group is that the hold cargo facility be designed to readily accommodate the storage needs of different crops without requiring expensive alterations. Likewise, the Plant Quarantine inspection program may have some recommendations regarding the specific location, layout, and improvements that would support the efficient and cost-effective inspection of air cargo.

Should you have any questions, please contact Earl Yamamoto at 973-9466.

c: Melvin Enriquez, Supervisor, Hilo Plant Quarantine Branch
Hawaii Farm Bureau Federation

TO: JAMES J. NAKATANI, CHAIRPERSON
BOARD OF AGRICULTURE

FROM: BRIAN K. MINAMI, DIRECTOR OF TRANSPORTATION

SUBJECT: PRE-ASSESSMENT CONSULTATION
HILO INTERNATIONAL AIRPORT ENVIRONMENTAL ASSESSMENT
STATE PROJECT NO. AH1011-03

Thank you for your letter regarding the subject Environmental Assessment (EA). Your letter noted that the Hawaii Farm Bureau Federation's Commodity Action Group would like the hold cargo facility to be designed to readily accommodate the storage needs of different crops without requiring expensive alterations. We have worked with air cargo operators and freight forwarders from the pre-design phase of the project through the present to ensure that the existing areas and utility improvements will effectively support the tenants.

You also commented that the Plant Quarantine inspection program may have recommendations regarding the design of a space to support the efficient and cost-effective inspection of air cargo. The State Department of Agriculture, most notably the Plant Quarantine Branch, has been involved in the design of the space designated for agency use. The recommendations made by your Department have been incorporated into the design.

We appreciate your interest and participation in the environmental review process. Your letter will be included in the forthcoming Draft EA. Please contact Ms. Lynn Becomes, Planner, at 833-8884, to clarify any questions you may have.

c: Wilson Otamoto & Associates, Rodney Funakoshi
July 26, 2001

To:       Jerry M. Matsuda, Airports Administrator
           Department of Transportation (AIR-P)

From:     Darrell Yagodich, Administrator
           Planning Office

Subject:  Pre-Assessment Consultation
           Hilo International Airport Environmental Assessment
           State Project No. AH0111-03
           Tax Map Key: 2-1-12:9 (porc. 2-1-20:14, 40, 41; 2-2-37:41; 2-2-35:68-073)

Thank you for the environmental assessment project summary for various improvements proposed for the Hilo Airport. The improvements and actions described appear to reflect the first phase of developments proposed in the Hilo International Airport Master Plan which was completed last year by the Department of Transportation (DOT).

As we stated during consultations for that project, the Department of Hawaiian Home Lands (DHHL) views the incompatibility between airport operations and the adjacent residential communities as a health and safety issue. The DHHL wants to see reductions of current adverse impacts on existing community facilities and individual households before any new development occurs at the airport.

What is the status of actions to eliminate excessive noise impacts within buildings at Keaukaha Elementary School? When will relief from excessive aircraft noise be offered to the 230 Keaukaha Tract-1 homes that would be exposed to noise greater than 60 DNL?

Following are DHHL comments in response to specific items in your Project Summary for the environmental assessment (EA).

Mr. Jerry M. Matsuda
July 26, 2001
Page 2

1. Hold Cargo Facility

We are concerned more about the increased aircraft and ground traffic that would result after construction of this new facility.

Would cargo flights increase? How many and what types of aircraft; how noisy would they be; anticipated times of landings and takeoffs? Which runways would be used? Explain necessity for any flights during night hours.

Would vehicular traffic entering and leaving the airport increase? How many and what types of vehicles; anticipated times when they would add to local traffic? Will the 150 parking and loading stalls that will be added be adequate to handle the traffic?

2. Helicopter Facilities

Describe current and anticipated helicopter operators and the purposes for their activities. Discuss how helicopter flights will change due to relocation to new facilities.

Would helicopter flights increase? How many and what types of aircraft; how noisy would they be; anticipated times of landings and takeoffs? Would adjusted flight paths go over residential areas not overflow under current operations? Will there be any helicopter flights during night hours?

3. General Aviation Facilities

Improvements to the seven-acre site near the Old Terminal are proposed to include water, wastewater, drainage, electrical and communications to support future growth of general aviation. The DHHL is evaluating future use of its adjacent 11.665-acre parcel (TMC 2-1-12:70) and would like to coordinate planning for future access and utility services. Please share any plans for adjusting access, roadways, and fencing.

The nature of general aviation operations should also be described in terms of the frequency, intensity and timing of aircraft noise and fume impacts on the adjoining neighborhoods.
4. Parking
Access and adequate circulation and parking are of interest to all users of the Airport. Are new alternative routes being considered for accessing the Airport?

5. DOT-A Hangar Expansion
No specific comment.

6. Noise Mitigation
Appropriate timing of specific projects recommended in the Airport Master Plan is critical. We believe that relief should come first to those in the community most adversely impacted by excessive aircraft noise and fumes before spending money on airport capital improvements. The airport is responsible for all adverse impacts that spill over into the community. All cumulative impacts should be addressed; i.e., if acoustical insulation is necessitated, the DOT should also cover the costs for air conditioning and increased electric bills.

From past public meetings, the DOT is aware that the proposed 15-foot high sound attenuation barrier (which it proposes to be continuous and more than one mile long) is not popular with many local residents because it would be an obstacle to evacuation from shoreline areas during tsunami alerts, and would degrade tradewinds and views. Rejection of this proposal by the community does not relieve DOT of responsibility for pursuing other mitigation approaches.

7. Land Acquisitions and Aviation Easements
The DOT perspective for satisfying FAA requirements for land acquisitions or easements must also consider the needs and concerns of current owners and occupiers of the targeted lands. The lots adjacent to the NE end of Runway 21 proposed for acquisition through a land exchange with DHHL are currently under residential homestead leases. (Tak Map Key 2-1-10:14, 49, 41) Asking people to relocate from their homes is a serious matter; the DOT should be timely, empathetic and generous in its direct negotiations with households they see a need to displace.

In seeking land exchanges, the well-being and satisfaction of homestead families is a primary concern of the DHHL and its executive board, the Hawaiian Homes Commission. Has the DOT identified suitable areas for relocating households?

Adverse impacts from airport operations on the utility and value of all Hawaiian home lands is also a concern.

8. Land Use Designations
While current State and County of Hawaii land use designations allow for airport uses of the airport property, “conditional zoning” may be sought to regulate and control adverse impacts that spill over onto neighboring properties. The use of this regulatory method should be considered as an alternative in the EA and its impacts, positive and negative, analyzed and discussed.

9. Anticipated Impacts
A Finding of No Significant Impact (FONSI) for this project should not be considered because the proposed changes do not reduce and may compound existing excessive impacts that are adverse to both human health and safety. Noise abatement and mitigation measures similar to what is in the current proposal were presented back in 1992, but nothing significant has happened since. Existing adverse impacts should be mitigated before any new development is initiated within the airport.

Noise and air quality impacts should be actually measured rather than "estimated."

Please provide us with the draft environmental assessment, and request that copies also be sent to the Koakaua Community Association and households identified for possible relocation. We look forward to consultations relative to Title VI Environmental Justice requirements of the Civil Rights Act and project eligibility for federal funding.

If you have any questions regarding our comments, please feel free to call me at 586-3836, or Joe Chu at 587-6421.
TO: DARRELL YAGODICH, ADMINISTRATOR
DEPARTMENT OF HAWAIIAN HOME LANDS

FROM: JERRY M. NAKUSA, P.E.
AIRPORT ADMINISTRATOR

SUBJECT: PRE-ASSESSMENT CONSULTATION - HNLG INTERNATIONAL AIRPORT ENVIRONMENTAL ASSESSMENT, HALO, HAWAII

August 10, 2001

Thank you for your letter of July 26, 2001, regarding the subject Environmental Assessment (EA). We offer the following in response to your comments:

1. Hold Cargo Facility - The proposed hold cargo facility is not expected to generate increased cargo operations as the facility is essentially a relocation and consolidation of facilities currently located elsewhere on the airport. Responses to your specific questions will be provided in the forthcoming Draft EA.

2. Helicopter Facilities - As with the cargo facility, the new helicopter facility is a relocation of existing operations. Responses to your specific questions will be addressed in the forthcoming Draft EA.

3. General Aviation Facilities - We intend to coordinate future infrastructure improvements in the Old Terminal Area with your department and other agencies having land holdings in the area.

4. Parking - An additional access road to the airport is being planned by the County through the Paliaina Street extension, as indicated on the current General Plan Facilities Map.

5. DOT-A Baseyard Expansion - No response required.

Darrell Yagodich
August 10, 2001

6. Noise Mitigation - Your concerns are acknowledged and will be addressed as much as possible. For your information, the noise abatement project for Kieukahua School is scheduled for bid by December 2001, with completion of improvements by October 2002. For residential sound abatement, no set schedule for improvements has been established. The Federal Aviation Administration (FAA) approval of the Noise Compatibility Program is expected by October 2001, after which we can pursue Federal funding for mitigation measures in continuing consultation with the Kieukahua community.

7. Land Acquisitions and Aviation Estates - There remains a need to acquire certain lands within the Runway Protection Zone. However, in light of concerns which have been raised, we have reevaluated our land acquisition program and will proceed only with the concurrence of the homeowner or at such time that the land owner becomes available.

8. Land Use Designations - We are not aware of any "conditional zoning" provisions in the County of Hawaii Zoning Code; however, we will address the thrust of this comment in the forthcoming Draft EA.

9. Anticipated Impacts - The proposed improvements do not result in any increased impacts, which cannot be adequately mitigated. Relative to Title VI Environmental Justice requirements, consultation with the Kieukahua Community has been initiated with a meeting scheduled for Wednesday, August 15, 2001, 6:30 p.m. at the Kieukahua School. Copies of the Draft EA will be provided to the Kieukahua Community Association and your office.

We appreciate your comments and will endeavor to address your concerns. Please contact Lynn Becomes, Planner, at (808) 310-8812, to clarify any questions you may have.

c: Wilson Okamoto & Associates (R. Fukekoshi)
Federal Aviation Administration (G. Melhouse)
July 24, 2001

Mr. Brian Minai, Director
State Department of Transportation
809 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Minai:

Subject: Pre-Assessment Consultation for Hilo International Airport
State Project RAH1001-03

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

1. The expected increase in cargo activity and other airport activity will intensify the likelihood that alien pest species will enter the island of Hawaii. Please review the existing alien species prevention plan for Hilo Airport and develop and implement a plan to prevent the entry of unauthorised alien species. A description of the alien species prevention plan should be included in the environmental assessment.

2. Please evaluate the visual impacts of the proposed noise barrier.

3. Please describe the number of bird strikes associated with Hilo Airport and describe mitigation measures to minimize future incidences.

4. Please describe the relationship between the airport expansion and growth in Hilo and its surrounding area.

5. The environmental assessment should include the demand forecasts for passengers, cargo and aircraft and landings for Hilo Airport.

6. Please refer to the Kahului Airport EIS as a guide for preparing the environmental assessment.

Should you have any questions, please call Jaysen Thigman at 586-4185.

Sincerely,

[Signature]

Genevieve Salamone
Director

August 9, 2002

TO: GENEVIEVE SALAMONE, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM: BRIAN K. MINAI
DIRECTOR OF TRANSPORTATION

SUBJECT: PRE-ASSESSMENT CONSULTATION
HILO INTERNATIONAL AIRPORT ENVIRONMENTAL ASSESSMENT
STATE PROJECT #: A110101-03

Thank you for your letter in response to our pre-assessment consultation regarding the subject Environmental Assessment (EA).

Your concerns will be addressed in the forthcoming Draft EA. Generally, the proposed actions do not constitute an expansion of the Airport. Facilities supporting the hold cargo and helicopter operations are being relocated to improve efficiencies and reduce on-airport conflicts.

Regarding the potential for alien species, we would note that current and planned overseas air cargo activities at Hilo International Airport consist of outbound air cargo only.

We appreciate your interest and participation in the environmental review process. Your letter will be included in the forthcoming Draft EA. Please contact Ms. Lynn DeCorte, Planner, at (808) 838-8111 to clarify any questions you may have.

MEMORANDUM:

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

FROM: Harry M. Yada, Acting Administrator
Land Division

SUBJECT: Pre-Assessment Consultation for Hilo International Airport State of Hawaii Department of Transportation Project No.: AH1011-03 - THMC: 3/17/2-1-12; post of 9 2-1-12: 14, 40, 41, 2-2-35; 41 and 2-2-35: 56-73
Hilo, Island of Hawaii, Hawaii

Thank you for including us in the Pre-Assessment Consultation for the Hilo International Airport State of Hawaii Department of Transportation Project No.: AH1011-03.

Enclosures and other documents covering the proposed matter were distributed to our Department’s Divisions of Aquatic Resources, Forestry and Wildlife, State Parks, Boating and Ocean Recreation, Historic Preservation, Commission on Water Resources Management and Land Division's Hawaii District Land Office, Engineering Branch & Planning and Technical Services Branch for their review and comment.

Please review the attached document and submit your comments (if any) on Division letterhead within the time requested above. Should you need more time to review the subject matter, please contact Nick Vaccaro at ext.: 7-0438.

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

(C) We have no comments.

Signed: [Signature]
Date: 7/23/01
XXX Division of Aquatic Resources
XXX Division of Forestry & Wildlife
Na Ala Heiau Trails
XXX Division of State Parks
XXX Division of Boating and Ocean Recreation
XXX Historic Preservation Division
XXX Commission on Water Resource Management
Land Division Branches of:
XXX Planning and Technical Services
XXX Engineering Branch
XXX Hawaii District Land Office
Shoreline Processing Services

FROM: Harry M. Yada, Acting Administrative Officer
Land Division

SUBJECT: Pre-Assessment Consultation for Hilo International Airport
State of Hawaii Department of Transportation Project No.
AH1011-03 - TKM: 3 1/8; 2-1-12; por 9-2-1-20: 14, 40, 41; 2 -
2-37; 41 and 2-2-35; 69 - 73, Hawaii

Please review the attached document and submit your comments if any on Division letterhead within the time requested above. Should you need more time to review the subject matter, please contact Nick Vaccaro at ext. 7-0438.

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

( ) Comments attached.

Signed: __________
Date: __________

WE HAVE NO COMMENTS.
TO:
DIERDRE MAMIYA, ADMINISTRATOR
DEPARTMENT OF LAND AND NATURAL RESOURCES

FROM:
ROY K. SAKATA
ACTING AIRPORTS ADMINISTRATOR

SUBJECT:
PRE-ASSESSMENT CONSULTATION
HELO INTERNATIONAL AIRPORT ENVIRONMENTAL ASSESSMENT
STATE PROJECT NO. AH1011-D3

Thank you for your letter regarding the subject Environmental Assessment (EA). It is acknowledged that the project sites are outside the 500-year flood plain.

We appreciate your interest and participation in the environmental review process. Your letter will be included in the forthcoming Draft EA. Please contact Mr. Lyn Bencos, Planner, at 836-8831, to clarify any questions you may have.

cc: Wilson Okamoto & Associates, Rodney Funakoshi
Mr. Jerry M. Matsumoto, P.E.,
July 26, 2001

Page Two

We are in agreement with the Department of Hawaiian Home Lands (DHHL) that the reduction of current adverse impacts on existing community facilities, households and individuals should be a high priority. Testing for both air quality and excessive noise baseline data must be gathered and reviewed to assess these actual impacts on the community and individual households, schools and other public facilities. The baseline data can also be used to measure any mitigation activities that would be implemented.

It is noted that expansion plans include the need to acquire several residential homes. Asking people to relocate is a serious matter, DOT and DHHL should work together in a timely, sympathetic and generous manner in direct negotiations with the community. Every effort should be made to place them within the existing community.

There are a number of community concerns that have been raised. There is strong support for testing the basing for the children at Keaauka School. Further, there is strong community support for relocation and air-conditioning of the school so that minimum standards will be met and instruction will not be disrupted. The community has expressed reservations regarding the proposed 15-foot high sound attenuation barrier to be constructed between the airport and Keaauka Road. They note that this will obstruct their view, reduce the flow of air and block the major thoroughfare route. Other concerns include increased traffic, possible change of flight pattern and increased noise and air pollution. We suggest you conduct further discussions with residents and the community on these issues as soon as possible.

In summary, OHA views the incompatibility between airport operations and the adjacent residential communities as a health and safety issue. Reductions of current highest priority. The community should be kept informed and have the opportunity to provide input as you address mitigation measures.

If you have further questions, please contact Jerry H. Nemi at 354-1297.

Sincerely,

Colin C. Kippen, Jr.
Deputy Administrator

cc OHA Board of Trustees
Ron Ahlo, Acting Administrator
Uluakalani Shinko, Hoal CAC
August 9, 2002

TO: COLIN C. KIPPEL, JR., DEPUTY ADMINISTRATOR
OFFICE OF HAWAIIAN AFFAIRS

FROM: ROY K. SAKATA
ACTING AIRPORTS ADMINISTRATOR

SUBJECT: PRE-ASSESSMENT CONSULTATION
HILO INTERNATIONAL AIRPORT ENVIRONMENTAL ASSESSMENT
STATE PROJECT NO: AH101-93

Thank you for your letter regarding the subject Environmental Assessment (EA).

The Federal Aviation Administration has reviewed the proposed actions and informed us the proposed actions do not require an assessment pursuant to the National Environmental Protection Act. Section 106, consultation will be pursued if determined to be needed.

Notwithstanding, we have undertaken a thorough evaluation of the potential environmental and historical/cultural impacts of the proposed action, including studies addressing the impacts of air quality, noise, traffic, flora and fauna, archaeological, and cultural resources. Archaeological and cultural impact assessment studies will be included in the forthcoming Draft EA.

In response to your concerns and those raised from the Department of Hawaiian Home Lands (DHH), we have also consulted with the Keaukaha residential community to seek their input. As a result of a survey and two community meetings held in August and November 2001, we have eliminated the proposed recommendations for a noise barrier wall. We will also not be undertaking any forced relocation of residents from the High Noise Area, and will continue to maintain a continuous dialogue with DHH and the Keaukaha community as we develop the EA.

We appreciate your interest and participation in the environmental review process. Your letter will be included in the forthcoming Draft EA. Please contact Mr. Lynn Becerra, Planner, at E38-881, to clarify any questions you may have.

July 18, 2001

Jerry M. Matsumoto, P.E.
Airports Administrator
Department of Transportation
Airports Division
400 Rodgers Boulevard, Suite 700
Honolulu, Hawaii 96819-1850

SUBJECT: PRE-ASSESSMENT CONSULTATION
HILO INTERNATIONAL AIRPORT ENVIRONMENTAL ASSESSMENT

We acknowledge receipt of your letter concerning the subject matter, and provide you with our comments as follows:

1. Any building construction shall conform to all requirements of code and statutes of the County of Hawaii.

2. All development generated runoff shall be disposed on site and shall not be directed toward any adjacent properties.

3. All earthwork and grading shall be in conformance with Chapter 10, Erosion and Sediment Control, of the Hawaii County Code.

4. The subject properties are found within Flood Zone "X", according to the Flood Insurance Rate Map dated September 16, 1988.

5. We suggest that the exit to the existing parking be relocated to the westerly outbound end of the parking. This will avoid the existing traffic conflicts with the arrival and departure traffic.

6. We also suggest that the Aloha Airlines and Hawaiian Airlines terminals be separated. We noticed that additional space is available on the other end of the airport terminal. Separating the airlines will improve the vehicular traffic conflicts on the arrival and departure pickup areas.

Should there be any questions concerning this matter, please feel free to contact Mr. Casey Yamagishi in our Engineering Division at (808)961-6327.

[Signature]

F. E. Young, Division Chief
Engineering Division
August 7, 2002

Mr. Ben Ishii
Division Chief
County of Hawaii
Department of Public Works
Engineering Division
Airport Center
101 Pauahi Street, Suite 7
Hilo, Hawaii 96720

Dear Mr. Ishii:

Subject: Pre-Assessment Consultation
Hilo International Airport Environmental Assessment
State Project No. A110101-03

Thank you for your letter regarding the subject Environmental Assessment (EA). Your comments are addressed as follows:

1. New structures will conform to all requirements of code and statutes of the County of Hawaii. Plans will be submitted to your Department for review upon completion of design.

2. Runoff generated by the proposed improvements will be disposed of within the Airport property and will not be directed toward adjacent properties. Drainage improvements will be discussed in the forthcoming Draft EA.

3. Grading and grubbing activities will be performed in conformance with Chapter 10, Erosion and Sediment Control, of the Hawaii County Code. The contractor will provide a Best Management Practices (BMP) plan prior to the start of construction to address erosion control measures.

4. It is acknowledged that according to the Flood Insurance Rate Map of September 16, 1988, the project sites are located within Flood Zone "X".

We appreciate your interest and participation in the environmental review process. Your letter will be included in the forthcoming Draft EA. Please contact Ms. Lynn Breonner, Planner, at (808) 816-8811, to clarify any questions you may have.

Sincerely,

ROY K. SAKATA
Acting Airport Administrator


[Signature]

[Signature]
DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII
333 GAFFNEY STREET • SUITE 21 • Hilo, Hawaii 96720
PHONE: 808-961-8050 • FAX: 808-961-8645
July 26, 2001

Mr. Jerry M. Matsuda, P.E.
Page 2
July 26, 2001

You may contact the Water Resources and Planning Branch at 961-3070 for additional information on
the location of the Department’s waterlines and meter/service lateral sizes for existing services or if
there are any questions.

Sincerely yours,

Milton C. Pavan, P.E.
Manager

PRE-ASSESSMENT CONSULTATION
HILO INTERNATIONAL AIRPORT ENVIRONMENTAL ASSESSMENT
STATE PROJECT NO. AH1011-33
TAX MAP KEY: 2-1-013:POR 2-1-20.14; 40, 41; 2-2-37.41; AND 2-2-35.68-73

We have reviewed the subject document and our comments are as follows.

Water availability conditions for the Hilo water system are such that there is water for the proposed
project area. Specific details on the water improvements for the project area should be provided.
Details should include water requirements for domestic use, irrigation, and fire protection. Water
service will be subject to compliance with the Department’s Rules and Regulations and Water System
Standards. Please refer to the following table regarding existing services for each parcel.

<table>
<thead>
<tr>
<th>Tax Map Key</th>
<th>Service</th>
<th>Yes or No</th>
<th>Location of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-1-013 POR 9 (Parking Exp.)</td>
<td>Yes</td>
<td>12&quot; waterline crossing the Airport Terminal</td>
<td></td>
</tr>
<tr>
<td>2-1-013 POR 9 (All Others)</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-1-025 014</td>
<td>Yes</td>
<td>6&quot; Waterline in Kaihale Ave.</td>
<td></td>
</tr>
<tr>
<td>2-1-020 000</td>
<td>Yes</td>
<td>6&quot; Waterline in Kaihale Ave.</td>
<td></td>
</tr>
<tr>
<td>2-1-010 041</td>
<td>Yes</td>
<td>6&quot; Waterline in Delsha Ave.</td>
<td></td>
</tr>
<tr>
<td>2-2-017 041</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-2-015 018</td>
<td>Yes</td>
<td>4&quot; Waterline in Kanoelehua Ave.</td>
<td></td>
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<td>2-2-015 069</td>
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<tr>
<td>2-2-015 070</td>
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<tr>
<td>2-2-015 071</td>
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<tr>
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<td>Yes</td>
<td>4&quot; Waterline in Kanoelehua Ave.</td>
<td></td>
</tr>
</tbody>
</table>
Mr. Milton D. Pavao, P.E.
Manager
County of Hawaii
Department of Water Supply
345 Kekuanaoa Street, Suite 20
Hilo, Hawaii 96720

Dear Mr. Pavao:

Subject: Pre-Assessment Consultation
Hilo International Airport Environmental Assessment
State Project No. AHI011-03

Thank you for your letter regarding the subject Environmental Assessment (EA) indicating that
the Hilo water system can accommodate the water needs of the proposed Airport improvements.
Your concern regarding the submission of specific details on water system improvements is
acknowledged. Plans will be submitted to the Department of Water Supply for review upon
completion of design.

We appreciate your interest and participation in the environmental review process. Your letter
will be included in the Draft EA. Please contact Ms. Lynn Beowers, Planner, at 818-8811 to
clarify any questions you may have.

Sincerely,

ROY K. SAKATA
Acting Airports Administrator

July 18, 2001

Mr. Jerry M. Matsuda
State Department of Transportation Airports Division
400 Rodgers Blvd, Suite 700
Honolulu, HI 96819

Dear Mr. Matsuda,

Pre-assessment Consultation for various projects at the Hilo International Airport
THK: 2-1-12; 2-2-20; 2-2-35; 40; 51; 2-2-37; 41; 2-2-35; 68 - 73

This is to acknowledge receipt of your letter dated June 28, 2001 requesting comments regarding the preparation of an Environmental Assessment (EA) for various improvements at the Hilo (International) Airport. The EA is being prepared pursuant to Chapter 343, Hawaii Revised Statutes and Title 11, Chapter 200, Hawaii Administrative Rules, as the proposed improvements include the use of State lands and funds.

We concur with your letter that the County zoning for the Hilo International Airport (Town C-1-12; 9) is Limited Industrial (NL-20). Portions of the proposed land acquisitions and avigation easements (TNK Nos: 2-1-20: 14, 40 & 41 owned by the Department of Hawaiian Home Lands, and 2-2-37; 41) are zoned Single Family Residential (RS-10). TNK Nos: 2-2-35; 68 - 73 are privately owned. Parcels 68, 70, 71 and 73 are zoned Open, Parcel 69 is zoned Limited Industrial (NL-20) and Parcel 72 is zoned Limited Industrial (NL-10).

The General Plan Land Use Pattern Allocation Guide (LUPAG) Map designation for the airport area is Industrial, and portions of the area zoned for the proposed land acquisitions and easements are designated Low and Medium Density Urban. For your information, there is a proposed alternate collector road from the Hilo International Airport to Punaeka Street (Punaeka Street Extension) indicated on the current General Plan Facilities Map. Please note that prior to construction, Plan Approval will be required from this department for all new structures.
August 9, 2002

Mr. Christopher Yuen
County of Hawaii
Planning Department
Asanaka Center
101 Panao Street, Suite 3
Hilo, Hawaii 96720

Dear Mr. Yuen:

Subject: Pre-Assessment Consultation
Hilo International Airport Environmental Assessment
State Project No. A81011-03

Thank you for your letter regarding the subject Environmental Assessment (EA). The County zoning designations of the project sites, as described in your letter, will be documented in the forthcoming EA. The information provided regarding zoning and the proposed alternate collector road from the Airport to Pualilo Street shown on the County General Plan Land Use Pattern Allocation Guide Map are appreciated. Plans for new structures will be submitted to the Planning Department for review upon completion of design.

We appreciate your interest and participation in the environmental review process. Your letter will be included in the forthcoming Draft EA. Please contact Ms. Lynn Becomes, Planner, at (808) 835-8311 to clarify any questions you may have.

Very truly yours,

Brian K. Minnai
Director of Transportation

July 9, 2001

Jerry Matsuda
Airports Division, DOT
400 Rodgers Blvd, Suite 700
Honolulu, HI 96817

Dear Mr. Matsuda:

We are in receipt of your letter dated June 28, 2001, discussing proposed plans for capital improvement projects at Hilo Airport. As one of the largest continuously operating general aviation companies at Hilo Airport, we are excited about the prospect of expanded facilities.

Since three of the properties which we occupy at Hilo Airport appear to fall within the boundaries of the proposed G-A expansion, we are understandably concerned about what transition plans will be in effect to assure uninterrupted operation of ours, and other companies currently using this area. Although we are a small company, we have provided jobs for over 20 Big Island residents consistently since 1986. An even short-term interruption in our business operations would most certainly force the permanent closure of our business, with resultant loss of jobs.

It is our hope that assessment of this project considers impact to existing businesses, as well as environment and other concerns, since, after all, without viable operating businesses, there will be no need for new facilities.

I would appreciate a written response to my comment, discussing how the department intends to address the issues I have raised.

Sincerely,

Phil Auldridge
President

July 31, 2001

Mr. Phil Auldridge
Above it All
Gate 29 Hilo Airpark
Hilo, Hawaii 96720

Dear Mr. Auldridge:

Subject: Hilo International Airport Environmental Assessment
Pre-Assessment Consultation
State Project No. AH0101-03

Thank you for your letter of July 9, 2001, in response to our pre-assessment consultation. Your expression of support for the proposed improvements at Hilo International Airport is appreciated.

Presently, we are in the preliminary planning stages for the proposed improvements to general aviation facilities. Once we proceed into the design phase with more specific plans and a timetable for construction, affected tenants will be contacted and relocation discussions initiated with the Hawaii District Manager and our Property Management section.

I have directed our environmental consultant to contact you at this time so that we may better understand and plan for your concerns as we proceed with implementation. We also intend to provide you with a copy of the forthcoming Draft Environmental Assessment.

If you should have any further questions, please contact Ben Schlapak, Head Planning Engineer, at (808) 831-2821.

Sincerely,

[Signature]

[Signature]

Wilson Okamoto & Associates (R. Funakoshi)
Federal Aviation Administration (D. Velhouse)

[Stamp]
August 20, 2001

Mr. Jerry Matsuda, Airports Administrator
State of Hawaii
DOT-AIRPORT DIVISION (AIR)
400 Rogers Blvd., Suite 700
Honolulu, Hawaii 96819-1880

Re: Comments to Pre-Environmental Assessment and Mitigation Measures for the Keaukaha Community.

Dear Mr. Matsuda,

I am Patrick L. Kahawalu’a, a native Hawaiian as defined under the HRCA, 1920, as amended, July 9, 1921 and the current president of the Keaukaha Community Association.

I, as president of this native Hawaiian community, have a distinct responsibility to address the serious concerns of this native Hawaiian community, which the record is clear, has given so much in the past to the success of the Hilo International Airport and the general public. I will not belabor that point and will try to dwell on the subject matter at hand, which was at the heart of the August 15, 2001 meeting held in Keaukaha.

It was overwhelming that the community believes the mitigation measure of the 15-foot noise wall is totally unacceptable.

Land exchanges are also unrealistic, based on no information as to where the “new” lands are located and if the land exchange is only to accommodate the runway protection zone (rpz), it is unacceptable.

The fact that “no funding” is in place and specific amounts could not be given, insofar as how much will be spent on a particular home, was unavailable, so residents may be able to reach an objective conclusion. Show ballpark figures.

Although the studies and survey are supposedly completed, the issues of health and safety for our residents are not being addressed, except by comments such as, “non exist.” We’d like to see the breakdown of these studies. What would happen in community, as a sound attenuator, presently the consensus is because of the high cost of electricity, that measure at present is not acceptable, however no one addressed if air conditioning on a voluntary basis was a viable alternative.

At the first meeting held in this community, the Mayor of Hawaii County, presented testimony that he believed the State of Hawaii in its Airports Division was doing a disservice to the native Hawaiians and that the airport should be moved. This matter should be addressed in your EA, as a basis that a complete EIS would not be necessary.

One extremely positive note which must be addressed and that is the perception that the consultants use of a cultural resource person to review the effects of cultural disruptions may help to dispel a total disregard to native Hawaiians as a viable partner in this endeavor to reach an amicable resolution to this complex and noisy issue. There are several hula halau (schools) in the community that the na haumana (students) suffers the impact of aircraft noise in the na kumu (teachers) trying to perpetuate our culture the hula.

So, in summary, the Keaukaha community association, wishes not to foreclose on any future dialog with the DOT-Airports Division and in fact based on the representation from Mr. Dennis Higa, they will be back and at the present time the aforementioned concerns needs to addressed in the EA and more dialog, without the possibility of having to sign away one’s rights guaranteed under the constitution, to life, liberty and the pursuit happiness. Please consider this as a positive response to your Pre-EA, however with room for improvement and more dialog in the future.

Sincerely,

Patrick L. P. Kahawalu’a
President, KCA

cc: Linda DelaCruz
Mr. Patrick L. Kahawaiola'a
August 9, 2002

Dear Mr. Kahawaiola'a:

Subject: Pre-Assessment Consultation
Hilo International Airport Environmental Assessment
State Project No. AH101-03

Thank you for your letter regarding the subject Environmental Assessment (EA). We are currently preparing the Draft EA for the proposed improvements.

We appreciate your comments and have endeavored to listen to the concerns expressed by residents in the Keaukaha community. Our August and November 2001 meetings in your community were very productive in giving us a better understanding of your views.

At a result of these meetings, we have eliminated the proposed noise wall as a recommendation to be pursued. Noise attenuation of residential structures in the 60+ DNL contours will continue to be a focus of our efforts to mitigate noise impacts in your community. We hope to fund shortly a noise attenuation project that will include ongoing consultation with the affected area residents.

As you have requested, the forthcoming Draft EA will include the technical studies and cultural resources assessment, including discussions of health and safety issues and the alternative of relocating the Airport.

We look forward to continuing dialogue and discussions with the residents of Keaukaha community in our efforts to improve the compatibility of our airport operations.

Sincerely,

ROY K. SAKATA
Acting airports Administrator

Mr. Patrick L. Kahawaiola’a
Hilo, Hawaii 96720

We appreciate your interest and participation in the environmental review process. Your letter will be included in the forthcoming Draft EA. Please contact Ms. Lynne Benson, Planner, at (808) 338-8811 to clarify any questions you may have.
Dear Mr. Matsuda,

This letter acknowledges receipt of your letter dated June 24, 2001 which invited comments on the subject project. Volcano Helicopters thank you for the opportunity to present comments.

On the elements of the planned improvements to the Hilo International Airport which are collectively described by "Hilo International Airport, Master Plan", Volcano Helicopters submit the attached writer as its comments. The letter is dated July 14, 2001, addressed to Mr. Jerry Matsuda, PE, and subject stated: "Hilo International Airport, Helicopter Master Plan, State Project No. AH1011-01

Regarding the impact of the plan on the micro and macro environment, Volcano Helicopters has our comments.

AIRPORT OPERATING HOURS

The airport is located close to residential areas and flight patterns overly them. Numerous US airports with similar conditions have eventually been closed or restricted by curfew. Such decisions were made although the airports were declared as necessary by government/authorities. It is observed that airport planning should be proactive on noise to avoid future costly lawsuits. Public opinion when fueled by the impression of being ignored, often develops into an uncompromising adversary. Consequently, planning should consider curfew hours during the night (sleeping).

If there are questions or the need for additional information, please call 949-1722.

Again, Thank you.

Very truly yours,
Volcano Helicopters

Richard Clark, PE
Its Business Manager

Attachment: Hilo International Airport Helicopter Master Plan
Reply to: AIR-P, 01-0305
Mr. Richard Okita, P.E.
Business Manager
Volcano Helicopters
1655 Makaha Street, #2700
Honolulu, Hawaii 96814

Dear Mr. Okita:

Subject: Pre-Assessment Consultation
Hilo International Airport Environmental Assessment
State Project No. AIH0101-03

Thank you for your letter regarding the subject Environmental Assessment (EA). Your letter notes the attachment of a letter previously submitted to the Department of Transportation, Airports Division, dated July 14, 2001, commenting on the update of the Hilo International Airport Master Plan. It is acknowledged that you are submitting the same comments as they may apply to the proposed improvements to be included in the forthcoming Draft EA.

Regarding your comment on Airport operating hours, existing noise levels in the residential areas near the airport are a known problem. For your information, the noise attenuation project for Keaau School is expected to be completed by the end of this year. The schedule for residential sound attenuation has not been established, although funding is being pursued for implementation. Coordination with the Keaau Community was initiated with meetings held in August and November 2001 and is expected to continue as the sound attenuation program progresses.

Sincerely,

ROY K. SAKATA
Acting Airports Administrator

Handwritten Note:
Hawai‘i Aloha No Kau‘a Aloha
Working Together to Make a Difference in Hawaii
Mr. Jerry M. Matsuda, P.E.
Airports Administrator
Dept. of Transportation
Airports Division

July 23, 2001

Jacob S. Kiko Jr.
66 Derha Avenue
Hilo, Hawaii 96720

Dear Sir,

Why build a sound barrier after all these years? We have lived in Keahou for 24 years and have become immune to the deafening sounds of airplanes. All people who have lived in Kamakau for some time now, somehow have learned to put up with the noise. The school children and my teacher who has taught at Kamakau for more than a school year don’t even bat an eye when an airplane flies overhead. At home and at school, conversation automatically stops when an airplane flies overhead and then starts again after it’s pasted. What about the air conditioning promised to the school. How many more years will it take until action is taken?

When will you know for sure about the lands in Kamakau that are proposed for acquisition? Over two years ago my family took in my sister-in-law who is bed bound with Parkinson’s disease. Therefore, for the past two years our home has been under major reconstruction. We have gotten rid of the first bathroom and have installed for wheelchair access, we remodeled the bedroom and shower for handicap access, and I had my family room enclosed so it could become a bigger bedroom for my sister-in-law. While we were at it, my wife wanted new kitchen cabinets and counter tops. We are now currently building a pool outside of the kitchen for spacing. Should we continue building our patio? Will all this be taken away from us and destroyed?

The land I have in Kamakau and the home I’ve built on it is important to me and my family. We’ve worked hard for what we have and continue to do so. It’s our home. It’s our life. How can you say that no significant impacts are anticipated from the construction or operation of the proposed improvements? If your land and home were suddenly wanted to be destroyed to build something else, wouldn’t that impact you significantly?

Let us know what is going on as soon as possible and if we have any choices here. Is there any other proposal? What about building it towards coastal road or King’s Landing? On more of plane travel be changed instead? What’s the research on the percentage of noise level that will be listened by this sound barrier? When is all this supposed to happen?

Jacob S. Kiko, Jr.
Mr. Jacob S. Kiko, Jr.
84 Mesha Avenue
Hilo, Hawaii 96720

Dear Mr. Kiko:

Subject: Pre-Assessment Consultation
Milo International Airport
Environmental Assessment, Hilo, Hawaii

Thank you for your letter of July 23, 2001 regarding the subject Environmental Assessment (EA).

With respect to the noise issues you have raised, we recently completed the Federal Aviation Regulation (FAR) Part 150 Noise Compatibility Program to identify land use incompatibilities and to recommend noise mitigation measures. Federal Aviation Administration approval of the Program is expected by October 2001, at which time the program elements will become eligible for federal funding. The proposed sound barrier and noise abatement for residences were part of the recommendations from the Program, which are intended to be implemented on a voluntary basis. As such, the recommendations will be pursued only with the support of the Keaukaha Tract I residents.

The Keaukaha School Noise Mitigation Project is presently in design and is expected to be bid for construction by December 2001, with completion of improvements by October 2002.

Regarding the proposed land acquisition, there remains a need to acquire certain lands, including your property, which are situated within the Runway Protection Zone (generally 1,700 feet off the runway ends). However, in light of concerns such as yours which have been raised, we have reevaluated our land acquisition program. Our policy in this area will now be to proceed with acquisition only with the concurrence of the homeowner, or at such time that the land otherwise becomes available. As such, no action will be taken now or in the near future to displace you from your residence.

Sincerely,

[Signature]

[Title]
Alapana Administrator

Cc: Wilson Okamoto & Associates (B. Funakoshi)
Federal Aviation Administration (D. Welhouse)
Hilo International Airport Environmental Assessment
Keaukaha Community Meeting
August 13, 2001

Name: Genesis Lee Loy
Agency/Organization: Keaukaha Business Council
Address: 510 Awanui Rd
Hilo, HI 96720

I offer the following comments with respect to the Hilo International Airport Environmental Assessment:

My birthdate is Sept 24, 1949 and am 52 years of age. Hawaii has always been my home and I have witnessed the transformation of tourism in Hawaii. The 1950s were a time of mass tourism. The Kona Coast was a place where tourists could experience the Polynesian culture. Today, Kona is a bustling community, and the airport is a symbol of Hawaii's growth.

The development of the airport in the 1950s was a turning point for Hawaii. The airport provided a gateway for tourists to experience the beauty of Hawaii's natural landscapes. The airport was initially a small affair, but as tourism grew, so did the airport. Today, the airport is a hub of activity, with flights to and from all over the world. The airport has played a vital role in the growth of Hawaii's economy.

In conclusion, I urge you to consider the impact of the airport on Hawaii's culture and economy. The airport has been a driving force behind the growth of tourism in Hawaii, and it is important that we continue to support its development. Thank you for your time and consideration.

Genesis Lee Loy

Please return this form to the State of Hawaii Department of Transportation, Airports Division by August 31, 2001.
...the normal and cultural gathering...
Ms. Genesis Lee Loy
510 Awaiai Road
Hilo, Hawaii 96720

Dear Ms. Lee Loy:

Subject: Hilo International Airport
Pre-Assessment Consultation
Environmental Assessment
State Project No. AH1101-03

Thank you for your letter of August 30, 2001, and for sharing your heartfelt sentiments regarding the history of development in the vicinity of Keaukaha. We offer the following in response to your numbered questions. As an initial point of clarification, however, the handout on which your letter is based constitutes a summary of the improvements and impacts. The Draft Environmental Assessment (EA) is under preparation and is forthcoming.

1. General aviation improvements are limited to that described in the Project Summary handout, i.e., a new T-hangar building, an aircraft wash rack, aircraft tie-downs, apron improvements, lease lots, and infrastructure improvements. Presently, there is a lack of hangar space in the immediate area of general aviation aircraft, and very limited support facilities.

2. The Part 150 Noise Compatibility Program Report, a copy of which can be made available to you if you wish, does incorporate the increased density and development in present-day Keaukaha.

3. There is no increased danger from the proposed improvements, as no major expansion of facilities is proposed. Primarily, the improvements consist of relocation of existing uses and improved facilities to support present operations.

4. The Part 150 Noise Compatibility Program Report does fully document the noise impacts and will be summarized in the forthcoming Draft EA.

Sincerely,

[Signature]

[Title]
[Name]

[address]

[phone number]
July 23, 2001

State of Hawaii
Department of Transportation
Airport Division
400 Rodgers Boulevard, Suite 700
Honolulu, HI 96819 (Fax 838-8751)

Attention: Mr. Jerry Matsumura, P.E.

Subject: Pre-Assessment Consultation letter AIR-P 01.0351 dated 06-28-01

Gentlemen:

We have received your letter and are aware that we would be affected by the proposed land acquisitions, as we occupy property that is scheduled to be acquired by the State (Tax Map Key: 2-2-35-69).

Since this will directly affect our electrical contracting business, we would like to have a better idea approximately when we will be involved, how the acquisition will be carried out, what kind of assistance will be provided for relocation, whether comparable properties will be available to us, etc. We have made a considerable investment in this ideally situated property and buildings and are very concerned about the future of our business.

Very truly yours,

Reid Furutani
President

August 6, 2001

Mr. Reid Furutani
President
ABLE Electric, Inc.
567 Kamelehu Avenue
Hilo, Hawaii 96720

Dear Mr. Furutani:

Subject: Pre-Assessment Consultation
Hilo International Airport

Thank you for your letter of July 23, 2001, in response to our pre-assessment consultation. Your concerns regarding the timing and procedures for land acquisitions relative to your business operation are certainly understandable.

At this time, we have neither the available funding nor a specific timeframe for the acquisition. Based on our current plans, however, we anticipate that some land acquisition may occur in approximately five years.

Once funding becomes available and a specific schedule is determined, affected landowners and tenants will be contacted and discussions initiated with our land acquisition section. Procedures typically include a title search, appraisal, offer and acceptance. Options for relocation assistance will also be provided at this time.

We will endeavor to keep you informed of our plans regarding acquisition as they affect your property. If you should have any further questions, please contact Lynn Becomes, Planner, at (808) 838-8811.

Sincerely,

Jerry T. Matsumura
Airport Administrator

C: Wilson Okamoto & Associates (K. Funakoshi)
Federal Aviation Administration (D. Welhouse)
July 25, 2001

Mr. Jerry M. Masuda  
Alpine Administrator  
Department of Transportation  
Airport Division  
400 Rodgers Boulevard, Suite 700  
Hilo, HI 96720-1680

RE: HILO INTERNATIONAL AIRPORT ENVIRONMENTAL ASSESSMENT  
STATE PROJECT NO.: AH0011-03

Dear Sir:

On behalf of my father, Hayato Okino, I am responding to your letter. My father is 89 years old and lives by himself at 545 Kamehame Avenue. He has lived there for fifty-one years. It is his wish to spend the remaining years of his life living in that house.

At this juncture in his life, it would pose an enormous impact both emotionally and financially should he be forced to give up his home. Further, your letter states that this project is scheduled for the year 2002 which is just 5 months away. It is not logistically or financially possible for him to make the necessary arrangements in such a short time. He will certainly require more time and advance notification.

Due to his age and being legally blind, he has difficulties with written correspondence. It is therefore requested that copies of any correspondence sent to him be also mailed to me. My address is as follows:

Glen M. Okino  
113 Akohala Place  
Kailua, HI 96734

I thank you very much for your time and consideration. Please feel free to call me should there be any questions. I can be reached at 295-6888.

Sincerely,

Glen M. Okino

August 22, 2001

Mr. Glenn Okino  
113 Akohala Place  
Kailua, Hawaii 96734

Dear Mr. Okino:

Subject: Pre-Assessment Consultation  
Hilo International Airport  
Environmental Assessment, Hilo, Hawaii

Thank you for your letter of July 25, 2001, regarding the subject Environmental Assessment (EA).

Regarding the proposed land acquisition, there remains a need to acquire certain lands including your father’s property, which are situated within the Runway Protection Zone (generally 1,700 feet off the runway ends). However, in light of concerns such as yours which have been raised, we have reevaluated our land acquisition program. Our policy in this area will now be to proceed with acquisition only when the concurrence of the homeowner or at such time that the land otherwise becomes available. As such, no action will be taken now or in the near future to replace your father from his residence.

Thank you for apprising us of your concerns. Please contact Lynn Becomes, Planner, at (808) 838-8811 if you have any further questions.

Sincerely,

Jerry M. Hattori, P.E.  
Airports Administrator  
c/o Wilson Okamoto & Associates  
Federal Aviation Administration (D. Helmholtz)
COMMENT AND RESPONSE LETTERS
FROM THE DRAFT ENVIRONMENTAL ASSESSMENT REVIEW PERIOD
November 19, 2003

Regulatory Branch

Mr. Roy K. Sakata
Acting Airports Administrator
Airports Division, Hawaii Department of Transportation
Hawaii International Airport
400 Rodgers Boulevard, Suite 700
Honolulu, HI 96819-1880

Dear Mr. Sakata:

This responds to your request for written comments on a draft Environmental Assessment (DEA) which addresses activities proposed for improvements at the Hilo International Airport, Hawaii Island (TMR 2-4-12).

Our records indicate that waters of the United States, as represented by perennial or intermittent streams and wetlands do not occur within the proposed project areas. It also appears that other special aquatic sites such as anadromic ponds are not present. The DEA should state in appropriate sections that there is no potential for navigable waters of the U.S. to be impacted by construction of project structures and associated ground disturbing activities within the proposed improvement areas. Therefore, it is determined that a Department of Army (DA) permit for Section 404 activities of the Clean Water Act will not be required for the proposed improvements at Hilo International Airport.

Thank you for your consideration of potential impacts to the aquatic environment in the Waiakea watershed. Please contact Ms. Farley Watanabe, my staff at 438-7701, or fax 438-4060, if you have any questions or need additional information. Please refer to File Number 200300143 in any future correspondence with us.

Sincerely,

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

January 24, 2003

Mr. George P. Young, P.E.
Regulatory Branch
Department of the Army
U.S. Army Engineer District, Honolulu
Department of the Army
Fort Shafter, Hawaii 96852-5440

Dear Mr. Young:

Subject: Hilo International Airport
Draft Environmental Assessment
State Project No. AH011-03

Thank you for your letter of November 19, 2003, stating that your records indicate that there are no perennial or intermittent streams, wetlands, or other special aquatic sites within the project area. As requested, the Final Environmental Assessment will state that there is no potential for navigable waters of the U.S. to be impacted by the proposed improvements.

We appreciate your interest and participation in the environmental review process. Your letter, together with this response, will be included in the forthcoming Final Environmental Assessment. If you need further information, please contact Ms. Lynn Becomes, Pnser, at (808) 838-8811.

Sincerely,

Davis K. Yogi
Airports Administrator

C: Wilson Okamoto and Associates (R. Futsakoshi)
Mr. Roy K. Sakata, Acting Airports Administrator
Department of Transportation, Airports Division
400 Rodgers Boulevard, Suite 700
Honolulu, Hawaii 96819-1880

January 21, 2003

Dear Mr. Sakata:

Subject: Draft Environmental Assessment (DEA)
Hilo International Airport Improvements
State Project No. AH011-03, Hilo District, Hawaii
Tax Map Key: 2-1-012; 909 (por)

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

Solid and Hazardous Waste Branch (SHWB)

Underground Storage Tanks

The Solid and Hazardous Waste Branch, Underground Storage Tank Section has numerous files for underground storage tanks at the Hilo International Airport. The SHWB has made the Underground Storage Tank database available on the Internet at http://www.state.hi.health/hv/hshwb, and on a 3.5" floppy disk in Microsoft Excel format. These files allow for searches by street address, facility name, city, etc. This version is also available through e-mail.

To order either the disk for $5.00 or the e-mail version free of charge, please submit a Request to Access a Government Record form specifying: UST/UST Database on 3.5" disk (or e-mail), and attention it to the UST Section. The latest copy of the RCRA List can also be obtained by contacting the SHWB.

Hazardous Waste

Please be aware that herbicide storage and mixing sheds may generate hazardous waste in the form of unused mixtures or old and unused herbicides. Best management practices should be

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mixture of herbicides should be used up and sprayed according to directions to prevent potential hazardous waste from being stored in the sprayer. The proper mechanics service pit will potentially have solvents, degreasers, paints, and used oil. All of these chemicals have a potential for becoming hazardous wastes when used.

Best management practices and compliance with hazardous waste generation, storage and disposal should be addressed in the facility's plans.

If there are any questions, please contact Jack Richardson of the Underground Storage Tank Division, or Grace Simons of the Hazardous Waste Division, at (808) 386-4226.

Environmental Planning Office (EPO)

This project is located in the Waiakea River/Hilo Bay watershed. Waiakea River and Hilo Bay are currently listed under section 303(d) of the Clean Water Act as being impaired by nutrients and turbidity. The impaired status of these waters requires that the Department of Health establish Total Maximum Daily Loads (TMDL) suggesting how much the existing pollutant loads should be reduced in order to attain water quality standards in the river and coastal waters.

Although these TMDLs are yet to be established and implemented, a first step in achieving TMDL objectives would be to reduce any project-related increases in pollutant loads. The Draft Environmental Assessment (DEA) suggests that since the airport does not have a drainage system that diverts runoff into State water waters, no indirect or cumulative impacts to the quality of surface water bodies are anticipated as a result of the construction and operation of the proposed airport improvements (p. 3-5). The DEA also suggests that no indirect or cumulative impacts to the quality of ground water are anticipated (p. 3-6). These suggestions would be more persuasive if the following are addressed:

1. According to the DEA, an open drainage channel along the western edge of the project both conveys and discharges runoff (p. 3-52). We suggest that the end points and flow characteristics of this channel be specified to support the determination that runoff is diverted into State water waters, even during extreme runoff events;

2. We suggest that hydrologic connections between underlying groundwater and nearby surface water (Waiakea River, Hilo Bay, and Konaheka shoreline) be analyzed to determine if runoff water and wastewater from the project site that percolates into the Hilo Aquifer System will eventually flow into these surface water bodies. If so, we suggest that the quantity and quality of this runoff water and wastewater, before and after its percolation into the aquifer, be characterized; and

3. Even without hydrologic connections between groundwater and surface water, determination of no significant or cumulative impacts to the quality of ground water (p. 3-6) seem contingent upon characterizing existing groundwater quality and the quantity and quality of project-related runoff water and wastewater, before and after its percolation into the aquifer.
A TMDL technical study of water quality in Wailoa River is scheduled to begin next year. We encourage the Department of Transportation, Airports Division to participate in the TMDL process and suggest that they consult with the Department of Health Clean Water Branch (Engineering Section) to discuss how water pollution control permitting may be linked with TMDL implementation.

If you have any questions about these comments or the Total Maximum Daily Load program, please contact David Penn at (808) 586-4337.

Safe Drinking Water Branch (SDWD)

Injection wells used for the subsurface disposal of wastewater, sewage effluent, or surface runoff are subject to environmental regulation and permitting under Hawaii Administrative Rules, Title 11, chapter 23, titled Underground Injection Control (UIC). The Department of Health's approval must be first obtained before any injection well construction commences. An UIC permit must be issued before any injection well operation occurs.

Authorization to use an injection well is granted when a UIC permit is issued to the injection well facility. The UIC permit contains discharge and operation limitations, monitoring and reporting requirements, and other facility management and operational conditions. A completed UIC permit application form is needed to apply for a UIC permit. A UIC permit can have a valid duration of up to five years. Permit renewal is needed to keep an expiring permit valid for another term.

If you have any questions, please contact Chaeuney How at (808) 586-4273.

Wastewater Branch (WWB)

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

If you have any questions, please contact the Wastewater Branch at (808) 586-4294.

Sincerely,

JUNE F. HARRIGAN-LUM, MANAGER
Environmental Planning Office

c: SHWB
EPO
SDWB
WWB
Inland and a sewer system will convey wastewater to the County of Hawaii Wastewater Treatment Plant. Stormwater will sheetflow over grassed areas and through a grassed swale as opposed to the dry wells currently used. The proposed heliport facilities will also employ connections to existing wastewater systems.

We would be pleased to participate in the forthcoming TMDL process to contribute to your discussions as well as learn how we may improve our operations relative to your pollutant reduction objectives.

Safe Drinking Water Branch

We acknowledge the need and will obtain an Underground Injection Control permit for the subsurface disposal of wastewater or storm water, should the proposed improvements require such facilities.

Wastewater Branch

Should the proposed improvements require individual wastewater systems, we will consult with the Wastewater Branch for conformance with applicable rules.

We appreciate your interest and participation in the environmental review process. If you have any questions, please contact Ms. Lynn Beconis, Planner, at (808) 838-8811.

c: Wilton Okamoto & Associates (R. Funakoshi)
December 9, 2002

Mr. Roy Sakata
Airports Division, Department of Transportation, State of Hawai‘i
440 Rodgers Boulevard, Suite 205
Honolulu, Hawai‘i 96814

Mr. Rodney Funakoshi
1907 South Beretania Street, Suite 100
Honolulu, Hawai‘i 96826

Dear Mr. Sakata and Mr. Funakoshi:

The Office of Environmental Quality Control has received the October 2002, draft environmental assessment for Hilo International Airport and offers the following comments for your consideration and response.

1. ALIEN SPECIES MITIGATION EFFORTS. In section 3.7 and section 3.8.1. the draft environmental assessment describes impacts to flora and fauna on site. In the environmental assessment, please describe what efforts will be undertaken at the improved airport to minimize the spread of undesirable alien plants and animal species from cargo entering the airport from domestic and international flights.

2. CULTURAL IMPACT CLARIFICATIONS. Section 3.12.2 notes that "this proposed improvement will have minimal and negative cultural impact upon native Hawaiian cultural resources, beliefs and practices as the development of existing airport facilities and boundaries has already eliminated any cultural resources within the area." [Footnotes and calculations omitted.] Therefore, please add what the remaining cultural resources are since the cultural description clearly states that the area is not affected by cultural resources. Also, please clarify what portion of the Final EA that was not designed by senior construction officers who lettered for the New Hilo International Airport. Are there cultural resources that were not described in the final EA?

3. SUSTAINABLE BUILDING GUIDELINES, USE OF NATIVE PLANTS, AND GLASSPHALT. We respectfully refer you to the following documents to address these issues: "1996 Final EA for 1963 Edition of Hawaii State Transportation Plan," "Natural, Native, and Nativistic Landscapes," and "1996 Final EA for 1963 Edition of Hawaii State Transportation Plan," and the use of native plants in landscaping. Also, please plan to use glassphalt aggregate for proposed paving in the project area.

Thank you for your patience in this matter. If there are any questions, please call Leslie Segado at my office (808) 586-4183.

Sincerely,

GENEVIEVE SALMONSON
Director

TO: GENEVIEVE SALMONSON, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM: ROONEY K. HARAGA
DIRECTOR OF TRANSPORTATION

SUBJECT: Hilo International Airport
DRAFT ENVIRONMENTAL ASSESSMENT
STATE PROJECT NO. AH1001-03

February 13, 2003

Thank you for your letter dated December 9, 2002, regarding the subject Draft Environmental Assessment (EA). We offer the following in response to your comments.

Alien Species Mitigation Efforts

We are aware of the potential threat that alien flora and fauna pose to our island’s ecosystem. However, since the risk of alien species introduction is influenced primarily by flight origin and frequency and the proposed improvements will have no effect on these factors, we do not believe that the proposed improvements will affect the risk of alien species introduction to our islands.

We would note in this regard that there are no inbound overseas flights to Hilo either existing or planned. In addition, programs presently conducted by the State Department of Agriculture and U.S. Department of Agriculture to detect alien species will not be affected by the proposed improvements.
Cultural Impact Clarifications

1. Hala Groves: The Cultural Impact Assessment identifies that practitioners use the hala groves on airport property, including the site identified as the Proposed Helicopter Facility, and recommends that practitioners should be permitted to gather from these hala trees through a right-of-entry policy with the airport (page 35 of the Cultural Impact Assessment).

2. Pana'ewa Forest: While portions of Pana'ewa Forest may remain undeveloped, the forest is not considered intact in either size, shape or biodiversity. Due to development in the Hilo area, the size of Pana’ewa Forest has been reduced, the forest is no longer contiguous being separated by pockets of residential, industrial and commercial development, and alien species now make up a considerable portion of the forest ecosystem. The Cultural Impact Assessment identifies that prior to the development of the airport, traditional accessways connected the Keauha community with Pana'ewa Forest. The development of the Airport, however, eliminated these traditional accessways and eliminated that portion of Pana'ewa Forest that was utilized by the Keauha community (page 35 of the Cultural Impact Assessment).

3. Fishing: The Cultural Impact Assessment identifies that all types of fishing and ocean and shoreline gathering activities and practices occurred and continue to occur in the Keauha, Wainahana region (page 30 of the Cultural Impact Assessment). During the interviews one informant commented that when Runway 3-21 is used, low flight patterns cause vibrations and noise, which may affect the marine life including dolphins, turtles, whales and other animals. The loud noise and vibrations also impacts the fishponds along the coast. Additionally, residue from airplanes flying overhead and airport activity deposited on the ocean and fishponds may also harm marine life (Page 4 of 5 of Gazette & Kanakahe Summary – Cultural Impact Assessment Appendix A). While this concern is related to existing airport activities, it was not a concern related to the proposed project. No concerns or impacts from the proposed project on access to the shoreline or on fishing and ocean and shoreline gathering activities were identified.

Sustainable Building Guidelines, Use of Native Plants, and Glasspahrt

Appropriate sustainable building techniques such as use of energy- and water-conserving fixtures and maximizing daylighting will be incorporated into the design of the proposed improvements. As required by Hawaii Revised Statutes (HRS) Chapter 10ID-408, native or culturally significant plants will be used where appropriate. Finally, paving material with the required recycled glass content as specified in HRS 10ID-407 will be used for required roadway improvements.
MEMORANDUM

TO: Nick Vaccaro, Land Agent
Land Division

THRU: Dierdre S. Maniya, Administrator
Land Division

FROM: Michael G. Buck, Administrator
Division of Forestry and Wildlife

SUBJECT: Draft Environmental Assessment, Hilo International Airport Project No. AH1011-03, Hilo, Hawaii, TMK (3) 2-1-12: per. 9.

DOWAF has reviewed the subject document and we provide the following comments for your consideration. We will comment on the indirect impacts these infrastructure additions to the Hilo International Airport will have on the island. In previous airport expansions, we requested that DOT mitigate the threat of pest and/or invasive species introductions to the island. In 1994, Hawaii’s borders arrived by aircraft, baggage, or hitchhikers on the aircraft alone. A number of major farm, forest, and health pests and/or invasive species introductions have been identified. This threat i.e. banana poa, brucellosis, papaya ring-spot virus, micchia etc, we request that an invasive species mitigation plan be added and incorporated into the Hilo International Airport master plan. For additional information on invasive species problems in Hawaii, please see (www.conervationhawaii.org/html/invasive/species.html). Please call Ms. Mindy Wilkinson, DOWAF Invasive Species Coordinator at 808-0364, if you have questions about our review. Thank you for the opportunity to comment on this project.

C: Hilo DOWAF Branch
Ms. Mindy Wilkinson, DOWAF Administration
MEMORANDUM

TO: X Division of Aquatic Resources
   X Division of Forestry & Wildlife
   X Na Ala Hele Trails
   X Division of State Parks
   X Division of Boating & Ocean Recreation
   X Commission on Water Resource Management

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

SUBJECT: Draft environmental assessment, Hilo International Airport Project No. AH101-03, Hilo, Hawaii, tax map key (3) 2-1-12; portion 9

Please review the attached document covering the subject matter and submit your comments (if any) on Division letterhead signed and dated within the time requested above. Should you need more time to review the subject matter, please contact Nick Vacarco at Ext. 7-0438.

**Note: One (1) copy of the document is available for review in the Land Division Office, Room 220. Sign out slips are available at the counter for those who wish to review the document for a 24-hour period.

If this office does not receive your comments on or before the suspense date, we will assume there are no comments. Thank you.

( ) We have no comments.

Comments are attached.

Signed: [Signature]
Date: [Date]

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/NAV
Ref.: SLU02-001.CMT

COMMENTS

In addition to our previous comments that have been addressed on Coastal Hazards of page 4-9, of the Draft Environmental Assessment, please provide the water demands and calculations to Planning Branch, Engineering Division of the Department of Land and Natural Resources so that the water demands can be included in the State Water Projects Plan Update.

Should you have any questions, please call Mr. Andrew Monden of the Planning Branch at 887-0229.

Signed: [Signature]
Date: [Date]
November 26, 2002

TO: Charlene E. Unoiki, Acting Assistant Administrator

FROM: Harry M. Yada, District Land Agent

SUBJECT: Draft Environmental Assessment, Hilo International Airport Project No. A11011-03, Hilo, Hawaii, Tax Map Key: (3) 2-1-12: various

Pursuant to your circulation for comments on the subject project, the Hawaii District Land Office has the following comments:

The proposed "Land Acquisition" referred to in the document identifies a parcel of State land (TMK: 3/2-2-37: 41) consisting of approximately 2.8 acres for acquisition. Given the current FAA policies with regard to any land set aside to the Department of Transportation, Airports Division, and the collection of rents for non-airport uses, any further dispositions of State lands to DOT, Airports Division will not be considered.

There is no distinction of the subject State owned parcel from the balance of the 10+ acres identified as "Proposed Avigation Easement" area. Therefore, the subject parcel should not be selectively identified for acquisition solely based on ownership. Due to the foregoing, Land Division will not concur to any acquisition of this parcel by DOT-A.

The justification for acquisition is even further diminished due to the location of Kamehameha Avenue, a recently widened 5 lane divided State highway located between the end of the runway and the subject State-owned parcel. The intersection of Kamehameha Avenue and Kekaha Kai Street located between the end of the runway and the subject State-owned parcel contains traffic signal and street light improvements that are for greater impacts to the RPZ than any 1 or 2 story structure that may be constructed on the State parcel. The subject intersection serves as the main ingress and egress to the airport. As a result, DOT-A's own roadway and user traffic is a major contributor to the congestion of cars and people in the RPZ zone. The proposed funds for land and avigation acquisition may be better spent towards the relocation of the access to the airport, removing its own roadway and users from the RPZ. The revenue potential represented by the subject State owned parcel should not be unjustifiably restricted by impractical concerns over an RPZ that is already compromised by more significant factors that cannot be mitigated.

Land Division is currently proceeding with a rezoning of the subject 2.8 acre parcel from its current residential zoning to an industrial/commercial zoning. The parcel has attracted significant interest in the past for potential industrial/commercial uses, but has always been stifled by the need to rezone and DOT-A's issues over the RPZ. Land Division would consider encumbering the property with an avigation easement provided the slope and plane of such an easement reflected the existing improvements within the Kamehameha Avenue and Kekaha Kai Street intersection. Additionally, such an avigation easement should take into consideration the location of the actual end of the runway that has been previously displaced and therefore extends the RPZ further from the limits of the airport boundary than necessary. In event the required avigation easement unreasonably restricts the development of the parcel, DOT-A should pay fair market compensation for the easement from its special funds, as it would for the same easement over private property.
MEMORANDUM

TO:  x Division of Aquatic Resources
    x Division of Forestry & Wildlife
    x Planning & Technical Services
    x Engineering Branch
    x Division of Parks
    x Commission on Water Resource Management

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

SUBJECT: Draft environmental assessment, Hilo International Airport Project No. AH1011-03, Hilo, Hawaii, tax map key (3) 2-1-12 portion 9

Please review the attached document covering the subject matter and submit your comments (if any) on Division letterhead signed and dated within the time requested above. Should you need more time to review the subject matter, please contact Nick Vacarri at Ext. 7-0438.

**Note:** One (1) copy of the document is available for review in the Land Division Office, Room 220. Sign out slips are available at the counter for those who wish to review the document for a 24-hour period.

If this office does not receive your comments on or before the suspense date, we will assume there are no comments. Thank you.

( ) We have no comments.

Signed:  
Date:  

( ) Comments are attached.
TO:  DIERDRE S. MAMIYA, ADMINISTRATOR
     LAND DIVISION
     DEPARTMENT OF LAND AND NATURAL RESOURCES

FROM:  DAVID K. YOHI
     AIRPORTS ADMINISTRATOR

SUBJECT:  Hilo International Airport
          Draft Environmental Assessment
          State Project No. AH1011-03

Thank you for your letter dated December 13, 2002, regarding the subject Draft Environmental Assessment (EA). The following is our response to your comments.

Division of Forestry and Wildlife

The Department of Transportation, Airports Division, is aware of the potential threat that alien flora and fauna pose to our island's ecosystem. However, we do not feel that an invasive species mitigation plan for the proposed improvements is warranted since the risk of alien species introduction is influenced primarily by flight origin and frequency and the proposed improvements will have no effect on these factors. Moreover, there are no inbound overseas flights at Hilo, either existing or planned. Therefore, the proposed improvements are not anticipated to affect the risk of alien species introduction to the State.

In addition, programs presently conducted by the State Department of Agriculture and U.S. Department of Agriculture to detect alien species will not be affected by the proposed improvements.

Engineering Division

As requested, water demand and calculations for the proposed improvements will be provided to the DLNR Engineering Division Planning Branch when they become available for inclusion in the State Water Projects Plan Update.

Land Division Hawaii District Land Office

Your concerns and preference for easements as opposed to acquisition are acknowledged. Our policy, however, is to seek acquisition to gain direct control over lands within the Runway Protection Zone whenever possible. State ownership of lands should facilitate the transfer or exchange of such lands, and we proceeded on that basis to identify the referenced parcel (Tax ID 2-2-37:4) for acquisition. As you are aware, the exchange of Airport lands has been undertaken elsewhere among State agencies such that we should not rule out such actions at this time. Should we be unable to acquire the subject parcel, we will pursue obtaining an appropriate avigation easement.

We appreciate your interest and participation in the environmental review process. Your letter, together with this response, will be included in the forthcoming Final EA. If you have any questions, please contact Mrs. Lynn Becomes, Planner, at (808) 836-8811.

Cc: Wilson Okamoto and Associates (R. Funakoshi)
December 17, 2002

Mr. Roy K. Sakato
Acting Airports Administrator
Department of Transportation
Honolulu International Airport
400 Rodgers Boulevard - Suite 700
Honolulu, HI 96819-1815

SUBJECT: Hilo International Airport - Draft Environmental Assessment

Dear Mr. Sakato:

Thank you for the opportunity to review the above referenced Draft Environmental Assessment which allows for expansion of the Hilo International Airport.

The Office of Hawaiian Affairs (OHA) recognizes that the DOT has increased its efforts to communicate with the Keawaua community and has a better understanding of their concerns. However, many of the issues raised in our earlier correspondence of July 26, 2001 have not been resolved.

OHA views the incompatibility between airport operations and the adjacent residential community as a health, safety, and social issue which is addressed by the Adverse Effects section of the DOT Environmental Justice Guidelines. As such, indications of current adverse impacts on existing community facilities and individual households should be DOT’s highest priority as they plan for this runway expansion. The community should be kept informed and have simple opportunities to provide meaningful input as you address mitigation measures. OHA offers the following specific comments:

The noise issue remains unresolved. Specifically, the DOT maintains that it will continue consultations regarding sound proofing and installation of air conditioning or the possible relocation of residents away from the “high noise areas”. However, the costs of installing air conditioners and subsequent increases in monthly electrical costs have not been addressed. Additionally, relocation does not appear to be acceptable to the local community and conflicts with DOT’s Adverse Effects definition cited in the U.S. Department of Transportation’s Environmental Justice Guidelines. Adverse noise and air quality impacts for schools and other public facilities in the area have not been addressed.

The DOT has not resolved how it will accommodate required FAA runway noise zones. This is ever more important now that the consideration of DHRFL housing near the airport has been reconsidered. Will the runway be re-aligned?

OHA believes 106 consultations are mandated for the Keawaua grave and for archaeological sites in the vicinity of the proposed expansion. OHA reminds the DOT and the FAA that even though access may be categorically exempt under the National Environmental Protection Act (NEPA), they are not necessarily exempt under the National Historic Preservation Act (NHPA), which requires a 106 consultation for all federal undertakings affecting historic or traditional cultural properties. To initiate a 106 consultation with the Office of Hawaiian Affairs, please send a written request for a 106 consultation to:

Administrator
Office of Hawaiian Affairs
711 Kapiolani Blvd., 5th Floor
Honolulu, HI 96813

Attachment: 106 Consultation

OHA is concerned that although the DOT has made good-faith efforts to accommodate community concerns, it has not finished its community outreach efforts, nor addressed all of its legal requirements to consult with affected parties. OHA believes that a POAREF for this project should be delayed and an Environmental Impact Statement should be required.

If you have further questions, please contact Jerry Nancy at 504-1847 or e-mail him at JerryN@oha.org.

Sincerely,

[Signature]

[Name]
Acting Director
Hawaiian Rights Division

C: Hilo CAC
TO: CLYDE NAMUO, ADMINISTRATOR
OFFICE OF HAWAIIAN AFFAIRS

FROM: DAVIS K. YOGI
AIRPORTS ADMINISTRATOR

SUBJECT: Hilo International Airport
Draft Environmental Assessment
State Project No. AIH011-03

Thank you for your letter commenting on the subject project. As requested, we will continue to keep the Keahalaka community informed of the airport improvements and will work with the Department of Hawaiian Home Lands and homeowners on a case-by-case basis to resolve airport-related noise impacts. However, we do want to correct a reference in your letter to "runway expansion," as no expansion of any runway is planned as part of the proposed improvements.

Regarding the impacts from noise and air quality, we believe that we have explored all available and reasonable measures for mitigation. At each, the most we can do is to have options available to individual homeowners and they can then decide to accept or pursue any of the proposed measures.

Regarding incompatible uses within the runway protection zone, we have re-evaluated our land acquisition program and our current policy is to acquire only at such time that the land becomes available.

A letter initiating a Section 106 consultation will be sent to your department, as requested.
December 13, 2002

Mr. Davis Yogi
Airports Administrator
Department of Transportation
Airports Division
Honolulu International Airport
400 Rodgers Boulevard, Suite 700
Honolulu, Hawaii 96819-1899

Re: Draft Environmental Assessment
Hilo International Airport
State Project No. AH101-03

Dear Mr. Yogi:

The ACH is in receipt of the Draft Environmental Assessment for the Hilo International Airport (reference State Letter AIR-P 02.0427).

We are pleased that many of our earlier comments have been addressed, and continue to offer the following suggestions. Note that the following ACH comments regarding the Draft Environmental Assessment do not necessarily represent a commitment by the ACH to undertake the subject projects at Hilo International Airport:

- **Helicopter Facilities** – Suggest that the report clarify that the DOT-A's helicopter project will provide basic infrastructure for lease lots, but the tenants will be responsible for all other development (such as passenger lounges, office and hangar facilities, and auto parking).
  In addition, an unresolved issue in the Master Plan is the compatibility of the heliports (and helicopter operations) with the fixed-wing aircraft operations associated with the relatively new T-Hanger (Building 414) adjacent to the site. The ACH continues to consider the "Old Terminal Area" a very visible site for helicopter facilities once the various cargo operations have been relocated to the new site.

- **Auto Parking** – Suggest that the report clarify that the needed parking lot expansion would be within the loop formed by the terminal access road rather than to the east of the existing parking lot as illustrated in the Draft Environmental Assessment. This will allow the needed flexibility to allow the project to respond to particular site conditions.
  While the ACH agrees with the need to address certain environmental conditions associated with the terminal loop roadway, the ACH disagrees with the specific terminal loop development plan included in the Master Plan, and does not support the inclusion of those specific Master Plan improvements in the Draft Environmental Assessment.

*Land Acquisitions and Aviation Easements* – As stated in the Master Planning process, the ACH supports the acquisition of an aviation easement only for (and does not support the acquisition of) the land west of Kaneohe Avenue on the extended centerline of Runway 03. Because the land is separated from the airport property by Kaneohe Avenue, its acquisition is unnecessary as aviation easements provide the necessary protections for the approach to Runway 03.

In addition, as stated in the Master Planning process, the ACH does not support the acquisition of the entire 2.3-acre 6-parcel site west of the Runway 03 threshold. While not resolved in the Master Planning process, a combination of easements and acquisitions may provide a better option with less disruption of private land ownership patterns.

Thank you for the opportunity to review and comment on the draft materials. Please do not hesitate to contact this office if you have questions or comments.

Sincerely,

John L. Thatcher

Mr. Davis Yogi
December 13, 2002
Page 2
Mr. John Thatcher
Executive Director
Airlines Committee of Hawaii
Honehula International Airport
300 Rodgers Boulevard, 463
Honehula, Hawaii 96819-1832

Dear Mr. Thatcher:

Subject: Hilo International Airport
Draft Environmental Assessment
State Project No. AH1011-03

Thank you for your letter regarding the subject Draft Environmental Assessment (EA). We offer the following in response to your comments.

Helicopter Facilities: As suggested, the Final EA will be revised to reflect that basic infrastructure will be provided to the lease lots, but that tenants will be responsible for their facilities development. Potential conflicts with the nearby T-hanger will also be noted.

Auto Parking: The parking lot expansion area will be modified to provide the Airport with flexibility in developing additional stalls.

Land Acquisition and Avigation Exemptions: Your concerns and preference for exemptions as opposed to acquisition are acknowledged. Our intention is to pursue avigation exemptions for properties in the runway protection zone or acquisition should such properties become available.

We appreciate your interest and participation in the environmental review process. Your letter, together with this response, will be included in the forthcoming Final EA. If you have any questions, please contact Ms. Lynn Becones, Planner, at (808) 838-8811.

Sincerely,

DAVIS K. YOGI
AIRPORTS ADMINISTRATOR

c: Wilson Okamoto & Associates (R. Funakoshi)
FAA-ADO (S. Weng)
December 8, 2002
R.R. 2, Box 4852
Pahoa, HI 96778

Mr. Roy Sakata
Department of Transportation
Airports Division
400 Rodgers Blvd., Suite 700
Honolulu, HI 96819

Dear Mr. Sakata,

I would like to urge you not to accept the proposed Hilo International Airport Master Plan draft Environmental Assessment.

Our state legislators created specific laws that explain how government meetings must be conducted to ensure that the public is involved in planning decisions. Yet the state Department of Transportation, in conjunction with Wilson Okamoto & Associates, completely ignored these requirements. And the result is exactly what the laws were designed to prevent – a plan devised behind closed doors that benefits a select few while ignoring the problems of the citizens who live in the immediate area of the airport.

This issue cannot be avoided, and the suggestions presented are unacceptable to the people of the Island of Hawaii.

Please understand that I will continue to ask the Office of Information Practices to investigate the irregularities associated with the creation of this document, and I will advise the State of Hawaii should this ill-conceived plan be accepted as it has been presented. I feel that it essential that you extend the hearing process so that the concerns of the people living near the airport can be heard and dealt with.

Aloha.

cc: W. Okamoto & Associates, OEQC

Mr. John Case
R.R. 2, Box 4852
Pahoa, Hawaii 96778

January 24, 2003

Dear Mr. Case,

Subject: Hilo International Airport
Draft Environmental Assessment
State Project No. A11011-63

Thank you for your letter of December 8, 2002, commenting on the subject project. We wish to assure you that public input is viewed as an essential component for preparation of the Hilo International Airport Master Plan. The Department of Transportation, Airports Division, will endeavor to keep the community apprised prior to construction of the proposed improvements and will continue to work with residents of the Keaauka community to resolve noise impacts.

We appreciate your interest and participation in the environmental review process. If you need further information, please contact Ms. Lynn Beutner, Planner, at (808) 838-5811.

Sincerely,

DAVIS K. YOGI
Airports Administrator

cc: Wilson Okamoto and Associates (R. Funakoshi)
April 10, 2001

Mr. John Case
Aviation Nuisance and Sound Abatement Committee Community Representative
R.R.2 Box 4652
Pahoa, Hawaii 96778

Re: Request for Assistance

Dear Mr. Case:

This letter is regarding your March 16, 2000, request that the Office of Information Practice investigate the Department of Transportation's alleged failure to provide proper public notice pursuant to Hawaii Revised Statutes section 92-7 (1990). My name is Georgia Fligg and this case has been reassigned to me. At this time, I request that you provide me with the name of the board or commission that called the March 16, 2000, public meeting.

Thank you for your patience and assistance in this matter. If you have any questions please do not hesitate to contact me in Honolulu at 566-1400.

Sincerely,

Georgia L. Fligg
Staff Attorney

GLF: ran

April 24, 2001
R. R. 2, Box 4852
Pahoa, HI 96778

Ms. Georgia L. Fligg
Staff Attorney
Office of Information Practices
No. 1 Capitol District Building
210 South Hotel Street, Suite 107
Honolulu, HI 96813

Dear Ms. Fligg:

Thank you very much for your letter regarding my concerns about the illegal meetings that were held by the state Department of Transportation. The last of this series of meetings was held in November of 2000, with disastrous results (please see the enclosed article). None of the community's many, many concerns were addressed in any way. I have already begun preparing a lawsuit to present to U.S. Circuit Court, but maybe now we can avoid that.

The enclosed public notice shows that it is the state DOT that organized these meetings. As you can see, no agendas were available for the public to inspect. And packets of information handed out at the door did not conform with the plans presented by the committee members. Apparently the changes had been made at a meeting held the previous day.

The Technical Advisory Committee Meetings that were always held secretly before the announced public meetings are another concern. I would appreciate you addressing these meetings, which were paid for with taxpayer money, included members of the county, state and federal governments as well private citizens in the aviation industry. No members of the community-at-large were allowed to attend these meetings although public policy was discussed and decisions regarding the airport were reached. Attached is the summary minutes of the March 20, 2000 meeting as well as a list of all the meetings that the DOT held illegally regarding the Hilo International Master Plan.

Although it is very difficult to obtain a copy, would you please look at the minutes and comments concerning the final Public Informational Meeting held on November 28, 2000 that are contained in the FAA Part 150 Noise Compatibility Program for Hilo Airport? Then you will be able to see how much damage these illegal meetings had on the Hawaiian Homestead Community of Kea'au.

Please let me know if I can be of any further assistance to you. I can't tell you how much those of us who will be suffering for the next twenty years as a result of these meetings appreciate your concern with this matter.

Aloha,

John Case
SUMMARY MINUTES
TECHNICAL ADVISORY COMMITTEE MEETING NO. 4
HILO INTERNATIONAL AIRPORT MASTER PLAN AND
NOISE COMPATIBILITY PROGRAM UPDATE

Date: March 16, 2000
Place: Airport District Manager’s Conference Room, Hilo International Airport
Attendance: See Attached Sheet

1) The meeting was convened at 2:08 p.m. by Mr. Stephen Tahimura, DOT-Airports Division. This is the fourth meeting of the Technical Advisory Committee for the Hilo International Airport Master Plan Update and the FAR Part 150 Noise Compatibility Study.

2) Introductions were made of those present at the meeting.

3) Mr. Rodney Funakoshi, Wilson Okamoto & Associates, presented an overview of the Draft Master Plan and Noise Compatibility Program. He described the objectives for the 20-year planning horizon, and covered the schedule for the Master Plan and Noise Compatibility Program. A summary of the Draft Master Plan was presented, as well as an overview of the noise study and the recommended noise abatement and land use plan.

4) The floor was opened for discussion (Consultant and DOT-A responses are in italics).

5) Mr. Bob Roshill asked if the cost of relocating the FAA ASR had been examined, since the NAVAID, with its required clearance zone, encroaches upon the Kamehameha Schools property. He pointed out that the DOT has been aware, for well over two years, of Kamehameha Schools’ plans for that piece of property, and that there is no agreement allowing the use of the area for the ASR.

The relocation of the ASR is the responsibility of the FAA, rather than the State DOT, because it is FAA equipment. The State DOT has asked the FAA to provide it with information as to what protection measures are required for both the ASR and the VORTAC. The FAA is probably not aware of plans made by Kamehameha Schools, and unfortunately the FAA representative could not be present at this meeting. It was later confirmed that the ASR does not encroach on property owned by Kamehameha Schools, formerly Bishop Estate.
10. REFERENCES


Hilo International Airport Improvements


APPENDIX A
BOTANICAL SURVEY REPORT
# Table of Contents

- Introduction ........................................................................................................... 1
- Methods .................................................................................................................. 1
- Botanical History of the Area .................................................................................. 1
- Results .................................................................................................................... 2
- Endangered Species ............................................................................................... 5
- Species List ............................................................................................................. 6
- Bibliography ........................................................................................................... 13
INTRODUCTION

The botanical survey of the proposed Hilo Airport Master Plan Improvements required the examination of four parcels of land off the airport proper. Together the four parcels consisted of approximately fifty eight acres of land. At this time these parcels are heavily over grown or in forest. Site 1, the location of the proposed helicopter facility and Site 2, the proposed location of the expanded base yard, were once home of a military base. Site 3, the area needed to expand the cargo apron, is east of the airport fence. This site is heavily forested and contains some native vegetation. Site 4, the proposed parking lot enlargement area is located just south of the existing parking lot. The vegetation types found on each site will be described and a single attached species list will contain the names of all plant taxa encountered during these surveys.

METHODS

Access to the vegetation of all the parcels was gained by way of existing roads, trails and forays by a two person team using the walk through method. Data were collected to describe the major vegetation types of each parcel and to prepare a list of all plant species found on all of the sites and most importantly to determine if any proposed listed threatened or endangered plant species are present on any of the parcels.

BOTANICAL HISTORY OF THE AREA

Since 1973 there have been two Environmental Impact Statements (EIS) for proposed projects on and around the Hilo International Airport. In the 1973 EIS prepared by the Federal Aviation Administration (FAA) for the New Passenger Terminal General Lyman Field, Hilo, Hawaii it was stated that the "US Department of the Interior has indicated that the vegetation at the proposed terminal site is that of low-growing rain forest comparable to the expanse of undeveloped land south of the existing airport. This forest is composed largely of rapid-growing, short lived vegetation". Twelve plant species are listed that make up the vegetation of the site.

A somewhat newer document is the 1988 Westac Services EIS for a "Hawaii Commodities Irradiation Facility". This project consisted of three sites near the existing airport. Site A was described as "mowed lawn surrounded by chain-linked fences and a few shrub species occur on the face of the fence terrace where the rocky surface is exposed." Site B was described as "grassy lawn with scattered trees." The lawn was said to be composed of "mixed grass species". And finally Site C was described as about "one half covered by broomsedge and molasses grass. The other half supports an open woodland of weedy, fast-growing Melochia trees". The complete survey report is appended to this EIS.

Neither report mentions the presence of large numbers of native Hawaiian plants or of proposed, listed threatened, or endangered species in this area.

RESULTS

Site 1, the proposed helicopter facility location, is composed of approximately twenty acres of land. It lies between the junction of Kekuanaoa Street and the airport fence. There are three vegetation types on this site. Dense Forest is found where Site 1 abuts Kekuanaoa Street. Here a mix of mostly introduced trees reach a height of from 50 to 75 feet. There are hala (Pandanus tectorius S. Parkinson ex Z.), gum powder (Thema orientalis Amam), Sisirs (Albizia lebeck (L.) Benth), kingngbing (Miconia mappa (L.) Mull. Arg.),
Melocchia umbellata (Mount.) Steep., and octopus trees (Schottlera actinophylloides (Eodt.) Harms.). In addition fruit trees such as mango, avocado, strawberry Guava, and yellow guava (Psidium guajava L.) indicate that the area was once landscaped. Several native 'ohia' trees Metrosiderus polymorpha (Gaud.) also persist in the area. This forest is very dense and the understory is scanty and consists of guava, bingabong, and hala seedlings. The Dense Forest is approximately 300 feet deep.

There are two additional vegetation types on this site. Along the airport fence can be found Open Grassland. Between the Open Grassland and Dense Forest is Transition Zone vegetation. The Open Grassland vegetation and the Transition Zone vegetation are kept trimmed by airport management to ensure good visibility for airplane and helicopter pilots.

The Transition Zone vegetation is mostly molasses grass (Melinis minutiflora P. Beauv.) with scattered patches of Guinea grass (Panicum maximum Jacq.) and yellow guava, bingabong, Melocchia, hula, and gun powder tree seedlings coming in. There are a good many weedy herbs found in this area. Among them are Bidens alba, sensitive plant (Mimosa pudica L.), and Crotalaria juncea L. The Transition Zone is approximately 200 feet wide and runs the length of Site 1.

Open Grassland vegetation abuts the airport fence and is approximately 100 feet wide. Here the dominant species is molasses grass with prominent patches of Guinea grass, Crotalaria juncea, Crocosmia x crocosmiiflora (Lamario ex E. Mor.) N.E. Brown, white oyster plant (Portulaca oleracea L.), sensitive plant (Mimosa pudica L.) are all to be found among many others. A few seedlings of gun powder tree, bingabong, and Melocchia persist. All the vegetation of the Open Grassland is under 10 feet in height.

Site 2, the proposed location of the expanded base yard, is also made up of approximately 20 acres of land. It too lies between the airport fence and Kekuanaoa Street. It is bounded on the west by the Hawaii National Guard Station and on the east by the central post office. Two vegetation types are found on Site 2, Scrub Forest and Open Grassland. Scrub Forest parallels Kekuanaoa Street and covers the remaining half of Site 2. Open Grassland parallels the airport fence and covers the remaining half of Site 2. Both Scrub Forest and Open Grassland are dissected by old military roads and both contain left over concrete building foundations.

The Scrub Forest is made up of a variety of introduced trees and large shrubs, all 15 to 20 feet in height. There are guava powder, bingabong, Melocchia, hula, strawberry and yellow guava, and Eddlewood trees (Citharexylum caudatum L.). Lantana camara L., koa kea (Leucosyna leucophaea (Lam.) de Wit), Melastoma candidum D. Don., and Tetrazyga bicolor (Mill.) Cogn. are a few of the large shrubs found in the area. The ground layer is made up of molasses grass, Dissotis rubidofolia (Sm.) Tritana, sensitive plant, Wedelia, Bamboo orchid (Arundo grandis) (D. Don) Hochr., and many, many others.

The Open Grassland is maintained as low stature vegetation by airport management for visibility. The dominant in this area is molasses grass with some patches of Guinea grass present. Strawberry and yellow guava, and Melocchia seedlings are coming in. There is also a small patch of banana (Musa x paradisiaca L.) to be found along the airport fence.

Site 3, the proposed Cargo Apron Expansion Area, is located just east of the passenger terminal and consists of approximately seven acres of land. Two vegetation
types are to be found on this site. Introduced Weed Tree Forest and Bamboo
Orchid/Bromesedge Grassland. Introduced Weed Tree Forest forms a broad band of
almost impenetrable forest along the north, south, and western edges of the study site. The
species composition of this forest is fairly narrow and consists of Melochia, gun powder,
ironwood (Casuarina equisetifolia L.), bingabing, and hala trees. Once past the edge
of the forest is fairly open and the understory consists of seedlings and saplings of
the above mentioned trees plus some strawberry guava and shehuhu anida (Ardisia
eiffortii Thumb).

In the central part of this site is found a broad open area vegetated by Bamboo
Orchid/Bromesedge Grassland. Here the vegetation is three to six feet in height and
consists of Bamboo orchid and bromesedge (Andropogon hiunculus L.) with scattered
Lantana and Melastoma bushes and ironwood, Melochia, hala, and bingabing seedlings
and saplings coming in.

Site 4, the Proposed Parking Expansion Site, is located south of the existing
public parking area and is made up of approximately seven acres of land. One vegetation
type is found on this site, Introduced Weed Tree Forest. The vegetation of this site is
very dense and is composed of Melochia, hala, and bingabing trees. The
understory is very scant and is mostly seedlings and saplings of the above mentioned
trees.

ENDANGERED SPECIES

No candidate, proposed, or listed threatened or endangered species are set forth in
the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) are known from
near the Hilo International Airport and none were found during this survey.

SPECIES LIST OF THE PLANTS FOUND ON FOUR PROPOSED HIKO AIRPORT
MASTER PLAN IMPROVEMENTS SITE

This species list contains the names of all plant taxa found on all four study areas
that are part of the Hilo Airport Master plan. The plant families have been arranged
alphabetically within three groups, Fera and Feni Allies, Monocotyledons, and
Dicotyledons. The genera and species are arranged alphabetically within families. The
taxonomy and nomenclature follow that of Wagner, Herbst, and Solter (1990). For
each taxon the following information is provided:

1. An asterisk before the plant name indicates a plant introduced to the
Hawaiian Islands since Cook or by the aborigines.
2. The scientific name of the plant.
3. The Hawaiian name or the most widely used common name of the
plant.
4. Abundance ratings are for this site only and they have the following
meanings:
   Uncommon = a plant that was found less than five times.
   Occasional = a plant that was found between five and ten times.
   Common = a plant considered an important part of the vegetation.
   Locally abundant = plants found in large numbers over a limited
area. For example the plants found in grassy patches.
   Abundant = plants found in large numbers on all sites.

This species list is the result of an extensive survey of this site during the hot, dry
season (July 2001) and it reflects the vegetative composition of the flora
during a single season. Minor changes in the vegetation will occur due to introductions
and losses and a slightly different species list would result from a survey conducted
during a different growing season.
<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Abundance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FERNS AND FERN ALLIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Polypodiaceae</em> - Common Fern Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christella densus (Forsk.) Browney &amp; Jerny</td>
<td>Oak fern</td>
<td>Locally abundant</td>
</tr>
<tr>
<td><em>Diopterysis densa</em> (Forsk.) C. Chr.</td>
<td>Sword fern</td>
<td>Common</td>
</tr>
<tr>
<td><em>Nephrolepis cordifolia</em> (L.) Schott.</td>
<td>Sword fern</td>
<td>Common</td>
</tr>
<tr>
<td><em>Nephrolepis exaltata</em> (L.) Link.</td>
<td>Silver fern</td>
<td>Uncommon</td>
</tr>
<tr>
<td><em>Pityrogramma calomelanos</em> (L.) Link.</td>
<td><em>Pteris thunbergiana Koehler</em></td>
<td>Occasional</td>
</tr>
<tr>
<td><em>Ptilotum undatum</em> Burn. F.</td>
<td><em>Ptilotum undatum</em> Burn. F.</td>
<td>Occasional</td>
</tr>
<tr>
<td><em>Ptilotum medium L.</em></td>
<td>Moso</td>
<td>Common</td>
</tr>
<tr>
<td><strong>MONOCOTYLEDONS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AGAVACEAE</strong> - Agave Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Cordyline fruticosa</em> (L.) A. Chev.</td>
<td>Ti</td>
<td>Occasional</td>
</tr>
<tr>
<td><strong>ARACEAE</strong> - Arum Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Epipedium pinnatum</em> (L.) Engl.</td>
<td><em>Epipedium nobile</em></td>
<td>Common</td>
</tr>
<tr>
<td><em>Monstera deliciosa</em> (Linn.)</td>
<td>Monstera</td>
<td>Locally abundant</td>
</tr>
<tr>
<td><strong>ARECACEAE</strong> - Palm Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Cocos nucifera</em> L.</td>
<td>Coconut palm</td>
<td>Occasional</td>
</tr>
<tr>
<td><strong>COMMELINACEAE</strong> - Spiderwort Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Commelina diffusa</em> N. L. Burm.</td>
<td>Honololea</td>
<td>Occasional</td>
</tr>
<tr>
<td><strong>Cyperaceae</strong> - Sedge Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Cyperus rotundus</em> L.</td>
<td>Nut grass</td>
<td>Common</td>
</tr>
<tr>
<td><em>Fimbristylis dichotoma</em> (L.) Val.</td>
<td>Tall fringe</td>
<td>Common</td>
</tr>
<tr>
<td><em>Kochia spinosissima</em> (Gaud.) Y. Kobus</td>
<td><em>Kochia spinosissima</em> (Gaud.) Y. Kobus</td>
<td>Uncommon</td>
</tr>
<tr>
<td><em>Pyura polystachya</em> (Reichb.) P. Beauv.</td>
<td><em>Pyura polystachya</em> (Reichb.) P. Beauv.</td>
<td>Occasional</td>
</tr>
<tr>
<td><strong>Heliconiaceae</strong> - Heliconia Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Heliconia sp.</em></td>
<td>False bird of paradise</td>
<td>Locally abundant</td>
</tr>
<tr>
<td><strong>Scientific Name</strong></td>
<td>Common Name</td>
<td>Abundance</td>
</tr>
<tr>
<td><strong>IRIDACEAE</strong> - Iris Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Crocosmia x crocosmiiflora</em> N.E. Brown</td>
<td><em>Crocosmia x crocosmiiflora</em> N.E. Brown</td>
<td>Occasional</td>
</tr>
<tr>
<td><strong>MUSACEAE</strong> - Banana Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Musa x paradisiaca L.</td>
<td>Banana</td>
<td>Locally abundant</td>
</tr>
<tr>
<td><strong>ORCHIDACEAE</strong> - Orchid Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Arundina graminifolia</em> (D. Don) Hoch.</td>
<td>Bamboo orchid</td>
<td>Common</td>
</tr>
<tr>
<td><strong>PANDANACEAE</strong> - Screw pine Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pandanus tectorius S. Parkinson ex Z.</td>
<td>Zala</td>
<td>Common</td>
</tr>
<tr>
<td><strong>POACEAE</strong> - Grass Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Andropogon bicornis</em> L.</td>
<td>Broonzedge</td>
<td>Locally abundant</td>
</tr>
<tr>
<td><em>Andropogon virgatus</em> L.</td>
<td>Yellow bluestem</td>
<td>Locally abundant</td>
</tr>
<tr>
<td><em>Cynodon dactylon</em> (L.) Pers.</td>
<td>Bermuda grass</td>
<td>Common</td>
</tr>
<tr>
<td><em>Digitaria ciliaris</em> (Retz.) Koster</td>
<td><em>Digitaria ciliaris</em> (Retz.) Koster</td>
<td>Common</td>
</tr>
<tr>
<td><em>Digitaria sosirensis</em> Link.</td>
<td>Smooth crabgrass</td>
<td>Locally abundant</td>
</tr>
<tr>
<td><em>Eragrostis unioloides</em> (Retz.) Nees ex Str.</td>
<td><em>Eragrostis unioloides</em> (Retz.) Nees ex Str.</td>
<td>Locally abundant</td>
</tr>
<tr>
<td><em>Melinis minutiflora</em> P. Beauv.</td>
<td>Wiregrass</td>
<td>Locally abundant</td>
</tr>
<tr>
<td><em>Panicum maximum</em> Jacq.</td>
<td>Melasses grass</td>
<td>Common</td>
</tr>
<tr>
<td><em>Panicum repens</em> L.</td>
<td>Guinea grass</td>
<td>Common</td>
</tr>
<tr>
<td><em>Paspalum conjugatum</em> Berg.</td>
<td>Torpedo grass</td>
<td>Locally abundant</td>
</tr>
<tr>
<td><em>Paspalum floribundum</em> Kuntz</td>
<td>Hilo grass</td>
<td>Locally abundant</td>
</tr>
<tr>
<td><em>Paspalum strobilaceum</em> L.</td>
<td><em>Paspalum strobilaceum</em> L.</td>
<td>Common</td>
</tr>
<tr>
<td><em>Paspalum clandestinum</em> Chiov.</td>
<td><em>Paspalum clandestinum</em> Chiov.</td>
<td>Common</td>
</tr>
<tr>
<td><em>Stipa graminifolia</em> Kuntz</td>
<td><em>Stipa graminifolia</em> Kuntz</td>
<td>Common</td>
</tr>
<tr>
<td><em>Stipa pallescens</em> (E. Koekio) Stapf</td>
<td>Yellow foxtail</td>
<td>Locally abundant</td>
</tr>
<tr>
<td><em>Stipa viridula</em> (Wilde) Il.</td>
<td>Palm grass</td>
<td>Common</td>
</tr>
<tr>
<td><em>Stipa viridula</em> (Wilde) Il.</td>
<td>Naital grass</td>
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<tr>
<td><em>Stipa viridula</em> (Wilde) Il.</td>
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<tr>
<td><strong>DICOTYLEDONS</strong></td>
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<tr>
<td><strong>ACANTHACEAE</strong> - Acanthus Family</td>
<td></td>
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<tr>
<td><em>Asteria botronica</em> L.</td>
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</tr>
<tr>
<td><em>Thunbergia fragrans</em> Roth.</td>
<td>White Thunbergia</td>
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<tr>
<td><strong>Scientific Name</strong></td>
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<td>Abundance</td>
</tr>
<tr>
<td><strong>Scientific Name</strong></td>
<td>Common Name</td>
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<td><strong>Scientific Name</strong></td>
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<td>Scientific Name</td>
<td>Common Name</td>
<td>Abundance</td>
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<tr>
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<td><strong>ANACARDIACEAE</strong> – Mango Family</td>
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<td><em>Mangifera indica</em> L.</td>
<td>Mango</td>
<td>Uncommon</td>
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<tr>
<td><em>Schima tetrandra</em> Raddi</td>
<td>Christmas berry</td>
<td>Occasional</td>
</tr>
<tr>
<td><strong>APOCYNACEAE</strong> – Dog Bane Family</td>
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<tr>
<td><em>Allamanda cathartica</em> L.</td>
<td>Allamanda</td>
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<td><strong>ARALIACEAE</strong> – Ginseng - Family</td>
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<tr>
<td><em>Schisandra chinensis</em> (Endl.) Harms</td>
<td>Octopus tree</td>
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<td><strong>ASTERACEAE</strong> – Sunflower Family</td>
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<tr>
<td><em>Agriocarpa comosa</em> DC.</td>
<td>Malie honohone</td>
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<tr>
<td><em>Bidens alba</em> (L.) DC.</td>
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<tr>
<td><em>Bidens crispus</em> DC.</td>
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<td></td>
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<tr>
<td><em>Eriogonum fasciculatum</em> (L.) DC.</td>
<td><em>Flora's paintbrush</em></td>
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<tr>
<td><em>Eupatorium rugosum</em> (Michx.) Britton</td>
<td><em>Sourbrush</em></td>
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<td><em>Helianthus annuus</em> L.</td>
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<tr>
<td><strong>BALSAMINACEAE</strong> – Touch-me-not Family</td>
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<tr>
<td><em>Impatiens wallerana</em> J. D. Hook.</td>
<td>Busy Lizzy</td>
<td>Locally abundant</td>
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<td><strong>BIGNONIACEAE</strong> – Bignonia Family</td>
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<tr>
<td><em>Spathodea campanulata</em> P. Beauv.</td>
<td>African tulip tree</td>
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<td><strong>BUDDLEIACEAE</strong> – butterfly Bush Family</td>
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<td><em>Buddleia asiatica</em> Lour.</td>
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<td><strong>CARICACEAE</strong> – Papaya Family</td>
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<td><em>Carica papaya</em> L.</td>
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<td><strong>CASUARINACEAE</strong> – She-oak Family</td>
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<td><em>Casuarina equisetifolia</em> L.</td>
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<td><strong>CECROPIACEAE</strong> – Cecropia Family</td>
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<td><em>Cecropia obtusifolia</em> Bertol.</td>
<td>Trumpet tree</td>
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<tr>
<td><strong>CONVOLVULACEAE</strong> – Morning glory Family</td>
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<tr>
<td><em>Ipomoea indica</em> (L.) Merr.</td>
<td>Koali 'eva</td>
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<td><em>Herremia pumila</em> (L.) Rendle.</td>
<td>Woodrose</td>
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<td><strong>CUSCUTACEAE</strong> – Dodder Family</td>
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<td><em>Convolvulus scandens</em> Choisy</td>
<td><em>Ku'au</em></td>
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<td><strong>EUPHORBIACEAE</strong> – Spurge Family</td>
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<td><em>Althea rosea</em> L.</td>
<td>Hairy spurge</td>
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<td><em>Chamaesyce hispida</em> (L.) Millsp.</td>
<td>Graceful spurge</td>
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<td><em>Chamaesyce hypericifolia</em> (L.) Millsp.</td>
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<td><em>Chamaesyce prostrata</em> (Ait.) Small.</td>
<td><em>Bingbing</em></td>
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<td><em>Monaragama maga</em> (L.) Millsp. Arg.</td>
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<td><em>Ricinus communis</em> L.</td>
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<td><em>Aeschynomene sp.</em></td>
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<td><em>Canavalia echinata</em> Thouars</td>
<td><em>Maunalei vine</em></td>
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<td><em>Partridge pea</em></td>
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<td><em>Crotalaria axillaris</em> Benth.</td>
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<td><em>Crotalaria pinnata</em> L.</td>
<td>Smooth rattlepod</td>
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<td><em>Desmodium intortum</em> (Sw.) DC.</td>
<td>Spanish clover</td>
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<td><em>Desmodium strictum</em> (Sw.) DC.</td>
<td>Florida beggarweed</td>
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<td><em>Glycine max</em> (Miq.) <em>Max</em> (Wight &amp; Arnott) Verd.</td>
<td>Glycine</td>
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<tr>
<td><em>Indigofera australis</em> Mil.</td>
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<td><em>Leucaena leucocephala</em> (Lam.) de Wit</td>
<td>Koa haole</td>
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<td><em>Macropodum australorum</em> (DC.) Urb.</td>
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<td><em>Medicago lupulina</em> L.</td>
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<td><em>Mimosa pudica</em> L.</td>
<td>Sensitive plant</td>
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<td><strong>LAMIACEAE</strong> – Mint Family</td>
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<td><em>Hyptis pectinata</em> (L.) Poit.</td>
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<tr>
<td>Scientific Name</td>
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<td>-----------------</td>
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<tr>
<td>LAURACEAE – Laurel Family</td>
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<tr>
<td>*Peroe americana Mill.</td>
<td>Alligator pear</td>
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<tr>
<td>MALVACEAE – Mallow Family</td>
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<tr>
<td>*Mallotus coronandulium (L.) Gérard False mallow</td>
<td>Occasional</td>
<td></td>
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<tr>
<td>*Sida rhombifolia L.</td>
<td>Prickly sida</td>
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<td>MELASTOMATACEAE – Malastoma Family</td>
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<tr>
<td>*Chlorophyllum hirsutum (L.) D. Don.</td>
<td>Koster's curse</td>
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<td>*Dispora rotundifolia (Sim.) Triana</td>
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<tr>
<td>*Mallotus candidum D. Don.</td>
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<td>Common</td>
</tr>
<tr>
<td>*Sterculia ecolor (Mill.) Cogn.</td>
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<td>MORACEAE – Fig Family</td>
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<tr>
<td>*Ficus microcarpa L. fil.</td>
<td>Chinese banyan</td>
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<td>MYRSINACEAE – Myrtle Family</td>
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<td>*Ardisia elliptica Thunb.</td>
<td>Shrubbery ardisia</td>
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<td>MYRTACEAE – Myrtle Family</td>
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<td>*Myrtus communis L.</td>
<td>*Ol'sa</td>
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<td>PASSIFLORACEAE – Passion Flower Family</td>
<td>*Passiflora edulis Sims</td>
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<td>*Passiflora foetida L.</td>
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<td>*Passiflora eugenioides (L.) Skeels</td>
<td>Java plum</td>
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<td>POLYGALACEAE – Milkweed Family</td>
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<td>*Polygala paniculata L.</td>
<td>Love-in-a-mist</td>
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<td>RUBIACEAE – Coffee Family</td>
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<td>*Hedyotis bifora (L.) Lam.</td>
<td>Malp pita</td>
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</tr>
<tr>
<td>*Pandorea jasminoides L.</td>
<td>Buttonwood</td>
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<tr>
<td>SOLANACEAE – Nightshade Family</td>
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<tr>
<td>*Solanaceae occidentalis Ruiz &amp; Pav.</td>
<td>Popolo</td>
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<tr>
<td>STERCULIACEAE – Cacao Family</td>
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<tr>
<td>*Wrightia inermis L.</td>
<td>Abundant</td>
<td>Common</td>
</tr>
<tr>
<td>VERBENACEAE – Verbena Family</td>
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<tr>
<td>*Vitex trifolium L.</td>
<td>*Utahsia</td>
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<tr>
<td>*Trema orientalis (L.) Blume</td>
<td>Gun powder</td>
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<td>*Verbena officinalis L.</td>
<td>Lastana</td>
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<tr>
<td>*Stachys officinalis (L.) Vahl</td>
<td>Owi</td>
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<tr>
<td>*Verbena officinalis (L.) Vahl</td>
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<td>*Verbena officinalis (L.) Vahl</td>
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BIBLIOGRAPHY


APPENDIX B
FAUNAL SURVEY
A Survey of Avian and Mammalian Species
Hilo International Airport Improvement Project
South Hilo District, Hawai‘i

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August 2001
Introduction

This report summarizes the findings of a three-day ornithological and mammalian survey of six sites totaling approximately 64 acres, located within the existing boundaries of the Hilo International Airport (THK: 21-1012.009 portion), as well as an additional three sites totaling approximately 17 acres, located immediately adjacent to the airport boundary (Figure 1). Fieldwork was conducted from July 22nd through 24th, 2001.

The primary purpose of the survey was to determine if there were any federally listed endangered, threatened, proposed, or candidate avian or mammalian species on or in the immediate vicinity of the proposed project sites. In addition, we were asked to assess the probability of any use of these sites by listed species, given the habitat the sites currently provide.


Project and Site Descriptions

The State of Hawai‘i Department of Transportation, Airports Division is proposing to construct various improvements at the Hilo International Airport. Proposed improvements are briefly described below, the numbers used in the list correspond to the numbers in the legend on Figure 1.

1. Development of a new cargo facility, to be located southwest of the existing passenger-terminal complex, including associated roadway (t), vehicular parking, general infrastructure, and improvements to the aircraft parking apron.

2. Relocation of helicopter operations to the southwest corner of the airport, including the development of lease lots, operational areas, and associate infrastructure.

3. Construction of General aviation facilities, including an aircraft parking apron, a new T-hanger, wash rack, aircraft tie-downs, and the development of lease lots in the old terminal area.

4. Expansion of the public and employee parking areas.

5. Expansion of the DOT-A maintenance base yard.

6. Implementations of noise-mitigation projects, including sound attenuation for nearby residences and a 15-foot noise barrier between the airport and the Keaukaha residential subdivision.

7. Acquisition of three parcels of land located adjacent to Runways 5, 21, and 21, but located outside of the current airport boundary, for use as runway protection zones.

8. Acquisition of an easement for the Runway 3, runway protection zone area.

The project sites encompass approximately 81 acres located within the airport (Figure 2). The area surveyed slope gently downward from south to north, from an elevation of approximately 45 feet above mean sea level (ASL), to approximately 20 feet ASL (USGS 1996). The first six projects described above are located on sites within the existing boundaries of the Hilo International Airport. The four parcels identified for acquisition or easement, in items 7 and 8, are located immediately adjacent to the airport boundaries (Figure 1). The terrain within the project sites is composed of a mix of pahoehoe and a`a lava flows formed by Mauna Loa during the late Holocene Epoch. The flows were deformed between 720 and 1,500 years ago (USGS 1981; Wolfe and Morris 1996).

With the exception of site number 2, the vegetation on the sites located within the airport boundary is unmanaged. These predominantly grassy areas are dominated by alien (introduced to Hawai‘i by humans) grasses. There are ornamental plantings on several of these grassy areas. Grasses within these sites are closely mowed, and on several sites, herbicides have been used to control vegetation. Site number 2, on the side of the parcel facing the runway, is not currently mowed or otherwise controlled. The perimeter of this site facing Kekaha Kai Road is mowed, and the pandanus, or hala (Pandanus tectorius), fronting the street has been trimmed recently. The vegetation on the various parcels described as sites 7 and 8, is a mix of predominantly alien grasses and woody species. The triangular site located southwest of Runway 3. Site number 7, contains a mix of ornamental and fruit trees and numerous alien grasses and woody species of (Figure 1).

Mammalian Survey Methods

In an effort to detect the presence of endangered Hawaiian hoary bats (Lasiurus cinereus semotus), or "`ama`ama, as it known in Hawai‘i, two stationary, remote bat-census stations were deployed on each of two nights (Figure 1). Broadband Antenna II ultrasonic bat detectors coupled to voice activated cassette recorders and remote timing devices were used to detect bat vocalizations. Following techniques developed by Kruth et al. (1996), the units were calibrated using a pet ultrasonic flex collar. In addition, visual scans were made for bats on two evenings, during crepuscular periods.

All other observations of mammalian species were of an incidental nature. With the exception of the Hawaiian hoary bat, all terrestrial mammals found on the island of Hawai‘i are alien species. Most are ubiquitous; no trapping program was proposed or undertaken to quantify the use of the study site by alien mammalian species. The survey of mammals other than bats was limited to visual and auditory detection, coupled with
observation of scat, tracks, and other animal sign. A running tally was kept of all vertebrate species observed and heard within the project sites.

Avian Survey Methods

Ten count stations were established within the project sites (Figure 1). Six-minute unlimited distance counts were made at each station (Reynolds et al. 1980). Counts were conducted once at each station. Field observations were made with the aid of Leica 10 x 42 binoculars and by listening for vocalizations. Counts were concentrated between 8:00 a.m. and 11:00 a.m., the peak of daily bird activity. An additional two hours were spent on site during the evenings of the 22<sup>nd</sup> and 23<sup>rd</sup> of July, 2001, in an attempt to detect nocturnally flying seabirds and owls overlying the area. Time not spent counting was used to search the sites and the surrounding area for species and habitats not detected during count sessions.

Mammalian Survey Results

Endangered Hawaiian beary bats were seen on both nights, and a total of six were observed during the survey. None of the bats was detected by the ultrasonic bat detectors, as they were, rather, recorded visually. At least three separate animals were seen foraging close to the existing passenger terminal, and on the night of the 22<sup>nd</sup>, one was seen foraging close to lights in the parking lot, south of the terminal complex. On the 23<sup>rd</sup>, at least two animals were observed foraging over the swimming pool and old terminal complex and site number 3 (Figure 1). During daylight hours, the only mammalian species seen within the project area was the small Indian mongoose (Herpestes urva). We did record within the project area sign and scat of three other mammalian species: domestic dog (Canis familiaris), cat (Felis catus) and pig (Sus scrofa). All of these introduced mammalian species are detrimental to avian populations.

Avian Survey Results

Eleven avian species, representing nine separate families, were recorded during station counts (Table 1). All species recorded are alien to Hawai'i. No species listed as endangered, threatened, proposed, or as a candidate for listing under either the U.S. Fish and Wildlife Service (USFWS) or the State of Hawai'i's endangered species program was recorded at any of the sites within the proposed development and improvement project area. (Federal Register 1999a, 1999b, 2001; DLNR 1986).

Avian diversity and densities were relatively low. Two species, Common Myna (Acridotheres tristis) and House Finch (Carpodacus mexicanus frontalis) accounted for 62% of the total of all birds recorded during station counts. An average of 50 birds was recorded per station count.
Table 1

Avian Species Detected During Station Counts
Hilo International Airport

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>ST</th>
<th>RA</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIGEONS &amp; Doves - Columbidae</td>
<td></td>
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<tr>
<td>Rock Dove</td>
<td>Columbida livia</td>
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<td>Spotted Dove</td>
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<td>Zebra Dove</td>
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<td>3.30</td>
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<td>BIRDS - Timaliidae</td>
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<tr>
<td>Hawaiian</td>
<td>Garrulus canorus</td>
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<td>SILVEREYES - Zosteropsida</td>
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<td>Japanese White-Eye</td>
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<td>STARLINGS - Sturnidae</td>
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<tr>
<td>Common Myna</td>
<td>Atylotornis striatus</td>
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<td>CARDINALE FINCHIES &amp; ALLIES - Fringillidae</td>
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<td></td>
</tr>
<tr>
<td>House Finch</td>
<td>Cistothorus mexicanus formica</td>
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<td>SALTATORS, CARDINALS &amp; ALLIES - Cardinidae</td>
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<td>Northern Cardinal</td>
<td>Cardinalis cardinalis</td>
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<td>OLD WORLD SPARROWS - Passeridae</td>
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<td>House Sparrow</td>
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<td>WAXBILL ALLIES - Estrildidae</td>
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<tr>
<td>Nearing Mannikin</td>
<td>Lonchura punctulata tajela</td>
<td>A</td>
<td>3.30</td>
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</tbody>
</table>

**KEY TO TABLE 1**

ST  Status
D  Domestic Species
A  Alien Species
RA Relative Abundance: Number of birds divided by the number of count stations (10

Discussion

A one-time survey cannot provide a total picture of the wildlife using any given area. Certain species will not be detected for one reason or another. Seasonal variations in populations, coupled with seasonal availability and use of resources, will cause different use patterns throughout a year and, in fact, over a number of years.

The findings of the mammalian survey are consistent with the results of other recent surveys conducted within the lowland areas of South Hilo (David 1996, 1998b, 1998c, 1999a, 2001). The detection of the endangered Hawaiian hoary bat within the airport complex was not unexpected. This species is regularly seen in and around Hilo, as well as along the coastline from Puna to North Hilo (David 1992, 1995, 1996, 1997, 1998c, 1998b, 1999a, 1999b, 2000; Cooper et al. 1995; Menard 2001). Tim Ohishi, of the USDA, AHIHS Wildlife Services, also reports having seen bats within the terminal complex area in the recent past, and recounted that bats are regularly seen foraging in and around the parking lot on the south side of the terminal complex (T. Ohishi, pers. comm.).

Unlike nocturnally flying seabirds, which often collide with man-made structures, bats are uniquely adapted to avoid collision with obstacles, man-made and natural. They navigate and locate their prey using ultrasonic echolocation, which is sensitive enough to allow them to locate and capture small vertebrate insects at night.

Although no live rodents were detected during the course of this survey, it is likely that roof rats (Rattus r. rattus), Norway rats (Rattus norvegicus), European house mice (Mus domesticus) and possibly Polynesian rats (Rattus exulans Hawaiianus) use various resources found within the project sites. Without conducting a trapping program, it is difficult to assess the population densities of these often hard-to-see mammals.

The findings of the avian survey are consistent with the findings of other recent surveys conducted within the lowland areas of South Hilo (David 1996, 1998b, 1998c, 2001). The 11 alien avian species detected during station counts are species that one would expect to report within highly disturbed lowland areas in the South Hilo District. Many of the more than 80 species of migratory and extralimital avian species that have been recorded in Hawai‘i between the months of September and May can be expected to use resources within several of the study-area sites (Pyle et al. 1988; David 1991b; Pyle 1992, 1997). The most commonly encountered of these migratory species are Pacific Golden-Plover (Pluvialis fulva), Reddy Turnstone (Arenaria interprets), and Wandering Tattler (Heteroscelus incanus).

Although we did not record Castle Egrets (Bubulcus ibis) at any of the sites surveyed, they are regularly seen within the airport grounds. This is a species that is of concern as a
Bird Airstrike Hazard. There are Cattle Egret nesting areas located north of the airport, adjacent to Kahanamoku Avenue at both Kienapauhu and Lokesa Ponds (Figure 1). Additionally, egrets regularly use resources within the Waialua River State Park, which is located due west of the airport. As recently as April 2001, observers counted 279 egrets at the Lokesa Pond (Ohashi 2001).

It is also possible that small numbers of the endangered endemic Hawaiian subspecies of the Dark-rumped Petrel (Pterodroma phaeopygia sandwichensis), or ‘a‘a, and the threatened Newell’s Shearwater (Puffinus loriatus newelli) or ‘nii‘u, overfly the airport and its environs between the months of May and October (Banko 1980a, 1980b; Harrison 1990).

Dark-rumped Petrels were formerly common on the Island of Hawai‘i (Wilson and Evans 1890–1899). This pelagic seabird is reported to nest in large numbers on the slopes of Mauna Loa and in the saddle area between Mauna Loa and Mauna Kea (Henshaw 1902), as well as at the mid to high elevations of Mount Hualalai. It has, within recent historic times, been reduced to only a few colonies located at high elevations on Mauna Loa and, possibly, Mount Hualalai (Banko 1980; Cooper and David 1995; Cooper et al. 1995; Inouye et al. 1991; David, Unpublished Field Notes 1986–1995, 1996; Harrison 1990; Banko et al. 2001).

Newell’s Shearwaters were formerly common on the Island of Hawai‘i (Wilson and Evans 1890–1899). This species breeds on Kaua‘i, Hawai‘i, and Molokai in extremely small numbers. Newell’s Shearwater populations have dropped precipitously since the 1880s (Banko 1980b; Day and Cooper, in press). This pelagic species nests high in the mountains in burrows excavated under thick vegetation, especially under ferns (Dicranopteris linearis). There are numerous records of this species having been seen, heard, or collected in and close to faldas (Banko 1980b; Conant 1940; David, pers. obs.; Keppler et al. 1979).

The primary cause of mortality in both these species is thought to be predation by alien mammalizes species at the nesting colonies (Cooper and Day 1995; Day and Cooper 1998; Ainsley et al. 2001). Collision with utility structures is considered to be the second most significant cause of mortality of these seabird species in Hawai‘i. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. When disoriented, seabirds often collide with manmade structures, and if they are not killed outright, the dazed or injured birds are easy targets of opportunity for feral mammals (Ainsley et al. 1995, 1997, 2001; Cooper and Day 1995, 1998; Day and Cooper 1997). There is no suitable nesting habitat within the project sites for either of these listed pelagic seabird species.

The principal potential impact that development of the project site poses to Dark-rumped Petrels and Newell’s Shearwaters is the increased threat that birds will be disoriented by new exterior lighting that may be required in conjunction with the one or more of the proposed improvements.

**Recommendations**

To reduce the possibility of disorientation and collision of Newell’s Shearwaters, it is recommended that any new exterior lighting planned within the proposed project be shielded (Reed et al. 1985). This mitigation would minimize the threat of disorientation and collision of Newell’s Shearwaters, and at the same time comply with the County of Hawai‘i’s current planning policy, which recommends the shielding of exterior lights. The shielding allows less ambient glare than unshielded lighting, and thereby causes less “light pollution,” which interferes with viewing at the astronomical observatories on Mauna Kea.
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APPENDIX C
AIR QUALITY IMPACT REPORT
AIR QUALITY IMPACT REPORT (AQIR)

HILO INTERNATIONAL AIRPORT
MASTER PLAN PHASES I & II
HILO, HAWAII

14 December 2001

PREPARED FOR:
and
State of Hawaii
Department of Transportation
Airports Division

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1. INTRODUCTION

In order to accommodate projected demand for airport operations and facilities requirements, the State of Hawaii Department of Transportation, Airports Division is proposing a number of improvements to the existing Hilo International Airport which is located on the east side of the town of Hilo on the island of Hawaii (Figure 1). Implementation of these improvements is proposed to occur in three phases, the first two of which are to be completed by the year 2010 and which are the subject of this report. Major elements of these first two phases include:

Phase I (2000 - 2005)
- acquisition of land for avigation easements and runway protection zones
- implementation of noise mitigation measures including a 15-foot noise barrier
- construction of a new air cargo facility northwest of the existing passenger terminal
- construction of a new hangar southwest of the Hawaii National Guard facility
- upgrade of general aviation facilities including a new T-hangar and parking apron
- expansion of public and employee parking facilities
- paving of the emergency access road to Runway 16 and extension of perimeter fencing

Phase I (2005 - 2010)
- continuation of noise mitigation measures at residences and public facilities
- continuation of general aviation area upgrades
- continuation of expansion of passenger terminal parking area
- continue of extension of perimeter fencing

The purpose of this report is to assess the air quality impacts of the proposed improvements and the projected aviation demand which necessitated them. The airport can be considered an "indirect source" of air pollution as defined in the federal Clean Air Act (CAA) since its primary association with air quality is its inherent attraction for mobile sources, i.e., motor vehicles and aircraft. Much of the focus of this analysis, therefore, is on the project's ability to generate surface and air traffic and the resultant impact on air quality. For comparative purposes, air quality impact was evaluated for existing (2001) and future (2010) conditions.

Finally, during construction of the various new facilities air pollutant emissions will be generated onsite and offsite due to vehicle movement, grading, concrete and asphalt batching, and general dust-generating construction activities. These impacts have also been addressed.
2. REGULATORY REQUIREMENTS

2.1 Emission Regulations

Emission control regulations pertinent to an airport would be primarily those relating to aircraft, motor vehicles, and fuel storage. Since the federal Clean Air Act has neither limited nor pre-empted the authority of states to regulate the first two, there are only limited opportunities for states to promulgate their own rules. The following sections summarize state and federal emissions rules pertinent to the Hilo International Airport.

2.1.1 State Requirements: The State of Hawaii regulates motor vehicle emissions only to the extent of prohibiting visible emissions from gasoline-powered vehicles and placing a 5-second time limit on visible smoke from diesel-powered vehicles while they are on the road. The rules also place restrictions on engine idling while parked, which, in the case of the airport, would apply primarily to buses, vans, and taxis. Engine idling during loading or unloading of passengers is limited to not more than three (3) minutes.

There are also specific requirements for storage of volatile organic compounds (VOC) such as liquid fuels. Storage tanks with a capacity greater than 40,000 gallons and containing fuels with a true vapor pressure equal to or greater than 1.5 pounds per square inch absolute (psia) must be pressurized to prevent vapor loss or be equipped with a floating roof, vapor recovery system, or other control equipment of equal efficiency. Underground storage tanks are exempt from this requirement if their total annual throughput is less than twice the volume of the tank.

Any new VOC storage tank of more than 250-gallon capacity must be equipped with a permanent submerged lift pipe, be pressurized, or be equipped with a vapor recovery system to prevent vapor or gas emissions into the air.

Fuel storage tanks are also subject to air permitting requirements if they have a capacity greater than 40,000 gallons or if they are subject to any requirement under CAA §111 (new source performance standards) or §112 (hazardous air pollutants).

2.1.2 Federal Requirements

2.1.2.1 Motor Vehicles: Pursuant to Title II of the CAA, the EPA has promulgated emissions standards for new motor vehicles and new motor vehicle engines. The primary strategy of the program is to impose progressively more stringent standards on new vehicles so that, over time, the older, higher emitting vehicles are removed from the total fleet by normal attrition leaving an increasing fraction of the fleet to be the newer, lower emitting vehicles. This strategy works provided that the percentage decrease in total automotive emissions is not offset by the percentage increase in total number of vehicles. When all new and in-use vehicles meet the existing emission standards, and the vehicle population continues to grow, then it is time to impose more stringent standards in order to avoid an upward trend in emissions.

J. W. MORROW