

# Kailua Park Master Plan

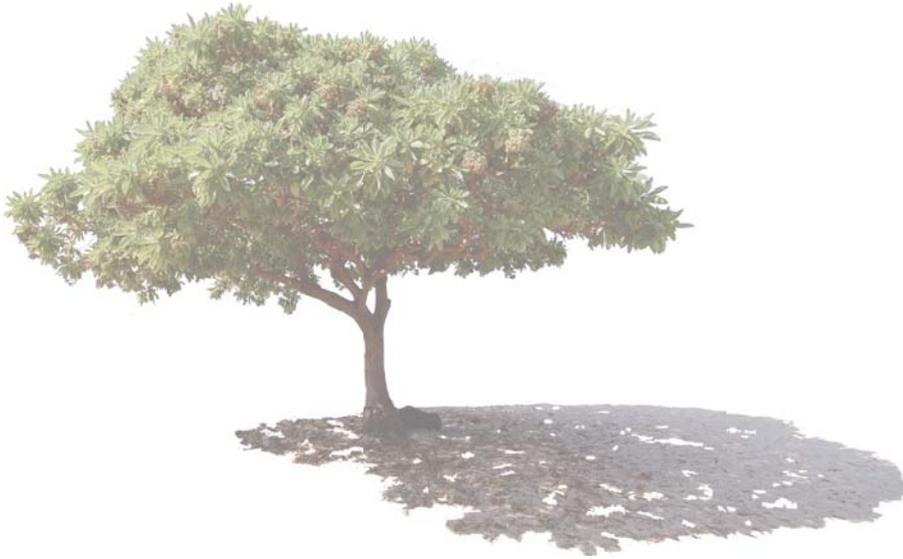
aka Old Airport Park/Maka'eo

County Contract C.002100



County of Hawai'i,  
Department of Parks and Recreation  
August 2010

**DRAFT**  
**ENVIRONMENTAL**  
**ASSESSMENT**



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aka Old Airport Park/Maka'eo

County Contract C.002100

## **DRAFT** ENVIRONMENTAL ASSESSMENT

Prepared for:  
**County of Hawai'i,**  
**Department of Parks and Recreation**

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August 2010

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LIST OF ACRONYMS

ADA	Americans with Disabilities Act
BEF	base flood elevation
BMP	Best Management Practices
CDP	Community Development Plan
CIA	Cultural Impact Assessment
CWA	Clean Water Act
CZM	Coastal Zone Management
DA	Department of the Army
DAR	Division of Aquatic Resources
DLNR	Department of Land & Natural Resources
DOCARE	Division of Conservation and Resources Enforcement
DOH	Department of Health
DPR	Department of Parks and Recreation
EA	Environmental Assessment
EMS	Emergency Medical Services
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
HELCO	Hawaiian Electric Light Company
HRS	Hawai‘i Revised Statutes
HT	Hawaiian Telcom
KCAC	Kona Community Aquatics Center
LED	light emitting diode

LEED	Leadership in Energy and Environmental Design
LPS	low pressure sodium
LUPAG	Land Use Pattern Allocation Guide
MLCD	Marine Life Conservation District
MOU	Memorandum of Understanding
MSL	mean sea level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NHT	National Historic Trail
OEQC	Office of Environmental Quality Control
OHA	Office of Hawaiian Affairs
QLT	Queen Lili'uokalani Trust
SHPD	State Historic Preservation Division
SMA	Special Management Area
TMK	tax map key
USFWS	U.S. Fish and Wildlife Service

## Project Summary

Item	Description
Project Name	Kailua Park Master Plan, Contract No. C.002100, County of Hawai‘i, Department of Parks and Recreation
Proposing Agency	County of Hawai‘i, Department of Parks and Recreation (DPR)
Approving Agency	County of Hawai‘i, Department of Parks and Recreation (DPR)
Anticipated Determination	Finding of No Significant Impact
Location	Kailua-Kona, North Kona District, Island of Hawai‘i
Tax Map Keys	TMK (3) 7-5-005:007 & (3) 7-5-005:083
Existing Uses	<p>The 117-acre project area includes the County’s Kailua Park and the former Old Kona Airport State Recreation Area. The project area is often referred to as “Old Airport Park” or “Maka‘eo.” Existing uses include multi-purpose ball fields, an aquatic center and gymnasium, basketball and tennis courts, in-line roller hockey rink, temporary skateboard park, horseshoe pit, toddler playground, a multi-purpose events pavilion, beach pavilions and restrooms, temporary canoe hale, walking and jogging path, botanical garden and base yard operations for the State DLNR and County DPR. Most of the northern half of the property is dominated by the former airport runway, which is used as a roadway to access the beach areas and the Maka‘eo Walking and Jogging Path.</p>
Landowner	<p>State of Hawai‘i. However, the Board of Land and Natural Resources (BLNR), with the concurrence of the Department of Land and Natural Resources (DLNR) and in conformance to HRS 171-11, has approved the set aside (assignment of management jurisdiction) of the park to the County of Hawai‘i for park and recreational purposes. In the interim, the BLNR has allowed for a Construction and Management Right of Entry to be granted to the County until such time that the Governor’s Executive Order is finalized. The County assumed management responsibilities over the entire park effective January 1, 2008 in close coordination and cooperation with State Parks’ staff and administration.</p>
Need for Project	<p>The master plan provides a long-range guide for development and use of the 117-acre property over the next 20+ years. Because the 98-acre State Old Kona Airport State Recreation Area is being conveyed to the County, a comprehensive plan for the entire 117-acre park was needed. The master plan recommendations address current and future demand for improving this district park in Kailua-Kona. It also identifies recreational needs that would be appropriate to be located at other park sites or a future regional park in the Kailua-Kona area.</p>

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Item	Description
Project Description	The project includes a wide range of improvements such as additional restrooms and lockers, concessions, canoe halau, youth and senior centers, 25-yard swimming pool, skate park, shared-use pedestrian and bicycle path, new access roads and parking and additional lawn and landscaped areas. A major proposal calls for removal of the old airport runway and creation of a new beach access road with parking. Northern areas of the site which are rich in cultural resources will remain undeveloped and protected and maintained as a cultural preserve.
Flood Insurance Rate Map	Makai portions of the property are located within Flood Zones “VE” and “AE.” Base flood elevations range from 6 to 10 feet above mean sea level.
State Land Use	Urban
Zoning	ML-20, Limited Industrial
Special Management Area (SMA)	Project is within the SMA, and a SMA Use Permit is required from the County Planning Department.

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# 1 INTRODUCTION

The County of Hawai‘i, Department of Parks and Recreation (DPR) has prepared a comprehensive, long range master plan for the 117-acre area that includes the County’s Kailua Park and the former Old Kona Airport State Recreation Area. The project area is often referred to as “Old Airport Park” or “Maka‘eo”. The project location is shown in Figure 1. The property is identified as TMK (3) 7-5-005:007 & (3) 7-5-005:083 (Figure 2).

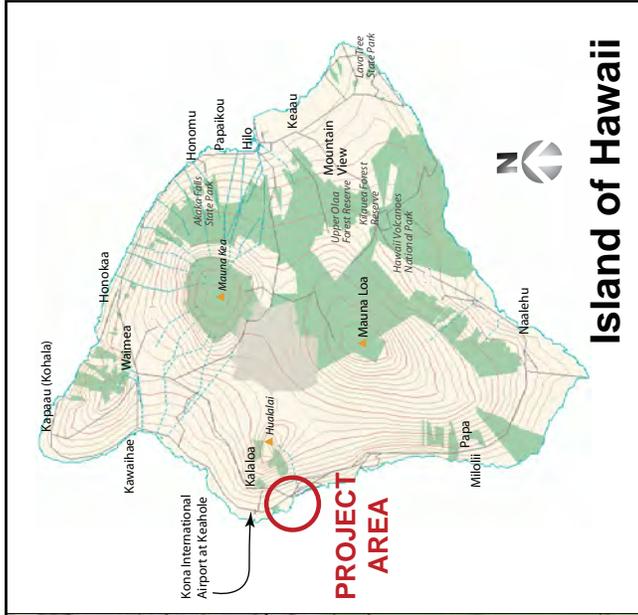
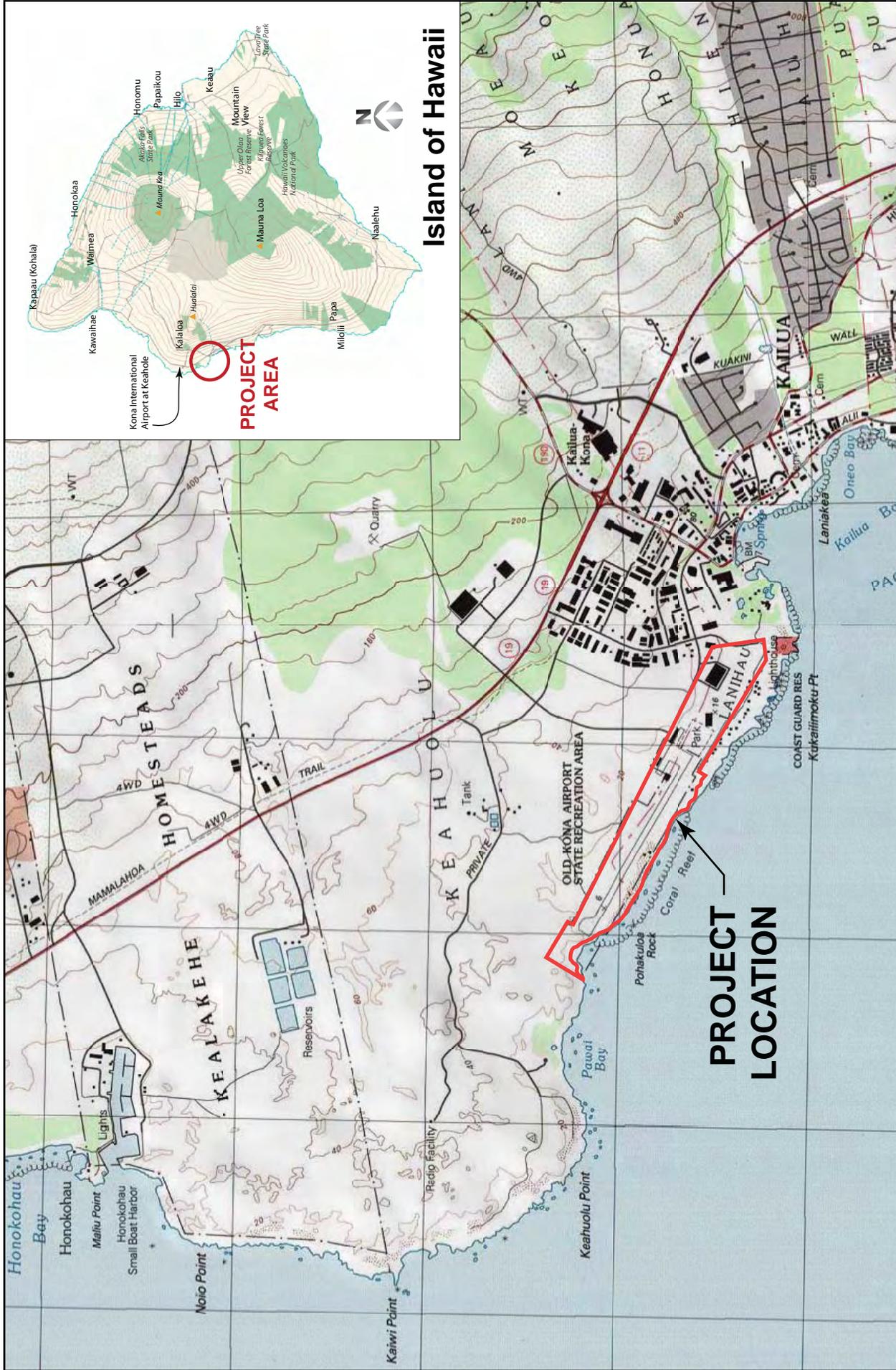
The master plan was developed with extensive community participation and input over a six-month period. The overarching concept for the master plan was to evaluate the park’s existing configuration, provide new recreational facilities, improve circulation and parking, incorporate “green,” eco-friendly concepts, and preserve and respect cultural resources.

## 1.1 PURPOSE OF THIS DRAFT ENVIRONMENTAL ASSESSMENT

This Draft Environmental Assessment (Draft EA) for the Kailua Park Master Plan has been prepared to satisfy the requirements of the Chapter 343, Hawai‘i Revised Statutes (HRS) and Title 11, Chapter 200, Environmental Impact Statement Rules of the Hawai‘i Administrative Rules. Because future improvements may utilize federal funds, this EA also meets the requirements of the National Environmental Policy Act (NEPA) and the rules and procedures set forth by the Council on Environmental Quality (CEQ).

The Final Environmental Assessment (Final EA) will be used to support a Special Management Area Use Permit application to the Hawai‘i County Planning Department. The application is being prepared pursuant to HRS Chapter 205A, Coastal Zone Management, and Rule 9 of the County Planning Commission Rules of Practice and Procedure governing the Special Management Area.

This Draft EA evaluates alternatives that were considered for the project, identifies a preferred alternative, and identifies the environmental impacts and mitigation associated with the alternatives.



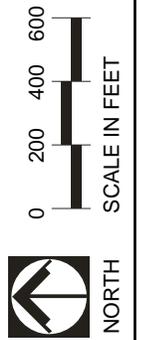
# Island of Hawaii

**Figure 1**  
**LOCATION MAP**  
 Kailua Park Master Plan  
 Draft Environmental Assessment  
 November 2009





**Figure 2**  
**TMK**  
Kailua Park Master Plan  
Draft Environmental Assessment  
November 2009



## 1.2 PROPOSED ACTION

The proposed action is the implementation of the Kailua Park Master Plan, over a 20+ year period. The master plan encompasses a wide range of park improvements that will be implemented in phases as funds become available. The master plan is shown in Figure 3. Proposed improvements include:

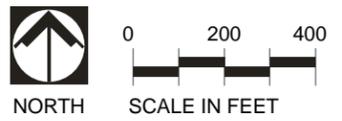
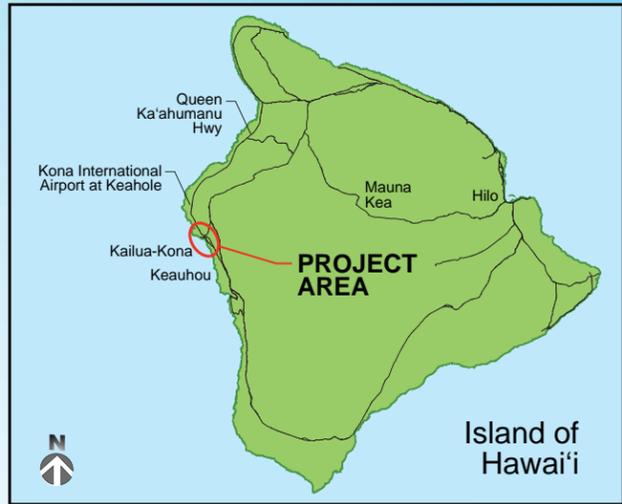
- Senior Center and Youth Center Complex
- 25-Yard Swimming Pool
- Restroom, showers, locker facilities
- Concessions and storage facilities
- Cultural Interpretive Center and cultural preserve
- Canoe Halau Complex and canoe launching sites
- Tennis Complex
- Skate Park Complex
- Outdoor performance stages
- Dog Park (pending revisions to the Hawai'i County Code and DPR's Administrative Rules)
- Beach Pavilions and Shower facilities
- Playground apparatus at various locations
- Bio-basins (stormwater catchment and filtration systems)
- Landscaping
- Shared use pedestrian and bicycle path circumnavigating the park
- Roadway and parking, including "reverse angle" parking
- Utilities and infrastructure

Other actions include:

- Improvements to the existing Maka'eō Walking and Jogging Path and botanical garden
- Expanding the substandard 80-yard football field to a regulation field by regrading Fields B and C and reconstructing the football and youth baseball fields
- Refurbishing and remodeling the gymnasium, aquatics center, Events Pavilion and other existing facilities with energy efficient, sustainable and state of the art facilities and accessories

Figure 3 front

figure 3 back



**Figure 3**  
**FINAL MASTER PLAN**  
 Kailua Park Master Plan  
 Draft Environmental Assessment  
 November 2009

- Removing the old airport runway
- Modifying and renovating the old airport terminal building
- Demolishing dilapidated structures
- Long-term relocation of the State DLNR/DOCARE and County Department of Parks and Recreation base yards and the State DLNR-SHPD temporary offices

The proposed improvements may be implemented by the DPR or through joint efforts with other County, State or Federal agencies, or community groups. The Kailua Park Master Plan document is attached as Appendix D, and provides a detailed description of the proposed plan.

### 1.3 POSSIBLE ENVIRONMENTAL PERMITS AND APPROVALS

The following is a summary of environmental approvals and consultations that may be required for implementation of the various master plan improvements. Chapter 5 includes a more detailed discussion of the project’s consistency with Federal, State and local land use plans, policies and controls.

Table 1-1: Possible Environmental Permits and Approvals

Approval/Consultation	Agency
<b>Federal</b>	
National Environmental Policy Act, Environmental Assessment and Finding of No Significant Impact (FONSI)	To be determined <i>(if federal funds are utilized for future park improvements)</i>
Section 106, National Historic Preservation Act consultation	Department of Land and Natural Resources, State Historic Preservation Division <i>(if federal funds are utilized for future park improvements)</i>
Section 7, Endangered Species Act	U.S. Fish and Wildlife Service (USFWS) <i>(if federal funds are utilized for future park improvements)</i>
Department of the Army Permit, Section 404 Clean Water Act	Department of the Army, U.S. Army Corps of Engineers, Honolulu District, Regulatory Branch <i>(May be required if improvements affecting anchialine pools are proposed)</i>
<b>State of Hawai‘i</b>	
HRS Chapter 343 Environmental Assessment and Finding of No Significant Impact (FONSI)	County of Hawai‘i, Department of Parks and Recreation
HRS Chapter 6E-8 Historic Preservation review	Department of Land and Natural Resources, State Historic Preservation Division
Coastal Zone Management (CZM) Consistency Determination	Dept. of Business, Economic Development and Tourism, Hawai‘i CZM Office <i>(if Dept. of Army, Section 404 permit is required)</i>

Approval/Consultation	Agency
Section 401, Water Quality Certification	Department of Health, Clean Water Branch <i>(if Dept. of Army, Section 404 permit is required)</i>
<b>County of Hawai‘i</b>	
Special Management Area Use Permit	County of Hawai‘i, Planning Department
Various Building and grading permits	County of Hawai‘i

## 1.4 UNRESOLVED ISSUES

The following issues, discussed in Chapter 4, remain unresolved and require follow up.

### 1.4.1 Relocation Site for County and State Baseyard Facilities

The master plan recommends long-term relocation of the County and State baseyard facilities to other off-site location. The State’s existing facilities include the old hangar building, portable offices and a total land area of approximately five acres including rights of access and easements. This area is identified in the master plan for additional area to provide formal parking in support of the Events Pavilion and the larger scale events it is envisioned to host when complemented with other planned improvements. The area is also critical for improving site access and circulation to the entire park area to the north. The County’s existing facilities include portions of the old terminal building and a section of paved area immediately adjacent thereto. This area is identified in the master plan as the primary and formal entrance to the entire park and is critical to the site’s access and circulation pattern to all facilities and amenities in the central and northern areas of the park. The County is actively seeking alternate locations to relocate its maintenance baseyard operations and at the same time seek opportunities for the state to relocate as well, entertaining the idea of co-locating baseyards to a shared site, if possible.

According to the BLNR’s action of November 16, 2007, a critical caveat for the set aside of the Old Kona Airport State Recreation Area to the County for park and recreation purposes to occur was that the DLNR Park’s Kona Sub-Unit Baseyard be allowed to retain its approximately 5 acre area at the site. More recently, through ongoing discussions between State and County officials, the DLNR has indicated they would be willing to relocate provided adequate replacement facilities are provided by the County. The industrial areas mauka of the park and the County’s envisioned regional park site at Kealakehe are some of the more viable candidate sites for relocation of both County and State baseyards, but no specific site or facilities have been identified to date. The master plan provides a long-term vision with a 20-year build-out, and it is not critical that the baseyard functions move immediately. However, relocation of the baseyards is critical to the long-term success of the master plan, its individually proposed improvements and the vitality of the park through the community’s enhanced use and enjoyment of the overall experience there.

#### 1.4.2 Coordination with Queen Lili'uokalani Trust

The Queen Lili'uokalani Trust (QLT) owns the adjacent lands immediately mauka of the park, and is in the process of finalizing plans for a future residential and commercial development. The QLT was involved during the Kailua Park master planning process, and have stated their willingness to continue working cooperatively with the County as their plans are developed. Continued coordination with the QLT is required to ensure a compatible and mutually beneficial interface between their future development and the park.

## 2 PURPOSE AND NEED FOR ACTION

### 2.1 BACKGROUND

In January 2009, the State of Hawai‘i Department of Land and Natural Resources (DLNR) via Executive Order, conveyed approximately 98 acres referred to as the Old Kona Airport State Recreation Area, to the County of Hawai‘i. Given control of the entire 117-acre parcel, the County prepared a community-based master plan as a blueprint for park improvements over the next 20+ years.

### 2.2 PROJECT PURPOSE AND NEED

The proposed action is the implementation of the Kailua Park Master Plan. The purpose of the master plan is to provide a comprehensive long-range guide for future development and use of the park which: 1) improves the park’s physical conditions; 2) meets the recreational and social needs of the community; 3) is consistent with the Kona Community Development Plan’s designation as a “district park;” 4) is appropriate to the environmental setting; and 5) was developed through the participation and input of the community.

#### 2.2.1 Improve the Park’s Physical Conditions

During the master planning process, the site analysis and stakeholder consultations revealed a number of areas of the park needing physical improvement. For example, access to and circulation within the park is poor. Vehicular access to the 117-acre project site is provided by multiple entry points from Kuakini Highway, but there is little connectivity between the various activity nodes. Vehicular circulation around the heavily used ballfield and aquatics complex is disjointed and confusing, and parking is poorly located and inadequate.

Existing athletic facilities are also in need of upgrade or improvement. One of the football fields is substandard and only 80 yards long. Although the Kona Community Aquatics Center (KCAC) includes lockers and showers, there are no comparable facilities for the gymnasium. There are no shower facilities for beach users who access Keiki Beach via the public access path. The tennis courts are poorly located in the middle of the ballfield complex, adding to congestion in this area.

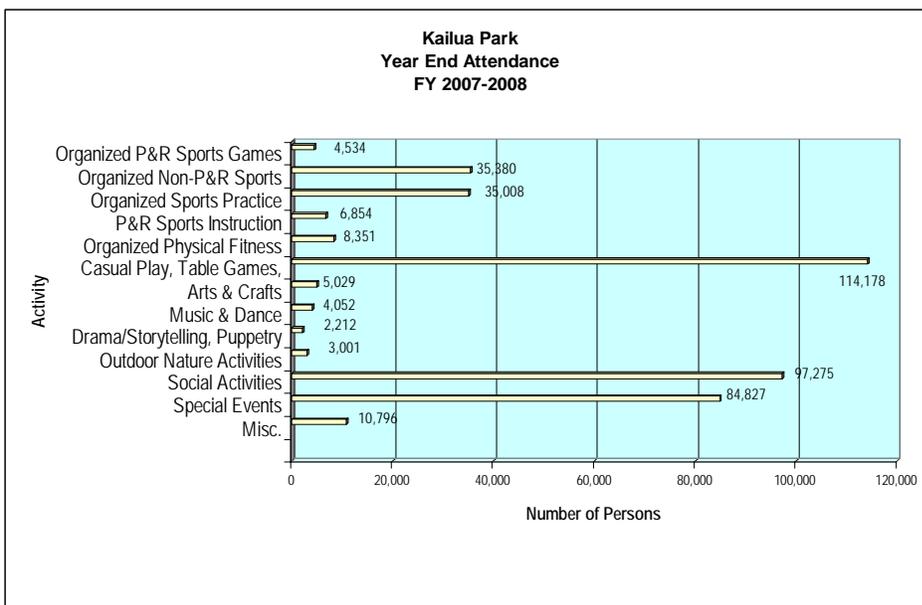
The T-intersection at Makala Boulevard has become the park’s “front door,” but the initial view is the unattractive backside of the old terminal building, surrounded by a barbed wire-topped chain link fence. The former airport terminal and other baseyard and maintenance facilities in the central area of the park are in poor physical condition and unattractive.

The entire central and northern end of the site is dominated by the former airport runway, which is used as a de facto roadway to access the beach areas and the walking and jogging path. The huge paved area is devoid of vegetation and shade, causing significant heat gain on the site.

One purpose of the master plan improvements is to address these existing physical problems at the park.

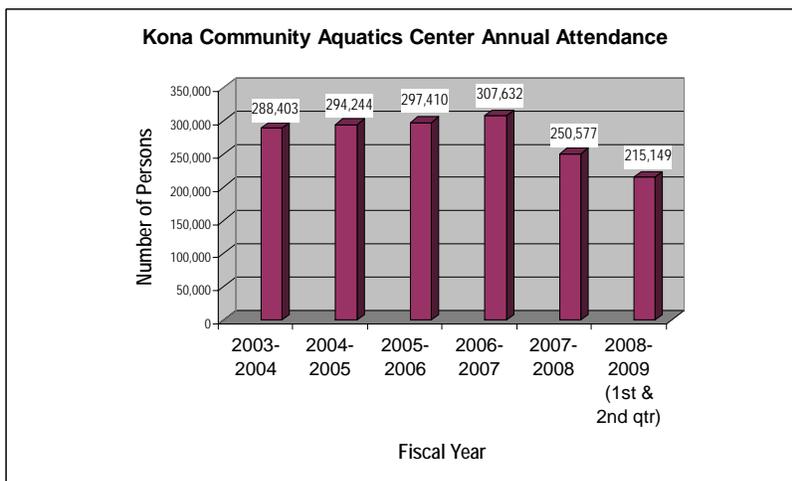
### 2.2.2 Meet the Recreational and Social Needs of the Community

The need for additional recreational facilities in the Kona region is widely known, well-documented, and identified as a priority in recent County plans and policies. As the primary park serving the West Hawai‘i area, Kailua Park’s existing ballfields, gymnasium and swimming pool are heavily utilized year-round by schools, sports leagues and clubs, and park programs, in



addition to casual users. As shown in the bar charts, the majority of park users (FY 2007-2008) participated in casual play and social activities, and large numbers also use the park for organized sports practice and games. The park is the venue for regional and statewide meets and tournaments on a regular basis.

Source: Department of Parks and Recreation 2009



Attendance at the KCAC during the first half of FY 2008-2009 was already more than 200,000 persons, about 85% of attendance during all of the previous year. During the planning process, County employees and park users consistently stated that demand for park facilities exceeds supply, and that expanded facilities were needed in West Hawai‘i.

Source: Department of Parks and Recreation 2009

During the master planning process, stakeholders also identified a need for a youth center particularly for young people who may not be involved in organized sports; a skate park; additional ballfields; and canoe hale complex. A senior center and more community meeting space were other stated needs.

### 2.2.3 Consistent with Designation as a “District Park”

The recently completed Kona Community Development Plan (CDP) categorizes Kailua Park as a “district park,” typically 10 to 30 acres in size, and defined as “*a major recreation area offering diversified types of recreational activities to all age groups*” ...located at the “*approximate center of a district consisting of several communities.*” (Recreation Plan, County of Hawai‘i, Department of Parks and Recreation, 1974).

A specific Kona CDP recommendation was to “*Upgrade the Old Airport Park to enhance the playfields, swimming pool, multi-purpose building, courts (basketball, tennis, volleyball), tot lots, fitness area, pet area, and skateboard area...*” (p. 4-114, Kona CDP, 2008).

Although Kailua Park is larger than a “typical” County district park, the master plan recommendations are consistent with its Kona CDP designation as a “district park.” The Kona CDP recommends that efforts be made to develop a larger “regional park” at Kealakehe. The master plan assumed that a future regional park would be developed to help address the overall need for recreational amenities and services.

### 2.2.4 Appropriate to the Environmental Setting

A major goal in developing the master plan was to preserve and enhance undeveloped coastal areas for public use and enjoyment. As one of the few accessible beach areas in West Hawai‘i, an important objective was to maintain the oceanfront areas at the northern half of the site for passive recreation and enjoyment.

Another consideration was to protect, preserve and enhance the cultural and historic resources at the park, particularly the northern areas surrounding Pawai Bay.

Finally, a goal of the master plan was to incorporate sustainable, “green” planning and building ideas and techniques whenever possible. The plan incorporates Leadership in Energy and Environmental Design (LEED) concepts in its buildings and facilities, proposes low maintenance landscaping, and encourages energy saving and recycling.

### **KAILUA PARK MASTER PLAN GOALS AND OBJECTIVES**

#### **Goal: Develop Kailua Park as a “district park,” consistent with Kona Community Development Plan (CDP) recommendations**

- Build facilities that are appropriate for a district park in Kona and will be compatible with one another for the next 20 years
- Enhance existing playfields and courts, swimming pool, multipurpose building, tot lots, etc. as recommended in the Kona CDP
- Identify recreation facilities and uses that may be more appropriate for a Kealahou Regional Park

#### **Goal: Preserve and enhance undeveloped coastal areas for public use and enjoyment**

- Plan improvements that are appropriate for a large open, undeveloped area with unimpeded access to the shoreline
- Create a passive beach park insulated from urban development
- Provide support facilities for coastal areas, including parking, picnic pavilions and shelters, and comfort stations

#### **Goal: Make Kailua Park the catalyst for other larger parks and open spaces in the region**

- Connect other parks and shoreline areas with a network of paths and open spaces
- Encourage neighboring landowners to provide public access to greenbelts, shorelines and other natural and open space areas

#### **Goal: Be sensitive and respectful of archaeological, cultural and historic sites, events and people**

- Restore, protect and enhance the cultural resources surrounding Pawai Bay and other areas of the park
- Provide opportunities for public education regarding the cultural importance of the area
- Incorporate Hawaiian history and culture in facility design with architectural styles or design motifs
- Recognize community members and leaders that have made the park possible

#### **Goal: Consider and balance desires of multiple users and stakeholders**

- Recognize that each sport has field requirements, schedules and seasons, participants and spectators that should be considered when planning
- Ensure that passive recreation activities are not adversely impacted by active sports
- Plan and build facilities based on population demand

#### **Goal: Develop a realistic plan given limited economic resources and ongoing maintenance requirements**

- Build facilities that the County can afford
- Search for funding sources including innovative, self help sources
- Build facilities that the County can staff and maintain

#### **Goal: Be sensitive to environmental conditions and constraints**

- Avoid building new structures in flood hazard areas
- Avoid new facilities in known burial areas and treat inadvertent finds in a proper, respectful manner

#### **Goal: Use sustainable, “green” planning and building techniques**

- Include LEED (Leadership in Energy and Environmental Design) concepts in planning buildings and facilities
- Incorporate SSI (Sustainable Sites Initiative) concepts in developing the park’s components and circulation
- Use low maintenance landscape material (including native vegetation) appropriate for the environmental conditions of the site
- Recycle and “upcycle”

#### **Goal: Build a “community” park that promotes health and well being, and fosters community spirit and pride**

### 2.2.5 Community Participation and Input

Community participation and input were obtained throughout the planning process through a series of meetings, stakeholder interviews, and a three-day design charrette, where alternative plans were developed and evaluated, and a preferred plan was selected. Comments were solicited by e-mail and a project website provided updated information throughout the process. The planning process identified amenities desired by the community, and also helped to determine which facilities were appropriate for a district park versus a future regional park. The final master plan was presented to the community at a public meeting, and the plan made available on the web site. The collaboration and input of stakeholders, including adjacent landowner Queen Lili'uokalani Trust, was a valuable part of developing the master plan.

### 3 PROJECT ALTERNATIVES INCLUDING THE PROPOSED ACTION

#### 3.1 ALTERNATIVES CONSIDERED

- No Action
- Alternative 1: Minimum Development
- Alternative 2: Moderate Development (Proposed Action)
- Alternative 3: Maximum Development

During the master planning process, three alternative plans were evaluated based on three development scenarios: minimum development, moderate development, and maximum development. A “minimum development/minimum change” scenario retained most of the park’s existing facilities with some improvements to circulation and parking, but attempted to minimize development costs. The “maximum development scenario” reconfigured the ballfield and gymnasium complex, improved circulation and parking, and tried to accommodate a range of new recreation uses. The “moderate development” alternative sought to provide a middle ground.

During the planning process, a “planning palette” was developed, which provided a selection of activities and facilities that were considered for inclusion in the park. The planning palette was developed in consultation with various stakeholders and park users, and included different types of ballfields and playing courts, swimming pool, skate park, tot lot playgrounds, dog park, youth center, senior center, canoe halau, beach center, picnic areas, and industrial and support facilities. Passive use and open space were also part of the planning palette. Each of the three development alternatives provided a combination of activities from the planning palette.

Order of magnitude cost estimates were developed for each alternative. The estimates included architecture, landscape architecture, civil engineering, and utility improvement costs.

Alternative 2, the moderate development plan, was ultimately selected as the preferred plan, and is the proposed action. The alternatives are discussed below:

#### 3.2 NO ACTION

The “No Action” alternative assumes the status quo. Under this alternative, future improvements or repairs would probably occur on a piecemeal basis, without regard to a larger, unified vision for the park. Improvements would be implemented as funds become available for a particular sporting venue or activity. There would be little consideration of the long-term needs of the park as a whole. Functional problems such as disjointed circulation, inadequate parking, and poorly located parking and facilities would not be addressed. Outdated and dilapidated structures like the former airport terminal would eventually be vacated for health and safety reasons. Park maintenance costs would escalate with the continued use of outdated electrical and other

infrastructure systems. The old airport runway would remain, and continue to function as an undefined travel way and parking lot. The heat island effect from the asphalt runway would continue. The demand for new recreational amenities such as a skate park, additional tennis courts, dog park, youth center and senior center would go unmet. There would be little improvement to the beach areas, and cultural areas north of the runway would continue to be overgrown, unmaintained and unmarked.

### 3.3 ALTERNATIVE 1: MINIMUM DEVELOPMENT

Alternative 1, Minimum Development, is shown in Figure 4. Major components in this alternative by geographic location include:

#### **Central and North Side**

- Remove the 4 tennis courts and replace them with a new 8-court tennis complex, including a tennis stadium, on the Kailua village side of the Events Pavilion. The existing tennis court site would be converted to parking to serve the ball fields and horse shoe pit. A two-lane road would connect this parking lot with the parking lot at the aquatics center and gym. The horse shoe pit would remain in its present location.
- Remove the old airport runway and replace it with a meandering roadway with reverse-in angle parking and pockets of parking.
- Complete construction of two canoe halau and accompanying exhibit structure. Access to the canoe halau would be provided with an extension of the roadway along the mauka boundary of the site.
- Build a multi-purpose youth baseball and soccer practice field located between the canoe halau and the Maka'eo walking and jogging path. These additional fields would supplement the main ball fields, to prevent their overuse and provide opportunities for field maintenance.
- Expand the Maka'eo walking and jogging path. With a new meandering roadway, additional space would be available to expand the jogging path.
- Build a new remote-controlled airplane runway located between the walking and jogging path and the area proposed for preservation as a cultural garden.
- Restore and enhance the area around Pawai Bay as a cultural preserve and garden.

#### **South Side**

- Expand the substandard 80-yard football field to a regulation 100-yard field by extending the field in the Kohala direction. This would require some grading of the topography and completely rebuilding the youth baseball field located on the Kailua Village side.

- Construct a new restroom and outdoor shower located on the mauka side between Simmons Field and Field B. This facility would serve participants and spectators who are often left without facilities whenever the pool and gym toilet facilities are closed. Beachgoers who currently use the shoreline access paths through the Kona Bay Estates would also have outdoor showers.
- Construct a new multi-purpose youth and senior center facility near the Makala Boulevard entry to the park. This facility would replace a portion of the old terminal building. The central portion of the old terminal building, including the restroom, would be retained. This portion of the building is still in good condition and has some historic attributes worth saving.
- Construct a skate board park on the Kohala side of the in-line hockey rink.
- Construct a temporary base yard building for the Department of Parks and Recreation on the Kohala side of the youth center, mauka of the tennis complex.
- No changes are proposed for the State Department of Land and Natural Resources (DLNR), Division of Conservation and Resources Enforcement (DOCARE) base yard and offices, the Na Kamalei toddler playground, in-line hockey rink, horse shoe pits, other outdoor fields, or the aquatics center and gym.

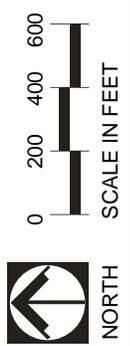
### **Circulation and Parking**

The interior circulation system would be modified by replacing the runway with a meandering roadway at the north, beach park end. The existing entry road from Kuakini Highway leading to the runway area would be retained. In the ball field and gym area, a new connector road would provide access between the new ball field parking area and the aquatics center/gym parking area. New and defined parking lots will be provided next to major venues. Additional parking at the site of the existing tennis courts will be conveniently located between three ball fields. In this alternative, there are a total of 1,080 parking stalls, 200 more than at present.

A shared multi-use bike and pedestrian path is proposed to create a circuit around the entire park. Possible connections to Kailua Village along Kuakini Highway and through the King Kamehameha parking lot are recommended, as well as possible connection along the shoreline in the Kohala direction. The Ala Kahakai trail, an initiative of the National Park Service, is delineated as a separate walking trail along the shoreline.



**Figure 4**  
**ALTERNATIVE 1—Minimum**  
 Kailua Park Master Plan  
 Draft Environmental Assessment  
 November 2009



STATE OF HAWAII CONSERVATION DISTRICT

QUEEN LILUOKALANI TRUST

Future Development

Makaao Walking/Jogging Path (Friends for Fitness) Expand Path

Sewer Easement Maintenance Road

Bike/Ped Path

New Youth Baseball and Soccer Practice Fields

State DNLR/DOCARE Baseyard and Offices

New DPR Base Yard

Youth and Senior Center

Retain Restroom (Historic Resource)

Toddler Playground No Change

Field E Main Soccer Field

Field F Restroom/Pavilion

Field G

Field A Simmons Baseball Field

Field B Baseball/Soccer

Field C Baseball/Soccer

Field D Old Airport Lights

Events Pavilion

Tennis Complex 8 courts, 1 stadium court

Skateboard Park

In Line Hockey

Dog Park

New Parking with roadway connection to gym parking

Horseshoes (stays)

Grade Baseball Field to provide room for regulation Football Field, Requires relocating one baseball field

New Restroom Outdoor Shower

Canoe Halau 2 Hale with center loading area and exhibition tent

Parking

Kona Community Aquatics Center

Kekuaokalani Gym

Sewer Pump Station

Outdoor Basketball Courts

Kaiwi St.

Luhia St.

Lotuku St.

Pawai Pl.

Makalea Blvd.

Makalapa Business Center

Project Boundary

Cultural Preserve and Garden

Remote Controlled Airplane Runway

Ala Kahakai

Papawai Bay

Bike/Ped Path

Reversed Angle Parking

A-5a ZONING

MCX-20 ZONING

Kona Industrial Subdivision

### 3.4 ALTERNATIVE 2: MODERATE DEVELOPMENT (PROPOSED ACTION)

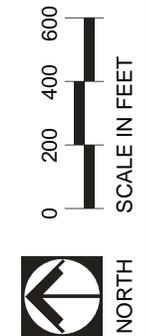
Alternative 2, Moderate Development is shown in Figure 5. The proposals for the active fields and aquatics center/gym are similar to Alternative 1. Another common feature is restoration and enhancement of the area surrounding Pawai Bay as a cultural garden. The difference between this alternative and Alternative 1 are the major improvements proposed on the northern or Kohala side of the park, beyond Field D.

Major features of this alternative include:

- Replace the toddler playground mauka of Field D with more parking. Multiple playgrounds are proposed around the new activity complex adjacent to the youth center and Events Pavilion. The intent is to provide manufactured play equipment in locations where children of various ages can recreate while other sporting activities occur. Some play areas can be geared for very young children (e.g., similar to the Na Kamalei Playground, the existing tot lot near the old airport terminal), and others can be targeted for older children.
- Retain a portion of the former airport terminal currently being used as a pavilion and restroom. This portion of the building, with its distinctive roof style, would be an historic reminder of the original Kona Airport.
- Create an intergenerational complex which incorporates the existing Events Pavilion as a major feature, and includes a Senior Center, Youth Center and 25-yard swimming pool. The intent of the new facility is to create a setting where seniors and youth can come together, creating synergy between these groups. In the Hawaiian culture, the elders, or kūpuna, are honored and respected, and play an important role in raising and teaching the children, or keiki. Likewise, interaction with young people can have a positive effect on the physical and mental well being of seniors, and provide a meaningful way for them to contribute to the community.
- The smaller 25-yard swimming pool is intended to relieve pressure from the heavily-used Kona Community Aquatics Center pool. A smaller, shallow pool (4 feet maximum) is suggested for adult water exercise and keiki learn-to-swim programs.
- A small tot lot and skate park are proposed in the space between the Senior Center and in-line hockey rink. The intent is to co-locate similar skating sports. If possible, beginners could use the in-line hockey rink to learn the sport of skateboarding before moving on to the more advanced skate park. Locating the skate park in a highly visible location would be a natural deterrent to loitering and inappropriate activity.
- A small outdoor amphitheater is located on the makai side of the Events Pavilion.



**Figure 5**  
**ALTERNATIVE 2-Moderate**  
 Kailua Park Master Plan  
 Draft Environmental Assessment  
 November 2009



- Create an urban design focal point for the park. The complex would be designed as a cluster of components surrounding a mauka-makai axis. A roundabout is proposed at Kuakini Highway near its intersection with a realigned Makala Boulevard. From the roundabout, a driveway flanked by parking, would lead to a central porte cochere, allowing passenger drop off for the youth and senior centers and the Events Pavilion. The porte cochere fronts a “Great Lawn,” an open area with an unobstructed vista of the ocean. A pavilion, suitable for ceremonial events, provides a visual focal point at the end of the lawn. A curving multi-use path would lead from the porte cochere to the beach park.
- Replace the four existing tennis courts with a new tennis complex of eight courts including a tennis stadium on the Kohala side of the Events Pavilion. A tennis clubhouse is located off a parking lot serving the tennis complex.
- Construct a new Beach Center which can serve as a food concession for beach park users, interpretive center and life safety center.
- Create bio-basins to control storm water runoff and protect near shore waters from pollution. Bio-basins are storm water retention areas that would be lined with native vegetation. The size and locations would need to be determined later.
- Construct a canoe halau consisting of 4 separate hale and an exhibition tent. Access to the canoe halau would be provided with an extension of a beach access roadway along the mauka boundary of the site.
- Create a green waste composting area mauka of the beach access road at the end of the beach park. This facility would generate compost from green waste created during park maintenance. The composting center is not intended to function as a community wide recycling center.
- Identify appropriate sites outside the project area to relocate the Department of Parks and Recreation base yard and the State DLNR/DOCARE base yard and offices. Both of these base yard functions support regional operations and do not need to be located within the park site. The land they occupy can be better utilized by a recreation-related function.

### **Circulation and Parking**

- Changes to the circulation system include replacing the runway with a meandering roadway at the beach park end, keeping the existing roadway alignment from its current Kuakini Highway entry and connecting ball field parking areas to the aquatics center/gym parking area. New parking lots with clearly delineated parking spaces provided next to major venues. Replacing the existing tennis courts with parking provides convenient parking centrally located between three fields. In this alternative, there are a total of 1,205 parking stalls, 325 more than at present. A

major improvement would be well defined parking areas that would prevent haphazard parking at different locations and barriers to prevent illegal driving on beaches, lawns and other fields.

- In the area near the new youth and senior center, the plan includes a new beach park access road extending from the proposed Kuakini Highway roundabout. The beach access road would curve around the canoe halau and tennis complex and then meander over the area of the old runway. The old airport runway would be recycled. This roadway would be designed with reversed angle parking and pockets of parking.
- A shared multi-use bike and pedestrian path would create a circuit around the entire park. Connections to Kailua village along Kuakini Highway and through the King Kamehameha's Kona Beach Hotel parking lot are proposed, as well as possible connection along the shoreline in the Kohala direction. The Ala Kahakai trail is combined with the multi-use path.

### 3.5 ALTERNATIVE 3: MAXIMUM DEVELOPMENT

Alternative 3, Maximum Development, is shown in Figure 6. Unlike the other two alternatives, Alternative 3 proposes major changes to the active outdoor fields, and attempts to maximize use of the ballfield area.

Major differences with Alternatives 1 and 2 include:

- Replace Field D, Old Airport Lights, with a triplex layout with three baseball diamonds radiating from a central scoring tower. This would require demolishing the existing ball fields, resulting in a temporary loss of fields, and demolishing the Na Kamalei toddler playground and existing terminal building. Although a quad complex with four fields is typical at other large baseball complexes, a triplex is proposed in order to provide parking nearby.
- A major tennis complex will include 12 courts including 1 stadium court. The complex is located on the Kohala side of the beach access road behind the Events Pavilion.
- The canoe halau complex will consist of 8 canoe hale and an exhibition structure. Access to the canoe halau would be through a utility road extending from the new park entrance along the mauka boundary of the park. The purpose of the utility road is to keep vehicles transporting canoes separate from other traffic.
- Create a new permanent county base yard between the canoe halau and the Maka'eo Walking and Jogging Path. Access to this facility would also be via the new utility road serving the canoe halau.



- Skate park is adjacent to the existing inline roller hockey rink on the makai side of a new beach access road to co-locate skating activities. Alternative 3 includes a new tot lot located adjacent to the skate park.
- Construct a new Beach Center which can serve as a food concession for beach park users, interpretive center and life safety center. This would be located on the makai side of the beach park access road. On the mauka side of the road, space is provided for a dog park.
- Similar to Alternative 2, create bio-basins to control storm water runoff, a green waste composting area on the mauka side of the beach access road, and new beach access road extending from the proposed Kuakini roundabout.
- The beach access road would run between the baseball and tennis complex and then meander over the area of the old runway. Parking lots for major components such as the Events Pavilion, tennis complex and dog park are provided in convenient locations. The meandering portion of the roadway would be designed with reversed angle parking and pockets of parking.
- Identify appropriate sites outside the project area to relocate the Department of Parks and Recreation base yard and the State DLNR/DOCARE base yard and offices. Space is unavailable on site to accommodate these uses.

### **Circulation and Parking**

The circulation system for Alternative 3 is divided into two sections. The primary road along the former runway provides access to the tennis complex, Events Pavilion, walking/jogging path and beach areas. On the south side of the site, the ball fields, aquatics center and gym are served by a separate circulation and parking system.

Within the gym and ballfield area, new and defined parking lots are provided next to major venues. The new parking lot on the site of the existing tennis court is centrally located between three ballfields. The new triplex ballfield complex has its own new parking lot, with access directly off Kuakini Highway. This parking area does not have a direct connection to the other ballfield parking areas. In this alternative, there are a total of 957 parking stalls, 77 more than at present.

A shared multi-use bike and pedestrian path would create a circuit around the entire park. Connections to Kailua village along Kuakini Highway and through the King Kamehameha's Kona Beach Hotel parking lot are proposed, as well as possible connection along the shoreline in the Kohala direction. The Ala Kahakai trail is separated from the multi-use path.

### **3.6 COMPARISON OF ALTERNATIVES**

As indicated above, the No Action alternative would maintain the status quo, which is clearly not the preference of the County or the Kailua Kona community. Park deficiencies will continue, and improvements will occur on a piecemeal basis as funds become available.

Alternative 1, minimum change, utilizes existing facilities and roadways as much as possible. Major improvements include relocation of the tennis courts, roadway and parking improvements near the ballfields, removal of the airport runway and construction of a meandering beach road, and new youth practice fields. A site for a skate park and dog park are identified, and a bike/pedestrian path around the park is provided. This alternative retains the existing Makala Boulevard entrance and entry road, retains the DLNR base yard facilities, and does not include a youth and senior center. This alternative was projected to cost \$27.4 million.

Alternative 2, the moderate change alternative, includes similar improvements as Alternative 1, but also includes a realigned Makala Boulevard and new park entry road, a youth and senior center complex with associated parking, a great lawn area, expanded canoe halau with four hale, a larger dog park, and construction of bio-basins to aid in storm water retention. This alternative was projected to cost \$42.4 million.

Alternative 3, the maximum development alternative, was designed to accommodate most of the recreational facilities requested by various stakeholder groups. The Field D ballfields have been completely reconfigured in a triplex design, adding another ballfield. As with Alternative 2, a new Makala Boulevard entry and youth and senior center are provided. The canoe halau is expanded to provide 8 hale, and the tennis complex includes 12 courts plus one stadium court. Because of the larger tennis center and canoe halau, this alternative encroaches further into the passive, beach side of the park. This was seen as a major disadvantage of Alternative 3. During the planning charette, participants agreed that the beach and shoreline areas of the park should remain in passive open space to the greatest extent possible. Alternative 3 was projected to cost \$48 million.

### 3.7 SELECTION OF PREFERRED ALTERNATIVE

After considering the three alternatives above, Alternative 2, Moderate Development, was selected as the preferred alternative. Both the planning team and community participants agreed that this alternative balances the need for additional recreational facilities, while retaining the passive, beach front areas. After the planning charette, this alternative was refined with additional input from the County administration and the technical consultants. The resulting, final master plan is shown in Figure 3. The proposed action is the implementation of this final master plan.

### 3.8 PROJECT PHASING

Implementing the recommended master plan will depend on availability of funds, priorities of elected officials and citizens, future development by adjacent landowner Queen Lili'uokalani Trust, and the overall state of the economy. The following is a general phasing plan for the proposed improvements, starting with removal of the asphalt runway and construction of the basic infrastructure and beach access road. Establishment of adequate infrastructure in the initial project phase is critical for implementation of subsequent phases. Improvements to the existing ballfield area can occur simultaneously.

### 3.8.1 Phase 1

The first phase focuses on establishing the basic infrastructure and constructing the beach access road and entry. Providing adequate utilities and roadway infrastructure early on is necessary before any subsequent development can occur in the northern half of the site and in subsequent development phases.

#### *Phase 1a*

- Remove existing asphalt runway, radio controlled aircraft runway, and parking starting at Events Pavilion and moving north.
- Construct toilets and showers near the gymnasium to fill an urgent need.

#### *Phase 1b*

- Construct new beach access road with parking areas and reverse angle parking.
- Construct bio-basins with native plants for storm water retention.
- Restore and grade areas surrounding bio-basins and revegetate with grass, shrubs and shade trees.
- Construct Beach Center, Interpretive Center, and new beach pavilions.
- Construct a 10-foot wide multi-use path.
- During this phase, the existing roadway up to the Events Pavilion would continue to be in use.

#### *Phase 1c*

- Construct a 15,000 to 20,000 SF skate park in the space between the Maka'eio Walking/Jogging path and the planned beach access road. A sewer force main runs along the park's mauka property line, within a 35-foot wide sewer easement. The future skate park needs to stay outside the easement area.

#### *Phase 1d*

- Complete two canoe hale with stand alone restroom and paved central loading area. Access to the hale will require extending the mauka roadway from the existing entry road to the beach.
- After the canoe hale are built, portion of the terminal building with interim canoe storage can be demolished.

### 3.8.2 Phase 2

#### *Phase 2a*

During this phase, the temporary access road will remain in operation.

- Construct six tennis courts.
- Construct extension of road from canoe halau and parking for tennis complex access.

### *Phase 2b*

- After completion of new tennis complex, demolish the four existing tennis courts, outdoor basketball court and tennis parking lot.
- Construct interim DLNR/DOCARE base yard. An option is to retain DLNR/DOCAR base yard and offices in their current location until Phase 4, when the youth and senior center complex is built, then relocate them off-site.
- Demolish portion of old terminal building with DPR maintenance shops; demolish old DMV building. If the skate park is already being planned or constructed (on the temporary DPR base yard site) in this phase, the DPR base yard can remain in the old terminal building. However, this function should eventually be relocated off-site.
- Remove parking lot surrounding the terminal building and the toddler playground.

### 3.8.3 Phase 3

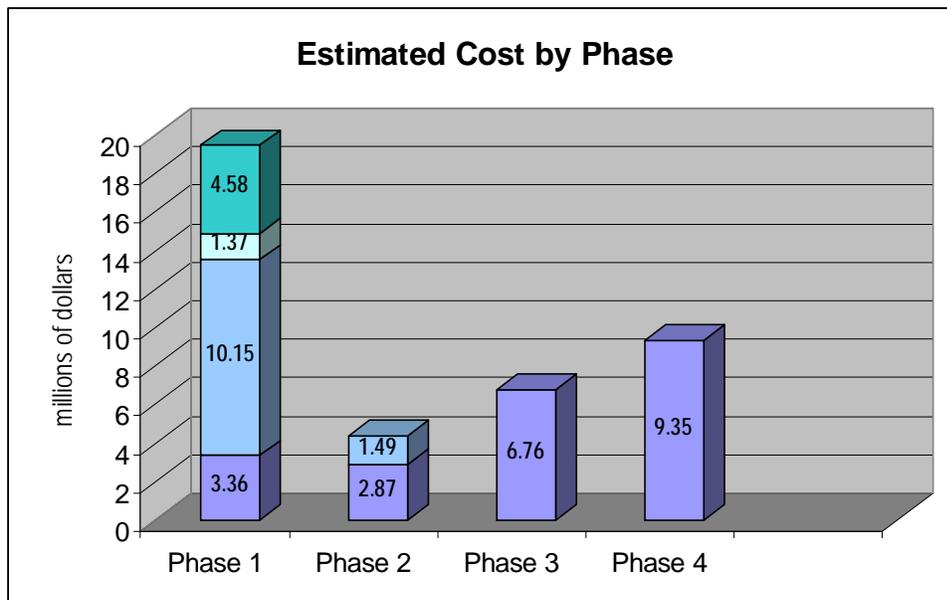
- Construct new parking and roadway connections around the old terminal building
- Construct new parking and roadways around former tennis court area.
- Expand the substandard football field to 100 yards.
- Replace soccer shelter with a new concession, restroom and soccer storage building.
- Complete last two canoe hale, exhibit and workshop building.
- Complete multi-use path surrounding the active fields.

### 3.8.4 Phase 4

- Complete community center facilities
  - Youth Center
  - Senior Center
  - 25 yard swimming pool
- Construct parking lot and driveways near the community center.
- Provide emergency access and grass block driveway connecting the porte cochere to cul-de-sac.
- Construct Great Lawn, pavilion, and hula stages.

**Estimated Costs (millions of dollars)**

Discipline	Phase 1a	Phase1 b	Phase1 c	Phase 1d	Phase2 a	Phase2 b	Phase 3	Phase 4	Total
<b>Architecture</b>	1.73	1.90	-	3.58	-	0.40	4.41	5.86	17.88
<b>Landscape</b>	-	4.05	1.28	0.28	1.49	0.07	1.12	1.05	9.34
<b>Civil Engineering</b>	1.63	3.30	0.09	0.34	0.30	0.37	0.87	1.59	8.50
<b>Electrical Engineering</b>	-	0.90	-	0.38	1.08	0.65	0.36	0.85	4.22
<b>Total</b>	3.36	10.15	1.37	4.58	2.87	1.49	6.76	9.35	39.94



## 4 AFFECTED ENVIRONMENT, IMPACTS AND MITIGATION

### 4.1 INTRODUCTION

This chapter describes the existing environment, potential project impacts and proposed mitigation. This chapter is organized by resource area, and is generally divided into: 1) physical environment, 2) biological environment, 3) socio-economic environment, 4) utilities and infrastructure, 5) traffic, and 6) public services and facilities.

The discussion of environmental impacts includes both direct and indirect impacts. Direct impacts are those caused by the action and occur at the same place and time. Indirect effects may occur later in time or farther in distance, but are still reasonably foreseeable. The analysis in this chapter also identifies possible cumulative environmental impacts. Cumulative impacts are defined as the results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

This section also addresses the environmental impacts of the other project alternatives discussed in Chapter 2.

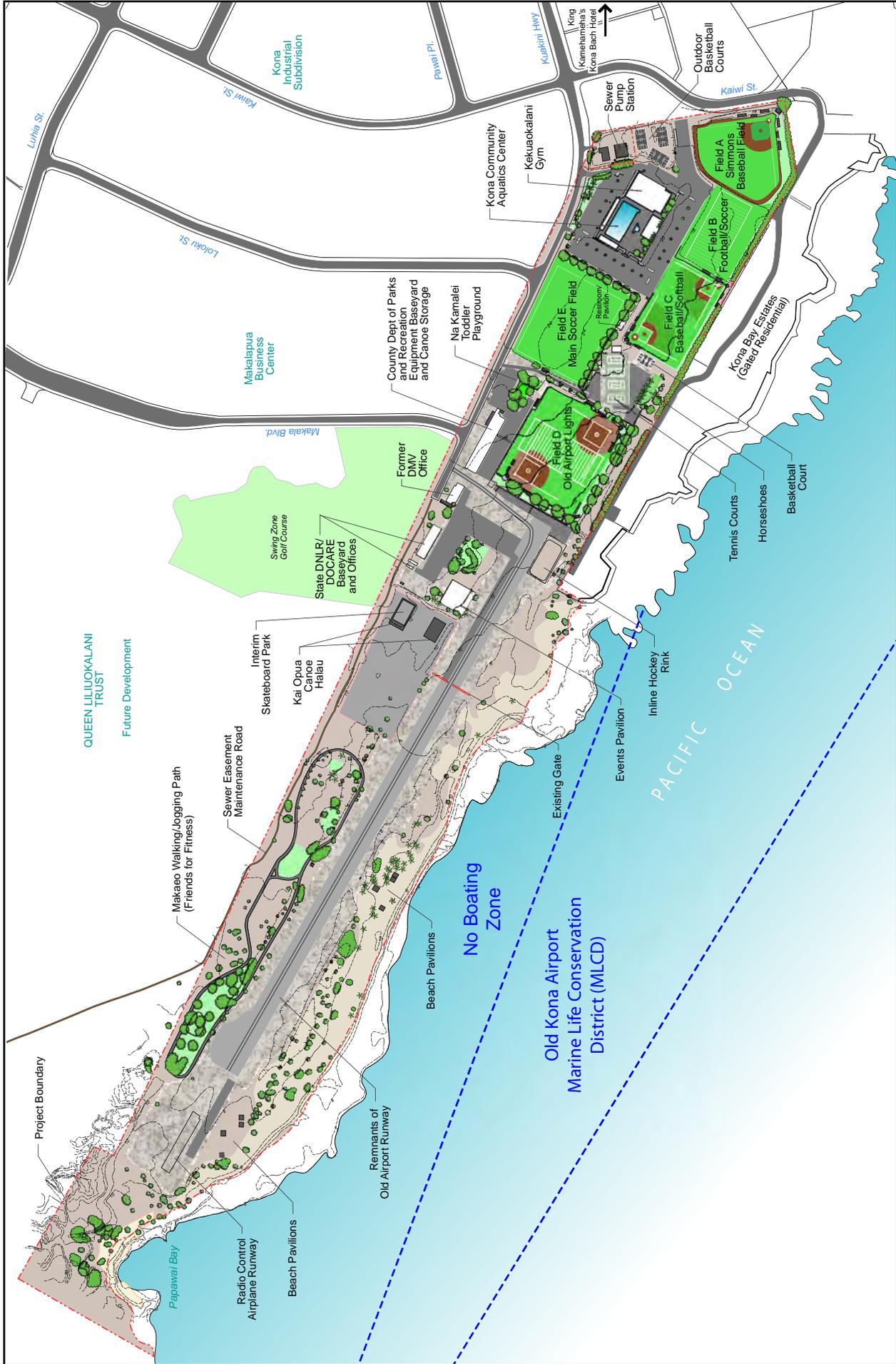
### 4.2 PHYSICAL ENVIRONMENT

#### 4.2.1 Existing Land Use

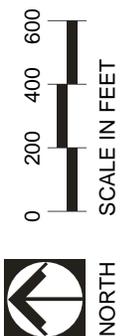
##### *Existing Conditions*

Figure 7 shows existing conditions and surrounding land uses. The 117-acre Kailua Park is a long and narrow site (6,600 ft by 800 ft) which is indicative of its former use as an airport. The property is divided into two distinct areas: the southeastern (Kailua Park) portion of the site, which includes active recreational fields and facilities, and the northwestern (former State Old Kona Airport Recreation Area) area where the runway is located.

Surrounding land uses include the Kona Bay Estates, a private residential community located directly makai of the ballfields. This gated subdivision was developed in 1984, and currently includes 42 lots, both developed and undeveloped. Many of these exclusive homes are used as vacation rentals. The runway portion of the project site fronts directly on the ocean.



**Figure 7**  
**EXISTING CONDITIONS**  
 Kailua Park Master Plan  
 Draft Environmental Assessment  
 November 2009



Lands to the north and west (mauka of the site) are owned by the Queen Lili'uokalani Trust (QLT). The QLT has leased the adjacent site along Makala Boulevard to the Swing Zone Golf Course, a nine-hole golf course with 18-hole putting course and restaurant. The recently developed Makala Business Center is located further mauka on Makala Boulevard. Other surrounding QLT lands are currently undeveloped, but zoned for mixed commercial and industrial uses. The QLT has plans for future residential and commercial development in this area, including areas abutting the park.

The southeastern side of the park consists of a number of active sports venues, operated and maintained by the County. Multi-purpose outdoor sports fields include:

- **Field A, Simmons Field**, a dedicated college and high school baseball field
- **Field B**, a multi-purpose soccer and substandard 80-yard football field
- **Field C**, two Youth Baseball or Softball Fields
- **Field D, Old Airport Lights**, a multi-purpose football and baseball/softball field with two skinned diamonds and two additional unskinned diamonds at each corner built around 1970. Fields are lit.
- **Field E**, the main soccer field capable of accommodating multiple soccer games depending on age classification constructed in 1994. When built, a BMX bicycle dirt course was eliminated.

Other facilities include:

- **Kona Community Aquatics Center**  
The KCAC consists of a 50-meter Olympic size swimming pool divided by a bulkhead, a children's wading pool, power generator and filtration room, covered stands, and a locker, shower and toilet facility. The aquatics center was built in 1998.
- **Kekuaokalani Gymnasium**  
The gymnasium measures approximately 20,880 square feet and includes a multi-court sport gymnasium, bathroom, storage and multi-purpose room built in 1991. There are no locker or shower facilities. The gym is striped to accommodate two cross court basketball courts, two cross court volleyball courts or three cross court badminton courts. Telescopic wooden bleachers line two sides of the gym. The gym floor is wood on concrete and not properly cushioned. The gym is naturally vented through clerestory windows. There are approximately 500 marked parking stalls surround the aquatics center and gym.
- **Outdoor Basketball Courts**  
Three outdoor basketball courts, completed in 2005, are located to the southeast of the gymnasium. The courts are used for practice and warm-ups as well as free play and

tournaments. The courts are lit for nighttime use, and lights are timed to turn off at 10:30 PM.

- **Soccer Pavilion**

A 960 SF pavilion was completed in 1997 at Field E to provide storage for soccer teams and pavilion for the soccer participants. The wooden structure is one-story.

- **Tennis Courts**

The tennis complex located between Field D and C consists of four hard courts originally built in 1976. The courts are lit with the original fluorescent light fixtures requiring 8-foot long fluorescent bulbs. In 1994 a 960 SF pavilion was added for storage and shelter. A single outdoor basketball court is situated between the tennis court parking lot and Field C.

- **Pueo Horseshoe Pits**

A 12-station horseshoe pit was built around 1980 on the makai side of the tennis courts. Each horseshoe pit includes concrete borders and curbing and scoreboard. Other improvements include landscaping, picnic benches and storage shed. The horseshoe pits are used and maintained by the Kona Horseshoe Pitchers Club.

- **Public Beach Access**

Two public beach access walkways are available from Kailua Park, providing pedestrian access through the Kona Bay Estates subdivision to the shoreline. Beach-goers typically leave their vehicles in the parking lot adjacent to the gym, walk through the playing fields toward the ocean, and then through a series of fences and gates, along a pathway between private residences, and ending at the public beach known locally as “Keiki Beach.”

Existing facilities northwest of Field D, comprising the former State Old Kona Airport State Recreation Area, include the following:

- **Former Runway**

Built by the Territory of Hawai‘i in 1948, the original Kona airport consisted of a single 3,800 foot asphalt paved runway that remained in operation until 1970 when the new Kona International Airport was built in Keāhole. After its closure, the runway was used as a dragstrip until the State and the County converted it to a recreational park around 1976. The runway is used as a parking area and access road for the former State park area.

- **Old Kona Airport Structures**

Structures originally used for the old Kona Airport date back to 1948 when the airport was first built. Structures include a terminal building, hangar and another structure that was probably used for operations and maintenance. The old terminal building consists of a restroom pavilion, storage for canoes, and Department of Parks and Recreation (DPR)

maintenance equipment. Building materials include a combination of wood frame, concrete block and stone accent columns and wood siding with metal roof. The center, restroom pavilion portion of the structure, has a steeply peaked roof with open rafters and architectural detailing reminiscent of Hawaiian architectural styles of the 1950's. The mauka portion of the buildings includes a fenced off area used to park maintenance equipment and vehicles. The terminal building underwent minor repairs in 1984 to repair leaking roofs, and damaged walls, doors and windows.

The operations and maintenance building on the northern side of the terminal building was previously used by the County for their Department of Motor Vehicles. Because of its dilapidated condition, the County vacated the building and it is now used for interim storage by a canoe club. This wood framed building includes wood siding with rolled gravel roofing material.

The hangar building located mauka of the Events Pavilion is currently used as a maintenance base yard facility by the State Department of Land and Natural Resources (DLNR), State Parks Division and Division of Conservation and Resources Enforcement (DOCARE). This steel framed building has metal roof and siding with large sliding doors to accommodate small aircraft. Portable trailers situated next to the hangar building are used as offices.

- **Na Kamalei Toddler Playground**

The toddler playground, located on the mauka side of Field D, was built in 1993. It includes colorful play structures with slides, bridges, pavilions, and a tricycle riding area under tall canopy shade trees.

- **The Events Pavilion**

The Events Pavilion is located makai of the old terminal structures on the Kohala side of Field D. The building, originally built in 1983, is constructed with concrete walls with natural rock accents, a combination of pre-stressed concrete beam roof supports and wood framing with an asphalt shingled roof over a concrete slab floor. Three open sides of the pavilion are secured with boxed aluminum fence-line doors. This 15,000 SF facility consists of an open air multi-purpose room surrounded by a kitchen, office and storage rooms, dressing rooms, mechanical room and men's and women's toilets. The pavilion is available for rent through the County Department of Parks and Recreation.

- **Canoe Halau/Interim Skate Park**

On the northern side of the Events Pavilion, there are two unfinished canoe hale, part of a proposed canoe halau complex. Existing construction is limited to structural columns and a concrete slab floor. Original plans proposed an 8-hale complex, with each hale structure measuring 6,000 SF over a 5.3 acre site. However, the halau complex was never completed due to a lack of funds.

In 2008, the Kona Skatepark Association leased the canoe club's unfinished hale pad and surrounding land for a temporary skate park. The skateboard park consists of ramps, half pipes and rails constructed out of wood. The Kona Skatepark Association currently has a Memorandum of Understanding (MOU) with the County for the sub lease of the canoe hale pad from Kai Opuu Canoe Club until 2010.

- **Pepsi-Kona In-Line Hockey Rink**

An in-line hockey rink complete with plexiglass barriers and walls, concrete slab floor, security fence, night lights and bleachers is located on the makai side of the Events Pavilion and on the Kohala side of Field D. This facility was built in 1977 by the West Hawai'i Hockey Association under a right-of-entry granted to the County of Hawai'i. The facility was originally built through donations from a local excavation service and concrete company. In 1998, Pepsi Company had an island-wide celebration, and in appreciation for local support, arranged to have the boards, glass, and scoreboard installed. A few years later, lights were installed through community donations. The facility is used by West Hawai'i Hockey Association for youth and adult leagues and is open to the public for monthly skate nights.

- **Radio-Controlled Airplane**

A 100-foot long asphalt runway was constructed at the far north end of the old airfield by the Kona R/C Flyers, a local radio-controlled airplane club. During club events, the runway area and an approach zone are coned for safety.

- **Maka'eo Walking and Jogging Path**

The Maka'eo walking and jogging path was started in the mid 1990s as a community effort spearheaded by Friends for Fitness, a non-profit community group whose mission is to create and promote a healthy, livable, and physically-active community. The 10-foot wide asphalt path includes a 0.7mile main circuit and a 0.3-mile loop to complete a measured mile route. Interspersed along the path are introduced and exotic species of trees, shrubs and plants. The path is immensely popular drawing walkers and joggers as well as park volunteers from the community on a daily basis.

- **Beach and Off-Shore Recreation**

The beach areas of the site are popular for tidepooling, shore fishing and picnicking. There are seven beach picnic pavilions along the shoreline that provide protected areas. However, shade trees are scarce in this area, and vegetation is mostly limited to coastal shrubs and ground cover. The shoreline throughout this area is rocky, and not widely used for swimming. However, it is punctuated with sand-filled ponds, providing safe wading areas for families.

There are several surf spots and areas used for snorkeling and scuba diving. The Pawai Bay area provides access for snorkeling and diving. The nearshore areas within 50 yards

of the shore has abundant coral reefs and fish that makes for good snorkeling, but beyond that, the bottom drops off quickly into very deep water.

The off-shore areas are part of the Old Kona Airport Marine Life Conservation District (MLCD), a 217-acre marine preserve created in 1992 and managed by the DLNR Division of Aquatic Resources. The MLCD is bounded by a straight line seaward 500 yards from the western end of the park to a straight line seaward 500 yards from the Kailua lighthouse. In addition to regulating fishing and gathering activities offshore, the DLNR has designed a “no boating zone” in areas off the park, prohibiting motor powered watercraft in the area.

- **Undeveloped and Cultural Areas**

About 40% of the project site, mostly in the former State park area, remains undeveloped. Pawai Bay, located beyond the end of the runway, provides a quiet sandy cove between the rocky shoreline and vegetation dominated by kiawe, coconut and lauhala trees, and naupaka and other shrubs. The area was once a native Hawaiian residential settlement, and remaining cultural sites include an anchialine pond and an old cistern formerly used to draw fresh water. A number of archaeological sites have been identified in the area north of the runway, including house platforms, enclosures, petroglyphs, and several burials sites.

### *Project Impacts and Mitigation*

The master plan proposals are intended to be implemented in phases over the long-term. As proposals are funded, construction will have temporary, short-term impacts on existing land uses until they are completed. Construction activity will temporarily increase the number of construction personnel on the property, and may create congestion, noise and fugitive dust, which will be controlled through specific project mitigation requirements and enforcement. The severity of these impacts will depend on the location of the construction activity, particularly its proximity to the highly developed areas of the park. Construction near the existing ballfields and gymnasium will generally cause more disruption than construction in the areas north of the Events Pavilion. This is because the areas around the ballfields and gym are more intensively used and are already congested during peak periods.

Construction of improvements will occur in phases to minimize disruptions to existing park users. Replacement facilities will be constructed before existing facilities are demolished or converted to another use. Vehicular and pedestrian access to existing park facilities will be maintained during construction whenever possible. In some instances, park users may have to use detour roads and temporary parking areas, which will cause inconvenience.

Construction impacts to the Kona Bay Estates community will include temporary increases in construction noise and fugitive dust. Improvements in the ballfield area closest to Kona Bay Estates include re-grading Fields B and C to accommodate a regulation football field, demolition

of the existing tennis courts, and construction of new parking lots and driveways. The demolition of the existing runway and construction of a new beach access road will also generate noise and dust.

Best Management Practices will be implemented for all improvements to mitigate noise, fugitive dust, erosion and other environmental impacts as required by law.

Once construction is completed, there will be no adverse long-term construction impacts to the existing facilities and fields or surrounding land uses. When fully implemented, the master plan will have a positive impact on the site and surrounding areas, transforming the park into a desirable recreation asset and community center. Removal of the old airport runway will have a positive effect on the physical environment, and will replace an undefined travel way and haphazard parking lot with a meandering but well-defined beach access road with designated parking areas.

The master plan recommends long-term relocation of the County's Parks Maintenance baseyard (currently located at the old terminal building) and the State's DLNR Parks baseyard (currently housed at the old hangar buildings) to unspecified locations offsite. According to action approved by the Board of Land and Natural Resources at its meeting on November 16, 2007, "*The Division of State Parks shall retain an area (at Kailua Park) not to exceed 5.00 acres, which shall include the old hangar building, mobile office site and surrounding areas...*" and the State shall retain "*Unrestricted access to the Kona Sub-Unit baseyard reserved for the Department of Land and Natural Resources, its employees, consultants, contractors and/or persons acting for or on its behalf to conduct the State's official business.*" In subsequent discussions between State and County officials, the DLNR has indicated that they are not opposed to relocating its baseyard to accommodate future park development plans but that replacement facilities must first be provided by the County (See DLNR letter in Chapter 9). The Kailua Park master plan is a long term vision with a 20-year build out and it is not critical that the baseyard facilities move immediately. Until a replacement site is found, the continued presence of the baseyards will not hamper the proposed development of the balance of the improvements proposed by the master plan.

Future plans for QLT lands immediately mauka of the park have not been finalized. The QLT is currently developing plans for its planned residential and commercial development. The enhanced Kailua Park would provide a valuable community amenity for future residents, as it provides a link to the beach and shoreline. Discussions have been initiated with QLT personnel, who have indicated their willingness to work with the County as plans for their property are developed.

Cumulative impacts associated with the implementation of the master plan would be positive, as it will enhance and add to the County's inventory of recreational amenities available to Big Island residents, particularly those in North and South Kona. The enhancement of Kailua Park

may also stimulate interest in and implementation of a future Kealakehe Regional Park, which is recommended in the recently completed Kona Community Development Plan.

### **Impacts of Other Alternatives**

Of the four project alternatives discussed in Chapter 2, the three construction alternatives (Alternatives 1, 2 and 3) would have similar impacts to the preferred plan. The No Action alternative would not change existing conditions. However, the recreational needs of certain segments of the community, opportunities to improve passive beach recreation, and opportunities to improve the natural environment would continue to be unmet.

#### **4.2.2 Geology and Topography**

##### *Existing Conditions*

The project site is located on the island of Hawai‘i, the largest of the Hawaiian Islands. Hawai‘i consists of five shield volcanoes. Kohala in the north is the oldest, Hualalai on the west is a dormant volcano, Mauna Kea, also dormant, is the largest of the volcanoes, Mauna Loa and Kilauea on the south are the most active on the island. The subject property is located at the western base of Hualalai.

Topographic map coverage of the site vicinity is provided by the United States Geological Survey, Island of Hawai‘i 7.5-minute Keāhole Point Quadrangle, 1996 and an aerial topographic survey map commissioned for the master plan in January 2009. The elevation of the runway area ranges from 6 to 10 feet above mean sea level (MSL). The active sports fields have ground elevations ranging between 18 to 24 feet above MSL, as the topography was graded and top soil was imported to create grassed fields. The site and surrounding areas are generally flat, with slight variations in gradient.

The land cover which characterizes the active sports field area is generally grass, with areas covered by structures, asphalt and concrete for parking areas, sidewalks and outdoor courts. The land cover which characterizes the old airport runway area is generally asphalt, gravel cinders, and concrete, except along the edge of the shoreline where pockets of sand, grass and naupaka are interspersed with the predominantly rocky shoreline. The northern boundary of this parcel is covered by old lava flows.

##### *Project Impacts and Mitigation*

The proposed action will not have an adverse impact on the geology or topography of the project area. Some minor re-grading will be required for ballfield improvements. The master plan includes removal of the old runway to the base course layer and replacement with a meandering beach access road and parking. To mitigate surface water runoff, bio basins are proposed to contain and filter runoff from roadways and parking lots before it reaches the nearshore waters.

## Impacts of Other Alternatives

The other alternatives would impact the geology or topography of the project area to varying degrees. Alternative 3, the Maximum Development Alternative, would result in more recreational facilities, and require greater modification to the site topography than Alternative 1, the Minimum Development Alternative and Alternative 2, the Moderate Development Alternative. However, none of the alternatives involves massive grading or modifications to the site topography. The No Action alternative would not alter the existing topography or remove the asphalt runway. In the long term, this alternative could have an indirect, negative impact, as the runway would continue as a “heat island” and stormwater runoff would continue unchecked.

### 4.2.3 Soils

#### *Existing Conditions*

The entire 117-acre parcel is classified rLW, defined as “*Lava Flows, A‘a.*” This soil classification refers to the natural land conditions prior to development of the park. A‘a lava flows is a miscellaneous land type with no soil covering and little or no vegetation. This lava is rough and broken and has a mass of clinkery, hard, glassy, sharp pieces piled in tumbled heaps. Surface soils consist of crushed a‘a lava that forms the aprons of the old runway and imported top soil used to create the existing sports fields and walking path garden. The shoreline is rocky with pockets of coral sand.

#### *Project Impacts and Mitigation*

Short-term environmental impacts will occur as a result of construction activities. For example, removing the asphalt runway and constructing a new beach access road and parking areas will require grading and trenching activities to install a new water line. Care will be taken to minimize disturbance of the ground below the existing pavement, in order to minimize disturbance to any archeological features. Improving Fields B and C by expanding the football field to 100 yards will require grading a portion of Field C. Topsoil will be imported for the new grass fields and landscaping.

For all projects, the contractor will be required to implement best management practices (BMP) throughout the construction period, including proper secondary containment structures around the work area to prevent stormwater runoff into the ocean. Stockpiling of construction materials will be restricted and all construction debris will be disposed off-site and recycled to the extent feasible. Rainwater accumulated will be naturally evaporated or infiltrated into the ground.

Any impact of construction activities on soils will be mitigated by measures outlined in the applicable County, State and federal regulations.

In the long term, the removal of the runway and the construction of landscaped biobasins will have a positive impact on soils, by greatly reducing the amount of impermeable surface and improving drainage conditions on the property.

### **Impacts of Other Alternatives**

Under a No Action alternative, there would be no construction-related impacts to soils. However, without removal of the existing runway, surface water runoff will continue unchecked. The Maximum Development scenario would involve more construction and therefore more temporary soil disruption than the Moderate and Minimum change scenarios. In all development scenarios, best management practices would be required during construction.

#### **4.2.4 Climate and Air Quality**

##### *Existing Conditions*

##### **Climate**

The entire state of Hawai‘i lies well within the belt of northeasterly trade winds generated by the semi-permanent Pacific high pressure cell to the north and east of the islands. Areas along the eastern coasts of the islands are particularly affected by the trade winds and are usually well-ventilated nearly year round.

Although in most parts of the Hawaiian Islands, summer is the drier season near the lowland coastal areas, near the Kona Coast, summer rainfall exceeds winter rainfall, with February being the driest month and September the wettest. There is a marked diurnal wind regime, with well-developed and reliable land and sea breezes, especially in the summer. Summer is also the season with a high frequency of late afternoon or early evening showers. Conditions on the Kona Coast are somewhat warmer and decidedly drier than in windward locations of the island.

Temperatures at the Kona International Airport at Keāhole range from an average of 66.9 to 82.7 degrees Fahrenheit. In Kailua-Kona, August is typically the warmest month and January the coolest month of the year. The average total precipitation at the airport is 24 inches per year. The mean annual wind speed at the airport is 8.3 miles per hour (mph), and usually varies between approximately 4 and 12 mph during the day.

##### **Air Quality**

Air pollutants affecting the project area include sulfur dioxide (SO<sub>2</sub>) and fine particulate matter 2.5 microns or smaller in size. The island of Hawai‘i is susceptible to elevated levels of volcanic smog or “vog,” associated with the Kilauea volcano. Sulfur dioxide from the volcano reacts with other gases, moisture, dust and sunlight to form the often thick, visible haze. The level of vog generally depends on a combination of volcanic activity, weather, and wind direction and speed.

Since March 2008, the amount of SO<sub>2</sub> emitted by Kilauea has increased due to the opening of a new gas vent in Halemaumau Crater. Since then, Kailua-Kona has experienced dense and nearly constant vog along the Kona coast. The State Department of Health (DOH) has established air quality monitoring stations in Kona, Hilo, Mountain View and Pahala. DOH has been monitoring exceedance of the National Ambient Air Quality Standard (NAAQS) over the past several years. As recent as May 2009, the Kona area experienced elevated levels of PM<sub>2.5</sub> that exceeded the NAAQS standard of 35 mg/m<sup>3</sup> over a 24 hour average. Such elevated levels can cause breathing problems in individuals especially those with pre-existing respiratory conditions, such as asthma, emphysema, and bronchitis.

The DOH has identified mitigation recommendations during poor air conditions, including staying indoors and using an air conditioner, not smoking or exposing oneself to second hand smoke, limiting physical exertion, drinking plenty of fluids, having an adequate supply of medications on hand and contacting your physician as soon as respiratory problems develop.

### *Project Impacts and Mitigation*

The project will have no impact on the major contributor to air pollution in Kailua-Kona, specifically volcanic activity. However, the expansion of recreational opportunities will lead to an increase in park users, increasing the number of people or duration of exposure to poor air quality. Air quality should be routinely monitored by local coaches and sports organizers, and strenuous active sports may need to be reduced or suspended if NAAQS are exceeded. As with current conditions, people with respiratory problems will be advised to stay indoors and minimize physical exertion during periods of heavy vog.

During construction activities, there may be localized, short-term impacts to air quality. Excavation and ground disturbance and demolition will increase fugitive dust in surrounding areas. Exhaust will be generated by construction equipment and machinery. Standard dust control measures such as dust screens and watering sprinkling will be implemented as needed. Transported or stored soils will be covered. Areas graded will be vegetated or paved as soon as possible to reduce dust.

### **Impacts of Other Alternatives**

There would be no short-term, construction period impacts to air quality with the No Action alternative. The other build alternatives would have construction impacts similar to the proposed action to varying degrees, requiring similar mitigation as the proposed action.

## 4.2.5 Flood Hazard

### *Existing Conditions*

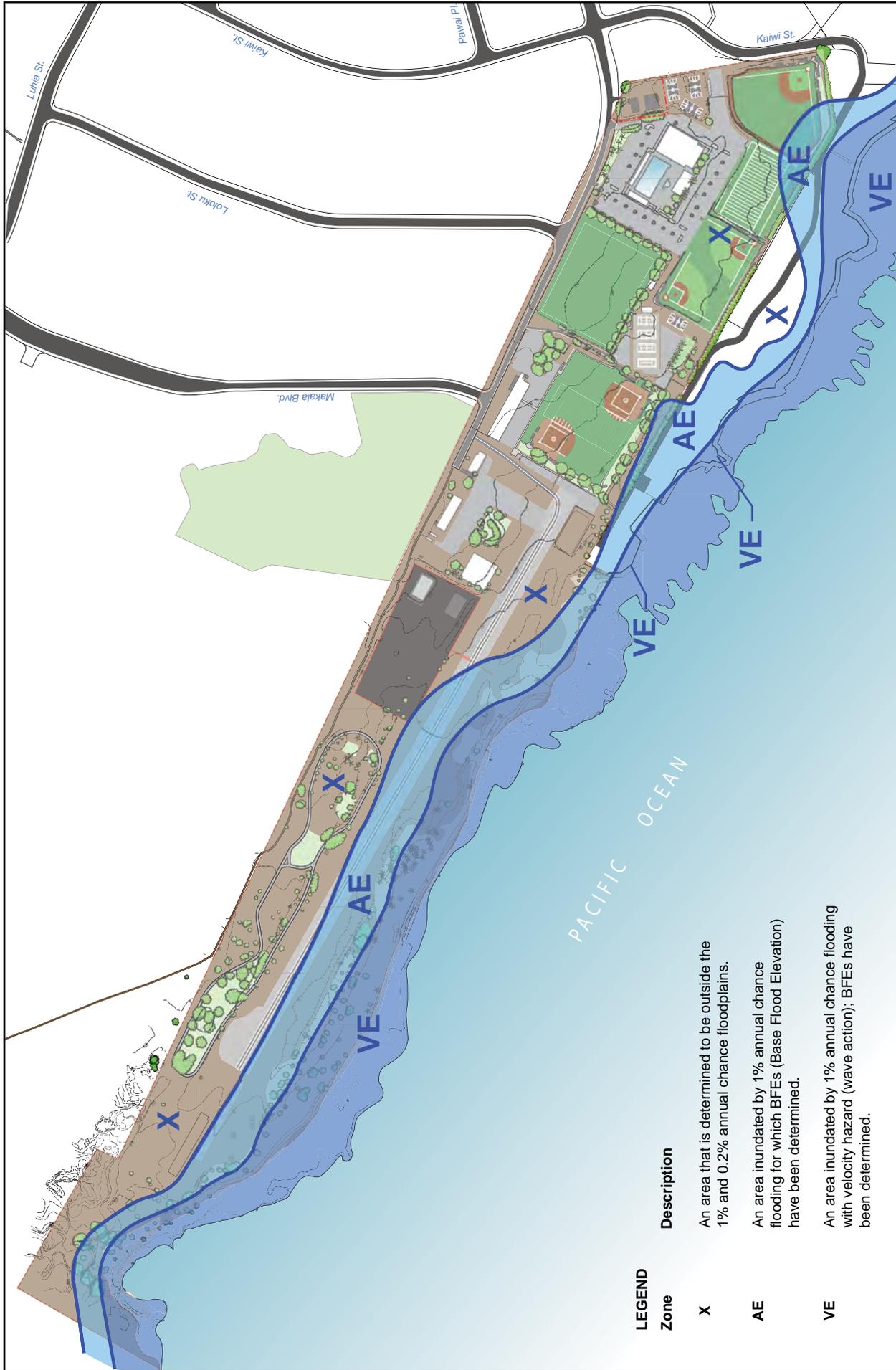
In a letter dated September 17, 2009, the County Department of Public Works confirmed that portions of the property are within Flood Zones AE (floodway fringe) and VE (coastal high hazard) as shown on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM). Figure 8 shows the FIRM designations on the existing site. Zone AE is the area subject to inundation by the 1% annual-chance flood event, also referred to as the “100-year flood.” The base flood elevation in Zone AE is 6 feet above mean sea level. The shoreline areas of Kailua Park are within the VE zone, coastal areas subject to inundation by the 1% annual-chance flood event, with additional hazards due to storm-induced velocity wave action. Base flood elevation in the VE zone is 10 feet above mean sea level. The remainder of the site is designated Zone X, an area determined to be outside the 1% (100-year flood) and 0.2% (500-year flood) annual chance of flooding.

The County requires that new construction and substantial improvements in the AE and VE zones comply with Chapter 27, Flood Plain Management of the Hawai‘i County Code, the regulations pertaining to flood hazard areas. The regulations require that there be no rise in base flood elevation (BFE) as a result of the improvements. If improvements are to be constructed in these zones, a variance must be obtained from the County, and a civil (hydraulic) engineer must show that the improvements will not cause an increase in the BFE. Fill is not allowed in the VE zone without a variance, as fill theoretically alters the ground profile, changing the flood inundation limits.

For floodplain management, a structure is defined as a walled or roofed building that is principally above ground. New non-residential buildings must either be elevated above the BFE or flood proofed. Existing structures, such as the beach pavilions, are grandfathered in; i.e., may remain as is.

### *Project Impacts and Mitigation*

Figure 9 shows the FIRM flood prone areas overlaid on the proposed master plan. Proposed improvements in the VE or AE zones have the potential to create an obstruction or cause a rise in the BFE. Proposed structures that are shown within the VE zone include beach pavilions, restrooms, and walking paths. Proposed structures that appear to be within the AE zone include the beach center, paths, the beach access road, parking areas, and one or more tennis courts. Any utility lines within these areas will be designed to minimize or eliminate infiltration of flood water into the system, as well as any discharge into flood waters.



Zone	Description
X	An area that is determined to be outside the 1% and 0.2% annual chance floodplains.
AE	An area inundated by 1% annual chance flooding for which BFEs (Base Flood Elevation) have been determined.
VE	An area inundated by 1% annual chance flooding with velocity hazard (wave action); BFEs have been determined.

 NORTH

0 200 400 600  
SCALE IN FEET

**Figure 8**  
**FIRM (Existing Conditions)**  
 Kailua Park Master Plan  
 Draft Environmental Assessment  
 November 2009



**Figure 9**  
**FIRM (Proposed Master Plan)**  
 Kailua Park Master Plan  
 Draft Environmental Assessment  
 November 2009

Zone	Description
X	An area that is determined to be outside the 1% and 0.2% annual chance floodplains.
AE	An area inundated by 1% annual chance flooding for which BFEs (Base Flood Elevation) have been determined.
VE	An area inundated by 1% annual chance flooding with velocity hazard (wave action); BFEs have been determined.

**LEGEND**

**Zone**

**Description**

**X** An area that is determined to be outside the 1% and 0.2% annual chance floodplains.

**AE** An area inundated by 1% annual chance flooding for which BFEs (Base Flood Elevation) have been determined.

**VE** An area inundated by 1% annual chance flooding with velocity hazard (wave action); BFEs have been determined.

0 200 400 600  
 SCALE IN FEET

**NORTH**

Construction of all improvements in the VE and AE flood zones will comply with provisions of Chapter 27, requiring no rise in BFE, use of flood resistant materials, elevation or waterproofing to or above the base flood level, secure anchoring, and structural adequacy. The proposed beach access roadway will be kept at the same elevation and profile as the existing runway, which will avoid the need for fill and a flood variance. With this mitigation, the improvements will not have an adverse effect on flood conditions.

### **Impacts of Other Alternatives**

All project alternatives except No Action, involve improvements within Zones VE and AE, and as such, have impacts and mitigation similar to the proposed alternative.

#### **4.2.6 Water Resources**

##### *Existing Conditions*

##### **Stream and Wetland Resources**

An evaluation of stream and wetland resources within the project area was included in the Biological Surveys (Rana Biological Consulting, 2009, Appendix A). There are no streams within Kailua Park area, as the area is too dry and the ground too porous (geologically recent lava flows and soil mostly derived from wind-blown beach sand) to support streams. However, the low elevation in proximity to the coast provides an environment for the formation of brackish pools at sea level. Pools isolated from the sea (that is, lacking an overland connection) and having water with measurable salinity and showing tidal action are termed *anchialine*, comprising a special habitat type protected by state and federal statutes.

According to the biological survey, three areas on the subject property have potential to be defined as anchialine and/or possibly as jurisdictional wetlands (i.e., regulated by the Army Corps of Engineers under Section 404 of the Clean Water Act). The first is a pond at the far north end at the edge of a large boulder dump. The pool here is on the order of 6-by-12 feet (2-by-3 meter) and roughly 2 feet (0.8 meters) deep. The biological survey did not include salinity sampling, but it was noted that the pool harbored populations of a small *poeciliid* (perhaps a molly) and a shrimp characteristic of anchialine ponds called *‘ōpae‘ula* (*Halocaridina rubra*). This pond is heavily shaded by several *kiawe* trees and surrounded by a thick growth of *‘akulikuli*.

A second feature is a small pool in the Maka‘eo Walking and Jogging Path and community garden area. This pool is only about 1.5 m in diameter and less than 0.25 m deep. The pool occupies a natural basin in the *pāhoehoe* surface and thought not to be anchialine; it may be a natural, impermeable basin fed by water from a hose. The pool supports a dense population of *poeciliids* (mostly guppies) that respond to visitors, indicating the fish are being fed.

A couple of areas within the Maka‘eo community garden support dense growth of pickleweed or ‘akuluikuli kai (*Batis maritima*). It is difficult to determine what the source of water may be for these areas, as they were dry during the October 2009 biological field survey. However, because pickleweed is considered an obligate, wetland plant in Hawai‘i, an area with hydrology (a water source) dominated by pickleweed, has the potential for being classified as a wetland under federal jurisdiction. The biological survey notes that one area wedged between the runway and the low coastal dunes is probably a depression that floods on occasion, or may have saline groundwater close to the surface. Pickleweed grows in areas of saline soils and sediments, including coastal fishponds and anchialine features.

### **Marine Waters**

The Hawai‘i Department of Health water quality standards maps show the nearshore waters fronting the old airport area as Class AA marine waters. According to the Hawai‘i Administrative Rules §11-54-3(c)(1), “it is the objective of class AA waters that these waters remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human-caused source or actions.”

The off-shore areas are part of the Old Kona Airport Marine Life Conservation District, a 217-acre marine preserve created in 1992 and managed by the Department of Land and Natural Resources (DLNR) Division of Aquatic Resources. In addition to regulating fishing and gathering activities, the DLNR has designed a “no boating zone,” which prohibits motor powered watercraft in the area.

### *Project Impacts and Mitigation*

#### **Anchialine Pools**

The master plan recommends preserving and possibly enhancing the anchialine feature at the north end of the park as part of a cultural preserve. Possible improvements include removing or stabilizing the boulders in and around the pond. These boulders appear to have been placed in the area during prior construction activity, and are unstable, inappropriate in a park setting, and potentially dangerous to park users. Another possible enhancement to the pool would be removal of the *poeciliid* fish and removal of the *kiawe* trees.

There are no modifications proposed to the Maka‘eo community garden. However, the potential wetland/anchialine areas that are marked by pickleweed may need to be investigated further if there is alteration of the landscape in these areas. As a general rule, removal of the pickleweed would be a benefit, as this plant is regarded as an aggressive invasive (Rana Biological Consulting, 2009).

Consultation with the Department of the Army (DA) would be required prior to any work in these potential anchialine pool and wetland areas, as they may be regulated under Section 404 of the Clean Water Act, and DA permits may be required.

### **Marine Waters**

The proposed improvements at Kailua Park will not have an adverse impact on nearshore water quality. No in-water construction or improvements are proposed. Construction of paths, walkways, and beach pavilions near the shoreline have the potential to affect water quality due to increased runoff, sedimentation and erosion, release of construction debris and other construction-related pollutants. During various stages of construction, the contractor will provide adequate measures to control pollutants from entering the ocean.

One of the sustainable ideas recommended in the master plan is constructing bio-basis, i.e., depressions in the ground that would be planted with native vegetation. The bio-basins would be designed to capture and filter runoff from roadways and parking lots before it reaches the ocean. Bio-basins are meant to be a long term mitigation solution designed to maintain water quality of the nearshore ocean waters.

### **Future Canoe Launching Areas**

The master plan shows conceptual locations for future canoe launching areas in the vicinity of the future canoe halau complex. However, these canoe launching areas are not included in the scope of this Environmental Assessment.

The canoe launching areas were included in the plan in response to members of the Kona paddling community who indicated that a new launching site is badly needed, as the Kailua Bay pier and shoreline areas are congested, not only with canoe clubs but tour boats, divers, fishermen, and swimmers. Appropriate locations were identified by knowledgeable community members, based on nearshore conditions.

Construction of new canoe launching areas would require construction of a shallow lagoon along the shore, with a dredged channel with access to the ocean. Excavation and removal of the rocky bottom, which is comprised of lava rock, is needed. A shallow, rocky area seaward of the lagoon would be retained to protect the lagoon, which could also provide a safe swimming area.

In addition to funding these improvements, a major challenge would be the regulatory and permitting requirements associated with such a proposal. Permits and approvals from federal, State, and County agencies would be required, including the Army Corps of Engineers, Hawai'i State Department of Health (Clean Water Branch), Department of Land and Natural Resources (Office of Conservation and Coastal Lands, Division of Aquatic Resources, Division of Boating and Ocean Recreation), Coastal Zone Management Office, and County Planning and Building departments. Issues needing further study include coastal engineering, water quality, and marine

biology. Impacts on the off-shore Old Kona Airport Marine Life Conservation District would need to be addressed.

### **Impacts of Other Alternatives**

The No Action alternative would have no impact on water resources or water quality. The other build alternatives would have impacts similar to the proposed action, but to varying degrees, and construction impacts can be mitigated through best management practices. None of the alternatives involves in-water construction.

#### **4.2.7 Noise**

##### *Existing Conditions*

The existing ambient noise at the project site is similar to that found in other urbanized recreational parks. Noise levels vary by location in the park, time of day, and day of the week. Noise correlates to the type of sporting activity occurring and the number of participants and spectators, and is largely generated by humans. Typical noise sources would be people shouting encouragement or loudly cheering during major tournaments. Other noise sources would be amplified music and voices generated by parties or other outdoor events, or machinery typically used for park maintenance. These include lawnmowers, grass trimmers, chain saws or other powered maintenance tool. Noise generated by vehicular traffic is minimal because traffic circulating throughout the park moves at slow speed. Aircraft transiting to and from Kona International Airport at Keāhole are another occasional source of background noise.

##### *Project Impacts and Mitigation*

Noise impacts associated with the various improvements of the master plan are unavoidable, and not expected to be significant. During construction, there will be short-term noise impacts on other park users and staff during normal weekday hours for the duration of particular improvement projects. Construction related noise would not occur during peak weekend or evening sporting events. Most of the proposed construction activity will occur in the central and northern areas of the site, which are away from the highly used areas of the park. The most severe noise impacts will be associated with the demolition of the existing runway and construction of the new beach access road. These activities will involve pavement removal including hammering and saw cutting, excavation, compaction, and use of other noisy construction equipment. Users of the beach, the walking and jogging path, and Events Pavilion will be exposed to the highest noise during this time. Some Kona Bay Estates residents will also be exposed to construction noise during these activities.

Noise levels of diesel powered construction equipment typically range from 80 to 90 dB at 50 feet distance. Adverse impacts from construction noise are not expected to be in the “public health and welfare” category due to the temporary nature of the work and administrative controls

regulating the work. Impacts will be limited to the temporary degradation of the acoustic environment in the immediate vicinity of the project site.

The State Department of Health currently regulates construction noise under a permit system (HAR 11-46, Community Noise Control). Under current procedures, noisy construction activities are restricted to hours between 7:00 AM and 6:00 PM, Monday through Friday, excluding certain holidays, and 9:00 AM and 6:00 PM on Saturdays. Construction is not permitted on Sundays. Construction activities during the evening and night time hours are not planned.

The use of quieted portable engine generators and diesel equipment may be specified for use on this project. Equipment staging areas will be located away from noise sensitive properties to the extent feasible.

The implementation of the master plan improvements will increase ambient noise at the park, because more areas of the park will be actively used. No new noise generating facilities such as ballfields are proposed next to the Kona Bay Estates residential subdivision. However, the central area of the park, which is not heavily used now, will include a new community center, tennis complex, canoe halau and skate park. Lawn areas will be available for concerts and other outdoor events. Excessive noise, e.g., amplified music, will be controlled through management and permitting of park activities, and monitored by park staff. For example, organized sports activities, concerts, and other events will be required to terminate by a specific time in the evening (e.g., 11:00 PM), and certain activities such as outdoor festivals and concerts may be limited to certain days of the week or as deemed appropriate by the Director of the DPR.

### **Impacts of Other Alternatives**

The No Action alternative would have no noise impact beyond what exists now. The other alternatives would generate construction noise to varying degrees, in comparison with the preferred alternative. Construction period noise would be temporary. The more intensively developed Alternative 3 would have the potential for greater noise because it includes more active recreational facilities. However, as with the preferred alternative, control of noise associated with park use is a management issue, and will be mitigated by the DPR by regulating when and where sporting and other events can occur.

#### **4.2.8 Hazardous Materials**

##### *Existing Conditions*

##### **Phase I ESA**

A Phase I, Environmental Site Assessment (Phase I ESA) was conducted by Kimura International, Inc., and is included as Appendix B. The purpose of the study was to identify and evaluate evidence that may indicate any recognized environmental conditions at the site due to

past or current management of chemicals or other materials that, if released or not properly controlled, could present a risk to human health or the environment. Specifically, these conditions could be associated with the storage, generation, and/or disposal of potentially hazardous materials and petroleum products.

The Phase I ESA consisted of a review of local, State and federal agency list and files of reported hazardous waste sites and hazardous substance/petroleum sources and releases, and a site reconnaissance. The resulting report is included as Appendix A.

The survey team observed various chemicals and solvents related to park maintenance stored onsite. For example, two 55-gallon drums of acetone used for canoe finishing and maintenance were being stored in the canoe halau portion of the old terminal building. An old, rusted 55-gallon drum in poor condition was observed adjacent to the horse shoe pit.

Hydraulic and electrical equipment and electrical components on the property were inspected for polychlorinated biphenyls (PCB)s. Eight of thirteen utility pole-mounted transformers were considered to contain PCB, but were in good condition with no history of leaks.

The site reconnaissance did not reveal any signs of illegal dumping of hazardous materials. It was noted that a number of telephone poles have been used as a landscaping element near the canoe halau complex, and it is highly possible that they have been treated with creosote. Another potential concern was a number of old wooden structures, which may have been treated with chromated copper arsenate (CCA). The Phase I ESA noted that there are no regulations in place that require the removal of treated lumber from existing structures. However, the Environmental Protection Agency (EPA) recommends that treated lumber be sealed and maintained to prevent possible leaching of CCA out of the wood and into the environment.

A visual lead paint and asbestos survey was conducted of the structures. Laboratory analysis was not conducted. Suspected asbestos containing building materials include mastics, grouting, pipe insulation, vinyl floor tiles, drywall, joint compound, window/door caulking, roofing materials, siding weatherproofing, Galbestos roofing, and Transite piping. All painted surfaces and their underlying layers could be lead-containing. However, at the time of the survey, none of these suspect lead or asbestos containing materials were in a condition that would be cause for environmental or human health concern.

Overall, the Phase I ESA did not find evidence of gross contamination or illegal dumping of hazardous materials anywhere onsite.

### **Hazardous Materials Surveys**

Subsequent to the Phase I ESA, the County conducted hazardous materials surveys for the Kona Community Aquatic Center (KCAC) and existing structures near the canoe halau area. The purpose was to determine the presence of materials within the buildings or soil that might be

disturbed by construction, repair or maintenance activity. Hazardous materials tested for included asbestos-containing material, lead-based paint, chlordane and lead in surface soils, and materials in light fixtures. At the KCAC, the survey found lead-based yellow paint on some safety posts near the park entrance, and noted that mercury fluorescent lights bulbs are still in use. Replacement of these light bulbs will require proper disposal.

In the area near the canoe halau complex, structures surveyed included the Events Pavilion, tennis courts, comfort station, and former DMV building. Suspect asbestos-containing materials were identified in many of the building structures at the site. Asbestos was found in the floor tiles of the Events Pavilion, old DMV building, and at the tennis courts. Lead-based paint was identified at various structures throughout the site. Arsenic was detected in the Canec ceiling tiles of the old DMV building. The studies recommend appropriate handling during maintenance, operation and renovation of these areas. None of these areas present an immediate hazard to park users or employees.

### *Project Impacts and Mitigation*

Although no evidence of gross contamination or illegal dumping was found on site, the Phase I ESA provides the following recommendations for proactive environmental health and safety measures:

- The two 55-gallon drums of acetone stored by the canoe halau in the old terminal building should be properly labeled and stored according to OSHA regulations (29 CFR §1910.106).
- The 55-gallon drum of unknown contents at the horseshoe pit should either be properly labeled and safely stored as required by their contents, or removed from the premises.
- The telephone poles used as a border around the new canoe halau complex should be regularly inspected to ensure the creosote does not impact the soil.
- Wooden structures that may have been constructed with treated wood should be regularly inspected and maintained to reduce the risk of arsenic exposure to members of the public.
- During maintenance, renovation or demolition of buildings on site, the findings and recommendations of the County's recently completed hazardous material surveys should be followed to ensure proper handling and disposal of asbestos-containing building material, lead-based paint, arsenic, PCBs and other hazardous materials.

## 4.3 BIOLOGICAL ENVIRONMENT

Biological surveys were conducted for the property to determine if there were any botanical, avian, or mammalian species currently listed, or proposed for listing as endangered or threatened

under either the federal or State of Hawai‘i’s endangered species programs on or within the immediate vicinity of the project. The report by Reginald E. David (Rana Biological Consulting) and Eric Guinther (AECOS Consultants) is included as Appendix A.

#### 4.3.1 Botanical Resources

##### *Existing Conditions*

A botanical survey of the project area was conducted in October 2009. The vegetation in the undeveloped lands at the extreme northern end of the property is mostly fountain grass (*Pennisetum purpureum*) with scattered kiawe (*Prosopis pallida*) and klu (*Aciacia farnesiana*). Abundant here is as well is shrubby koa haole (*Leucanena leucocephala*) and ‘uhaloa (*Waltheria indica*). A single specimen of the native endemic, Maiapilo (*Capperis sandwichiana*) was observed in the north corner of the property. An endangered hibiscus (*Hibiscus clayi*) was also being cultivated in the community garden.

Areas of undisturbed strand vegetation occur at the north and south ends of the park, with scattered areas between having varying levels of disturbance due to beach use, water access, etc. Typical vegetation in these areas is mostly native and includes ‘aki‘aki (*Sporobolus virginicus*), tree heliotrope (*Tournefortia argentea*; non-native), *naupaka* (*Scaevola taccada*), *pōhuehue* (*Ipomoea pes-caprae*), and ‘akulikuli (*Sesuvium portulacastrum*).

The transition to the disturbed areas inland supports tree heliotrope and *naupaka*, with coconut palms (*Cocos nucifera*; many recently planted), Bermuda grass (*Cynodon dactylon*), ‘uhaloa, and false alena (*Boerhavia coccinea*) common to abundant. Depressed areas are covered with pickleweed (*Batis maritima*), an indication of occasional flooding.

Two areas of project site are highly maintained: 1) the Maka‘eo Walking and Jogging Path and associated lawn and community gardens, and 2) the lawns and playing fields of the sports complex at the south end of the site.

Plantings in the Maka‘eo community garden are mostly ornamentals, with the individual plots well maintained, watered and weeded. Several gardeners have developed specific themes and have extensive collections of cactus and succulents, culinary herbs, or native Hawaiian plants. Due to the large number and variety of ornamental plants in this community garden, the botanical study does not provide a complete listing of these plants.

In the area around the ballfields, gymnasium and aquatic center, a wide variety of ornamental trees have been planted, including monkeypod (*Samanea saman*), St. Thomas tree (*Bauhanian monandra*), Cook pine (*Araucaria columnaris*), *kamani* (*Calophyllum inophyllum*), *kou* (*Cordia subcordata*), frangipani (*Plumeria rubra* cultivars, mostly), among many others. Commonly planted around buildings and other structures are various cultivars of Chinese hibiscus (*Hibiscus rosa-sinensis* cultivars), gardenia (*Gardenia taitensis* and *G. sp.*), croton (*Codiaeum*

*variegatum*), and other shrubs, as well as several palms: golden-fruited palm (*Dypsis lutescens*), Macarthur palm (*Ptychosperma macarthurii*), coconut palm, etc.

The study notes that most of the site is highly disturbed, with only the coastal strand providing a glimpse of what the natural vegetation would have been like several centuries ago. Only two endemic species of note were recorded. One specimen of *maiapilo* (*Capparis sandwichiana*) or Hawaiian caper was found at the north end of the park. This species is becoming rare in the islands, and the lowland slopes of north Kailua Kona are one area where the plant is relatively common. Several of these plants are also being grown in the community garden. The second species, *Hibiscus clayi*, is a listed endangered species native to eastern Kaua‘i, and was being grown in the community garden. Its presence in the community garden does not have an adverse effect on its endangered status, and in fact, propagation of the species in a botanical garden helps to increase the number of plants throughout Hawai‘i.

### *Project Impacts and Mitigation*

The project will not have an adverse impact on any threatened or endangered plant species. The only protected species found on the site was the *Hibiscus clayi*, found in the Maka‘eo community garden, where several specimens have been planted as ornamentals in a native plant plot. Because the master plan recommends retention and expansion of the Maka‘eo Walking and Jogging Path and garden, the project will not have an adverse impact.

### **Impacts of Other Alternatives**

The No Action alternative would have no impact on botanical resources. All other alternatives considered had impacts similar to the proposed action, and all propose preservation of the Maka‘eo community garden.

#### 4.3.2 Terrestrial Fauna

##### *Existing Conditions*

##### **Avian Survey**

Avian surveys conducted at ten count stations identified a total of 742 individual birds of 18 different species representing 13 separate families. Two of the species, Pacific Golden Plover (*Pluvialis fulva*) and Ruddy Turnstone (*Arenaria interpres*) are native species. Both are indigenous migratory shorebirds that nest in the high Arctic during the late spring and summer months, returning to Hawai‘i during the fall and winter each year. The remaining 16 avian species are all considered to be alien to the Hawaiian Islands. No avian species currently listed, or proposed for listing under either the federal or State of Hawai‘i endangered species statutes was detected during the survey.

Avian diversity and densities were consistent with what would be expected in this location. Three species Zebra Dove (*Geopelia striata*), Saffron Finch (*Sicalis flaveola*), and House Sparrow (*Passer domesticus*), accounted for about half of the birds detected. The most common avian species recorded was Zebra Dove, which accounted for slightly less than 30 percent of the individual birds recorded.

Although not detected during this survey, it is possible that small numbers of the endangered endemic Hawaiian Petrel (*Pterodroma sandwichensis*), and the threatened Newell's Shearwater (*Puffinus auricularis newelli*), over-fly the project area between the months of May and November. The biological survey noted that there is no suitable nesting habitat within or close to the proposed project site for either of these species.

A major threat to these protected species is collision with man-made structures. 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.

### **Mammalian Survey**

The field survey identified numerous cats (*Felis c. catus*), usually seen close to the cat feeding stations located at various locations within the site. The cat feeding stations are maintained by AdvoCATS, a community group that operates a trap-neuter-return program.

A total of 10 small Indian mongooses (*Herpestes a. auro punctatus*) were seen, usually associated with the cat feeding stations or in close proximity to the trash cans. Additionally there were a number of dog (*Canis f. familiaris*) being walked by their owners. Although no rodents were detected during the survey it is probable that the four established alien rodents known from the Island of Hawai'i, roof rat (*Rattus r. rattus*), Norway rat (*Rattus norvegicus*), Polynesian rat (*Rattus exulans hawaiiensis*), and European house mice (*Mus musculus domesticus*), occur on the property.

All of the other mammalian species recorded during the course of this survey are commonly occurring species in the urban and park settings in Kona. All of these mammals are considered alien to the Hawaiian Islands, and none are protected under either state or the federal endangered species statutes.

With the exception of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), or 'ōpe'ape'a as it is known locally, all terrestrial mammals currently found on the Island of Hawai'i are alien species. Although not detected during the course of this survey, it is probable that Hawaiian hoary bats occasionally use resources within the park, as bats have been documented in the general Kailua Kona area on a seasonal basis.

### *Project Impacts and Mitigation*

The improvements proposed in the Kailua Park Master Plan are not expected to have an adverse impact on any avian or mammalian species currently listed or proposed for listing under either the federal or State of Hawai‘i endangered species statutes.

#### **Hawaiian Petrel and Newell’s Shearwater**

The primary potential impact on Hawaiian Petrels and Newell’s Shearwaters is the risk that these nocturnally flying sea birds will be downed after becoming disoriented by park lights during the nesting season. This threat can occur during the construction period, if night time work is necessary, and after build-out, due to night use of athletic fields and operation of park roadway lighting.

In order to mitigate construction period impacts, all associated lights should be shielded if nighttime construction activity (i.e., actual construction or equipment maintenance) occurs. Large flood/work lights should be placed on poles that are high enough to allow the lights to be pointed directly at the ground.

All streetlights and facility lighting associated with the park improvements should be shielded to reduce the potential for collisions of nocturnally flying Hawaiian Petrels and Newell’s Shearwaters with the lights and other man-made structures. These measures will also comply with the Hawaii County Code § 14 – 50 *et seq.* which requires shielding of exterior lights to mitigate potential glare impacts on the Mauna Kea observatories.

The existing athletic field lighting is a mix of shielded and unshielded lights. It is recommended that existing unshielded athletic field lights be replaced with shielded lights or retrofitted with shields, and that all new athletic field lighting be shielded.

#### **Hawaiian Hoary Bat**

As mentioned above, it is possible that Hawaiian hoary bats over-fly portions of the site on a seasonal basis. They may also forage for volant (flying) insects that are attracted to the athletic field lighting on a seasonal basis. It is not currently known if any individual bats roost within Kailua Park. The principal potential impact that the development of Kailua Park poses to bats is during the clearing and grubbing phases of construction, as vegetation is removed. The removal of vegetation may temporarily displace individual bats, which may use the vegetation as roosting locations. As bats use multiple roosts within their home territories the potential disturbance resulting from the removal of the vegetation is likely to be minimal. During the pupping season, female carrying their pups may be less able to rapidly vacate a roost site as the vegetation is cleared. Additionally adult female bats sometimes leave their pups in the roost tree while they forage. Very small pups may be unable to flee a tree that is being felled.

To mitigate these potential impacts, it is recommended that woody vegetation that is 4.5 meters (15 foot) or taller not be cleared between April 15 and August 15, which is when roosting bats may be tending their young.

### Impacts of Other Alternatives

None of the project alternatives would have an impact on threatened or endangered species or their habitats. Recommended mitigation for potential impacts to nocturnal sea birds and Hawaiian hoary bats are the same as for the preferred alternative.

## 4.4 SOCIO-ECONOMIC ENVIRONMENT

### 4.4.1 Population and Employment

The population of North and South Kona from 1980 to 2000 is shown in Table 4-1. The table shows the percentage change from 1980 to 1990, and from 1990 to 2000, in comparison to the County as a whole.

Table 4-1: Resident Population by District, Hawai'i County (1980, 1990 and 2000)

District	1980	1990	2000	Percent Change	
				1980 to 1990	1990 to 2000
<b>Hawai'i County.</b>	<b>92,053</b>	<b>120,317</b>	<b>148,677</b>	<b>30.7</b>	<b>23.6</b>
North Kona	13,748	22,284	28,543	62.1	28.1
South Kona	5,914	7,658	8,589	29.5	12.2

Source: U.S. Bureau of the Census, compiled and calculated by County of Hawai'i, Department of Research and Development

North Kona, in particular, has experienced significant population growth during this period, increasing 62 percent between 1980 and 1990, and another 28 percent between 1990 and 2000. According to the 2008 Kona Community Development Plan, these figure do not fully capture the exponential growth Kona experienced from 2000 to today. Based on a 2005 estimated population of 31,900 for North Kona and 10,700 for South Kona, the average annual growth rate from 2000 has been 6%, comparable to the rapid expansion period of 1980 to 1990 (Kona CDP, 2008).

The table below shows the racial make up of North and South Kona compared to Hawai'i County as a whole. While the racial composition of South Kona is very similar to the County as a whole, North Kona has a higher percentage of white residents than the County (45.9% versus 31.5%) and a lower percentage of Asian only residents (16.0% versus 26.7%) than Hawai'i County.

Table 4-2: Resident Population, Hawai'i County, by Race Alone by District (2000)

	Total Population	White alone	Black or African American alone	Am Indian & Alaska Native alone	Asian alone	Native Hawn & Other Pac Islander alone	Other alone	Two or more races
<b>Hawai'i County</b>	<b>148,677</b>	<b>46,904</b> <b>(31.5%)</b>	<b>698</b> <b>(0.5%)</b>	<b>666</b> <b>(0.4%)</b>	<b>39,702</b> <b>(26.7%)</b>	<b>16,724</b> <b>(11.2%)</b>	<b>1,695</b> <b>(1.1%)</b>	<b>42,288</b> <b>(28.4%)</b>
North Kona	28,543	13,103 (45.9%)	161 (0.6%)	134 (0.5%)	4,580 (16.0%)	3,016 (10.6%)	420 (1.5%)	7,129 (25.0%)
South Kona	8,589	2,923 (34.0%)	44 (0.5%)	23 (0.3%)	2,066 (24.0%)	1,183 (13.8%)	116 (1.4%)	2,234 (26.0%)

Source: U.S. Bureau of the Census 2000, Summary File 1

#### 4.4.2 Archaeological, Historic, and Cultural Resources

##### *Archaeological Literature Review and Field Inspection*

An Archaeological Literature Review and Field Inspection was conducted by Cultural Surveys Hawai'i (July 2009), and is included in Appendix C. The purpose of the archaeological study was to determine the major archaeological concerns within the Area of Potential Effect (APE), defined as the entire 117-acre master plan area. The report and recommendations were designed as a due diligence document, and to explain the State Historic Preservation Division (SHPD) requirements prior to implementation of the master plan components.

The scope of work included historical research to identify areas of cultural significance within the project area, and a limited field inspection to confirm the location of previously identified sites. The field inspection also identified sensitive areas that may require further investigation or mitigation prior to land alteration. Following the field inspection, consultation was conducted with *kūpuna* with long familial ties in the area. These interviews were conducted as part of the Cultural Impact Assessment, discussed below. The *kūpuna* confirmed the location and function of several previously documented and undocumented historic sites. The resulting Archaeological Literature Review and Field Inspection report is included in Appendix C.

##### **Existing Conditions**

The project site is in the Keahuolū and Lanihau Ahupua'a, which have been the subject of a number of previous archaeological investigations. During pre-contact times, this coastal zone was the location of scattered small settlements congregated near anchialine ponds and along the shoreline. In post-contact time, this zone was often utilized for small settlements and fishing activities.

There have been several previous studies within the current 117-acre project area, most of them reconnaissance level studies. These studies confirm that activities in the area were consistent with the surrounding areas, and consisted of small settlements, shelters, and fishing related activities in both pre and early post-contact times.

The project site includes a total of 32 archaeological sites. The limited pedestrian inspection of the project area confirmed the location of 19 previously-identified sites, and identified four sites not previously identified. An additional nine sites are believed to still be present, although they are covered by sand, vegetation, or mulch and not re-identified during the field inspection. The archaeological sites include house platforms, small complexes, petroglyphs, fishing heiau, bait mortars, planting pits, lava cave shelters, and numerous burial sites. A complete listing of the sites is included in the Literature Review and Field Inspection in Appendix C.

The burial finds were largely due to beach erosion in the sandy portion of the project area makai of the runway. Natural erosion has been exacerbated by high surf events, including two hurricanes, which exposed burials along the sandy shoreline. The majority of the unearthed burials were determined to have originated from two makai areas, identified as the Western Burial Area and Eastern Burial Area. Most of the burial remains were reinterred elsewhere within the project area.

In modern times, large portions of the 117-acre project area have been subject to development, in particular, the construction of the Kona Airport in 1948-1950, and development of Kailua Park in the 1990s. This has resulted in the destruction or relocation of a number of previously identified archaeological sites. The study notes that the remaining Kona Airport structures (i.e., the runway and terminal building) do not meet federal or state criteria for a significant historic property, due to a lack of remaining integrity.

### **Project Impacts and Mitigation**

The proposed master plan intentionally avoids development in the archaeologically sensitive areas of the site makai and north of the runway. The plan has identified the area north of the Events Pavilion as an open space and cultural zone. The planning concept for this area is to focus on passive beach recreation and to preserve and enhance cultural and historic resources. Improvements and future construction in this area will include removal of the runway, construction of the new beach access road, great lawn, and additional restrooms or beach pavilions to enhance public enjoyment of the area. An interpretive center is proposed at the end of the beach access road. Interpretive signage and landscaping are also planned for the area north of the runway.

Although future use in the most archaeologically sensitive areas of the park will be low intensity, construction activities have the potential to impact identified historic sites.

A draft Archaeological Literature Review and Field Inspection was submitted to the SHPD in October 2009 in support of a Section 106, National Historic Preservation Act (NHPA) review as well as Chapter 6E HRS. Review comments from the SHPD were received in January 2010. The report was subsequently revised and resubmitted to SHPD in February 2010 (Appendix C).

SHPD review in accordance with Section 106 and Chapter 6E HRS is pending.

### *Cultural Impact Assessment*

A Cultural Impact Assessment (CIA) was prepared (Cultural Surveys Hawai‘i, October 2009), in compliance with HRS Chapter 343 which requires consideration of a proposed project’s effect on cultural practices and resources. The CIA was prepared in accordance with the Office of Environmental Quality Control (OEQC) Guidelines for Assessing Cultural Impacts, and is included in Appendix C.

As part of the CIA, Cultural Surveys Hawai‘i contacted Hawaiian organizations, agencies and community representatives in order to identify native Hawaiian resources, beliefs and practices associated with the project area that might be impacted by the project. *Kama‘āina* (native born) and *kūpuna* (elders) with knowledge of the study area participated in “talk story” sessions to share their knowledge about the area.

The findings of the CIA indicate that there is a wealth of Native Hawaiian cultural resources, beliefs and ongoing practices associated with the proposed project area and immediate vicinity. There are several major areas of cultural interest and concern regarding potential adverse impacts on cultural and natural resources, and associated beliefs and practices.

Some of the issues and concerns raised during the community consultation include:

1. The project area, in particular the shoreline, has a long history of use by Native Hawaiians and other kama‘aina groups for a variety of past and present cultural activities and gathering practices (e.g., anchialine ponds, fishing grounds, gathering of ‘*opihī*, ‘*pipi*, ‘*kupe‘e*, and ‘*limu*, gathering of medicinal plants, presence of petroglyphs, burials and heiau on the site).
2. Sensitivity of the makai and northern portion of the project area where there are numerous archaeological sites and burials
3. Presence of additional significant cultural and natural resources that have not been adequately documented
4. Need to protect the makai areas from dune vegetation removal. Vegetation protects the shoreline from high wave activity. Its removal increases potential for eroding more burials.
5. Need to restore, preserve and protect grave sites, the shoreline, anchialine ponds, and natural water cisterns.

6. Need to consult cultural and lineal descendants on protecting and preserving the area's cultural and natural resources.
7. Possible development of a Hawaiian cultural park. Possible interpretive signage and fencing
8. Concern with reducing open space at the park. Need for the park to be relevant to the community needs 60 to 100 years from now
9. Consider the growing needs of Kailua Town residents, including but not limited the need for safe open space for children, a dog park, picnic and barbeque facilities, etc.
10. Need to keep beach area open for passive recreation and enjoyment

### **Project Impacts and Mitigation**

Based on the community consultations, the CIA identified possible mitigation measures to address some of the concerns expressed by study participants.

1. To address concerns about burial sites in the makai portion of the project area, it is recommended that:
  - Any development in the makai area be limited to passive recreation. Any development should be limited to minimally invasive infrastructure.
  - The sand dunes and beach area should be left alone. Removal of dune vegetation should be avoided and the beach naupaka should be encouraged to thrive as a protective measure
  - No dredging should occur in the known habitation areas
  - Personnel involved in development should be informed of the possibility of inadvertent cultural finds, including human remains. Should cultural or burial sites be identified during ground disturbance, all work should cease and appropriate agencies notified.
2. Conduct Archaeological Inventory Survey (AIS) for the project area.
3. Clean, protect and preserve known burial sites.
4. Provide visitor/resident education on proper behavior and protocol, as part of active management, to promote protection, appreciation and enjoyment of natural and cultural features.
5. Replant coconuts in sandy areas. Preserve and replant native vegetation. Anchialine ponds should be cleared and restored. Caves with fresh and brackish water should be restored, protected and preserved.

6. Consult community members with longstanding connections to the area (e.g., Kunewa and Kailiwai 'ohana) regarding the preservation, restoration, and interpretation of cultural resources.

The master plan proposals for the sensitive, northern areas of the site are generally consistent with the above recommendations in the CIA. The master plan identifies this area of the park for passive recreation and open space, and includes proposals to preserve and enhance cultural and historic resources.

### **Impacts of Other Alternatives**

All project alternatives considered during the planning process avoided development in the culturally sensitive areas makai and north of the runway. However, a maximum development scenario would result in more recreational facilities and therefore less open space than the proposed alternative. A minimum development scenario would result in more open space, but may not include some of the recommended improvements to enhance the cultural areas, such as an interpretive center, paths, fencing and landscaping. The no action alternative would leave the site as it is today, with the runway intact, and no improvement or restoration of the cultural areas at the northern end of the runway.

#### **4.4.3 Visual Resources**

##### *Existing Conditions*

The visual environment of the project site is composed of a mixture of urban forms, landscape elements and open spaces. The active recreation area consists of green open fields with structures such as the gymnasium, swimming complex, and former airport buildings lining the mauka border with parking lots and driveways. The ocean is not visible from this area of the park, due to the presence of the Kona Bay Estates subdivision. A formal row of Cook Pines along a high rock wall creates a visual edge and buffer between the playfields and the Kona Bay Estates.

During development of the master plan, some Kona Bay Estates residents mentioned that several pine trees along their property line were removed a few years ago, as part of Americans with Disabilities Act (ADA) improvements at the park. They noted that the trees were supposed to be replaced, but to date, this has not been done. At least one resident felt that the noticeable gap in the symmetrical row of screening trees has adversely affected their property values.

The visual environment on the northern end of the park provides a dramatically different landscape than the active recreation side. The park in this area is dominated by the old airport runway, and although views are open and expansive, visual quality is diminished by an excess of paved asphalt and gravel. On the other hand, the park directly fronts the shoreline, providing expansive oceanfront views that are not available at the southern end of the park.

Mauka views from various vantage points in the park provide visual panoramas of the sloping hillside of the Kona region.

A number of areas of the park have night lighting, particularly the area around the gymnasium, pool and ballfields. The park hours are from 7:00 AM to 11:00 PM seven days a week. The outdoor basketball court lights are on a timer and turn off at 10:30 PM. Lights for the ballfields are manually operated as required for night use. If no one is using the fields, lights are turned off by park staff at 10:45 PM.

### *Project Impact and Mitigation*

#### **Visual and Aesthetic Environment**

When fully implemented, the master plan will alter the visual environment within the park, particularly in the central area where a new community center will be built, and in the northern area where the runway will be removed and replaced by a new beach access road. Although the park will be more “developed,” the visual impact will be positive and an aesthetic improvement over existing conditions. The buildings in the future community center are proposed to be clustered with a consistent design theme, in order to provide a pleasant, village-like environment and to retain more open space in the surrounding areas. Green open spaces with native trees and vegetation, and roadways that gently curve through the passive beach park will enhance the visual environment. The proposed entry road leading to the recreation complex is designed to create a visual sense of arrival when approaching from Kuakini Highway. A view corridor extending from the complex in the makai direction will provide a clear vista to the ocean. The master plan encourages the use of natural and local building materials, and architectural design which is sensitive to the cultural and historic context.

The improvements will not obstruct mauka views from the Kona Bay Estates subdivision, as the proposed structures will be of low scale and height. However, there will be more night time activity in this area compared to the present.

Lighting will be provided at the new tennis courts, skatepark, canoe hale complex, as well as at the existing gym and swimming pool and ballfields. Lighting at the Events Pavilion, great lawn, tennis complex, and community center will modify the makai views from Makala Boulevard and Kuakini Highway, and the mauka views from Kona Bay Estates, as these areas are not currently lit. There will not be significant visual or aesthetic changes at the south eastern end of the park, as the ballfields and gym will remain essentially the same.

#### **Impacts of Other Alternatives**

The No Action alternative would not change the existing visual environment, and the old airport structures and runway would continue to dominate public views in the central and northern

portions of the site. The other build alternatives would have similar visual and lighting impacts to the proposed action, correlating to the scale of the alternatives.

## 4.5 UTILITIES AND INFRASTRUCTURE

### 4.5.1 Water System

An assessment of the existing and proposed water system was conducted by R.M. Towill Corporation. This section summarizes their findings and recommendations.

#### *Existing Conditions*

Water is provided to the site by the County of Hawai'i Department of Water Supply. As shown in Figure 10, the water system within the project area consists of a potable water distribution system made up of a 4-inch water main that is located along the old runway. This line extends through the park from Kuakini Highway to the beach pavilions located at the north end of the park. Water is distributed from the 4-inch line to a system of water laterals ranging in size from 3/4-inch to 2-1/2 inches. Potable water is currently used for irrigation, restrooms, the swimming pool and gymnasium complex, the Events Pavilion, offices, base yards and drinking fountains. The Maka'eō Walking and Jogging Path garden uses drip irrigation systems to irrigate their garden.

#### *Project Impacts and Mitigation*

In a letter dated October 13, 2009, the County Department of Water Supply indicated that water service is available from an existing 6-inch waterline within Kuakini Highway and an 8-inch waterline within Kona Bay Road, both fronting the subject parcels. Prior to obtaining a water commitment from the County, water demand calculations will be submitted to the Department of Water Supply for review and approval. Upon review and approval of the water demand calculations, the Department will determine whether water can be made available, facilities charges due, and any water system improvements required for the service.

Project engineers have estimated that the current average water demand at Kailua Park is 114,000 gallons per day for domestic use and 228,258 gallons per day for irrigation. These numbers represent the theoretical demand based on existing park uses. Future theoretical water demand to support the proposed master plan at full build out was estimated to be 203,280 gallons per day for domestic use and 259,295 gallons per day for irrigation. The bar charts below compare the current and projected water usage.



**ELECTRICAL DISTRIBUTION SYSTEM**  
 Pad mounted transformer or pole mounted transformer, single phase transformer  
 Pad mounted or pole mounted transformer bank, three phase transformer  
 Overhead lines (3P/PT)  
 3P = 3Ø (three phase primary)  
 P = 1Ø (single phase primary)  
 T = telecommunications (Telephone and/or catv)  
 Underground primary ductline, 3Ø or 1Ø

**CIVIL UTILITIES**  
 Irrigation  
 Water  
 Sewage  
 Drain

**Figure 10**  
**EXISTING INFRASTRUCTURE**  
 Kailua Park Master Plan  
 Draft Environmental Assessment  
 November 2009

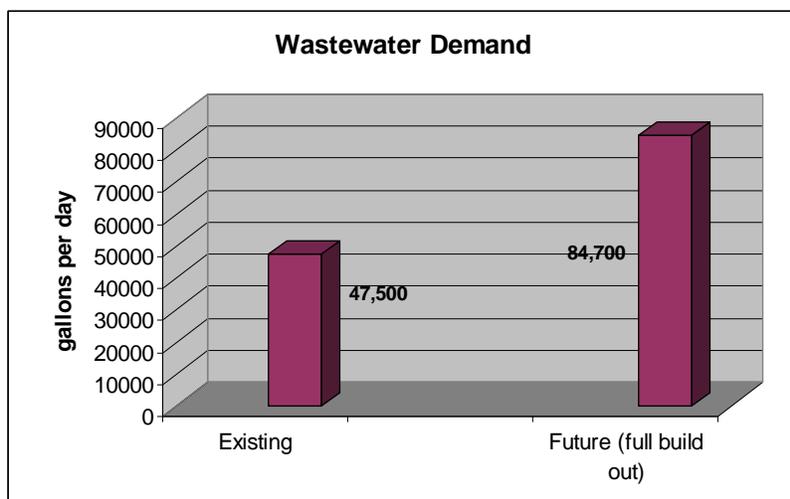
**NORTH**

0 200 400 600  
 SCALE IN FEET

the project site. Currently, approximately 47,500 gallons of wastewater generated daily by users of the park is treated at the Kealakehe Wastewater Treatment Plant.

### *Project Impacts and Mitigation*

New recreational facilities requiring wastewater disposal will be connected to the existing pressure sewer system that runs from Kuakini Highway to the pavilions at the end of the runway. The new sewer laterals will be connected to the existing sewer pressure system in the same manner as the existing laterals. Wastewater will be discharged into septic tanks adjacent to the buildings for treatment prior to being pumped into the existing force main.

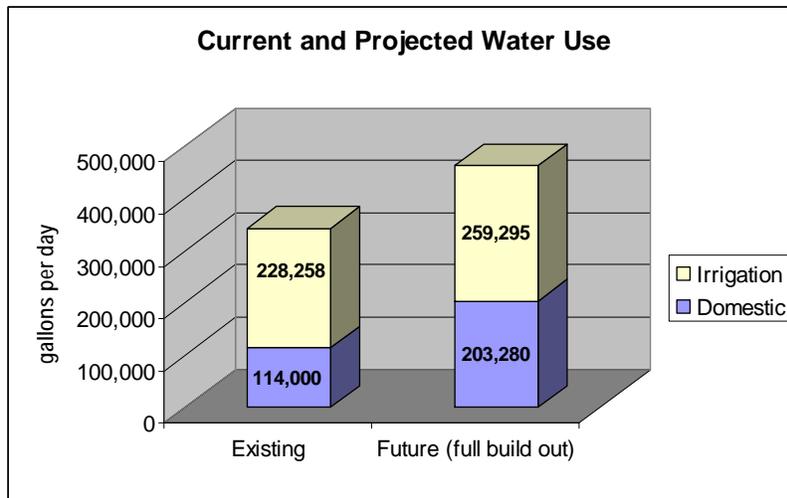


At full build out, the proposed facilities in the park are expected to generate 37,200 gallons of additional wastewater, or a total of 84,700 gallons. The existing wastewater treatment plant currently does not have the capacity to treat additional wastewater from the proposed Kailua Park improvements. Improvements that will expand the treatment plant and increase treatment capacity are scheduled to be complete

around 2011.

The wastewater from the proposed improvements to Kailua Park can be treated at the expanded Kealakehe Wastewater Treatment Plant if there is capacity at the time of the park improvements. The Kealakehe treatment plant is currently capable of producing R-2 recycled irrigation water, which is wastewater that has received secondary treatment and may be used for subsurface irrigation in public parks. Improvements to the treatment plant to provide additional treatment and production of R-1 recycled irrigation water are planned to be completed around 2012. R-1 water has been disinfected to provide a significant reduction in pathogens, and can be used for any form of irrigation at the park and athletic fields.

To provide some reduction in wastewater generation, the master plan recommends the installation of waterless urinals in future men's toilets and as budget allows, existing urinals should be retrofitted with waterless urinals, which can save up to 20% of conventional toilets. Although initial costs are slightly higher, long term maintenance is lower as separate pressurized water pipes and valves are no longer needed. By eliminating the pressurized water line, damages from vandalism are also reduced.



The increase in domestic water demand will be due largely to the proposed restrooms, senior and youth center, swimming pool, and other recreational facilities. Increased irrigation demand will be due to the creation of the great lawn and landscaped areas. Landscaped areas along the beach will utilize native plants that require little water, and irrigation needs for this area should be minimal once the plants are established.

Future improvements at the Kealakehe Wastewater Treatment may provide the park with recycled (i.e., reclaimed) irrigation water, thereby reducing the existing domestic demand within the park. Once improvements are completed at the Kealakehe Wastewater Treatment plant, R-1 recycled water can be used for irrigation of the ballfields and landscaped areas. Once the demand for irrigation water decreases, there should be adequate water available for the proposed facilities. Irrigation mains will have to be installed from the treatment plant to the park and connected to the park's existing irrigation main.

The master plan also promotes a variety of water conservation methods including using drip irrigation systems to irrigate plants and shrubs around new structures and to install rainwater catchment systems to augment irrigation water demand. In addition, drought tolerant, native plant species appropriate for the beach environment are recommended.

#### 4.5.2 Wastewater Disposal System

An assessment of the existing and proposed wastewater system was conducted by R.M. Towill Corporation. This section summarizes their findings and recommendations.

##### *Existing Conditions*

Currently, wastewater from Kailua Park facilities is pumped from the northern end of the park to a pump station located at the southeast corner of the park on Kuakini and Kona Bay Estates Drive. Wastewater from the buildings is discharged into concrete septic tanks adjacent to the buildings prior to being pumped through a force main to Kuakini Highway. The wastewater ultimately is pumped to the Kealakehe Wastewater Treatment Plant located about 2 miles from

### 4.5.3 Drainage System

#### *Existing Conditions*

The drainage system in Kailua Park is limited to a storm drainage system in the parking lot areas. There is no drainage system in the airfield area. Runoff flows into drain inlets and is piped to seepage pits where runoff is allowed to percolate into the ground. Storm water runoff for the remainder of the site sheet flows across most of the site from east to west toward the ocean. The permeability of the soil is good and most of the runoff percolates into the ground.

One area of concern is Field D, which is reported to have poor percolation and experiences ponding. Based on discussions with park users, a layer of the existing pavement was not removed prior to filling of topsoil for the field. The existing pavement has created an impervious layer that does not allow for percolation of runoff. It is recommended that the pavement beneath the field be broken up to allow for runoff to percolate through the pavement into the subgrade. If it is not cost effective to temporarily remove the topsoil to break up the asphalt, an alternative would be boring holes through the pavement layer with drilling rigs at locations where ponding recurs.

The northern half of the project area is dominated by the old Kona Airport runway, which is paved with about 12 inches of asphalt concrete. Drainage in this area sheet flows from east to west towards the ocean.

#### *Project Impacts and Mitigation*

The master plan proposes removing the paved airport runway down to the base course layer, and replacing it with a meandering beach access road. The removed material will be recycled to the extent possible. Care will be taken to minimize disturbance of the ground below the existing pavement, in order to minimize disturbance to any archeological features. Topsoil will need to be imported for the new grass fields and landscaping. The removal of the runway will greatly reduce the amount of impermeable surface, and improve drainage conditions on the site.

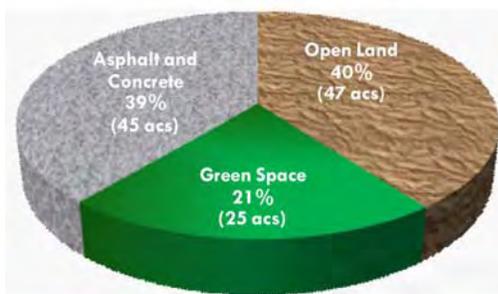
Traditional asphalt concrete is recommended for new paved areas to minimize cost and pavement thickness. Minimal pavement thickness will cause the least impact to the subgrade and reduce the chance of encountering archaeological features. New paved areas include proposed parking lots constructed where the tennis courts are now, adjacent to Field D, around the Events Pavilion, and near the canoe halau and tennis complex. Paved walkways will be constructed throughout the central community center area, and a bike and pedestrian path will connect the major activity zones within the park.

An alternative to the traditional pavement design is porous asphalt concrete pavement and pervious concrete pavement. This type of pavement is constructed with voids throughout the

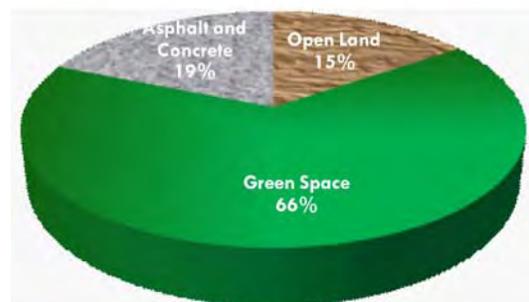
pavement section to allow runoff to percolate through the pavement. The runoff is then stored in an aggregate basin that allows for slower percolation into the natural ground. The advantage of this type of pavement is that it minimizes storm water runoff, and maximizes recharge into the ground. A disadvantage is its higher cost, primarily the existing pavement and base course must be removed, and additional grading done to accommodate the aggregate storage basin. The additional depth of the grading would also increase the risk of disturbing archeological features.

Overall, the proposed master plan will have a positive impact on drainage conditions at Kailua Park by greatly reducing the amount of impermeable surfaces. Currently, approximately 39% of the entire 117-acre site is paved with asphalt and concrete. After removal of the runway and implementation of the plan improvements, paved areas will be reduced to 19% of the site. The remaining 66% of the site will be landscaped green space and 15% will remain undeveloped/open.

**Land Coverage -- Existing**



**Land Coverage -- After**



Removal of the asphalt runway and creation of landscaped areas will increase the amount of pervious surface, allowing for increased recharging of the ground water. The amount of runoff entering the ocean will be reduced. There will be no increase in the quantity of runoff at the major drainage runoff points exiting the site. Creation of the bio-basins will further reduce runoff and provide erosion control measures.

#### 4.5.4 Electrical Utilities

An assessment of the existing and proposed electrical system was conducted as part of the master plan by ECS, Inc. This section summarizes their findings and recommendations, as well as early consultation comments provided by HELCO (see letter in Chapter 9).

##### *Existing Conditions*

Electrical and telecommunications service to the park is currently provided from existing Hawai'i Electric Light Company (HELCo) and Hawaiian Telecom (HT) overhead distribution facilities routed on wooden joint utility poles along the exterior roadways and the north and east boundaries of the site. HELCo utilizes a combination of pad mounted transformers, pole mounted transformers and pole mounted transformer banks to provide electrical service to the various facilities located within the park.

##### *Proposed Improvements*

The improvements identified in the master plan will result in a relatively small increase in the telecommunications needs and an increase in the electrical load for the park by approximately 750 kVA. Increased demand for electrical/telecommunication service will be the result of the new youth and senior center complex, canoe halau and tennis complex, and by lighting for the new parking lots, youth and senior center, and around the Events Pavilion.

In general, electrical demand at the existing County ballfields, gym and swimming pool complex is not expected to increase, and may decrease if energy saving measures are implemented (e.g., solar heating for swimming pool, use of energy efficient field lights, etc.).

##### **Exterior Electrical Utilities**

Existing HELCo and HT overhead distribution facilities are located along the park's exterior roadways and the north and east boundaries of the site. These lines will continue to provide electrical and telecommunications service to the park. Project engineers have initiated preliminary discussions with HELCo to determine the adequacy of the existing infrastructure to support the anticipated increase in electrical load as the park is developed. A determination by HELCo is still pending. If necessary, the existing HELCo and HT overhead lines can be upgraded or supplemented with additional lines to support the increased demand from the park.

Electrical and telephone infrastructure for the new facilities in the park will be connected to the existing distribution lines along the park's exterior roadways. The existing HELCo and HT distribution systems will be extended via overhead lines and wooden joint utility poles to the new areas requiring service. The infrastructure to support HELCo's and HT's services within the "active" portion of the park will be routed underground if it is economically feasible. Pad mounted transformers will be utilized to provide electrical service to the new

improvements/facilities located within the park. The on-site secondary electrical distribution system between the pad mounted transformers, the new improvements/facilities and site lighting (roadway and parking lot) will be underground. The routing of the underground secondary electrical distribution will avoid known culturally sensitive areas to minimize the chances of disturbing or damaging these areas.

### **Exterior Lighting**

The master plan does not include modification to the lighting for the existing ballfields, in-line hockey rink and parking lots, other than to recommend investigation of more energy efficient options. New exterior lighting will be provided for the new parking lots next to the existing ballfields, the youth and senior center, the Events Pavilion, skatepark, canoe hale complex, and the new tennis complex.

### *Project Impacts and Mitigation*

The proposed improvements will result in increased lighting in various areas of the park, and an overall increase in electrical demand at the park. Early consultation comments from Hawai'i Electric Light Company, Inc. (HELCO) are summarized below.

Additional lighting at the park also has the potential for adverse impacts on adjacent property owners, the Mauna Kea observatories, and on nocturnally flying sea birds. These impacts and recommended mitigations are also discussed below.

### **HELCO Early Consultation Comments**

An early consultation letter was received from HELCO, dated November 12, 2009 (see Chapter 9). The letter indicates HELCO will be able to provide electrical development to the proposed development. Preliminary comments are as follows:

1. Generation capacity-- HELCO's current system peak load is 198,200 kW and total generation system capability is 271,850 kW. Reserve margin is 37%, and has adequate generation to serve the project.
2. Electrical substation-- The area is served by HELCO's existing 10.0 MVA Kailua electrical substation and a 12,470 volt overhead distribution along Kuakini Highway and a 7,200 volt overhead line on-site. The capacity of the existing substation should be adequate to serve the anticipated load.
3. Electrical Distribution System—The existing 12,470 volt overhead distribution system along Kuakini Highway is adequate to serve the proposed development. However, a distribution line upgrade and/or extension may be required to interconnect the existing distribution system to the on-site development. Also, the installation of 12,470 volt switches may be required. After the detailed loading and civil plans are submitted,

HELCO will prepare a firm cost for the off-site distribution system to connect to this development.

4. HELCO recommends energy efficient and conservation measure to reduce the maximum electrical demand and energy consumption.

The letter recommends that a service request be opened as soon as practicable to ensure timely electrical facility installation. More detailed analysis of electrical requirements will be performed during project design, after receipt of detailed design drawings and estimated load.

### **Compliance with Hawai'i County Code**

All outdoor lighting for the new improvements and facilities at Kailua Park will comply with applicable portions of Article 9 Outdoor Lighting from Chapter 14 General Welfare of the Hawai'i County Code 1983 (2005 edition). These sections of the County Code restrict the use of certain types of light source, control the hours of operation, and require shielding of exterior lights in order to mitigate adverse impacts, particularly to the observatories on Mauna Kea.

Lights for the new tennis complex will comply with the "Class I lighting" requirements of the Hawai'i County Code, addressing outdoor lighting for recreational facilities. The Class I requirements apply to all existing and proposed ballfields, tennis courts, and basketball courts (and other similar applications where color rendition is important). Light fixtures are required to be fully shielded, and be turned off from 11:00 PM to sunrise. Some exceptions are allowed for bona fide business or recreational activities.

Lighting for the new parking lots, walkways, and exterior of the youth and senior center and Events Pavilion will comply with the "Class II lighting" requirements of the Hawai'i County Code. Requirements for these areas include use of a low pressure sodium (LPS) light source, and partially shielded lighting fixtures for lamps greater than 90 watts. LPS is a "yellow" light source, which produces light within a very limited range of the color spectrum that can easily be filtered out to minimize the impact to the Mauna Kea observatories.

Lighting will not be provided for the roadways and parking lots located in the beach (passive) area of the park. The master plan also recommends that any unshielded lights at the existing ballfields be replaced with shielded lights or retrofitted with shields.

### **Light Impacts on Adjacent Landowners**

Increased lighting and night time activity at the park has the potential to affect adjacent landowners, in particular, the Kona Bay Estates subdivision located directly makai of the existing ballfield complex. One large home has been constructed within 80 feet of the in-line hockey rink, which is lit and used for in-line hockey league matches in the early evenings, generally until 7:00 PM. During the master planning process, one Kona Bay Estates resident

commented that field lights at the park are sometimes left on long after the games are over, shining into their bedroom windows.

No additional lighting is proposed for the existing ballfield or gym complex, other than a general recommendation to shield any remaining unshielded lights, and to consider installation of more energy efficient lighting systems. The new parking lot on the existing tennis court site will be lit, and will comply with the lighting requirements of the Hawai'i County Code. The net effect on Kona Bay Estates should be similar to the existing lighted tennis courts.

New exterior lighting will be installed around the senior and youth center, associated parking areas and the new tennis complex. These areas of the park are not heavily utilized now, and have little existing lighting. As a result, the presence of outdoor lighting and evening use of the site will alter the mauka views from some Kona Bay Estates lots. The closest proposed structure to Kona Bay Estates would be the youth center, which will be over 200 feet away. Given the County's Class II lighting requirements, issues such as light trespass into homes should not be a problem.

It is possible that night usage of the park facilities will increase as the master plan is implemented and more evening activities, such as concerts occur in the park. Night time lighting policies are a park management issue. In general, park managers should be required to turn off the field lights immediately after games are over, and day games should be scheduled as much as possible to maximize use of daylight and conserve energy. Evening events such as concerts should have a reasonable curfew that takes the adjoining residential neighbors into consideration.

### **Impacts on Hawaiian Petrels and Newell's Shearwaters**

As discussed previously in Section 4.3.2, light pollution is widely recognized as being a major threat to seabirds and other nocturnal migrant species, particularly the Newell's shearwater. Street and resort lights, especially in coastal regions, disorient shearwater fledglings causing them to eventually fall to the ground exhausted or increasing their chance of collision with artificial structures (i.e. fallout). Once on the ground, shearwater fledglings are unable to fly and are killed by cars, cats, and dogs or die because of starvation or dehydration. The impact to the shearwater can be minimized by limiting the amount of light that is emitted above the horizon and avoiding the use of "white" light sources which appear to be the worst offenders for bird attraction. Full cut-off or shielded lighting fixtures will be used where practicable to limit the amount of light that is emitted above the horizon and the use of "white" light sources will be avoided in areas where color rendition is not important.

### **Energy Efficiency Issues**

Mitigation for increased energy use at the park will be the implementation of sustainable, "green" planning and building techniques and technologies wherever possible. One of the goals of the master plan was to follow Leadership in Energy and Environmental Design (LEED)

concepts in planning buildings and facilities. The following is a discussion of how these concepts were considered for the electrical system.

### ***Solar Power***

During the preparation of the master plan, the engineering consultants investigated the potential for solar powered exterior lighting for the new parking lots. It was estimated that the County requirement to use LPS light sources for these areas would require the use of solar panels with a surface area of approximately 32 feet square for each light. To make solar powered exterior lighting a feasible option, a light emitting diode (LED) light source would need to be utilized. The use of LED light sources for parking lots and roadways is currently not allowed by the Hawai'i County Code. Therefore, solar powered exterior lighting for the new parking lots is not considered a feasible option at this time.

Self-contained solar powered lighting systems, which consist of solar panels, batteries, and LED light sources, will be considered for use at the remote beach pavilions. The use of self-contained solar powered lighting systems will eliminate the need to provide HELCo service to the remote beach pavilions and reduce electricity costs. They will also reduce the need for excavation in the culturally sensitive areas on the makai side of the existing runway.

### ***Net Metering***

Net metering is a utility resource usage and payment scheme in which a customer who generates their own power is compensated monetarily. Net metering originated with electric companies as a way to encourage consumers to invest in renewable energy sources such as solar or wind power. In a net metering program, the electric company allows a customer's meter to actually run backwards if the electricity the customer generates is more than they are consuming. At the end of the billing period, the customer only pays for their net consumption: the amount of resources consumed, minus the amount of resources generated.

The master plan recommends that the proposed improvements and facilities attempt to achieve a minimum rating of silver on the LEED Green Building Rating System where feasible. LEED credits can be obtained through use of on-site renewable energy, including solar, wind, geothermal, low-impact hydro, biomass and bio-gas strategies, to supply power to and reduce the environmental and economic impacts associated with fossil fuel energy use. Net metering agreements with HELCo will be considered if any of the abovementioned on-site renewable energy sources are implemented.

### ***LEED Sustainable Sites (SS) Credit 8, Light Pollution Reduction***

The master plan is recommending that proposed improvements and facilities attempt to achieve a minimum rating of silver on the LEED Green Building Rating System where feasible. One of the points that may be pursued to obtain the silver rating is Sustainable Sites (SS) Credit 8, Light Pollution Reduction. The intent of this credit is to minimize light trespass from the building and site, reduce sky-glow to increase night sky access, improve nighttime visibility through glare reduction, and reduce development impact on nocturnal environments. Site lighting criteria will

be adopted to maintain safe but reasonable light levels and full cut-off or shielded lighting fixtures and computer modeling will be utilized to minimize the amount of off-site lighting and night sky pollution. In addition, lighting controls will be used, wherever possible, to turn-off non-essential lighting after normal operating hours or in post-curfew periods.

## 4.6 TRAFFIC AND TRANSPORTATION

### 4.6.1 Vehicular Circulation

#### *Existing Conditions*

Traffic analysis for the proposed master plan was provided by Julian Ng, Inc. (2009). Vehicular access to the existing Kailua Park from Kailua village is provided by Kuakini Highway. Between Palani Road and Kaiwi Street, Kuakini Highway is a two-lane roadway with separate turn lanes for left turns onto Palani Road and right turns onto Kaiwi Street. Opposite Kaiwi Street, Kona Bay Drive is a two-lane roadway that serves a gated residential community; Kaiwi Street serves an industrial subdivision and connects to Queen Ka‘ahumanu Highway. Makala Drive also connects Kuakini Highway with Queen Ka‘ahumanu Highway, providing access to the park from other parts of the island via Queen Ka‘ahumanu Highway.

Several driveways serving parking lots in the park connect to the two-lane Kuakini Highway west of Kaiwi Street and east of Makala Drive; these parking lots have been striped for approximately 700 parking stalls. West of Makala Drive, Kuakini Highway terminates at the State baseyard and traffic into the park runs through a parking lot and onto the old airport runway. Approximately 200 marked parking stalls are provided at and near the baseyard; an additional 60 vehicles could be parked in this area. Another 40 parking stalls are located beyond the west end of the old runway, approximately 2,000 feet away. The old runway is used for additional parking during special events; the 2,000-foot length is estimated to accommodate 400 vehicles parked perpendicular to the runway axis, for a total existing parking capacity in the park of 1,360 vehicles.

In 2005, a traffic study was done for a proposed commercial development near Queen Ka‘ahumanu Highway that would be served by Makala Drive. Table 4-3 shows the peak hour volumes on several roadway links that were derived from manual counts taken in May 2005 for that study.

**Table 4-3: Existing Traffic on Roadways in Vicinity**

	AM Peak Hour	PM Peak Hour
Queen Ka‘ahumanu Highway, west of Makala Boulevard	1,396	1,439
Queen Ka‘ahumanu Highway, east of Makala Boulevard	2,111	2,197
Makala Boulevard, south of Queen Ka‘ahumanu Highway	154	406
Makala Boulevard, north of Kuakini Highway	390	505
Kuakini Highway, west of Makala Boulevard	148	310
Kuakini Highway, east of Makala Boulevard	460	627
Kaiwi Street, north of Kuakini Highway	635	804
Kuakini Highway, west of Kaiwi Street/Kona Bay Drive	545	752
Kuakini Highway, east of Kaiwi Street/Kona Bay Drive	989	1,153
Kona Bay Drive, south of Kuakini Highway	133	125
Palani Road, north of Kuakini Highway	962	1,255
Kuakini Highway, west of Palani Road	1,036	1,235
Kuakini Highway, east of Palani Road	723	982
Palani Road, south of Kuakini Highway	899	962

Source: Julian Ng, Inc., using data reported in Figures 3 and 4, *Traffic Impact Report for Kona Commons*, prepared by Wilson Okamoto Corporation, July 2005

The existing peak hour traffic volumes generated by the park were derived by reviewing the traffic counts along Kuakini Highway and estimating movements in and out of the park parking lots located between Makala Boulevard and Kaiwi Street, as indicated in Table 4-4.

**Table 4-4: Existing Park Traffic Generation**

	AM Peak Hour		PM Peak Hour	
	exit	enter	exit	enter
Kuakini Highway, west of Makala Boulevard	70	78	142	168
Driveway between Makala Blvd. & Kaiwi St.	75	102	88	222
<b>Estimate of park-generated traffic</b>	<b>145</b>	<b>180</b>	<b>230</b>	<b>390</b>

Source: Julian Ng, Inc., using data reported in Figures 3 and 4, *Traffic Impact Report for Kona Commons*, prepared by Wilson Okamoto Corporation, July 2005

The highest traffic volumes due to activities at the park occur in the hour after a large event, when 1,300 vehicles leave the park. Based on peak hour counts, estimated capacities for traffic leaving the park are 160 vehicles per hour from Makala Boulevard to Queen Ka‘ahumanu Highway, 350 vehicles per hour on Kaiwi Street, and 650 vehicles per hour on Kuakini Highway

at Palani Road; congested conditions leaving the park after such an event, therefore, will have a duration of slightly more than one hour.

A comparison of the manual peak-period traffic counts taken in 2005 with a more recent count taken in August, 2007 at the intersection of Palani Road and Queen Ka‘ahumanu Highway is shown in Table 4-5:

**Table 4-5: Comparison of Traffic Counts, 2005 and 2007, Intersection of Queen Ka‘ahumanu Highway and Palani Road**

		2005	2007
AM Peak Hour	Palani Road, north of Queen Ka‘ahumanu Highway	867	667
	Queen Ka‘ahumanu Highway, west of Palani Road	1,870	1,612
	Queen Ka‘ahumanu Highway, east of Palani Road	1,283	1,249
	Palani Road, south of Queen Ka‘ahumanu Highway	1,204	1,138
PM Peak Hour	Palani Road, north of Queen Ka‘ahumanu Highway	1,041	1,017
	Queen Ka‘ahumanu Highway, west of Palani Road	2,182	1,881
	Queen Ka‘ahumanu Highway, east of Palani Road	1,723	1,417
	Palani Road, south of Queen Ka‘ahumanu Highway	1,738	1,537

Source: Julian Ng, Inc., using data reported in Figures 3 and 4, *Traffic Impact Report for Kona Commons*, prepared by Wilson Okamoto Corporation, July 2005 and in Figure 2, *Traffic Impact Analysis Report for the Proposed Ane Keohokalole Highway Extension*, prepared by Fehr & Peers, April 2009

As indicated in Table 4-5, the counts taken in 2007 show lower traffic volumes at the intersection than the counts taken in 2005. The reduction is probably due to construction activity on Queen Ka‘ahumanu Highway. The 2005 counts, therefore, should be representative of existing conditions without influence of highway construction activities.

Public bus service near the park is provided by the County of Hawai‘i’s “Hele-On Bus” system. A single trip per day in each direction operates Monday through Saturday between Kona and Hilo; a bus traveling toward Hilo comes through the intersection of Kuakini Highway and Palani Road at approximately 6:30 AM and the reverse route traveling toward Honaunau is scheduled to pass the same intersection at approximately 4:30 PM.

Service on an “Intra-Kona” bus route is also provided. The Intra-Kona route uses Kuakini Highway and Makala Boulevard, with northbound service seven times per weekday between 8:45 AM and 6:25 PM, and southbound service eight times per weekday between 6:55 AM and 5:15 PM. Saturday service is provided with the number of trips reduced by two each way.

### *Project Impacts and Mitigation*

#### **Transportation Infrastructure**

The proposed project is not expected to change traffic generation from the park on a typical day or under peak conditions. Vehicular access will continue to be provided by Kuakini Highway and Makala Boulevard, with an improvement with the proposed relocation of a portion of Makala Boulevard leading directly to the center of the reconfigured park. The highest weekday traffic from the park will continue to occur in the PM Peak Hour, during which the hourly traffic volume has been estimated to be about 620 vehicles per hour, or about 25% of the existing PM Peak Hour traffic in and out of the area.

The plan for the park itself will relocate some activities and provide for new roadways and paths for pedestrian and bicycle use. The proposed plan includes a total of 1,374 marked parking spaces. By comparison, the park currently has 880 marked stalls, and an estimated 400 more vehicles can be accommodated on unmarked portions of the old runway. Increased use of the park can be expected throughout the day, thereby increasing traffic during existing non-peak hours (however, park traffic will be small compared to other activities that rely on the affected roadways to provide access).

The proposed plan shows a future roadway connection from the west end of the park to connect to the Kealakehe Regional Park. This roadway will provide improved vehicular access to the Kailua Park and will lessen traffic impacts at the other roadways into and out of the park, by providing alternative paths.

#### **Internal Improvements: New Beach Access Road and Reverse-In Angle Parking**

The proposed plan replaces the existing old airport runway with a new, meandering beach access road leading from a proposed roundabout extending from Kuakini Highway. Rather than being an “extension” of Kuakini Highway, this new road will be an internal beach access road. It does not preclude a future extension of Kuakini Highway (extending north, past the roundabout) by the County or State.

The proposed roundabout is intended to provide a physical landmark, signifying arrival at an important destination. Although the roundabout would serve an important way-finding function, realignment of Makala Boulevard must be agreed to by adjacent landowner QLT. If the Makala Boulevard realignment is not consistent with QLT’s development plans, it can be replaced with a standard “T” intersection with entry features identifying Kailua Park. The meandering beach access road is intended to have a posted speed limit of 15 miles per hour. The gently curving road is designed to reduce traffic speed and to be visually appealing.

The master plan recommends reverse angle parking along the mauka and makai sides of the beach access road. Reverse angle parking, where drivers must back into the stalls, is a state-of-

the-art parking configuration that has gained popularity in cities throughout the United States in recent years. The benefits of reverse angle parking are summarized below.

Applying this mandatory parking concept to the park is appropriate because the roadway is meant for slow-moving, local traffic. Park users unloading recreation gear and coolers will unload at the rear of the vehicle, away from the travel way, making it safer for the users and their children. A landscaped median should be provided wherever reverse-in angled parking stalls are proposed, to prevent drivers from crossing the road to park in the wrong direction. Because the concept is new to Hawai'i Island, the public will need time to adjust to this parking concept. Providing instructional signs will help to speed the learning process.

### **Impacts of Other Alternatives**

The No Action alternative would not impact traffic as the status quo would be maintained. However, the current undefined travel ways, undefined parking areas, and unconnected internal circulation would continue to pose circulation problems. The minimum alternative proposed minor changes to the circulation system to reduce cost, but does little to improve current conditions. The circulation system associated with the maximum development alternative would be an improvement to existing conditions. However, a disadvantage is that maximum build out of sports venues leaves little room for parking. As a result, the maximum development alternative may not have adequate parking during peak park use.

## Anticipated Benefits of Reverse Angle Parking

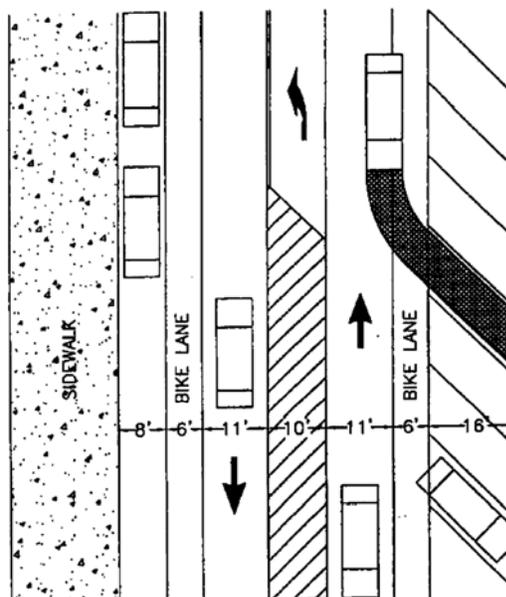


- Improved visibility and increased field of vision. When leaving the parking space, motorists are able to see oncoming traffic.
- Decreased number of collisions. Motorists no longer have to back out blindly from their parking space.
- Improved safety for children. Car doors open in a manner that directs children to the back of the vehicle, ushering them toward the sidewalk rather than the streets.
- Improved safety for cyclists. As vehicles exit their parking stall, they are able to see cyclists in the roadway.

- Improved loading and unloading. Trunks are adjacent to the sidewalk and open car doors offer protection from the street, allowing loading and unloading onto the sidewalk.



- Improved disabled parking. Disabled parking spaces can be placed adjacent to curb ramps.
- Increased space. Reverse angle parking does not require as much space to maneuver as traditional angle parking, which may result in an increased number of parking spaces or additional room for sidewalks, bike lanes, etc.
- Traffic calming. Serves to naturally slow traffic.



From: Burlington VT Public Works, [www.dpw.ci.burlington.vt.us](http://www.dpw.ci.burlington.vt.us)

## 4.6.2 Paths, Trails and Greenways

### *Existing Conditions*

Two historic trails running through the project area were identified by the Archeological Literature Review and Field Inspection (Cultural Surveys Hawai‘i, October 2009, Appendix C), and were confirmed during consultation with area kūpuna. One trail still in use today runs parallel to the shoreline, while the second is a possible remnant trail that was oriented mauka/makai and extended out of the project area.

The coastal trail traverses the beach sand for the majority of the project area, averages about 80 cm (31 inches) wide, and is characterized by a relatively level walking surface and an absence of vegetation. Community consultation conducted by Cultural Surveys Hawai‘i confirms that this trail existed prior to the airport construction in 1948. The study notes that although there is no doubt that Hawaiians in both pre and post-contact times utilized coastal trails in the project area, the lack of information about the age and nature of the trail prevents it from meeting the eligibility criteria for the Hawai‘i Register of Historic Places.

A possible mauka/makai trail is located in the northwest portion of the project area, near an archaeological habitation site. However, only remnants of the trail exist, and are not considered eligible for the Hawai‘i Register of Historic Places.

### *Project Impacts and Mitigation*

The master plan includes recommendations for connectivity and linkages within the park, and between the park and adjacent recreational lands and open space areas.

### **Multi-Use Path**

The master plan includes a multi-use path around the entire park, providing opportunities for increased walking and biking. The path will connect the various activity zones and reduce the need to drive between destinations within the park. The path would be constructed as a 10-foot wide, all weather surface. Construction of a multi-use path will be an asset to the park, reducing congestion, parking needed, and increasing safety for pedestrians and bikers.

Further connections to Kailua Village along Kuakini Highway and through the King Kamehameha’s Kona Beach Hotel parking lot are proposed, as well as possible connection along the shoreline in the Kohala direction. Future implementation of these proposals will need to be coordinated with adjacent property owners.

### **Ala Kahakai National Historic Trail**

The plan includes a conceptual alignment for continuation of the Ala Kahakai National Historic Trail (NHT) through the project area. The Ala Kahakai NHT is a 175-mile long trail established in 2000 by the National Park Service for the preservation, protection and interpretation of traditional native Hawaiian culture and natural resources. The designated trail follows the coastline and can be accessed at several points, but is not yet a continuous unbroken trail. The Ala Kahakai NHT passes through over 200 ahupua'a, and hundreds of ancient Hawaiian settlement sites, rich with cultural, historical and natural resources. It is part of the National Historic Trail system, a federal designation providing protection for significant historic trails and their environs.

In an early consultation letter dated October 12, 2009, the Department of Land and Natural Resources Na Ala Hele Program provided the following information on the conceptual Ala Kahakai trail alignment shown in the master plan:

*Research discloses that part of a Settlement Agreement under Kona Old Hawai'i Trails Group vs. State of Hawai'i, et .al., Civil No. 86-212, Third Circuit Court, the government relinquished its interest in the "Old Hawaiian Trail." In return, the owners of the lots within Kona Bay Estate granted to the State of Hawai'i easements for Pedestrian Beach Access and the right to use a 2 foot wide walkway that parallels the makai boundaries of these lots. In essence, the public [c]an access the beach through designated public access points and are able to walk along a concrete masonry wall that runs the length of the Kona Bay Estates Subdivision.*

*Therefore, the Ala Kahakai Trail depicted in the Final Master Plan prepared by Kimura International, Inc. on behalf of the County of Hawai'i, is not a historic trail alignment, but is an easement to walk along a wall.*

Further efforts regarding this trail should be coordinated with both the DLNR Na Ala Hele Program and the National Park Service.

### **Future Greenway Connections**

The master plan notes that there are opportunities for future greenways and road connections from Kailua Park to a regional park at Kealakehe, as well as to other parks, open spaces and recreational facilities on neighboring lands. No active recreational activities would be included, but pedestrian and biking trails would be appropriate. A greenway could connect the Kealakehe regional park to Kailua Park and the beach without the need for motorized vehicles. This greenbelt could be incorporated as a major feature in the Queen Lili'uokalani Trust's future residential or commercial development mauka of the park.

These greenway connections would have a positive impact on regional planning and land use. However, these efforts will extend beyond the County-owned property, and must be coordinated with the Queen Lili'uokalani Trust, the adjacent landowner.

## 4.7 PUBLIC SERVICES AND FACILITIES

### 4.7.1 Police

The Kailua Park is under the jurisdiction of the Hawai'i County Police Department which has a station in Kealahou, about 2 miles away.

In an early consultation letter dated September 15, 2009, the Police Department had the following comments and recommendations:

- Provide easy police accessibility to all points of the park
- Strategically place police call boxes throughout the park
- Utilize design and function of amenities to promote crime prevention
- Ensure that park improvements do not negatively affect traffic or pedestrian flow along the northern extension of Kuakini Highway

The master plan and design of the park directly support the recommendations provided by the Police Department to increase safety and security. For example, the improvements to the roadway and circulation system and provision of vehicle parking will reduce traffic congestion, and provide easier police access to all points of the park. The design of the main park entry and porte cochere will allow safe drop off points for program participants and park users. The availability of connected paths also provides the police department or private security personnel with the option of foot or bike patrol during special events.

The youth and senior center buildings will be clustered, increasing visibility of youth activities, providing greater safety for seniors, and discourage loitering. Adequate lighting will be provided around all facilities. Walking paths and outdoor spaces will bring more people and activities outdoors, providing "eyes on the park," and discouraging illegal or unwanted activity. The location of play grounds near sports fields provides a play area for siblings who are not involved on the field, making it easier for parents to supervise these children. The provision of walking and bicycle paths will increase the number of people circulating through out the park, naturally increasing visibility, safety and security.

### 4.7.2 Fire and Emergency Medical Services

The Hawai'i County Fire Department has 20 full-time fire/medic stations, and twenty volunteer fire stations covering the entire island. For firefighting purposes, the County of Hawai'i is divided into two battalion areas, East and West. Kailua Park is in the area covered by the West battalion. The nearest fire station is Station 14 in South Kohala. Equipment assigned to this

station includes Engine 14, Medic 14, Tanker 14, a fuel truck, and Chopper 2, the Medevac helicopter.

In an early consultation letter dated September 25, 2009, the Hawai‘i Fire Department outlined the fire protection requirements for the project. This included the provision and maintenance of fire apparatus and access roads in accordance with UFC Section 10.207, and providing adequate water supply for fire protection in accordance with UFC Section 10.301(c). A copy of the letter is included in Chapter 9.

As noted above, improvements to the circulation system at the park will improve fire and emergency access. The great lawn could be used for helicopter evacuation if needed.

### **Impacts of Other Alternatives**

None of the project alternatives would impact police, fire, or emergency services.

#### **4.7.3 Schools**

##### *Existing Conditions*

Public elementary schools in the Kona region include Holualoa Elementary, Honaunau Elementary, Ho‘okena Elementary, Konawaena Elementary, Kealakehe Elementary, and Kahakai Elementary. Intermediate and middle schools include Kealakehe Intermediate, and Konawaena Middle. High schools include Konawaena High and Kealakehe High. There are two public charter schools, Innovations Public Charter School (grades 1-8) and West Hawai‘i Explorations PCS (grades 6 to 12). Ke Kula o Ehunuikaimalino is a pre-K to grade 12 Hawaiian language immersion school located in Kealakekua.

##### *Project Impacts and Mitigation*

Many of the area schools utilize Kailua Park athletic fields for practice, games, and tournaments, the master plan recommendations will improve the condition of the facilities. The construction of a new youth and community center will also have a positive impact on school-aged children, and will likely increase after school and weekend programs available to the community.

### **Impacts of Other Alternatives**

The no action alternative would have no impact on school-aged children, but the other build alternatives would have impacts similar to the preferred alternative.

## 5 LAND USE PLANS, POLICIES AND CONTROLS

### 5.1 FEDERAL

#### 5.1.1 National Environmental Policy Act (NEPA)

The project may utilize federal funds and therefore, this Environmental Assessment addresses provisions of the National Environmental Policy Act (NEPA) of 1969 as amended, and the regulation of the Council on Environmental Quality (CEQ), 40 CFR parts 1500 through 1508.

#### 5.1.2 Department of the Army Permit

Section 10 of the Rivers and Harbors Act requires that a Department of Army permit be obtained for structures or work in or affecting navigable waters of the United States. Section 404 of the Clean Water Act (CWA) of 1972 requires that a DA permit be obtained for the discharge (placement) of dredge and/or fill material into waters of the U.S., including jurisdictional wetlands and other special aquatic sites.

The northern end of the project area has at least one anchialine pool, landlocked, brackish ponds found in lava depressions near the ocean, and connected underground to both fresh and salt water. Anchialine pools are considered to be wetland resources, and are regulated by the Department of the Army under Section 404 of the CWA. Two other areas in the Maka'e community garden may be anchialine pools or wetlands. No development is proposed near any of these three areas, and no placement of dredge or fill material is planned. However, if future restoration of any anchialine pools are proposed (e.g., debris and vegetation removal, alien fish removal, etc.), consultation with the Department of the Army Corps of Engineers will be required to confirm its status as a jurisdictional wetland (i.e., subject to Army Corps of Engineers regulation), and appropriate permits will be required.

#### 5.1.3 Section 106, National Historic Preservation Act

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires federal agencies to take into account the effects of their undertakings on historic properties. A Section 106 consultation with the State Historic Preservation Division (SHPD) will be required if federal funds are utilized for any of the master plan improvements. An archaeological Literature Review and Field Inspection for the project area was conducted by Cultural Surveys Hawai'i, which confirmed the location of previously identified historic properties. The report was sent to the SHPD in October 2009, requesting consultation in accordance with both State of Hawai'i Section 6E-8 and Section 106 of the NHPA. Review comments from the SHPD were received in January 2010 and a revised report submitted to the SHPD in February 2010. Section 106 consultation is ongoing.

#### 5.1.4 Section 7, Endangered Species Act

Section 7 of the Endangered Species Act requires federal agencies to ensure that any action they authorize, fund, or carry out is not likely to adversely affect a listed species or designated critical habitat. The redevelopment and expansion of the park facilities is not expected to result in adverse impacts to any botanical, avian, or mammalian species currently listed or proposed for listing under either the federal or State of Hawai'i endangered species statutes.

Park lighting has the potential to impact the endangered endemic Hawaiian Petrel and the threatened Newell's shearwater, which fly over the project area during certain times of year. Proposed mitigation includes shielded lights at the park, including replacing or retrofitting existing unshielded lights with shielded ones. Mitigation to prevent adverse impact to Hawaiian hoary bats involves avoiding clearing large woody vegetation during times of the year when roosting bats may be tending their young.

The U.S. Fish and Wildlife Service (USFWS) was contacted during the EA pre-assessment consultation, and has been sent a copy of this Draft EA. At present, no federal funds are planned for park development or construction. However, if in the future, federal funds are utilized at Kailua Park, consultation may be required with the USFWS in accordance with Section 7 of the Endangered Species Act.

## 5.2 STATE OF HAWAI'I

### 5.2.1 Hawai'i State Plan

The 1996 Hawai'i State Plan (Chapter 226, HRS) is the umbrella document in the statewide planning system. It serves as a written guide for the future long-range development of the state by describing a desired future for the residents of Hawai'i and providing a set of goals, objectives, and policies that are intended to shape the general direction of public and private development.

The State plan objectives for the physical environment—land, air and water quality (Sect. 226-13) are: 1) maintenance and pursuit of improved quality in Hawai'i's land, air and water resources, and 2) greater public awareness and appreciation of Hawai'i's environmental resources. Among the policies to achieve these objectives are a) to promote the proper management of Hawai'i's land and water resources and b) reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.

## 5.2.2 State Land Use Classification

The State Land Use Commission, pursuant to Chapter 205 and 205A, HRS and Chapter 15-15, Hawai'i Administrative Rules, is empowered to classify all lands in the State into one of four land use districts: urban, rural, agricultural and conservation. The entire project area is within the State's Urban District. The County of Hawai'i regulates activities or uses within the Urban district. The proposed park improvements are consistent with this State Land Use designation.

## 5.2.3 Coastal Zone Management

The Federal Coastal Zone Management Program was created through passage of the CZM Act of 1972, and the State of Hawai'i's CZM program was enacted in 1977 (Chapter 205A, Hawai'i Revised Statutes). CZM objectives and policies (Section 205A-2, HRS) have been developed to preserve, protect, and where possible, to restore the natural resources of the coastal zone of Hawai'i.

Hawai'i's CZM area encompasses the entire state, because there is no point of land more than 30 miles from the ocean. The CZM area also extends seaward to the limit of the State's police power and management authority, to include the territorial sea.

The Kailua Park Master Plan is consistent with the State's Coastal Zone Management (CZM) objectives, identified in HRS Chapter 205A-2, as discussed below.

### *Recreational Resources*

**CZM Objective:** *Provide coastal recreational opportunities accessible to the public.*

The master plan will enhance coastal recreational opportunities accessible to the public. The northern area of the site will be retained as open space, and enhanced for public use. Proposed improvements in this area include new beach pavilions and a beach center with concessions and restrooms. The aircraft runway will be removed, and replaced with a new meandering beach access road and designated parking. Removal of the runway will allow expansion of the beach front further mauka, widening and enlarging this passive recreation space. The project will not affect existing fishing, surfing or other existing uses. In the southern half of the property, the public beach access through the Kona Bay Estates subdivision will remain. Outdoor showers and restrooms will be provided near the ball field parking lots, which can be used by beach goers.

### *Historic Resources*

**CZM Objective:** *Protect, preserve, and where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.*

The Project will not adversely impact natural or man-made historic or prehistoric resources in the CZM area. An archeological field inspection has confirmed the location of historic properties,

including burials, within the 117-acre property. The plan improvements avoid impact to these known sites. The area surrounding Pawai Bay, which is rich in cultural artifacts, will be improved by clearing trash, replacing invasive vegetation with native vegetation, and delineating sensitive areas through signage and defined walkways to prevent inadvertent damage. A cultural interpretive center is proposed at the end of the beach access road. The canoe halau complex will include an education exhibition center to teach canoe-making and other cultural activities. The plan recommendations were developed through consultation with area kupuna, and extensive community interviews are documented in the Cultural Impact Assessment. Consultation with SHPD is ongoing to define any further cultural resource management work that may be needed.

### *Scenic and Open Space Resources*

**CZM Objective:** *Protect, preserve, and where desirable, restore and improve the quality of coastal scenic and open space resources.*

The Project will preserve and improve the quality of coastal and scenic resources particularly in the central and northern areas of the park. The new park entry road leading to the community center will terminate at a great lawn, with open vistas to the ocean. Coastal views from the northern area of the park will be improved by removal of the asphalt runway, which currently dominates the visual landscape. With the removal of the runway, the beach area can be expanded in the makai direction. No major structures, other than new picnic pavilions, are proposed makai of the existing runway.

### *Coastal Ecosystems*

**CZM Objective:** *Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.*

The Project will not adversely impact coastal ecosystems or water quality. During construction activities, construction contractors will follow best management practices to minimize storm water runoff. No in-water construction is proposed. The master plan includes construction of bio-basins, storm water retention areas landscaped with native plant materials. These will retain surface runoff and increase on-site percolation.

### *Economic Uses*

**CZM Objective:** *Provide public or private facilities and improvements important to the State's economy in suitable locations.*

The project complies with this CZM objective, as Kailua Park is an existing district park, which will be improved and enhanced. Because of the park's ocean front location, the master plan seeks to maximize open space and encourage more passive uses along the former runway area. Active recreational facilities that may still be needed, such as additional ball fields, can be located at a future regional park in Kealakehe.

### *Coastal Hazards*

**CZM Objective:** *Reduce hazard to life and property from tsunamis, storm waves, stream flooding, erosion, subsidence, and pollution.*

A portion of the project site is within the VE and AE flood hazard area. Improvements in these areas will be limited to non-habitable structures such as beach pavilions, walls, and paths, and none of the improvements will cause a rise in the base flood elevation.

### *Managing Development*

**CZM Objective:** *Improve the development review process, communication, and public participation in the management of coastal resources and hazards.*

The Project has no impact on this CZM objective.

### *Public Participation*

**CZM Objective:** *Stimulate public awareness, education, and participation in coastal management.*

The master plan process involved extensive public participation, including a series of community information meetings, informal stakeholder meetings and interviews, a three-day charrette workshop, and a project web site. The community actively participated in developing the master plan recommendations.

### *Beach Protection*

**CZM Objective:** *Protect beaches for public use and recreation.*

The master plan will protect and enhance the beaches for public use and recreation. Removal of the asphalt runway will allow mauka expansion of the beach area, providing a larger area for public recreation. New picnic pavilions and restrooms will be provided. The existing public access through the Kona Bay Estates will be maintained, and new outdoor showers will be provided by the gymnasium parking lot for beach goers.

### *Marine Resources*

**CZM Objective:** *Promote the protection, use, and development of marine and coastal resources to assure their sustainability.*

As indicated previously, the master plan recommends protecting and preserving the open, undeveloped coastal areas in the northern areas of the site. The construction of bio-basins will have a positive long-term impact on the nearshore environment, by retaining storm water runoff on site. No in-water construction is proposed.

## 5.3 COUNTY OF HAWAII

### 5.3.1 County General Plan

The County General Plan, February 2005, is a long range comprehensive policy document whose purpose is to guide the future development of the County. The General Plan is organized into elements ranging from Economics to Natural Resources to Land Uses. Recreation is one element of the General Plan. Recreational facilities are discussed in two categories: 1) resource-based and facility-based, where resource based facilities are tied to publicly accessible outstanding natural or cultural resources and 2) facility-based facilities provide for organized, spectator or informal play recreational activities not dependent upon a natural resource.

The recreation element notes both resource and facility based recreational facilities are unevenly distributed throughout the island with North Kona, South Kona, South Kohala and Puna having the least amount of county facilities-based parks and beach parks in relation to population. However, it notes that State beach parks within the South Kohala and North Kona districts help to offset some of the deficiencies.

The recreational element also notes recreational programs of the County aim to diversify activities and provide more programs for youth as well as senior citizens.

#### *Recreation Goals and Policies*

The project is in conformance with the following goals and policies of the Recreation element of the General Plan:

#### Element 12. Recreation

##### 12.2 Goals:

- (a) Provide a wide variety of recreational opportunities for the residents and visitors of the county.
- (b) Maintain the natural beauty of recreation areas
- (c) Provide a diversity of environments for active and passive pursuits

##### 12.3 Policies:

- (a) Strive to equitably allocate facility-based parks among the districts relative to population, with public input to determine the locations and types of facilities.
- (b) Improve existing public facilities for optimum usage.
- (c) Recreational facilities shall reflect the natural, historic, and cultural character of the area.

- (d) The use of land adjoining recreation areas shall be compatible with community values, physical resources and recreation potential.
- (g) Facilities for compatible multiple uses shall be provided.
- (h) Provide facilities and a broad recreational program for all age groups with special considerations for the handicapped, the elderly and young children.
- (j) Develop local citizen leadership and participation in recreation planning, maintenance, and programming.

The proposed project is consistent with the goals and policies listed above. The plan contains a balanced mixture of resource and facilities-based amenities. The master plan preserves and enhances natural shoreline assets, improves active sports facilities, and proposes a new recreational complex that would serve the needs of the general community, and specifically youth and seniors. The community was actively involved in developing the master plan.

#### *Land Use Pattern Allocation Guide (LUPAG)*

The General Plan's Land Use Pattern Allocation Guide (LUPAG) controls long-term land use patterns in the County. The LUPAG designates the entire project site and surrounding areas as "Open," which is consistent with its existing park use.

### 5.3.2 Kona Community Development Plan

The Kona Community Development Plan (CDP) (September 2008) was prepared in compliance with the County of Hawai'i General Plan Section 15.1, which calls for the preparation of community development plans "*to translate the broad General Plan statements into specific actions as they apply to specific geographical areas.*" The Kona CDP was adopted by County Council Ordinance 08 131, effective September 25, 2008.

The Kona CDP area encompasses 800 square miles, and includes the judicial districts of North and South Kona. The purposes of the Kona CDP are:

- Articulate Kona's residents' vision for the planning area
- Guide regional development in accordance with that vision, accommodating future growth while preserving valued assets;
- Provide a feasible infrastructure financing plan to improve existing deficiencies and proactively support the needs of future growth;
- Direct growth to appropriate areas;
- Create a plan of action where government and the people work in partnership to improve the quality of life in Kona for those who live, work and visit;
- Provide a framework for monitoring the progress and effectiveness of the plan and to make changes and update it, if necessary.

### *Vision Statement and Guiding Principles*

Chapter 3 of the Kona CDP provides a vision statement and guiding principles in order to achieve the vision. The proposed master plan is consistent with the Kona CDP's vision statement and guiding principles, particularly guiding principle #4, addressing recreation opportunities. The vision statement is:

***Kona's Future Shall Be:***

*A more sustainable Kona characterized by a deep respect for the culture and the environment and residents that responsively and responsibly accommodate change through an active and collaborative community.*

#### Guiding Principles:

1. Protect Kona's natural resources and culture.
2. Provide connectivity and transportation choices.
3. Provide housing choices,
- 4. Provide recreation opportunities. Future growth should provide a diversity of recreational opportunities that are well-maintained, attractive, and easily accessible to the entire community.**
5. Direct future growth patterns toward compact villages, preserving Kona's rural, diverse, and historical character.
6. Provide infrastructure and essential facilities concurrent with growth.
7. Encourage a diverse and vibrant economy emphasizing agriculture and sustainable economies.
8. Promote effective governance.

The Kailua Park master plan is intended to provide diverse recreational opportunities which are accessible to the entire community.

### *Goals, Objectives and Policies*

The Kona CDP identifies goals, objectives, policies and actions in eight areas:

- Transportation
- Land use
- Environmental resources
- Cultural Resources
- Housing
- Public Facilities, Infrastructure and Services
- Energy

- Economic Development

The following discusses how the Kailua Park Master Plan relates to each of the eight areas.

### **Transportation**

One of the CDP's transportation strategies is developing Multi-Modal Transportation, "a network of interconnected bike lanes, trails and sidewalks that provide a healthy and green alternative to automobile use" (Kona CDP, p. 4-6). The master plan's recommendation for a compact, walkable community center, a multi-use bike and pedestrian path around the park, and greenways linking the park to other regional recreational resources support this CDP strategy.

The project area, also known as Maka'eo, is specifically mentioned in the transportation section of the Kona CDP as a possible transit hub.

**Objective TRAN-1, Transportation and Land Use.** To organize growth on a regional level in Kona, growth should be compact and transit-supportive. Compact mixed-use villages along transit routes provide sufficient densities to support transit feasibility and enable people to meet a variety of daily needs within walking distance.

**Policy TRAN-1.6: Kailua or Maka'eo Village as a Transit Hub:** The redevelopment of Kailua shall include a plan to create an intra-Kona transportation service, with Kailua Village or Maka'eo Village as the "hub" or transit center. Buses would operate from Captain Cook to the Kailua or Maka'eo Village hub...

The master plan proposals are compatible with the Kona CDP's concept for a potential transit hub at Maka'eo. The park would be a major activity and recreational node, and the proposed realignment of Makala Boulevard, roundabout, and porte cochere provides a safe and convenient place for bus passenger drop off and pick up.

**Objective TRAN-6, Concurrency.** To manage the timing of growth so as to avoid overloading the arterial system.

**Policy TRAN-6.2: Prioritized Road Improvements.**

Table 4-1 Concurrency Table, in the Transportation section of the Kona CDP (p. 4-24) lists "Maka'eo Village" as a concurrency zone, with "4B-Kuakini Extension Collector (Kealakehe Parkway to Old Airport)" as a future roadway improvement. This proposal would construct an extension of Kuakini Boulevard between its current terminus near the park and Kealakehe Parkway.

The master plan recommends realignment of Makala Boulevard to a new roundabout and park entrance on Kuakini Highway. From the roundabout, an internal beach access road provides access within the park. These roadway improvements do not preclude future implementation of a Kuakini Highway extension to Kealakehe Parkway by the County or State.

### **Environmental resources**

This section of the CDP includes a strategy of “integrating the coastal resources,” which include anchialine ponds, sandy beaches and clear nearshore waters (p. 4-53). The master plan preserves the anchialine ponds on site, and provides an opportunity for community efforts to restore or enhance the ponds. The plan emphasizes preservation of the undeveloped, oceanfront areas of the site as open space for passive enjoyment. Bio-basins landscaped with native plant materials will retain surface runoff and increase on-site water percolation.

### **Cultural Resources**

This section of the Kona CDP emphasizes the fundamental relationship between cultural resources and the natural environment, and the need to ensure protection of cultural resources. The intent of the master plan is to respect the cultural significance of the site, particularly the northern areas which are rich with cultural artifacts and burials. The master plan avoids disturbing identified cultural sites, and recommends developing the area around Pawai Bay as a cultural preserve. Specific master plan recommendations include clearing trash, restoring native vegetation and delineating sensitive areas with well-defined walkways and interpretive signage. The recommendations were developed with input from area kupuna.

### **Housing**

The master plan does not directly impact the provision of affordable housing in Kona. However, the park provides free, accessible, safe and varied recreational opportunities, which is a critical component of a strong, vibrant community.

### **Public Facilities, Infrastructure and Services**

This section addresses County public services, including parks, police, fire solid waste disposal, and social service programs. A stated guiding principle concerns “sense of community and quality of life,” by “encouraging gathering and interaction, by providing lifelong learning opportunities, by building appreciation and respect for nature through trails and parks and other interactive opportunities, by nurturing the soul through art, and cultural activities” (p. 4-99). The park master plan will clearly enhance quality of life by expanding and improving an important recreational amenity. Development of a youth and senior center will centralize and integrate community services, provide a venue for lifelong learning and cultural activities, and promote social interaction within the community.

The following section of the CDP specifically states its policy for the Old Airport Park:

**Objective PUB-6, Quality of Life.** To foster a sense of community and health through the public realm such as gathering places, parks, pedestrian networks, and open spaces.

**Policy PUB-6.2:** Active Recreation Opportunities. A range of recreational opportunities shall be provided to encourage physical activity and interaction among toddlers, youth, teens, adults, and seniors, including, without limitation the following:

...(c) **District Park (10-30 acres)—Upgrade the Old Airport Park to enhance the playfields, swimming pool, multi-purpose building, courts (Basketball, tennis, volleyball), tot lots, fitness area, pet area, and skateboard area...** (p. 4-114, emphasis added)

### **Energy**

The focus of this section of the CDP is on increased energy efficiency, conservation, and use of renewable energy sources. The Kailua Park Master Plan emphasizes energy sustainability throughout the park. The plan recommends that any new construction or renovation meet Leadership in Energy and Environmental Design (LEED) Silver criteria. Each project phase should investigate use of renewable energies such as wind and solar technologies, and reduction of water use through waterless urinals, dual flush toilets and rainwater catchment systems for non-potable uses. A goal is to eventually utilize R1 recycled water for toilets and park irrigation, once upgrades to the Kealakehe Wastewater Treatment Plant are completed. The asphalt from the runway will be recycled to local construction projects, and the use of local building materials such as stone and gravel will be encouraged. Natural ventilation and lighting will be incorporated into building design.

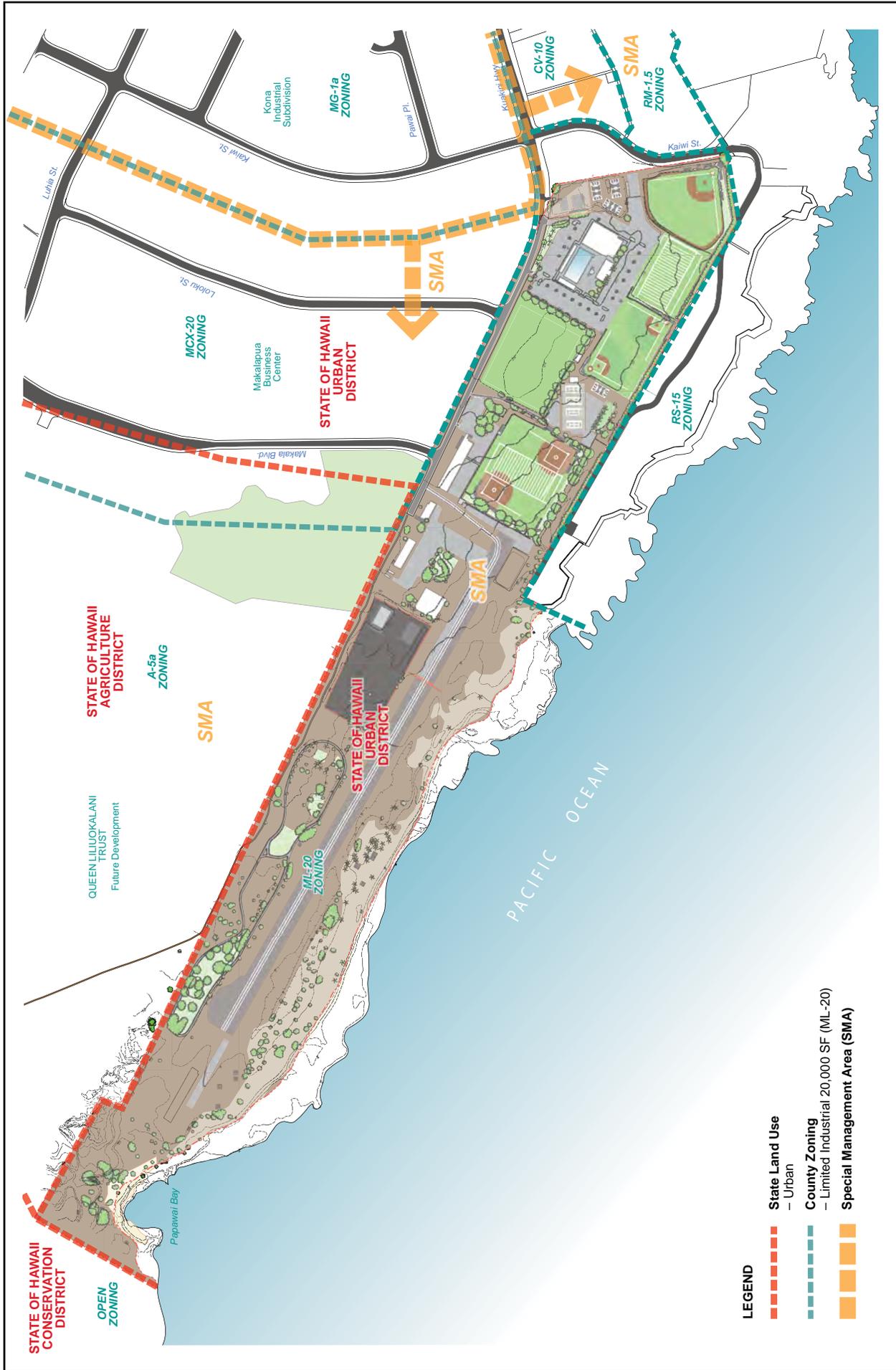
### **Economic Development**

This section of the CDP focuses on supporting important foundations of Kona's economy and opportunities for economic development. Major economic sectors were identified as tourism, diversified agriculture, forest and ranching, redevelopment needs, and housing. Although the Kailua Park improvements do not directly promote economic development, they have a supportive effect on these efforts. For example, the park will provide an amenity that can be enjoyed by visitors as well as residents, and become a venue for state or nationwide athletic tournaments and events. This indirectly supports the tourism industry. A top economic priority is redevelopment of Kailua Village as the commercial, cultural and visitor center of Kona. Improvement of the nearby Kailua Park supports the overall redevelopment and desirability of Kailua Town as a place to live and visit.

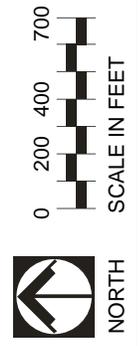
#### **5.3.3 County Zoning**

The Hawai'i County Code, Chapter 25, Zoning Code, is its zoning ordinance, which regulates land use in a manner that will encourage orderly development in accordance with adopted land use policies.

As shown in Figure 11, the property is zoned Limited Industrial (ML-20) with a 20,000 square foot (SF) minimum lot size. The industrial zoning is a remnant of the site's former airport use. According to the County Zoning Code, the park is a permitted use in the ML-20 zoning district.



- LEGEND**
- - - State Land Use
    - Urban
  - - - County Zoning
    - Limited Industrial 20,000 SF (ML-20)
  - - - Special Management Area (SMA)



**Figure 11**  
**STATE LAND USE, SMA, ZONING**  
 Kailua Park Master Plan  
 Draft Environmental Assessment  
 November 2009

Section 25-5-142(a)(35), Permitted Uses, allows “*Public Uses and structures, as permitted under section 25-4-11.*” Any use by a government agency, or a privately-operated use provided wholly as “public use,” is a permitted use in every zoning district as long as it complies with the requirement (of the referenced Section 25-4-11) that Plan Approval is first obtained from the Planning Department. It should be noted that “community buildings” that are owned and operated either by the County or privately by a non-profit organization are allowed.

### 5.3.4 Special Management Area

County governments play a crucial role in implementing the Hawai‘i CZM Program by regulating development in geographically designated Special Management Areas (SMA). Through their respective SMA permit systems, the Counties assess and regulate development proposals in the SMA for compliance with the CZM objectives and policies and SMA guidelines set forth in Chapter 205A, Hawai‘i Revised Statutes (HRS).

As shown in Figure 11, the Kailua Park site is within Hawai‘i County’s designated Special Management Area, and because the valuation of the proposed improvements will be in excess of \$125,000, a Special Management Area Use Permit from the County will be required. The County’s SMA rules are embodied in Rule 9 of the Planning Commission Rules of Practice and Procedure.

This EA has been prepared in support of the SMA use permit application that will be submitted to the County Planning Department. Section 5.2.3 of this EA, Coastal Zone Management, addressed the project’s conformance with the broad CZM objectives and policies of Chapter 205A, HRS. Section 5.3 of the EA discusses the project’s consistency with the County General Plan, Kona CDP, and zoning. Chapter 4 of the EA discusses the project’s anticipated environmental impacts and proposed mitigation.

The SMA use permit application will be submitted to the Planning Department as soon as the Final Environmental Assessment is approved.

## 5.4 OTHER CONSIDERATIONS

### 5.4.1 Unavoidable Adverse Effects

During construction of the various master plan improvements, there will be noise, dust, and inconvenience to park users. These temporary impacts are unavoidable. However, all these impacts can be mitigated to an extent that they would not be significant. Best management practices will mitigate dust and control constructed related runoff. Noisy activities will be limited to specific times. Detour roads and temporary parking areas will ensure that access will be maintained throughout the park, and that all facilities continue to be available for public use.

#### 5.4.2 Energy Requirements and Conservation Potential of Various Alternatives and Mitigation Measures

Energy consumption will be required for construction activities, including demolition and removal of the runway, construction of new roads, ball field areas and buildings. The master plan includes a number of energy saving ideas and recommends their implementation as budgets allow. Such recommendations include use of solar energy to power new facilities, replace the use of electricity to heat the swimming pool, use of energy saving light fixtures to light the tennis courts, capturing rainwater for irrigation, removing the existing airport runway which acts as a heat island, and installing bio-basins to retain and filter runoff from roads and parking lots. In the long term, the intent of the master plan is to decrease energy requirements despite the addition of new recreational facilities and venues.

#### 5.4.3 Relationship of Short-Term uses and Long-Term Productivity

In the short-term, the project will have temporary construction-related impacts on various areas of the park and to a limited extent, on the Kona Bay Estates residential community. Access to certain facilities will be temporarily impacted and park users may be inconvenienced with detour roads, temporary parking areas or closure of fields until construction is completed. When fully implemented, the project will have a long-term positive effect on the environment and provide a valuable community asset.

#### 5.4.4 Irretrievable and Irreversible Resource Commitments

Resources that are committed irreversibly or irretrievably are those that cannot be recovered if the project is implemented. The proposed project will involve two types of resources: 1) general industrial resources including capital, labor, fuels and construction equipment; and 2) project-specific resources such as natural resources and land at the affected site. General industrial resources will be spent during project construction and for long-term operation and maintenance of the road. Natural resources and land will be converted from their present state to park use. In particular, the area around the Events Pavilion will be transformed from an underutilized, industrial appearing area into an expanded community center complex with a youth and senior center, canoe halau and tennis courts.

## 6 ANTICIPATED DETERMINATION

Based on the information presented and examined in this document, the proposed project is not expected to result in significant, social, economic, cultural or environmental impacts. Consequently a finding of no significant impact (FONSI) is anticipated, pursuant to the provisions of Subchapter 6 of the Chapter 200, Title 11, Hawai'i Administrative Rules of the Department of Health.

## 7 FINDINGS AND REASONS SUPPORTING THE ANTICIPATED DETERMINATION

The potential effects of the proposed project were evaluated based on the significance criteria in the Hawai‘i Administrative Rules, Section 11-200-12. Based on this evaluation, this EA has found that the potential for impacts associated with the proposed action will not be significant. Potential environmental impacts will be temporary and are not expected to adversely impact the long-term environmental quality of the area.

The following is a summary the State of Hawai‘i significance criteria for evaluating potential environmental effects of the proposed action.

### SIGNIFICANCE CRITERIA

1. Involves an irrevocable commitment to loss or destruction of any natural or cultural resources;

The proposed project will not involve the loss or destruction of any natural or cultural resources. The only endangered species identified was a hibiscus plant that is being cultivated in the Maka‘eo community garden. The plan recommends retention of the community garden. There is an anchialine pool on the northern end of the site and two other potential anchialine or wetland areas in the community garden. The master plan recommends preservation and possible enhancement of these natural features.

The project area has been the subject of numerous archaeological surveys. An archaeological literature review and field inspections were conducted to confirm the location of previously identified historic properties on the site. The master plan improvements avoid impacting these known historic properties, and recommends establishment of a cultural preserve to protect sensitive areas. The County is consulting with the State Historic Preservation Division to identify any further cultural resource management work to comply with historic preservation regulations. A Cultural Impact Assessment has been completed. Most of the concerns raised by the consulted parties, such as the need to protect sensitive archaeological and burial areas and the desire to retain open space have been incorporated into the master plan.

2. Curtails the range of beneficial uses of the environment;

During construction of the various master plan improvements, the beneficial use of certain areas of the park may be temporarily curtailed. Facilities may be temporarily closed or traffic flow diverted for public safety. However, these impacts will be temporary, and when improvements are completed, recreational opportunities and beneficial uses of the environment will be enhanced. Given the shortage of publicly accessible beach access on the Big Island, the master planned park will ensure that future generations will be given the opportunity to enjoy the park for the long term future.

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 consistent with the environmental policies established in Chapter 344, HRS, which seeks to “*encourage productive and enjoyable harmony between people and their environment, promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humanity, and enrich the understanding of the ecological system and natural resources important to the people of Hawai‘i.*” (HRS §344-1)

The proposed master plan improvements are consistent with the Chapter 344 policy of conserving natural resources by... “*Establishing communities which provide a sense of identify, wise use of land, efficient transportation, and aesthetic and social satisfaction in harmony with the natural environment which is uniquely Hawaiian...*”

The master plan recommendations are consistent with and promote the following Chapter 344 guidelines:

- (2) Land, water, mineral, visual, air and other natural resources.
  - (B) Promote irrigation and waste water management practices which conserve and fully utilize vital water resources;
  - (E) Establish and maintain natural area preserves, wildlife preserves, forest reserves, marine preserves, and unique ecological preserves;
  - (F) Maintain an integrated system of state land use planning which coordinates the state and county general plans.
  - (G) Promote the optimal use of solid wastes through programs of waste prevention, energy resource recovery, and recycling so that all our wastes become utilized.
- (3) Flora and fauna.
  - (B) Foster the planting of native as well as other trees, shrubs, and flowering plants compatible to the environment.
- (4) Parks, recreation and open space.
  - (A) Establish, preserve and maintain scenic, historic, cultural, park and recreation areas, including the shorelines, for public recreational, educational, and scientific uses;
  - (B) Protect the shorelines of the State from encroachment of artificial improvements, structures, and activities;
  - (C) Promote open space in view of its natural beauty not only as a natural resource but as an ennobling, living environment for its people.
- (5) Transportation
  - (A) Encourage transportation systems in harmony with the lifestyle of the people and environment of the State

- (10) Citizen participation.
  - (B) Provide for expanding citizen participation in the decision making process so it continually embraces more citizens and more issues.

4. Substantially affects the economic or social welfare of the community or state;

The proposed project will have a very positive effect on the economic and social welfare of the West Hawai'i community, by expanding and enhancing active and passive recreational opportunities. The youth and senior center will be a needed venue for organized activities, programs and services targeting these groups. The park is intended to be a gathering place for families, and will help promote a sense of community among local residents.

5. Substantially affects public health;

The proposed park improvements will have an extremely positive impact on both physical and mental health, by providing more opportunities for indoor and outdoor recreation, exercise, and enjoyment of nature. The proposed community center will provide needed services for youth and seniors in a safe and supportive environment, enhancing both physical and mental health. Park facilities provide a broad range of venues for recreation and exercise for all ages, gender and levels of activity. In addition to the gymnasium, swimming pool and sports fields, other low physical impact recreational opportunities promoting public health include bicycle and walking paths, participation in the Maka'eo walking and jogging path gardens and the horseshoe pits. The enhanced open space and beach areas of the site will be available for passive enjoyment.

Construction-related impact to air quality and noise will be temporary, and far outweighed by the project's long-term health benefits.

During periods when of heavy "vog" associated with Kilauea volcano, air quality should be routinely monitored by County DPR staff and coaches, and strenuous active sports may need to be reduced or suspended if National Ambient Air Quality Standard (NAAQS) are exceeded.

6. Involves secondary impacts such as population changes or effects on public facilities;

The project will not induce population changes. Rather, the park improvements are a response to an increase in West Hawai'i's population that has resulted in unmet demand for recreational opportunities. The proposed improvements will increase water, wastewater and electrical demand at the park. This will be mitigated through appropriate infrastructure upgrades, use of energy saving fixtures, and incorporation of sustainable and green concepts wherever possible.

7. Involves a substantial degradation of environmental quality;

Construction-period impacts related to noise and air quality will be temporary and short-term, and will not degrade environmental quality. Implementation of the master plan recommendations

will enhance environmental quality in the long run. Removal of the massive runway will substantially reduce heat gain on the site, provide additional vegetated areas, and improve drainage conditions. The construction of bio-basins will also enhance drainage and reduce storm water runoff. Sensitive archaeological sites will be protected and enhanced. More energy efficient lighting and heating systems are recommended for the existing swimming/ball field/gymnasium complex and new tennis courts.

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

The Kona CDP identifies Kailua Park a “district park,” and specifically recommends improvement and upgrade of its facilities. The Kona CDP also calls for future development of a “regional park” at Kealakehe, to compliment and supplement public recreational facilities. The Kona CDP recommendations represent the County’s commitment to larger actions to improve recreation in the Kona region.

The master plan emphasizes retention and enhancement of the beach front and open areas at Kailua Park. This conserves open space for the long-term future, and could become a catalyst to develop an integrated network of publicly accessible open spaces. For example, linkages could be created to connect Kailua Park to other shoreline areas, as well as to the future regional park at Kealakehe.

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

No rare, threatened or endangered species or its habitat will be impacted by the project. An endangered hibiscus plant (*Hibiscus clayi*) has been planted in the Maka‘eo community garden. Because the master plan recommends retention and expansion of the Maka‘eo Walking and Jogging Path and garden, the project will not have an adverse impact.

Park lighting will comply with County lighting regulations intended to minimize adverse impact to seabirds and nocturnal migrant species, including the Newell’s shearwater. The plan recommends preservation and possible restoration of the anchialine pond(s) on the site, which will have a positive effect on this unique habitat.

10. Detrimentially affects air or water quality or ambient noise levels;

The project will result in short-term construction period increases in fugitive dust and noise. These impacts are unavoidable, and will be mitigated by compliance with applicable State and County regulations. Once the project is completed, there will be a positive impact on water quality due to the increase in pervious surfaces on the property. There will be no increase in noise adjacent to the Kona Bay Estates, as no changes are proposed for the athletic fields adjacent to the subdivision.

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;

Portions of the project area are within the VE and AE flood zones, special flood hazard areas that would be inundated by a flood with a 1% chance of occurrence in any given year. Structures that may be built in these areas include restrooms, pavilions, paths, and walls. The requirements of Hawai'i County Code Chapter 27, Flood Plain Management will be followed, to ensure that there is no rise in base flood elevation and adverse impact to the flood plain due to these improvements.

12. Substantially affects scenic vistas and viewplanes identified in county or state plans or studies; or

The project will not impact scenic vistas or viewplanes identified in county or state plans or studies. Rather, it will preserve view planes to the ocean for the public to enjoy in the long term future.

13. Requires substantial energy consumption.

The project will not require substantial energy consumption. Energy resources will be consumed during project construction. The proposed improvements such as the youth and senior center, new tennis complex, canoe halau, and newly landscaped areas will increase water, electrical and waste water demand. The County will work with the appropriate utility providers to ensure that adequate service is available to the park. Renewable energy sources such as solar and wind power will be investigated and used whenever possible. Materials such as the demolished runway pavement will be recycled, and green building design will be incorporated in new structures. A recommended goal of the master plan is to build new facilities to LEED Silver rating.

## CONCLUSION

In accordance with the provisions set forth in Chapter 343 HRS and the significance criteria in Section 11-200-12 of Title 11, Chapter 200, Hawai'i Administrative Rules, this assessment has determined that the project will not have significant adverse impacts. Anticipated impacts related to construction activities will be mitigated through use of best management practices (BMP) during construction. Adequate mitigation has been identified for other potential impacts. The County of Hawai'i anticipates filing a Finding of No Significant Impact (FONSI) with the State Office of Environmental Quality Control.

## 8 BIBLIOGRAPHY

County of Hawai‘i, *Mapping Kona’s Future, Kona Community Development Plan, Volume 1*, September 2008

County of Hawai‘i, *General Plan*, February 2005.

County of Hawai‘i, *Recreation Plan*. 1974

Cultural Surveys Hawai‘i, *Literature Review and Field Inspection for the Kailua Park Master Planning Project Keahuolu and Lanihau Ahupua ‘a, North Kona, Hawai‘i*. January 2010.

\_\_\_\_\_. *Cultural Impact Assessment for the Kailua Park Master Planning Project Keahuolu and Lanihau Ahupua ‘a, North Kona, Hawai‘i*. April 2010.

David, Reginald E., Rana Biological Consulting, Inc. and Eric Guinther, AECOS Consultants. *Biological Surveys Conducted for the Proposed Kailua Park Master Plan, North Kona District, Island of Hawai‘i*. October 29, 2009.

ECS, Inc., Internal letter report on Kailua Park electrical utilities, 2009.

Environmental Resources Management, *Hazardous Materials Survey, Assessment and Planning, Kailua Park Aquatic Center*, Prepared for County of Hawai‘i, Department of Parks and Recreation, November 2009.

\_\_\_\_\_. *Hazardous Materials Survey, Assessment and Planning, Kailua Park Canoe Halaus*, Prepared for County of Hawai‘i, Department of Parks and Recreation, November 2009.

Kimura International, Inc., *Draft Kailua Park Master Plan*, 2009.

\_\_\_\_\_. *Phase I Environmental Site Assessment*, Kailua Park, July 2009

Ng, Julian, Inc., Internal letter report on Kailua Park Master Plan traffic impact, 2009.

R.M. Towill, Inc., Internal letter report on Kailua Park water, sewer and drainage facilities, 2009.

State of Hawai‘i, Hawai‘i Administrative Rules, §13-37, Old Kona Airport Marine Life Conservation District

State of Hawai‘i Department of Health, Wastewater Branch, *Guidelines for the Treatment and Use of Recycled Water*, May 15, 2002

## 9 PERSONS AND AGENCIES INVOLVED IN THE PREPARATION OF THE ENVIRONMENTAL ASSESSMENT

### 9.1 LIST OF PREPARERS

This Draft Environmental Assessment was prepared for the County of Hawai'i Department of Parks and Recreation. The following individuals were involved in the preparation of the EA.

<b>Name</b>	<b>Contribution/Specialization</b>
<b>County of Hawai'i, Department of Parks and Recreation</b>	
<i>Robert Fitzgerald</i>	Director, Dept. of Parks & Recreation
<i>James Komata, Park Planner</i>	Project Manager
<b>Kimura International, Inc.</b>	
<i>Glenn T. Kimura</i>	Prime Consultant, Master Plan and Environmental Assessment
<i>Leslie Kurisaki</i>	EA Primary Author
<i>Brandis Ueyama</i>	Phase I ESA
<i>Fletcher Kimura, Ph.D.</i>	Phase I ESA
<b>Cultural Surveys Hawai'i</b>	
<i>Mindy Simonson</i>	Archaeology
<i>Margaret Magat, Ph.D.</i>	Cultural Impact Assessment
<b>Rana Biological Consulting, Inc.</b>	
<i>Reginald E. David</i>	Avifauna and Mammalian Survey
<b>AECOS Consultants</b>	
<i>Eric Guinther</i>	Botanical Survey
<b>Miyabara &amp; Associates</b>	
<i>Michael Miyabara, FASLA</i>	Landscape Architecture
<b>R.M. Towill, Inc.</b>	
<i>Jason Tateishi, PE</i>	Civil Engineering
<b>ECS, Inc.</b>	
<i>Lennox Nishimura, PE</i>	Electrical Engineering
<i>Garret Masuda, PE</i>	Electrical Engineering
<b>Julian Ng, Inc.</b>	
<i>Julian Ng, PE, PTOE</i>	Traffic Engineering

## 9.2 Organizations Consulted During Preparation of the Draft EA

As part of the early consultation process, the following agencies and organizations were sent pre-assessment letters in September 2009, requesting comments prior to the completion of the Draft Environmental Assessment.

A copy of the letter requesting pre-assessment comments is reproduced after the listing.

### Federal

U.S. Army Corps of Engineers

- Civil Works Technical Branch
- Regulatory Branch

U.S. Fish and Wildlife Service

### State

Department of Land and Natural Resources

- Historic Preservation Division
- Land Division

Department of Health

- Environmental Health
- Disability and Communication Access Board

Office of Hawaiian Affairs

Department of Business, Economic Development and Tourism

Department of Education

### County of Hawai'i

Office of the Mayor

Office of Aging

Civil Defense

Department of Water Supply

Department of Environmental Management

Fire Department

Police Department

Department of Parks and Recreation

Department of Planning

Department of Public Works

Department of Research and Development

Mass Transit Agency

Utilities

Hawaiian Electric Company, Inc.  
Hawaiian Telcom  
Oceanic Time Warner Cable

9.3 Comments Received During Pre-Assessment Consultation

Letters from the following agencies/department were received during the pre-consultation period, and are reproduced in this chapter. The table below summarizes the agency comments and provides a response. The comment letters are included at the end of this chapter.

Table 9-1: Early Consultation Comments Received

Agency/Organization	Date	Agency Comments	Action/Response
<b>Federal</b>			
U.S. Army Corps of Engineers, Regulatory Branch	September 29, 2009	Recommend DEA identify all water resources on and in vicinity, characterize hydrology and ecology and provide description of ground disturbing activities. Section 10 requires DA permit for work affecting navigable waters; Section 404 requires DA permit for discharge of dredge/fill material into U.S. waters, including jurisdictional wetlands.	EA identifies water resources and potential wetlands (i.e. anchialine ponds). No work affecting navigable waters is proposed. No discharge of dredge/fill material is proposed.
U.S. Department of the Interior, Fish and Wildlife Service	November 20, 2009	Federally threatened green sea turtle and endangered Hawksbill sea turtle have been observed in vicinity; recommend addressing potential impacts and mitigation. Hawaiian hoary bats roost in woody vegetation and leave young unattended; recommend no removal of woody plants above 15 ft during birthing and pup rearing season (May through August). Recommend survey for presence of Blackburn's sphinx moth host plants. Recommend shielded lighting around shoreline. Recommend prohibiting free movement of pets, discourage feeding of feral animals, and provide animal-proof garbage containers. Recommend use of native plants for landscaping.	Information and recommendations are consistent with those provided in the Biological Studies conducted for the EA. No host plants for Blackburn's sphinx moth. Recommendations will be included in EA.
<b>State of Hawai'i</b>			
Department of Land and Natural Resources (DLNR)	October 12, 2009	See comments by various DLNR departments below.	
--Division of Aquatic Resources		No comments	
--Division of Boating & Ocean Recreation		No comments	

Agency/Organization	Date	Agency Comments	Action/Response
--Land Division, Hawai'i District		No comments	
--Office of Conservation & Coastal Lands		No comments	
--Engineering Division		Project site in Flood Zones X, AE and VE; development within Special Flood Hazard Area must comply with National Flood Insurance Program rules and regs.	EA states that development in flood hazard areas must comply with NFIP rules and regs.
--Division of State Parks		On November 16, 2007, Land Board recommended to Governor that Old Kona Airport State Rec area be set aside for County park, with condition that State Parks retain 5-acre portion (which includes old hangar building, mobile office and surroundings) for Kona base yard. Not opposed to relocating but County needs to fund and construct replacement first. Letter sent to Mayor Kenoi on 9/1/09 stating this concern.	Information included in EA and forwarded to County.
--Na Ala Hele Program		Plan depicts alignment identified as Ala Kahakai Trail. Per prior settlement agreement for Old Kona Hawai'i Trails Group v. State of Hawai'i (Civil No. 86-212, Third Circuit Court), the government relinquished its interest in the "Old Hawaiian Trail." In return, owners of Kona Bay Estates lots granted State easements for pedestrian beach access and use of 2-ft walkway parallel to makai boundary of lots. Ala Kahakai Trail alignment shown is not a historic trail alignment, but an easement to walk along a wall .	Information included in EA and forwarded to County. Further efforts regarding Ala Kahakai Trail to be coordinated between County, National Park Service and Kona Bay Estates.
Department of Land and Natural Resources (DLNR), State Historic Preservation Division	October 14, 2009	Area contains numerous burials including under sand makai and north of runway. Certain sections of park designated for permanent preservation, possibility of encountering historic properties when removing runway. Recommend archaeological monitoring during ground altering activities.	SHPD position stated in EA. Archaeological Literature Review & Field Inspection (2009) has been transmitted to SHPD in accordance with Section 6E, awaiting official response.
Office of Hawaiian Affairs	October 8, 2009	DEA should include a Cultural Impact Assessment. If arch inventory survey (AIS) submitted to SHPD, request opportunity to comment on the criteria assigned to cultural or archaeological sites identified within the AIS. Request that if iwi kupuna or Native Hawaiian cultural or traditional deposits found during construction, work will cease and appropriate agencies contacted. Recommend use of native vegetation.	DEA will include Cultural Impact Assessment. OHA will be sent copy of Draft EA and have opportunity to comment.

Agency/Organization	Date	Agency Comments	Action/Response
Department of Education	November 13, 2009	MP identifies athletic facilities including aquatics center, baseball & softball parks, football/soccer field. Request that EA include info about envisioned users.	DEA will explain that no new athletic fields are proposed; users will likely remain the same as at present, or as determined by County Parks policy.
<b>County of Hawai'i</b>			
Department of Environmental Management	October 26, 2009	See comments by solid waste and wastewater divisions below.	
--Solid Waste Division		Project requires solid waste management plan during permitting process. Need to implement recycling program per Mayor's Memorandum on recycling. Dept. of Environmental Management is interested in discussing opportunities to grind green trimmings into mulch for DPR use.	Information included in EA. Master plan proposes recycling program. Comments forwarded to DPR.
--Wastewater Division		Development of Kailua Park presents opportunity to establish effective Effluent Reuse program in Kailua-Kona. Reuse water for park irrigation should be an integral component of master plan.	Future use of recycled water from Kealakehe WWTP recommended in master plan.
Fire Department	September 25, 2009	Provide fire apparatus roads in accordance with UFC Section 10.207, and water supply in accordance with UFS Section 10.301(c).	Project will comply. Comments included in EA.
Planning Department	September 28, 2009	EA should address consistency with Kona Community Development Plan and timeline for submittal of SMA application.	EA addresses consistency with Kona CDP and timeline for SMA application.
Police Department	September 15, 2009	Provide easy police accessibility to all points of the park; include police call boxes throughout park; utilize design and function of amenities to promote crime prevention; ensure park improvements don't negatively affect traffic or pedestrian flow along north extension of Kuakini Highway.	Master plan includes accessibility to all areas of the park. Police call boxes and crime prevention through design will be incorporated during design. No negative impact on traffic/pedestrian flow along Kuakini Highway.
Department of Public Works	September 17, 2009	<ol style="list-style-type: none"> <li>1. Confer with Planning Dept. to ensure Kuakini Hwy. extension complies w/ County General Plan, Kona CDP and Hawai'i Long Range Transportation Plan.</li> <li>2. Kuakini Hwy extension as shown doesn't comply with DPW or State highway standards; appears to be designed as one-</li> </ol>	The proposed roadway extending from the proposed roundabout at the realigned Makala Boulevard is not meant to be an "extension" of Kuakini

Agency/Organization	Date	Agency Comments	Action/Response
		<p>way “park” road as it includes reversed angle pkg and no ROW designated.</p> <p>3. Portions of property within Flood Zones AE and VE. New construction and improvements must comply w/Chapter 27, Flood Plain Mgmt, Hawai‘i County Code. Identify flood zones on site plan exhibits.</p>	<p>Highway. Rather, this is an internal, beach access road. If the County and/or State wishes to extend Kuakini Highway as proposed in the Kona CDP, this can still be done.</p> <p>EA states that development in flood zone AE and VE must comply w/Chapter 27. Potential structures include beach pavilions, paths, walls.</p>
Department of Water Supply	October 13, 2009	Water can be made available from 6-inch waterline within Kuakini Hwy and 8-inch line within Kona Bay Rd. Submit water demand calculations showing total max daily water demand and peak flow generated.	Information included in EA. Further coordination with DWS to be conducted during project design.
Department of Research and Development	October 5, 2009	<p>Encouraging to see a multi-use concept not just regional park for ballplayers. Community center is needed.</p> <ul style="list-style-type: none"> <li>▪ Would center be limited to just seniors and youth?</li> <li>▪ Great need for meeting spaces</li> </ul> <p>Traffic is great concern</p> <ul style="list-style-type: none"> <li>▪ How guaranteed that future road will be developed?</li> <li>▪ Does realigning Makala Blvd. mean new rd and closing existing?</li> </ul> <p>Where would annual Farm Fair be held? Proposed plan is welcomed and will meet the needs of many.</p>	<p>Future use of senior/youth center facilities and continuation of Farm Fair are County park management decisions to be determined by DPR.</p> <p>Proposed realignment of Makala Blvd. would result in closing existing road alignment.</p>
Hawai‘i Electric Light Company, Inc.	November 12, 2009	<p>HELCO has adequate generation to serve project. Capacity of existing substation should be adequate to serve anticipated load. Overhead distribution system along Kuakini Highway adequate, but distribution line upgrade and/or extension and additional switches may be required. Recommend energy efficient and conservation measures.</p>	Information included in EA. Further coordination with HELCO to be conducted during project design.
<b>Other</b>			
Councilmember Kelly Greenwell	October 5, 2009	<p>Final draft plan at charrette included conceptual connection between Kailua Park and Kealakehe Regional Park. Concern this has been omitted in final plan and replaced with road (future); needs to be re-included. Hope planners widen scope and present land use plan to County that incorporates more of surrounding area for broader visioning by</p>	<p>Master plan recommends establishing connection between Kailua Park and Kealakehe Regional Park. Further coordination between</p>

Agency/Organization	Date	Agency Comments	Action/Response
		County. Good planning must consider the future needs of the community.	County and adjacent landowner (Queen Lili'uokalani Trust) is needed to work out this issue.
Megan Mitchell	e-mail dated September 16, 2009	Concern for quality of life issues for surrounding landowners—noise, lights, crowds making noise. Amplified music must be contained. How are acoustics/noise for outside events being addressed? Shoreline should be protected for wildlife and peace for humans. Concern about waste of electricity and water, how being handled? Need to prevent light impacts on telescopes.	EA addresses noise and light impacts. No additional playing fields proposed near Kona Bay Estates. Lighting to comply with County code. Control of amplified music, noise at park are management issues to be determined by DPR. Master plan recommends maintaining shoreline areas in open space.

Add comment letters



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

September 29, 2009

REPLY TO  
ATTENTION OF:

Regulatory Branch

File Number: POH-2009-0285

Glenn T. Kimura, President  
Kimura International, Inc.  
1600 Kapiolani Blvd., Suite 1610  
Honolulu, Hawai'i 96814

RECEIVED OCT 01 2009

Dear Mr. Kimura:

This letter is in response to your request, dated September 8, 2009, for our review and early consultation comments for the proposed Kailua Park Master Planning Project located in North Kona, Island of Hawai'i, Hawai'i (TMK 375005007).

We recommend your Draft Environmental Assessment identify all water resources (i.e. streams, wetlands, anchialine ponds) on and in the immediate vicinity of the proposed project site; characterize the hydrology and ecology of those features; provide a detailed description of all ground-disturbing activities associated with the project construction occurring on and in the immediate vicinity of the project site; and provide a cross-section of the proposed work and the existing conditions at the proposed project location.

Section 10 of the Rivers and Harbors Act (RHA) of 1899 requires that a Department of Army (DA) permit be obtained for structures or work in or affecting navigable waters of the U.S. (33 U.S.C. 403). Section 404 of the Clean Water Act (CWA) of 1972 requires that a DA permit be obtained for the discharge (placement) of dredge and/ or fill material into waters of the U.S., including jurisdictional wetlands. The Corps defines wetlands as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions.

If you have any questions, please contact Ms. Meris Bantilan-Smith, of my Regulatory staff at 808-438-7023 or by electronic mail at [Meris.Bantilan-Smith@usace.army.mil](mailto:Meris.Bantilan-Smith@usace.army.mil). Please include File Number POH-2009-285 in any future correspondence regarding this project. Please be advised you can provide comments on your experience with the Corps' Honolulu District Regulatory Branch by accessing our web-based customer survey form at <http://per2.nwp.usace.army.mil/survey.html>.

Sincerely,

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



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Pacific Islands Fish and Wildlife Office  
300 Ala Moana Boulevard, Room 3-122, Box 50088  
Honolulu, Hawaii 96850

NOV 20 2009

In Reply Refer To:  
2010-TA-0048

Mr. Glenn T. Kimura, President  
Kimura International, Inc.  
1600 Kapiolani Boulevard, Suite 1610  
Honolulu, Hawaii 96814

RECEIVED NOV 24 2009

Subject: Information for Preparation of draft Environmental Assessment for the Kailua Park Master Planning Project, North Kona, Hawaii

Dear Mr. Kimura:

Thank you for your letter dated October 28, 2009, received October 30, 2009, requesting information for the preparation of a draft Environmental Assessment (DEA) for the Kailua Park (aka Old Airport Park/Makaeo) Master Planning Project. The proposed project is located in North Kona, on the island of Hawaii [TMK: (3) 7-5-005:007, 083]. At build-out, this master planned park will have an active outdoor/indoor sports zone, a new 'community center' zone, and an open space and cultural zone. This project will be located on approximately 117 acres (47 hectares) of land that includes the existing Kailua Park and the former Old Kona Airport State Recreation Area. The proposed project will remove the existing asphalt runway of the Old Kona Airport and replace it with a meandering road and vegetated areas.

We have reviewed the project information you provided and pertinent information in our files, including data compiled by the Hawaii Biodiversity and Mapping Program and the Hawaii GAP Program. The federally endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), the federally threatened green sea turtle (*Chelonia mydas*) and the endangered Hawksbill sea turtle (*Eretmochelys imbricata*) have been observed in the vicinity of the proposed project location. We recommend you address potential project impacts to these listed species and include measures to minimize adverse impacts to these resources in your DEA.

Hawaiian hoary bats roost in both exotic and native woody vegetation and leave their young unattended in "nursery" trees and shrubs when they forage. If trees or shrubs suitable for bat roosting are cleared during the bat breeding season (April to August), there is a risk that young bats could inadvertently be harmed or killed. To minimize impacts to the endangered Hawaiian hoary bat, woody plants greater than 15-feet (4.6-meters) tall will not be removed or trimmed during the bat birthing and pup rearing season (May 15 through August 15).

TAKE PRIDE®  
IN AMERICA 

The endangered Blackburn's sphinx moth (*Manduca blackburni*) may occur in the project area. The adult moth feeds on nectar from native plants including beach morning glory (*Ipomoea pes-caprae*), iliee (*Plumbago zeylanica*), and maiapilo (*Capparis sandwichiana*), and the larvae feed upon non-native tree tobacco (*Nicotiana glauca*) and the native aiea (*Nothocestrum breviflorum*). All of these species may occur on the project site. We recommend you survey the site for the presence of Blackburn's sphinx moth host plants and if host plants are found, contact our office for further assistance.

Sea turtles come ashore to nest on beaches from May through September, peaking in June and July. Many factors affect the potential survival of these turtles, including the loss or destruction of nesting and basking beaches, predation, and other human activities such as the use of artificial lights. Optimal nesting habitat is a dark beach free of barriers that restrict their movement. We recommend installation of shielded lighting around the shoreline development. This will reduce the direct and ambient lighting of the beach habitats within and adjacent to the project site. Effective light shields should be completely opaque, sufficiently large, and positioned so that light from the shielded source does not reach the beach.

We recommend prohibiting free movement of pets in the proposed Beach Park. Signs should be posted that discourage feeding feral animals in the park. In addition, we recommend providing sturdy animal-proof garbage containers to prevent the invasion of house mice, rats, mongoose, and feral cats to the area.

Hawaii's native ecosystems are heavily impacted by exotic invasive plants. Whenever possible we recommend using native plants for landscaping purposes. If native plants do not meet the landscaping objectives, we recommend choosing species that are thought to have a low risk of becoming invasive. The following websites are good resources to use when choosing landscaping plants: Pacific Island Ecosystems at Risk (<http://www.hear.org/Pier/>), Hawaii-Pacific Weed Risk Assessment ([http://www.botany.hawaii.edu/faculty/daehler/wra/full\\_table.asp](http://www.botany.hawaii.edu/faculty/daehler/wra/full_table.asp)) and Global Compendium of Weeds ([www.hear.org/gcw](http://www.hear.org/gcw)).

Thank you for the opportunity to provide comments related to your DEA. If you have any questions regarding this letter, please contact Dr. Jeff Zimpfer, Fish and Wildlife Biologist, Consultation and Technical Assistance Program (phone: 808-792-9431; email: [jeff\\_zimpfer@fws.gov](mailto:jeff_zimpfer@fws.gov)).

Sincerely,



for Loyal Mehrhoff  
Field Supervisor

LINDA LINGLE  
GOVERNOR OF HAWAII



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

RUSSELL Y. TSUJI  
FIRST DEPUTY

KEN C. KAWAHARA  
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

October 12, 2009

RECEIVED OCT 16 2009

Mr. Glenn T. Kimura, President  
Kimura International, Inc.  
1600 Kapiolani Blvd Suite 1610  
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: Early Consultation for Draft Environmental Assessment for Kailua Park  
(aka Old Airport Park/Maka'eo) Master Planning Project

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR), Land Division distributed or made available a copy of your letter pertaining to the subject matter to DLNR Divisions for their review and comment(s), as follows:

Division of Aquatic Resources: No comments.  
Division of Boating & Ocean Recreation: No comments.  
Land Division – Hawaii District: No comments.  
Office of Conservation & Coastal Lands: No comments.

Engineering Division: The project sites, according to the Flood Insurance Rate Map (FIRM), are located in Flood Zones X, AE and VE. The Flood Insurance Program does not have any regulations for developments within Flood Zone X, however; it does regulate developments within Zones AE and VE. The Project must comply with the rules and regulations of the national Flood Insurance program (NFIP) presented in Title 44 of the Code of Federal Regulations (44FR), whenever development within a Special Flood Hazard Area is undertaken. Should you have any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, 587-0267. Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local

flood ordinances, please contact Mr. Frank DeMarco at (808) 961-8042 of the County of Hawaii, Department of Public Works.

Division of State Parks: On November 16, 2007, the Land Board approved and recommended to the Governor that the lands at the Old Kona Airport State Recreation Area be set aside to the County of Hawaii for park and recreational purposes. One of the conditions of approval was that State Parks would retain a 5.0 acre portion which included the old hangar building, mobile office, and surrounding area for a Kona sub-unit baseyard.

In the final Master Plan drawing, the existing baseyard is gone, and a temporary State baseyard is indicated. We are not opposed to having a baseyard in a different location, but are in no position to build another. Should the County find a suitable location, and obtain funding to build a permanent baseyard facility then, State Parks would be amenable to relocating. Until such time, State Parks must remain at the existing facility. Enclosed is a copy of our letter to Mayor William P. Kenoi dated September 1, 2009 stating our concerns.

Na Ala Hele Program: The diagram in the Final Master Plan depicts an alignment identified as the Ala Kahakai Trail. Research discloses that as part of a Settlement Agreement under Kona Old Hawaii Trails Group vs. State of Hawaii, et al., Civil No. 86-212, Third Circuit Court, the government relinquished its interest in the "Old Hawaiian Trail". In return, the owners of the lots within Kona Bay Estates, granted to the State of Hawaii easements for Pedestrian Beach Access and the right to use a 2 foot wide walkway that parallels the makai boundaries of those lots. In essence, the public an access the beach through designated public access points and are able to walk along a concrete masonry wall that runs the length of the Kona Bay Estates Subdivision.

Therefore, the Ala Kahakai Trail depicted in the Final Master Plan prepared by Kimura International, Inc. on behalf of the County of Hawaii, is not a historic trail alignment, but is an easement to walk along a wall. Should you have any questions, please feel free to call Ms. Doris Rowland at 587-0057.

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

Sincerely,



Laura H. Thielen  
Chairperson

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

September 1, 2009

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

RUSSELL Y. TSUJI  
DEPUTY DIRECTOR

KEN C. KAWAHARA  
DEPUTY DIRECTOR - WATER

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

The Honorable William P. Kenoi, Mayor  
County of Hawaii  
891 Ululani Street  
Hilo, Hawaii 96720-3982

COPY

Dear Mayor Kenoi:

This is in reply to your letter July 29, 2009 regarding Governor's Executive Order No. 3665 for the Kealakehe Wastewater Reclamation Field and North Kona Golf Course.

As you are aware, Executive Order No. 3665 dated July 18, 1995 set aside 193.547 acres at Kealakehe, North Kona to the Department of Public Works, County of Hawaii, for the Kealakehe Wastewater Reclamation Field and North Kona Golf Course. Under the terms and conditions of the executive order and Hawaii Revised Statutes Section 171-11 the County has management control of the lands as long as they are utilized for the purpose described in the executive order. If the county abandons the lands or ceases to utilize them for the specified purpose, the law provides that the lands are to be returned to the inventory of the Department of Land and Natural Resources so that the department and other agencies can assess the best use of the lands. Accordingly, while we acknowledge the county's request to develop another park in lieu of the specified golf course, we must fully evaluate the needs of the department and other state agencies for the lands before recommending any action to the Land Board.

At their meeting of November 16, 2007 the Board of Land and Natural Resources approved the set aside of Old Kona Airport State Recreation Area to the County of Hawaii. One condition of that approval is that the State retain the existing baseyard including approximately 5 acres of land. We recognize that the County is moving ahead to develop a new vision for the park which does not

Mayor William Kenoi

- 2 -

September 1, 2009

include the existing baseyard. We are not opposed to having a baseyard in a different location, but are in no position to build another. Should the County find a suitable location, and funding to build a baseyard facility, we would be amenable to relocating. Until such time, we must remain at the existing facility.

Very truly yours,



LAURA H. THIELEN

COPY

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

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

RUSSELL Y. TSUJI  
FIRST DEPUTY

KEN C. KAWAHARA  
DEPUTY DIRECTOR - WATER

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

RECEIVED OCT 16 2009

October 14, 2009

Glenn T. Kimura, President  
Kimura International, Inc.  
1600 Kapiolani Blvd., Suite 1610  
Honolulu, Hawaii 96814

LOG NO: 2009.3370  
DOC NO: 0910MD16  
Archaeology

Dear Mr. Kimura:

**SUBJECT: Chapter 6E-8 Historic Preservation Review –  
Request for Comment on a the Kailua Park Master Planning Project/Early  
Consultation for an Environmental Assessment  
Keahuolu & Lanihau 1<sup>st</sup> Ahupua`a, North Kona District, Island of Hawaii  
TMK: (3) 7-5-005:007 & 083**

Thank you for the opportunity to comment on the aforementioned project, which we received on September 10, 2009. This property has also been referred to as the "Old Airport Park" and "Maka`eo" and encompasses 117 acres. As you are no doubt aware this project area contains numerous burials, including underneath the sand makai of the old airport runway and north of the runway. We urge you to have the locations of these areas in mind when designing in particular the northern new road access. Certain sections of the Park are already designated for permanent preservation. Additional concerns that come to mind include the likelihood of encountering historic properties, including burials, when removing the original asphalt runway. Because of these considerations we recommend archaeological monitoring during ground-altering activities at this Park.

An ongoing concern is the periodic exposure of burials due to natural processes along the shoreline. We would like to see a plan for immediate reinterment of remains as part of the Master Plan. If you have questions about this letter please contact Morgan Davis at (808) 933-7650.

Aloha,

A handwritten signature in cursive script that reads "Nancy A. McMahon".

Nancy McMahon, Deputy SHPO/State Archaeologist  
and Historic Preservation Manager  
State Historic Preservation Division

Cc:

Morris M. Atta, DLNR Land Division via email to: [Morris.M.Atta@hawaii.gov](mailto:Morris.M.Atta@hawaii.gov)

Glenn T. Kimura, President  
Kimura International, Inc.  
Page 2 of 2

BJ Leithead Todd, Planning Director  
County of Hawaii Planning Department  
101 Pauahi Street, Suite 3  
Hilo, Hawaii 96720-4224

Warren H.W. Lee, P. E. Director  
County of Hawaii Department of Public Works  
101 Pauahi Street, Suite 7  
Hilo, Hawaii 96720-4224

Analu Josephides, SHPD Cultural Historian, Hawaii Island Section



**STATE OF HAWAII**  
**OFFICE OF HAWAIIAN AFFAIRS**  
711 KAPI'OLANI BOULEVARD, SUITE 500  
HONOLULU, HAWAII 96813

RECEIVED OCT 19 2009

HRD09/4258B

October 8, 2009

Glenn T. Kimura, President  
Kimura International, Inc.  
1600 Kapi'olani Blvd., Suite 1610  
Honolulu, HI 96814

**RE: Early consultation for the Environmental Assessment for the Kailua Park Master Planning Project, North Kona, Hawai'i, TMK: (3) 7-5-005:007 and 083.**

Aloha e Glenn T. Kimura,

The Office of Hawaiian Affairs (OHA) is in receipt of your letter requesting comments on the above-mentioned project. The County of Hawai'i Department of Parks and Recreation propose a Master Planning Project for the 117-acre Kailua Park, North Kona, Hawai'i. The 20-year plan includes a suite of various park improvements. OHA has reviewed the project and offers the following comments.

The Draft Environmental Assessment should include a Cultural Impact Assessment (CIA), in accordance with Chapter 343 of the Hawaii Revised Statutes (HRS). The CIA should include information relating to the Native Hawaiian practices and beliefs associated with the general area of the project site, and it is recommended that the community be involved in this assessment. Consideration must also be afforded to any individuals accessing the project area for constitutionally protected traditional and customary purposes, in accordance with the Hawai'i State Constitution, Article XII, Section 7.

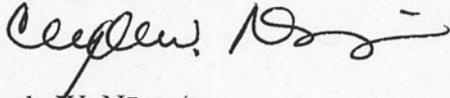
OHA requests clarification whether an archaeological inventory survey for the project will be submitted to the State Historic Preservation Division for review and approval. If so, OHA should be allowed the opportunity to comment on the criteria assigned to any cultural or archaeological sites identified within the archaeological inventory survey. We request the applicant's assurances that should iwi kūpuna or Native Hawaiian cultural or traditional deposits be found during the construction of the project, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

Glenn T. Kimura  
October 8, 2009  
Page 2

In addition, OHA recommends that the applicant use native vegetation in its landscaping plan for subject parcel. Landscaping with native plants furthers the traditional Hawaiian concept of mālama 'āina and creates a more Hawaiian sense of place.

Thank you for the opportunity to comment, and we look forward to reviewing the Environmental Assessment when it becomes available. If you have further questions, please contact Sterling Wong by phone at (808) 594-0248 or e-mail him at [sterlingw@oha.org](mailto:sterlingw@oha.org).

'O wau iho nō me ka 'oia'i'o,



Clyde W. Nāmu'o  
Administrator

C: OHA Kona CRC Office



STATE OF HAWAII  
DEPARTMENT OF EDUCATION  
P.O. BOX 2360  
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

RECEIVED NOV 19 2009

November 13, 2009

Mr. Glenn T. Kimura, President  
Kimura International, Inc.  
1600 Kapiolani Blvd., Suite 1610  
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: Early Consultation on the Kailua Park (aka Old Airport Park/Maka`eo)  
Master Planning Project, TMK (3)-7-5-005:007 & 083

The Department of Education has reviewed your request for early consultation on the Draft Environmental Assessment (EA) for the Kailua Park Master Planning Project.

The Master Plan identifies several athletics facilities, including an aquatics center, baseball and softball parks, a football field, and a soccer/football field. We request that the EA include information about the envisioned users of these facilities.

Thank you for the opportunity to comment. If you have any questions, please contact Jeremy Kwock of the Facilities Development Branch at 377-8301.

Very truly yours,

*for* Patricia Hamamoto  
Superintendent

PH:jmb

c: Randolph Moore, Assistant Superintendent, OSFSS  
Arthur Souza, CAS, Honokaa/Kealahkehe/Kohala/Konawaena Complex Areas

William P. Kenoi  
Mayor



Lono A. Tyson  
Director

Ivan M. Torigoe  
Deputy Director

**County of Hawai'i**  
**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**  
25 Aupuni Street • Hilo, Hawai'i 96720  
(808) 961-8083 • Fax (808) 961-8086  
[http://co.hawaii.hi.us/directory/dir\\_envmng.htm](http://co.hawaii.hi.us/directory/dir_envmng.htm)

RECEIVED OCT 28 2009

October 26, 2009

Mr. Glenn T. Kimura  
President  
KIMURA INTERNATIONAL, INC.  
1600 Kapi'olani Blvd, Suite 1610  
Honolulu, HI 96814

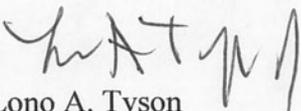
RE: Kailua Park (aka Old Airport Park/Maka'eo) Master Planning Project  
TMK:7-5-005:007 & 083  
North Kona, HI  
Environmental Assessment—Early Consultation

Dear Mr. Kimura,

Our comments on the subject project are enclosed.

Thank you for allowing us to review and comment on this project.

With Regards and Aloha,

  
Lono A. Tyson  
DIRECTOR

enclosures

cc: SWD  
WWD

12082A



## SOLID WASTE DIVISION

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
108 RAILROAD AVENUE - HILO, HAWAII 96720  
(808) 961-8515 - FAX (808) 961-8553

---

### MEMORANDUM

Date: September 11, 2009

To: Lono Tyson, Director

From: Michael Dworsky, SWD Chief

Subject: Early Consultation for EA for Kailua Park (aka Old Airport Park/Maka'eo)  
North Kona District  
TMK: 7-5-005:007 and 083

---

We offer the following comments on the subject project.

#### Solid Waste Division

The project will require submittal of a solid waste management plan during the permitting process through Planning. A copy of the Solid Waste Management Plan Guidelines is on our website. In addition, the Mayor has issued a Memorandum promoting County Recycling programs for county facilities and county employees. Implementing the recycling program as part of the normal operations once the facility is constructed should be addressed as it has social, cultural and community impacts, and economic impacts.

In the Kimura letter of September 09, 2009, they identified that the old existing runway will be replaced by a more defined, meandering road and vegetated area. It was also identified that the northern area of the park will transition into a passive, natural setting. There are currently extensive green trimmings generated from the landscaping that occurs in the Kona area. This valuable resource should not be disposed at the county Landfill. If there are any opportunities to utilize the unprocessed green trimmings by grinding into mulch for utilization by the County of Hawai'i Department of Parks and Recreation (DPR), the Department of Environmental Management would be interested in discussing.



## DEPARTMENT OF ENVIRONMENTAL MANAGEMENT WASTEWATER DIVISION

COUNTY OF HAWAII – 108 RAILROAD AVENUE – HILO, HI 96720  
HILO (808) 961-8338 FAX (808) 961-8644

### MEMORANDUM

October 24, 2009

**To:** Lono Tyson, Director  
Ivan Torigoe, Deputy Director

**From:** L. Hirota, Deputy Division Chief **Lyle Hirota**

**Subject:** Kailua Park (aka Old Airport Park/Maka`eo) Master Planning Project  
TMK 7-5-005:007 and 083, Environmental Assessment – Early Consultation  
North Kona, Hawai`i

Digitally signed by Lyle Hirota  
DN: cn=Lyle Hirota, o=DEM, ou=WWD,  
email=lhirota@co.hawaii.hi.us, c=US  
Date: 2009.10.24 10:45:00 -10'00'

The County of Hawai`i Department of Environmental Management, Wastewater Division (WWD) has reviewed the Early Consultation request and provides the following comments:

Development of the Kailua Park as indicated in the Final Master Plan would provide a golden opportunity to help establish an effective Effluent Reuse program in the Kailua-Kona area.

1. The Kailua Park represents a significant land area (approximately 117 acres), the Master Plan depicts significant greenery which would require significant amounts of irrigation due to the natural climate in the area, and the WWD has an existing easement for the Kealakehe Sewage Pump Station (KSPS) which connects the park to the Kealakehe Wastewater Treatment Plant (KWWTP).
  - a. The approximate distance from the KWWTP to the Kailua Park is 0.95 miles based on the easement path.
  - b. It is noted that the existing reuse line serving the Swing Zone complex is routed via the KSPS easement but is sized only to serve the private facility.
  - c. The Kealakehe Wastewater Treatment Plant Effluent Reuse Master Plan, February 1999 (1999 Effluent Reuse Master Plan) prepared by Brown and Caldwell identified the Kailua Park as a major potential user (3 million gallons (MG) per month or 0.1 MGD) of reuse water based on 25 to 30 acres of irrigated land.
    - Development of the Kailua Park as indicated in the Final Master Plan would significantly increase the irrigation needs for the facility well beyond the previously projected amount.
2. An Effluent Reuse system via the Kailua Park would allow servicing of additional properties in the area.
  - a. Several additional properties in the vicinity (Queen Lili`uokalani Children's Center, Swing Zone, and the Kona Bay Estates) were identified in the 1999 Effluent Reuse Master Plan as potential uses of reuse water for irrigation needs.

- b. Total projected needs for these additional properties at the time of the study was 2.4 MG per month (0.08 MGD)

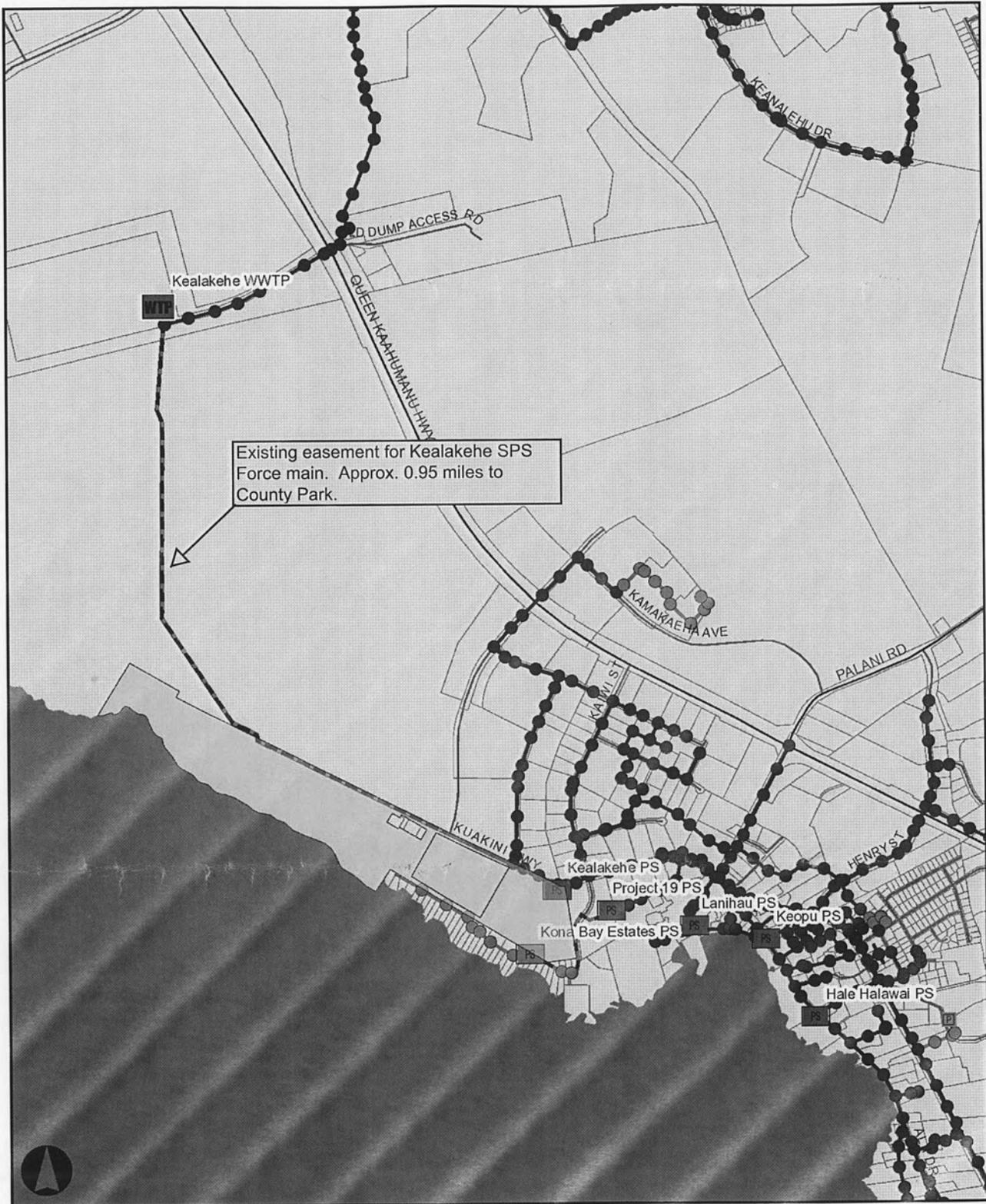
Based on the above, it is strongly recommended that Kimura International, Inc. as well as the Department of Parks and Recreation be advised that reuse water should be an integral component of the Kailua Park Master Plan since use of Reuse Water to irrigate the proposed park would serve to protect the environment as well as potable water resources in the area.

Should there be any comments or questions on the above please contact me at 961-8333 ([lhirota@co.hawaii.hi.us](mailto:lhirota@co.hawaii.hi.us)) or Dora Beck, P.E., Wastewater Division Chief at 961-8513 ([dbeck@co.hawaii.hi.us](mailto:dbeck@co.hawaii.hi.us)).

#### Attachments

cc: Dora Beck, P.E., Division Chief  
Jeffrey Frechtling, CE V  
Peter Ono, Managing Engineer, Brown and Caldwell  
Craig Lekven, Supervising Engineer, Brown and Caldwell

# Map/Results



William P. Kenoi  
Mayor



Darryl J. Oliveira  
Fire Chief

Glen P. I. Honda  
Deputy Fire Chief

County of Hawai'i  
HAWAII FIRE DEPARTMENT  
25 Aupuni Street • Suite 103 • Hilo, Hawai'i 96720  
(808) 981-8394 • Fax (808) 981-2037

RECEIVED OCT 02 2009

September 25, 2009

Mr. Glenn T. Kimura  
Kimura International Inc.  
1600 Kapiolani Blvd., Suite  
Honolulu, Hawai'i 96814

**SUBJECT:** ENVIRONMENTAL ASSESSMENT – EARLY CONSULTATION  
PROJECT: KAILUA PARK MASTER PLANNING PROJECT  
TMK: (3) 7-5-005:007 & 083

---

In regards to the above-mentioned early consultation Environmental Assessment, the following shall be in accordance:

Fire apparatus access roads shall be in accordance with UFC Section 10.207:

**"Fire Apparatus Access Roads**

**"Sec. 10.207. (a) General.** Fire apparatus access roads shall be provided and maintained in accordance with the provisions of this section.

**"(b) Where Required.** Fire apparatus access roads shall be required for every building hereafter constructed when any portion of an exterior wall of the first story is located more than 150 feet from fire department vehicle access as measured by an unobstructed route around the exterior of the building.

**"EXCEPTIONS:** 1. When buildings are completely protected with an approved automatic fire sprinkler system, the provisions of this section may be modified.

2. When access roadways cannot be installed due to topography, waterways, nonnegotiable grades or other similar conditions, the chief may require additional fire protection as specified in Section 10.301 (b).



"3. When there are not more than two Group R, Division 3 or Group M Occupancies, the requirements of this section may be modified, provided, in the opinion of the chief, fire-fighting or rescue operations would not be impaired.

"More than one fire apparatus road may be required when it is determined by the chief that access by a single road may be impaired by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access.

"For high-piled combustible storage, see Section 81.109.

"(c) **Width.** The unobstructed width of a fire apparatus access road shall meet the requirements of the appropriate county jurisdiction.

"(d) **Vertical Clearance.** Fire apparatus access roads shall have an unobstructed vertical clearance of not less than 13 feet 6 inches.

**"EXCEPTION:** Upon approval vertical clearance may be reduced, provided such reduction does not impair access by fire apparatus and approved signs are installed and maintained indicating the established vertical clearance.

"(e) **Permissible Modifications.** Vertical clearances or widths required by this section may be increased when, in the opinion of the chief, vertical clearances or widths are not adequate to provide fire apparatus access.

"(f) **Surface.** Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be provided with a surface so as to provide all-weather driving capabilities." (20 tons)

"(g) **Turning Radius.** The turning radius of a fire apparatus access road shall be as approved by the chief." (45 feet)

"(h) **Turnarounds.** All dead-end fire apparatus access roads in excess of 150 feet in length shall be provided with approved provisions for the turning around of fire apparatus.

"(i) **Bridges.** When a bridge is required to be used as access under this section, it shall be constructed and maintained in accordance with the applicable sections of the Building Code and using designed live loading sufficient to carry the imposed loads of fire apparatus.

"(j) **Grade.** The gradient for a fire apparatus access road shall not exceed the maximum approved by the chief." (15%)

Glenn T. Kimura  
September 25, 2009  
Page 3

"(k) **Obstruction.** The required width of any fire apparatus access road shall not be obstructed in any manner, including parking of vehicles. Minimum required widths and clearances established under this section shall be maintained at all times.

"(l) **Signs.** When required by the fire chief, approved signs or other approved notices shall be provided and maintained for fire apparatus access roads to identify such roads and prohibit the obstruction thereof or both."

Water supply shall be in accordance with UFC Section 10.301(c):

"(c) **Water Supply.** An approved water supply capable of supplying required fire flow for fire protection shall be provided to all premises upon which buildings or portions of buildings are hereafter constructed, in accordance with the respective county water requirements. There shall be provided, when required by the chief, on-site fire hydrants and mains capable of supplying the required fire flow.

"Water supply may consist of reservoirs, pressure tanks, elevated tanks, water mains or other fixed systems capable of providing the required fire flow.

"The location, number and type of fire hydrants connected to a water supply capable of delivering the required fire flow shall be protected as set forth by the respective county water requirements. All hydrants shall be accessible to the fire department apparatus by roadways meeting the requirements of Section 10.207.

  
DARRYL OLIVEIRA  
Fire Chief

RP:lpc

William P. Kenoi  
Mayor



BJ Leithead Todd  
Planning Director

Margaret K. Masunaga  
Deputy Planning Director

## County of Hawaii

### PLANNING DEPARTMENT

Aupuni Center • 101 Pauahi Street, Suite 3 • Hilo, Hawaii 96720  
Phone (808) 961-8288 • Fax (808) 961-8742

September 28, 2009

RECEIVED OCT 01 2009

Ms Leslie Kurisaki  
Kimura International, Inc.  
1600 Kapiolani Blvd., Suite 1610  
Honolulu, HI. 96814

Dear Ms. Kurisaki:

**Pre-Assessment Consultation  
Request for Comments  
Kailua Park Master Plan  
TMK: (3) 7-5-005:007 & 083**

---

We have the following comments regarding the forthcoming Environmental Assessment for the Kailua Park Master Plan:

1. Please have the EA address the project's consistency with Kona Community Development Plan.
2. Please have the EA address the timeline for submittal of Special Management Area Use Permits Applications

Thank you for the opportunity to comment on the proposed project. Should you have questions, please contact Deanne Bugado of our Kona office at 327-3510.

Sincerely,

  
BJ LEITHEAD TODD  
Planning Director

DEB:deb

K:\Staff\Deanne\Letters\7-5-005-007 & 083 Kailua Park Master Plan Pre-Assessment Consultation Comments.doc

xc: Planning Department, Kona

**William P. Kenoi**  
Mayor



**Harry S. Kubojiri**  
Police Chief

**Paul K. Ferreira**  
Deputy Police Chief

## County of Hawaii

### POLICE DEPARTMENT

349 Kapiolani Street • Hilo, Hawaii 96720-3998  
(808) 935-3311 • Fax (808) 961-8865

September 15, 2009

RECEIVED SEP 18 2009

Mr. Glenn T. Kimura  
Kimura International Inc.  
1600 Kapiolani Blvd., Suite 1610  
Honolulu, Hawaii 96814

**SUBJECT:** Environmental Assessment – Early Consultation  
Kailua Park (aka “Old Airport Park”/”Maka’eo”)  
Master Planning Project  
North Kona, Hawaii  
TMK: (3) 7-5-005: 007 & 083

Dear Mr. Kimura:

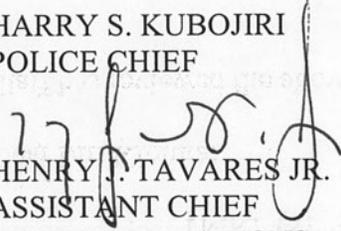
Staff has reviewed the above-mentioned assessment and has the following comments:

- Provide easy police accessibility to all points of the park.
- Strategically place police call boxes throughout the park.
- Utilize design and function of amenities to promote crime prevention.
- Ensure that park improvements do not negatively affect traffic or pedestrian flow along the north extension of Kuakini Highway.

If you have any further questions please contact Chad Basque, Kona District Commander, at 326-4646, extension 249.

Sincerely,

HARRY S. KUBOJIRI  
POLICE CHIEF

  
HENRY J. TAVARES JR.  
ASSISTANT CHIEF  
AREA II OPERATIONS

CB/JD  
RS0900698

William P. Kenoi  
Mayor

William T. Takaba  
Managing Director



Warren H. W. Lee  
Director

**County of Hawai'i**  
**DEPARTMENT OF PUBLIC WORKS**  
Aupuni Center  
101 Pauahi Street, Suite 7 · Hilo, Hawai'i 96720-4224  
(808) 961-8321 · Fax (808) 961-8630  
www.co.hawaii.hi.us

September 17, 2009

RECEIVED SEP 23 2009

Glenn T. Kimura, President  
Kimura International  
1600 Kapiolani Blvd. Suite 1610  
Honolulu, HI 96814

Subject: Kailua Park (aka Old Airport Park/Makaeo) Master Planning Project  
Environmental Assessment –Early Consultation  
North Kona District, Kailua Kona, Hawaii  
TMK: (3) 7-5-005:007 & 083

We reviewed the subject and our comments are as follows:

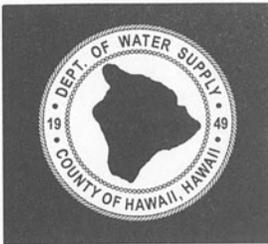
1. Does the Kuakini Highway extension comply with the County General Plan, the Kona Community Development Plan and the Hawaii Long Range Transportation Plan? We recommend conferring with the Planning Department to make a determination.
2. The Kuakini Highway extension as shown on the master plan does not comply with DPW or State Highway standards. It appears to be designed as a one-way "Park" road as it includes reversed angle parking stalls and there is no right-of-way designated.
3. Portions of the property are within Flood Zones AE and VE as shown on the Flood Insurance Rate Map. New construction and substantial improvements must comply with Chapter 27 Flood Plain Management of Hawaii County Code. Please identify the flood zones on the site plan exhibits.

If you have any questions, please contact Kiran Emler of our Kona office at 327-3530.

Galen M. Kuba, Division Chief  
Engineering Division

KE

c: ENG - HILO/KONA  
Planning Director



**DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAI'I**

345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAI'I 96720

TELEPHONE (808) 961-8050 • FAX (808) 961-8657

October 13, 2009

Mr. Glenn T. Kimura  
Kimura International, Inc.  
1600 Kapiolani Boulevard, Suite 1610  
Honolulu, HI 96814

RECEIVED OCT 15 2009

**PRE-ENVIRONMENTAL ASSESSMENT CONSULTATION  
KAILUA PARK MASTER PLAN  
TAX MAP KEY 7-5-005:007 AND 083**

This is in response to your letter dated September 9, 2009.

Water can be made available from an existing 6-inch waterline within Kuakini Highway and an 8-inch waterline within Kona Bay Road, both fronting the subject parcels.

Before we can effect a water commitment for the proposed Kailua Park improvements, the Department will require that estimated water demand calculations, prepared by a professional engineer licensed in the State of Hawai'i, be submitted for review and approval. The water demand calculations must show the total maximum daily water demand for all new improvements (in gallons per day) as well as the peak flow generated by the new improvements (in gallons per minute).

Upon review and approval of the water demand calculations, the Department will determine whether water can be made available, facilities charges due (subject to change), and any water system improvements required for service.

We will also note that any existing or additional meter(s) that will serve the project must have a reduced pressure type backflow prevention assembly installed within five (5) feet of the meter on private property.

Should there be any questions, please contact Mr. Finn McCall of our Water Resources and Planning Branch at 961-8070, extension 255.

Sincerely yours,

Milton D. Pavao, P.E.  
Manager

FM:dfg

copy - DWS Customer Service Sections (Hilo and Kona)  
DWS Cross Connection Section

William P. Kenoi  
Mayor



Randall M. Kurohara  
Director

**County of Hawaii**  
**DEPARTMENT OF RESEARCH AND DEVELOPMENT**  
25 Aupuni Street, Room 109 • Hilo, Hawaii 96720-4252  
(808) 961-8366 • Fax (808) 935-1205  
E-mail: chresdev@co.hawaii.hi.us

October 5, 2009

Glenn T. Kimura, President  
Kimura International, Inc.  
1600 Kapiolani Blvd., Ste. 1610  
Hilo, Hawai'i 96720

RE: Environmental Assessment – Early Consultation  
Kailua Park (aka Old Airport Park/Maka'e'o) Master Planning Project  
North Kona, Hawai'i

Dear Mr. Kimura:

In response to your early solicitation for comments and/or concerns regarding the environmental assessment of the proposed Kailua Park, the following are some points of interest brought to my attention.

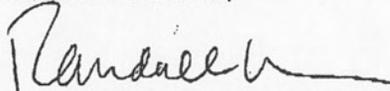
- It is encouraging to see a multi-use concept and not just a regional park for ball players; a welcomed place where locals and tourists may gather for various activities and educational lessons, including performance stage(s) for those to showcase their talents;
- A community center is a definite need.  
Questions/Concerns:
  - 1) Would the community center be limited to just senior citizens and youths?
  - 2) Would the community center include meeting rooms for use by the community and business sectors? There is a great need for meeting spaces in Kona.
- Traffic is a great concern, especially with a multi-use facility and the possibility of numerous activities happening all at once.  
Questions/Concerns:
  - 1) Although the future road is identified, how guaranteed is it that said road will be developed?
  - 2) Does realigning Makala Blvd. mean a new road and closing the existing road?
- With the new Kailua Park plan, where would the annual *Farm Fair* be held?

Glenn T. Kimura, President  
Kimura International, Inc.  
October 5, 2009  
Page 2

The proposed plan is a welcomed sight for West Hawai'i and shall meet the needs of many, including the local population, tourists and the business sector. We look forward to your environmental assessment.

Should you have any questions, please do not hesitate to contact me.

Mahalo and Aloha,



RANDALL M. KUROHARA  
Director

xc: William Takaba, Managing Director, County of Hawai'i



November 12, 2009

RECEIVED DEC 02 2009

Kimura International, Inc.  
Attention: Mr. Glenn T. Kimura  
1600 Kapiolani Blvd., Suite 1610  
Honolulu, Hawaii 96814

Gentlemen:

SUBJECT: Draft Environmental Assessment  
Kailua Park (aka Old Airport Park/Maka'eo) Master Planning Project  
North Kona, Hawai'i (TMK: 7-5-005: 007 & 083)

Thank you for the opportunity to comment on the subject's environmental assessment (EA). HELCO will be able to provide electrical service to the proposed development in North Kona. A detailed analysis will be performed after the receipt of the consultant's detailed design drawings and estimated load. The following is a summary of our comments:

1. Generation capacity - HELCO's current system peak load is 198,200kW and our total generation system capability is 271,850kW. Our reserve margin is 37% and has adequate generation to serve the above.
2. Electrical Substation - The area is served by our existing 10.0MVA Kailua electrical substation and a 12,470 volt overhead distribution along Kuakini Highway and a 7,200 volt overhead line on-site. The capacity of our existing substation should be adequate to serve the anticipated load.
3. Electrical Distribution System – The existing 12,470 volt overhead distribution system along Kuakini Highway is adequate to serve the proposed development. However, a distribution line upgrade and/or extension may be required to interconnect the existing distribution system to the on-site development. Also, the installation of 12,470 volt switches may be required. After the development's detailed loading and civil plans are submitted, HELCO will prepare a firm cost for the off-site distribution system to connect to this development.
4. HELCO recommends energy efficient and conservation measures to reduce the maximum electrical demand and energy consumption. The developer may call HELCO's Customer Service department at 935-1171 for questions or details on available programs.

Kimura International, Inc .

Page 2

November 12, 2009

It is encouraged that the developer's electrical consultant open a service request with HELCO Engineering department as soon as practicable to ensure timely electrical facility installation. If you have any questions, please contact myself or Hal Kamigaki at 896-8120.

Sincerely,



Thomas W. Cummins, L.P.L.S.  
Manager, Engineering Department  
Hawaii Electric Light Co., Inc.

TWC:gk

Enclosure

cc: H. Kamigaki  
S. Tomita  
K. Whitener



**KELLY GREENWELL**  
Council Member  
District 8 - North Kona



Phone: (808) 327-3642  
Fax: (808) 329-4786  
Email: [kgreenwell@co.hawaii.hi.us](mailto:kgreenwell@co.hawaii.hi.us)

*Hawai'i County Council  
County of Hawai'i*

*Kailua Trade Center  
75-5706 Hanama Place, Suite 109  
Kailua-Kona, Hawai'i 96740*

RECEIVED OCT 05 2009

Glenn T. Kimura  
Kimura International, Inc.  
1600 Kapiolani Blvd., Suite 1610  
Honolulu, Hawaii 96814

Dear Glenn,

On the final draft shown at our last meeting (charrette) there was included a conceptual or implied connection between the Kailua Park and the regional park being proposed in Kealakehe.

I am concerned that this idea has been omitted in the final plan and replaced with a road (future).

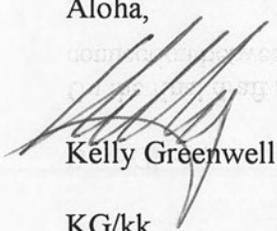
This connect and the implication it projects in involving the Queen Liliokalani Estate is critical to future expansion of the park setting in the area and needs to be re-included.

Further, I would have hoped, as planners, that you would have widened the scope beyond the boundary restraints and presented to the county a land use plan that would have incorporated more of the surrounding area as a basis for broader visioning by the county.

I realize that would have been beyond your assigned mission but good planning must consider the future needs of the community as it expands.

We will discuss this matter further and I will do my best to get you out of the box.

Aloha,



Kelly Greenwell

KG/kk

**Leslie Kurisaki**

---

**From:** Megan Mitchell [meganmmitchell@yahoo.com]  
**Sent:** Wednesday, September 16, 2009 8:49 PM  
**To:** Leslie Kurisaki  
**Subject:** Re: Kailua Park--Pre-Assessment Consultation

Dear Leslie,

Thanks for your email.

I have a concern for quality of life issues for surrounding landowners: noise, lights, crowds making noise.

If a pavilion has rock music/any kind of amplified music - it needs to be contained.

If a shell of any kind for entertainment has been proposed - it should not impact residents. We need our shoreline protected for wildlife and peace for human beings.

I understand that much of this is more appropriately addressed by administrative rules (P & R) but buildings and baffling and generally bringing up the topic for consideration at this stage, if it hasn't been addressed, needs to be addressed.

Amplification needs to be absent in the outside events. How are you addressing the acoustics? Has a specialist been consulted?

Another concern is waste of electricity and water. I know I wasn't present at the meetings - not sure how you are handling these issues. With our telescopes, we need to prevent light from going into the atmosphere, from what I understand.

Thanks for the opportunity to say a few words... I'm sure these have already been thought about.

Aloha,  
Megan Mitchell

--- On Tue, 9/15/09, Leslie Kurisaki <lkurisaki@kimurainternational.com> wrote:

From: Leslie Kurisaki <lkurisaki@kimurainternational.com>  
Subject: Kailua Park--Pre-Assessment Consultation  
To: "Leslie Kurisaki" <lkurisaki@kimurainternational.com>  
Date: Tuesday, September 15, 2009, 8:05 AM

Aloha!

We are currently conducting **Pre-Assessment Consultation** for the forthcoming Draft Environmental Assessment (EA). If you have any input regarding potential environmental

## **Appendix A**

Biological Surveys

Rana Biological Consulting and AECOS Consultants

October 2009

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# Biological Surveys Conducted for the Proposed Kailua Park Master Plan, North Kona District, Island of Hawai‘i.

---

Prepared by:

Reginald E. David  
Rana Biological Consulting, Inc.  
P.O. Box 1371  
Kailua-Kona, Hawai‘i 96745  
&

Eric Guinther  
AECOS Consultants  
45-309 Akimala Pl.  
Kāne‘ohe, Hawai‘i 96744

Prepared for:

Kimura International, Inc.  
1600 Kapiolani Boulevard,  
Honolulu, Hawaii 96814

November 19, 2009

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## ***Introduction***

The County of Hawai‘i’s Department of Parks and Recreation is preparing a Master Plan for the future redevelopment of Kailua Park, which is located in Kailua, North Kona District Island of Hawaiii (Figure 1). The plan encompasses approximately 117-acres of land. Included are the Kailua Park, managed by the county, as well as the former Old Airport State Recreation Area, also known as the Old Airport Park or Maka‘eo recently conveyed to the county. The project will be developed in phases over the next 20 years.

The primary purpose of these surveys was to determine if there were any botanical, avian or mammalian species currently listed, or proposed for listing as endangered or threatened under either the federal or the State of Hawai‘i’s endangered species programs on, or within the immediate vicinity of the project depicted on Figure 1. Federal and State of Hawai‘i listed species status follows species identified in the following referenced documents (Division of Land and Natural Resources (DLNR) 1998, Federal Register 2005, U. S. Fish & Wildlife Service (USFWS) 2005, 2009). Fieldwork was conducted on October 21 and 23, 2009.

Avian phylogenetic order and nomenclature follows *The American Ornithologists’ Union Check-list of North American Birds 7<sup>th</sup> Edition* (American Ornithologists’ Union 1998), and the 42<sup>nd</sup> through the 50<sup>th</sup> supplements to *Check-list of North American Birds* (American Ornithologists’ Union 2000; Banks et al. 2002, 2003, 2004, 2005, 2006, 2007, 2008, Chesser et al., 2009). Mammal scientific names follow *Mammals in Hawaii* (Tomich 1986). Plant names follow *Manual of the Flowering Plants of Hawai‘i* (Wagner et al., 1990, 1999) for native and naturalized flowering plants, and *A Tropical Garden Flora* (Staples and Herbst, 2005) for crop and ornamental plants. Place names follow *Place Names of Hawaii* (Pukui et al., 1974).

Hawaiian and scientific names are italicized in the text. A glossary of technical terms and acronyms used in the document, which may be unfamiliar to the reader, are included at the end of the narrative text.

## ***General Site and Project Description***

The project site includes the existing county managed Kailua Park, which includes ball fields, a gymnasium and the Kona Community Aquatics Center, tennis courts, and horseshoe park which are located within the southern third of the site. It also includes the deactivated runway, events pavilion, in-line hockey rink and a skateboard park and two unfinished canoe *hale* in the central portion of the site. The northern portion of the site includes portions of the runway, the Maka‘eo Walking and Jogging path and is one of the few undeveloped shoreline areas in West Hawai‘i that is accessible to the public.

The project site is gently slopes from north-to-south from an elevation of ~ 23 feet (7 meters) above mean sea level (ASL) at the northeastern corner of the project site, down to an elevation of ~ 3-feet (1 meter) ASL, on the southwestern side of the Beach Park. The natural substrate present within the project site is made up of mostly *pāhoehoe*, flows disgorged from Mount Hualālai between 1,500 and 3,000 years ago (Wolfe and Morris 1996).



**KAILUA PARK**  
 (aka Old Airport Park/Maka'eo)  
**Master Planning Project**

Prepared for:



County of Hawaii  
 Department of Parks and Recreation

Prepared by:



**FINAL MASTER PLAN**

---

The Master Plan divides the park in to three major geographic and activity zones identified as follows:

- Southern third: a high intensity, active outdoor and indoor sports zone
- Central third: a moderate-intensity, new community center
- Northern third: a low-intensity, passive, open space and cultural zone

The Master Plan identifies the following goals for each of the three zones identified above:

***South: Active Sports Zone***

The Active Sports Zone encompasses the existing County-managed park which includes ball fields, a gymnasium and the Kona Community Aquatics Center, tennis courts, and horseshoe park. The plan proposes retaining these sporting venues, and upgrading or replacing inadequate, aging facilities. A major proposal is to relocate the tennis courts from the congested ball field complex, in order to improve vehicular, bicycle and pedestrian circulation and increase parking (Figure 1).



Figure 2 – Ball fields in the southern zone looking northwest

***Central: Community Center Complex***

The central area will become a major focal point of the park. Currently, the area includes the Events Pavilion, in-line hockey rink, and two unfinished canoe *hale*. The major proposal for this

---

zone is development of a new community center complex, which will include a senior center and youth center, intended to encourage interaction between the generations. A new park entry will include a roundabout at Kuakini Highway, providing a landmark and a sense of arrival. Radiating from the roundabout, park users will have an option to continue *makai* to a passenger drop-off area serving the senior and youth center and the Events Pavilion. The road will terminate here at a “great lawn” providing open views to the ocean.

Another road will lead from the park entry to the canoe *hālau* complex, which will include four *hale* for canoe storage and an exhibition building. A new six-court tennis complex is sited next to the canoe *hālau*.

The central zone will provide a transitional area between the highly active and passive ends of the park. A multi-use, bike and pedestrian path have been proposed that will circle the entire park complex (Figure 1).



Figure 3 Existing events pavilion and unfinished canoe *hālau* and runway

***North: Passive Open Space and Cultural Zone***

The northern portion of the site is one of the few undeveloped shoreline areas in West Hawai‘i that is accessible to the public. The plan proposes that it remain a zone of natural open space and a beach park. A major proposal is the removal of the asphalt runway that dominates the site. The runway would be replaced by a meandering beach access road.



Figure 4 – Typical coastal strand vegetation north of the runway

The northern zone is also rich in cultural and archaeological resources. An interpretive center is proposed at the far end of the beach access road. Interpretive signage and appropriate landscaping using native species where appropriate can be used to keep people out of sensitive areas.

Additional beach pavilions are proposed along the shoreline. The Maka‘eo Walking and Jogging Path, a symbol of community spirit and involvement, will be retained and enhanced. A dog park is also proposed which if developed would be located north of the Maka‘eo Walking and Jogging Path (Figure 1).

The vegetation on the site is best described as a mixture of coastal strand closest to the ocean shore, dry lowland grassland, mostly highly disturbed, and managed landscaping.

### ***Botanical Survey Methods***

The botanical survey was undertaken on October 21, 2009 utilizing wandering transects that traversed all parts of the subject parcel. The route of the botanical survey was recorded by GPS as the survey progressed, so that coverage could be assessed as the survey progressed. The survey was conducted in the dry season and therefore some plants typical of this site, especially annuals, were likely not observed. At highly disturbed lowland sites, such as the old Kona airport, missed species due to seasonal constraints are expected to be introduced (non-native), weedy species.



Figure 5 – Northern end of property showing kiawe/fountain grass savannah



Figure 6 - The Maka‘eo Walking and Jogging Path showing ornamental planting looking northeast

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Further, due to rigorous maintenance (mowing) in the more developed (south) part of the site, some lawn grasses proved difficult to identify. For a few specimens not recognized in the field, photographs were taken and/or material collected for identification in the laboratory.

The park includes an extensive community garden/planting area along the Maka'eio Walking and Jogging Path. Plantings in this area are mostly ornamentals, and the individual plots are well maintained, watered, and weeded. Several gardeners have developed specific themes and have extensive collections of cactus and succulents, culinary herbs, or native Hawaiian plants. Although an attempt was made to include the flora found in these many small gardens in the botanical survey results, the large number of ornamentals, many newly planted (i.e., juveniles lacking diagnostic characteristics) made arriving at a complete list all but impossible without devoting considerable more time to the field effort. Consequently, the results of the survey are incomplete with respect to many of the collections of ornamental plants present at this site.

### ***Botanical Survey Results***

A plant checklist (Table 1) was compiled from field observations, with entries arranged alphabetically under plant family names (standard practice). Included in the list are scientific name, common name, and status (whether native or non-native) for each species observed on the property. Species status given in **bold** indicates a plant of some interest to the Hawaiian Islands flora. It is worth noting for this survey location that "status" is the assigned relationship of a species to natural Hawaiian Islands environments. Thus, "naturalized" (Nat) is assigned to a species that is non-native but successfully established in the wild. The landscaped and garden areas include some weeds (naturalized species), but also some native and non-native species that have been planted and are being cared for. These plants are in effect "ornamentals" at this location and are indicated as such by Note (1) in the last column.

In addition to identifying the plants present within the study site, qualitative estimates of plant abundance were made. These are coded in the table as explained in the Legend to Table 1 and apply to observations made during the present survey. For some species, a two-level system of abundance is used: the letter-number codes indicating species that have a limited distribution (e.g., found in only one small area of the property), but present there in numbers exceeding just a few individuals. For example, an abundance rating of "R" indicates a plant encountered only once or twice during the entire survey. An "R2" indicates a plant encountered in just one or two places, but with several to many individuals present where encountered. An "R3" would be a plant seldom encountered (i.e., rare), but locally abundant in one or more of the locations where it was encountered.

The project area supports several basic types of vegetation: 1) strand vegetation associated with the rocky and sand substrata inland from the ocean shoreline; 2) Mostly undisturbed areas of *pāhoehoe* supporting fountain grass; 3) highly disturbed areas of the old runway and buildings; and 4) landscaped and maintained grounds surrounding the large sports complex at the south end. There are also significant areas of transition between the strand and the disturbed areas representing both maintained and unmaintained areas of beach access (the small beach parks).

Abundance ratings in Table 1 are given for three different vegetation areas on the property: the grounds comprising the landscaped sports complex (DE), the mostly disturbed areas (DI) inland from the strand in the northern two-thirds of the parcel, and the narrow coastal strand (CS) itself.

**Table 1 – Flora Listing for the Kailua Park Site**

<i>Species listed by family</i>	<i>Common name</i>	ST	Abundance			NT
			DE	DI	CS	
<b>FERN and FERN ALLIES</b>						
NEPHROLEPIDACEAE						
<i>Nephrolepis cordifolia</i> (L.) C. Presl.	---	Ind	R	R	--	1
<i>Nephrolepis multiflora</i> (Roxb.) F.M. Jarrett ex C.V. Morton	---	Nat	--	R	--	1
POLYPODACEAE						
<i>Phymatosorus grossus</i> (Langsd. & Fisch.) Brownlie	<i>lauae</i>	Nat	R	R	--	1
PSILOTACEAE						
<i>Psilotum nudum</i> (L.) P. Beauv.	<i>moa</i>	Ind	R	--	--	
PTERIDACEAE						
<i>Pteris vittata</i> L.	cliff brake	Nat	R	--	--	
<b>GYMNOSPERMS</b>						
ARAUCARIACEAE						
<i>Araucaria columnaris</i> (G. Forster) J.D. Hook.	Cook-pine	Nat	R3	--	--	1
CYCADACEAE						
<i>Cycas revoluta</i> Thunb.	sago palm	Orn	R	--	--	
<b>FLOWERING PLANTS</b>						
<b>DICOTYLEDONES</b>						
ACANTHACEAE						
<i>Barleria repens</i> C. Nees	pink-Ruella	Orn	--	R	--	
<i>Ruellia brittoniana</i> E. Leonard	---	Nat	--	R	--	1
<i>Strobilanthes</i> sp.	---	Orn	--	R	--	4
AIZOACEAE						
<i>Aptenia cordifolia</i> (L.) N.E. Brown	hearts and flowers	Orn	R	U3	--	
<i>Sesuvium portulacastrum</i> (L.) L.	' <i>ākulikuli</i>	Ind	--	U	O	1
ALLOEACEAE						
<i>Aloë vera</i> (L.) N.L. Burm.	aloe vera	Orn	--	U	--	
<i>Aloë</i> sp.	---	Orn	--	R	--	
AMARANTHACEAE						
<i>Alternanthera pungens</i> Kunth	khaki weed	Nat	--	R	--	
<i>Amaranthus spinosus</i> L.	spiny amaranth	Nat	R	--	--	

<i>Species listed by family</i>	<i>Common name</i>	ST	Abundance			NT
			DE	DI	CS	
<i>Celosia cristata</i> L.	cockscomb	Orn	--	U	--	
ANACARDIACEAE						
<i>Mangifera indica</i> L.	mango	Nat	R	--	--	1,4
<i>Schinus terebinthifolius</i> Raddi	Christmas berry	Nat	R	O	R	
APOCYNACEAE						
<i>Adenium obesum</i> (Forsk.) J. Roemer & J.A. Schultes	desert-rose	Orn	--	R	--	
<i>Carissa macrocarpa</i> (Ecklon) A. de Cand.	natal plum	Orn	U	--	--	
<i>Catharanthus roseus</i> (L.) G. Don	Madagascar periwinkle	Nat	R	O	--	1
<i>Plumeria obtusa</i> L.	Singapore plumeria	Orn	R	R	--	
<i>Plumeria rubra</i> L.	plumeria, frangipani	Orn	U	U	--	
ARALIACEAE						
<i>Schefflera actinopylla</i> (Endlich.) Harms	octopus tree	Nat	R	R	--	1
<i>Schefflera arboricola</i> (Hayata) Merr.	dwarf schefflera	Orn	--	R	--	
ASCLEPIADACEAE						
<i>Stapelia gigantea</i> N.E. Brown	giant toad flower	Nat	--	R	--	1
ASTERACEAE (COMPOSITAE)						
<i>Artemisia vulgaris</i> L.	mugwort	Orn	--	R	--	
<i>Dyssodia tenuiloba</i> (Candolle) Robinson	---	Nat	--	R	--	1
<i>Emilia fosbergii</i> Nicolson	Flora's paintbrush	Nat	R	--	--	4
<i>Lactuca serriola</i> L.	prickly lettuce	Nat	R	--	--	
<i>Pluchia carolinensis</i> (Jacq.) G. Don	sourbush	Nat	R	U	R	
<i>Senecio cineraria</i> A.P. de Candolle	dusty-Miller	Orn	--	R	--	
<i>Sphagneticola trilobata</i> (L.) Pruski	wedelia	Nat	U2	--	--	1
<i>Tridax procumbens</i> L.	coat buttons	Nat		U2	--	
BATACEAE						
<i>Batis maritima</i> L.	pickleweed	Nat	--	U3	R3	1
BIGNONIACEAE						
<i>Spathodea campanulata</i> P. Beauv.	African tulip	Nat	--	R	--	1
<i>Tabebuia</i> sp.	---	Orn	--	R	--	4
BORAGINACEAE						
<i>Cordia subcordata</i> Lam.	<i>kou</i>	<b>Pol</b>	R	U	R	
<i>Heliotropium curassavicum</i> L.	<i>kīpūkai</i>	<b>Ind</b>	--	U	U	
<i>Tournefortia argentea</i> L. fil.	tree heliotrope	Nat	--	O	C	
CACTACEAE						
<i>Cereus uruguayanus</i> R. Kiesling	hedge cactus	Nat	--	R1	--	1
<i>Echinocactus grusonii</i> Hildmann	golden-barrel cactus	Orn	--	R3	--	
CAPPARACEAE						
<i>Capparis sandwichiana</i> DC	<i>maiapilo</i>	<b>End</b>	--	R	--	1
<i>Cleome gynandra</i> L.	wild spider flower	Nat	R	O	--	

<i>Species listed by family</i>	<i>Common name</i>	ST	Abundance			NT
			DE	DI	CS	
CARICACEAE						
<i>Carica papaya</i> L.	papaya, pawpaw	Nat	R	R	--	1
CARYOPHYLLACEAE						
<i>Dianthus caryophyllus</i> L.	carnation	Orn	--	R	--	
CHENOPODIACEAE						
<i>Beta vulgaris cicla</i> (L.) W.D.J. Koch	chard	Orn	--	R	--	
<i>Chenopodium murale</i> L.	'āheahea	Nat	--	--	R	
CLUSIACEAE						
<i>Calophyllum inophyllum</i> L.	<i>kamani</i>	<b>Pol</b>	R1	--	--	1
<i>Clusia rosea</i> Jacq.	autograph tree, copey	Nat	R	--	--	1
COMBRETACEAE						
<i>Conocarpus erectus</i> L.	button mangrove	Nat	--	R	--	1
CONVOLVULACEAE						
<i>Ipomoea batatas</i> (L.) Lam.	'uala	Pol	--	R	--	1
<i>Ipomoea</i> cf. <i>obscura</i> (L.) Ker-Gawl	---	Nat	R	U	--	4
<i>Ipomoea pes-caprae</i> (L.) R. Br.	<i>pōhuehue</i>	<b>Ind</b>	--	R	O2	1
<i>Ipomoea triloba</i> L.	little bell	Nat	R	--	--	4
<i>Jacquemontia ovalifolia</i> (Choisy) H. Hallier	<i>pā'ū-o-Hi'iaka</i>	<b>Ind</b>	--	R	--	1
CRASSULACEAE						
<i>Bryophyllum pinnatum</i> (Lam.) 'Oken	air plant	Nat	--	R	--	1
<i>Sedum</i> cf. <i>pachyphyllum</i> Rose	jellybean plant	Orn	--	R	--	
CUCURBITACEAE						
<i>Cucurbita moschata</i> L.	crookneck squash	Orn	--	R	--	
<i>Sechium edule</i> (N. Jacq.) Swartz	chayote	Orn	--	R	--	4
EUPHORBIACEAE						
<i>Acalypha</i> sp.		Orn	--	R	--	4
<i>Aleurites moluccana</i> (L.) Willd.	<i>kukui</i>	Pol	R	R	--	1
<i>Chamaesyce albomarginata</i> (Torr. & A. Gray) Small	rattlesnake plant	Nat	U2	U3	--	
<i>Chamaesyce hirta</i> (L.) Millsp.	garden spurge	Nat	C	A	U	2
<i>Chamaesyce hypericifolia</i> (L.) Millsp.	graceful spurge	Nat.	R	U1	--	
<i>Chamaesyce hyssopifolia</i> (L.) Small	---	Nat	--	R	--	
<i>Codiaeum variegatum</i> (L.) Blume	croton	Orn	R	U	--	
<i>Euphorbia cotinifolia</i> L.	red spurge	Orn	--	R	--	
<i>Euphorbia cyathophora</i> J.A. Murray	wild poinsettia	Nat	--	R	--	1
<i>Euphorbia lacteal</i> Haworth	mottled-candlestick tree	Orn	--	R	--	
<i>Euphorbia milii</i> des Moulins	crown-of-thorns	Orn	--	R2	--	
<i>Euphorbia tirucalli</i> L.	pencil tree	Nat	--	R	--	1
<i>Jatropha gossypifolia</i> L.	cotton-leaved jatropa	Nat	--	R	--	1
<i>Pedilanthus tithymaloides</i> (L.) Poiteau	redbird-cactus (white sport)	Orn	--	R	--	

<i>Species listed by family</i>	<i>Common name</i>	ST	Abundance			NT
			DE	DI	CS	
<i>Pedilanthus tithymalooides smallii</i> (Millsp.) Dressler	zigzag plant	Orn	--	R2	--	
<i>Phyllanthus debilis</i> Klein ex Willd.	niruri	Nat	U	R	--	
FABACEAE						
<i>Acacia confusa</i> Mers	Formosan <i>koa</i>	Nat	--	R	--	1
<i>Acacia farnesiana</i> (L.) Willd.	<i>klu</i>	Nat	--	O	R	
<i>Bauhania monandra</i> Kurz	St. Thomas tree	Orn	R1	R	--	
<i>Caesalpinia pulcherrima</i> (L.) Swartz	' <i>ohai ali'i</i>	Orn	--	R	--	
<i>Chamaecrista nictitans</i> (L.) Moench	partridge pea	Nat		U		
<i>Delonix regia</i> (Bojer ex Hook.) Raf.	royal poinciana	Nat	R	--	--	
<i>Desmodium triflorum</i> (L.) DC	---	Nat	U3	--	--	2
<i>Indigofera hendicaphylla</i> Jacq.	creeping indigo	Nat	--	C	U	2
<i>Indigofera suffruticosa</i> Mill.	indigo	Nat	--	R	--	
<i>Leucaena leucocephala</i> (Lam.) de Wit	<i>koa haole</i>	Nat	R	O	R	
<i>Macroptilium atropurpureum</i> (DC) Urb.	---	Nat	R	--	--	
<i>Macroptilium lathyroides</i> (L.) Urb.	cow pea	Nat.	R	--	--	
<i>Mimosa pudica</i> L.	sensitive plant	Nat	R	--	--	
<i>Pithecellobium dulce</i> (Roxb.) Benth.	' <i>opiuma</i>	Nat	--	R	--	
<i>Prosopis pallida</i> (Humb. & Bonpl. ex Willd.) Kunth.	<i>kiawe</i>	Nat	--	O	--	
<i>Samanea saman</i> (Jacq.) Merr.	monkeypod, rain tree	Nat	O	C	--	1
<i>Senna alata</i> (L.) Roxb.	candle bush	Nat	--	R	--	1
GERANIACEAE						
<i>Pelargonium X hortorum</i> L. H. Bailey	common geranium	Orn	--	U	--	
GOODENIACEAE						
<i>Scaevola taccada</i> (Gaertn.) Roxb.	<i>naupaka kahakai</i>	<b>Ind</b>	O	C	C	
LAMIACEAE						
<i>Lavandula</i> spp.	lavender	Orn	--	R2	--	
<i>Mentha X spicata</i> L.	spearmint	Orn	--	R	--	
<i>Ocimum</i> spp.	basil	Orn	--	R2	--	
<i>Rosmarinus officianalis</i> L.	rosemary	Orn	--	R	--	
<i>Salvia officinalis</i>	sage	Orn	--	R	--	
<i>Solenostemon scutellarioides</i> (L.) Codd	coleus	Orn	--	R	--	
LYTHRACEAE						
<i>Lagerstroemia indica</i> L.	crepe-myrtle	Orn	--	R	--	4
MALVACEAE						
<i>Abutilon grandifolium</i> (Willd.) Sweet	hairy abutilon	Nat	R	--	--	4
<i>Hibiscus clayi</i> O. & I. Degener	Clay's hibiscus	<b>End</b>	--	R	--	1,3
<i>Hibiscus rosa-sinensis</i> L.	Chinese hibiscus & cult.	Orn	O	C	--	
<i>Malva parviflora</i> L.	cheese weed	Nat	--	R	--	
<i>Malvastrum coromandelianum</i> (L.) Garcke	false mallow	Nat	R	--	--	

<i>Species listed by family</i>	<i>Common name</i>	ST	Abundance			NT
			DE	DI	CS	
<i>Malvaviscus pendulifloris</i> A.P. de Cand.	Turk's-cap	Orn	--	R	--	
<i>Sida ciliaris</i> L.	---	Nat	--	R2	--	4
<i>Thespesia populnea</i> (L.) Sol. ex Corrêa	<i>milo</i>	Ind		U	R	
MORINGACEAE						
<i>Moringa oleifera</i> Lam.	horseradish tree	Orn	R	R1	--	
MORACEAE						
<i>Ficus macrophylla</i> Pers.	Moreton Bay fig	Orn	--	R	--	
<i>Ficus microcarpa</i> L. fil.	Chinese banyan	Nat	R	R	--	
MYOPORACEAE						
<i>Myoporum sandwicense</i> A. Gray	<i>naio &amp; naio papa</i>	Ind	--	R1	--	1
NYCTAGINACEAE						
<i>Boerhavia coccinea</i> Mill.	false alena	Nat	U	A	C	
<i>Bougainvillea spectabilis</i> Wild.	bougainvillea	Orn	U	U	--	
ONAGRACEAE						
<i>Oxalis corniculata</i> L.	yellow wood sorrel	Pol	R	R	--	
PASSIFLORACEAE						
<i>Passiflora suberosa</i> L.	<i>huehue haole</i>	Nat	R	--	--	
PLANTAGINACEAE						
<i>Plantago lanceolata</i> L.	nrv-lvd plantain	Nat	--	U3	--	2
<i>Plantago major</i> L.	brd-lvd plantain	Nat	U3	--	--	2
PLUMBAGINIACEAE						
<i>Plumbago auriculata</i> Lam.	blue plumbago	Orn	--	R	--	
POLYGONACEAE						
<i>Coccoloba uvifera</i> (L.) L.	sea grape	Orn	R	R	--	1
PORTULACACEAE						
<i>Portulaca grandiflora</i> W.J. Hook.	moss-rose	Orn	--	R	--	
<i>Portulaca oleracea</i> L.	pig weed	Nat	R	U	--	
<i>Portulaca pilosa</i> L.	---	Nat	R	U	--	
<i>Portulacaria afra</i> (L.) N. Jacq.	minature jade plant	Orn	--	R	--	
<i>Talinum fruticosum</i> (L.) Juss.	---	Nat	R	U2	--	
ROSACEAE						
<i>Rosa</i> sp.	rose	Orn	--	R	--	
RUBIACEAE						
<i>Gardenia taitensis</i> A.P. Candolle	Tahitian gardenia	Orn				
<i>Gardenia</i> sp.	gardenia	Orn	--	R	--	4
<i>Hedyotis corymbosa</i> (L.) Lam.	--	Nat	U3	U3	--	2
<i>Ixora</i> sp.	ixora	Orn	R1	--	--	
<i>Morinda citrifolia</i> L.	<i>noni</i>	Pol	R	O	R	
<i>Pentas lanceolata</i> (Forsk.) Deflers	pentas	Orn	--	R	--	

<i>Species listed by family</i>	<i>Common name</i>	ST	Abundance			NT
			DE	DI	CS	
<b>SAPINDACEAE</b>						
<i>Filicium decipiens</i> (R. Wight & Arnott) <i>Thwaites</i>	fern tree	Nat	--	R	--	1
<b>SCROPHULARIACEAE</b>						
<i>Bacopa monnieri</i> (L.) Pennell	'ae'ae	Ind	--	R	--	1
<b>SOLANACEAE</b>						
<i>Brugmansia X candida</i> Persoon	Angel's trumpet	Orn	--	R	--	
<i>Capsicum</i> spp.	peppers, chili pepper	Orn	--	R1	--	
<i>Solanum americanum</i> Mill.	<i>pōpolo</i>	Ind	--	R	--	
<i>Solanum melongena</i> L.	eggplant	Orn	--	R	--	
<b>STERCULIACEAE</b>						
<i>Waltheria indica</i> L.	'uhaloa	Nat	R	A	C	
<b>STRELITZIACEAE</b>						
<i>Ravenala madagascariensis</i> Sonn.	traveler's tree	Orn	--	R	--	
<i>Solanum americanum</i> Mill.	<i>pōpolo</i>	Ind	--	R	--	
<b>TURNERACEAE</b>						
<i>Turnera ulmifolia</i> L.	yellow alder	Nat	U	U	--	1
<b>RUTACEAE</b>						
<i>Citrus aurantiifolia</i> (Christm.) Swingle	Mexican lime cult.	Orn	R	--	--	
<b>VERBENACEAE</b>						
<i>Duranta erecta</i> L.	golden dewdrop	Orn	--	R	--	
<i>Lantana camara</i> L.	lantana	Nat	--	U	--	1
<i>Phyla</i> sp.	---	Orn	--	R	--	
<i>Vitex rotundifolia</i> L. Fil.	<i>pōhinahina</i>	Ind	--	R3	--	1
<i>Vitex trifolia</i> L.	blue vitex	Orn	--	R	--	
<b>ZYGOPHYLLACEAE</b>						
<i>Tribulus cf. terrestris</i> L.	caltrop (or <i>nohu</i> )	Nat	--	R	R	4
<b>FLOWERING PLANTS MONOCOTYLEDONES</b>						
<b>AGAVACEAE</b>						
<i>Cordyline fruticosa</i> (L.) A. Chevalier	ti, <i>ki</i>	Pol	--	U	--	1
<i>Dracaena fragrans</i> (L.) Ker Gawl.	fragrant dracaena	Orn	--	U	--	
<i>Dracaena sanderiana</i> M.T. Masters	sanderiana	Orn	--	R1	--	
<i>Nolina recurvata</i> (Lemaire) W. Hemsley	ponytail	Orn	--	R	--	
<i>Sansevaria trifasciata</i> Prain	bowstring-hemp	Orn	R	R	--	
<i>Sansevaria trifasciata</i> 'Golden Hahnii'	dwarf cult.	Orn	--	R	--	
<b>ALOEACEAE</b>						
<i>Aloë vera</i> (L.) N.L. Burm.	aloe vera	Orn	R	U	--	
<b>ARACEAE</b>						
<i>Dieffenbachia maculata</i> (Loddiges) G. Don	dumb cane	Orn	--	R	--	
<i>Monstera delicosa</i> Liebm.	monstera	Orn	--	R	--	

<i>Species listed by family</i>	<i>Common name</i>	ST	Abundance			NT
			DE	DI	CS	
<i>Philodendron</i> spp.	philodendron vines	Orn	--	R	--	
<b>ARECACEAE</b>						
<i>Caryota</i> sp.	fishtail palm	Orn	--	R	--	
<i>Cocos nucifera</i> L.	<i>niu</i> , coconut	<b>Pol</b>	U	O	U	1
<i>Dypsis lutescens</i> (H. Wendl.) Beentje & J. Dransfield	golden-fruited palm	Orn	R1	R	--	
<i>Hyophorbe</i> cf. <i>lagenicaulis</i> (L.H. Bailey) H.E. Moore	bottle palm	Orn	--	R	--	
<i>Licuala</i> cf. <i>grandis</i> H. Wendl.	licuala palm	Orn	--	R	--	
<i>Livistona chinensis</i> (N. Jacq.) Martius	Chinese fan palm	Orn	--	R	--	
<i>Phoenix</i> sp.	date palm	Nat	--	R	R	
<i>Pritchardia</i> cf. <i>thurstonii</i> F. Muell. & Drude	Fiji fan palm	Orn	--	R	--	
<i>Pritchardia</i> sp.	---	Orn	--	R	--	1,4
<i>Ptychosperma macarthurii</i> (Veitch) J.D. Hook.	Macarthur palm	Orn	R	R	--	
<i>Veitchia merrilli</i> (Beccari) H.E. Moore	Manila palm	Orn	--	R	--	
<b>BROMELIACEAE</b>						
<i>Ananas comosus</i> L.	pineapple	Orn	--	R	--	
<i>Neoregelia carolinae</i> (Beer) L.B. Smith	blushing bromeliad	Orn	--	R3	--	
<i>Neoregelia</i> spp. and crosses	---	Orn	--	R3	--	4
<b>CANNACEAE</b>						
<i>Canna X generalis</i> L. H. Bailey	garden canna	Orn	--	R2	--	
<b>COMMELINACEAE</b>						
<i>Commelina benghalensis</i> L.	hairy <i>honohono</i>	Nat	R2	--	--	
<i>Tradescantia spathacea</i> Swartz	moses-in-the-cradle	Orn	R1	R2	--	
<b>COSTACEAE</b>						
<i>Costus</i> sp.	---	Orn	R	R	--	4
<b>CYCLANTHACEAE</b>						
<i>Carludovica palmata</i> Ruiz & Pavón.	Panama-hat plant	Orn	--	R	--	
<b>CYPERACEAE</b>						
<i>Cyperus polystachyos</i> Rottb.	---	<b>Ind</b>	R2	R	--	
<i>Fimbristylis cymosa</i> spathacea (Roth) T. Koyama	---	<b>Ind</b>	--	--	R2	
<i>Fimbristylis dichotoma</i> (L.) Vahl	---	<b>Ind</b>				2
<i>Kyllinga brevifolia</i> Rottb.	<i>kili'op'opu</i>	Nat	A	C	--	2
<i>Kyllinga nemoralis</i> (J.R. & G. Forster) Dandy ex Hutchinson & Dalziel	<i>kili'op'opu</i>	Nat	R	--	--	
<b>HELICONIACEAE</b>						
<i>Heliconia psittacorum</i> L. fil. x <i>H. spathocircinata</i> Aristeg.	parrot heliconia	Orn	--	R	--	
<b>IRIDACEAE</b>						
<i>Neomarica</i> sp.	marica	Orn	--	R	--	

<i>Species listed by family</i>	<i>Common name</i>	ST	Abundance			NT
			DE	DI	CS	
<b>LILIACEAE</b>						
<i>Agapanthus praecox orientalis</i> (F.M. Leighton) F.M. Leighton	African lily	Orn	--	R2	--	
<i>Allium</i> spp.	onion, chives	Orn	--	R3	--	
<i>Dianella sandwicensis</i> Hook. & Arnott	'uki'uki	<b>Ind</b>	--	R	--	1
<i>Hymenocallis</i> sp.	spider lily	Orn	--	R	--	
<i>Ophiopogon japonicus</i> (L. fil.) Ker Gawl.	mondo grass	Orn	R2	--	--	
<b>MUSACEAE</b>						
<i>Musa</i> hybrid	banana	Orn	R	R	--	
<b>ORCHIDACEAE</b>						
<i>Cattleya</i> sp.	---	Orn	--	R	--	
<b>PANDANACEAE</b>						
<i>Pandanus tectorius</i> S. Parkinson ex Z	<i>hala</i>	<b>Ind</b>	R	R	R	1
<b>POACEAE</b>						
<i>Axonopus compressus</i> (Sw.) P. Beauv.	carpet-grass	Nat	A3	O3	--	1,2
<i>Axonopus fissifolius</i> (Raddi) Kuhlm.	carpet-grass	Nat	C3	O2	--	2
<i>Bothriochloa pertusa</i> (L.) A. Camus	pitted beardgrass	Nat	U3	--	--	1,2
<i>Cenchrus echinatus</i> L.	common sandbur	Nat	R	R	--	
<i>Chloris barbata</i> (L.) Sw.	swollen fingergrass	Nat	R	U	R	
<i>Cymbopogon citratus</i> (C. Nees) Stapf	lemon grass	Orn	--	R	--	
<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass	Nat	C3	O3	O3	1,2
<i>Eragrostis tenella</i> (L.) P. Beauv. ex Roem. & Schult.	lovegrass	Nat	R1	--	--	1,2
<i>Eragrostis pectinacea</i> (Michx.) Nees	Carolina lovegrass	Nat	C3	--	--	1,2
<i>Eleusine indica</i> (L.) Gaertn.	wiregrass	Nat	A	C	U	1,2
<i>Eremochloa ophiuroides</i> (Minro) Hackel	centipede grass	Orn	--	R2	--	
<i>Melinis repens</i> (Willd.) Zizka	Natal redbtop	Nat	R	R	--	
<i>Pennisetum setaceum</i> (Forssk.) Chiov.	fountain grass	Nat	R	AA	U	
<i>Saccharum officinarum</i> L.	ko, sugar cane	<b>Pol</b>	--	R	--	1
<i>Sporobolus virginicus</i> (L.) Kunth	'aki'aki	<b>Ind</b>	--	--	AA	
<i>Sporobolus cf. indicus</i> (L.) R.Br.	West Indian dropseed	Nat			O2	
<i>Sporobolus</i> sp.	dropseed, smutgrass	Nat	O			
<i>Urochloa maxima</i> (Jacq.) Webster	Guinea grass	Nat	R	R	--	

### Legend to Table 1

ST -STATUS = distributional status for the Hawaiian Islands:

**Ind** = indigenous; native to Hawaii, but not unique to the Hawaiian Islands.

Nat = naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of Cook Expedition in 1778, and well-established outside of cultivation.

**Pol.** = Polynesian introduction before 1778.

ABUNDANCE = occurrence ratings for plants by area:

R - Rare seen in only one or perhaps two locations.

U - Uncommon- seen at most in several locations

- 
- O - Occasional                    seen with some regularity  
 C - Common                        observed numerous times during the survey  
 A - Abundant                        found in large numbers; may be locally dominant.  
 AA - Very abundant                abundant and dominant; defining species for vegetation type.  
 Numbers following an occurrence rating indicate clusters within the survey area. The ratings above provide an estimate of the likelihood of encountering a species within the specified survey area; numbers modify this where abundance, tends to be greater than the occurrence rating:  
     1 – several plants present  
     2 - many plants present  
     3 – locally abundant  
 Areas are: DEV = landscaped sports complex area; DIS = mostly highly disturbed areas of variable maintenance (old runway, community gardens, beach parks); and CST = the coastal strand.
- NT - NOTES: (1) - Although a native species, present as a planted ornamental in the park (esp. public garden area).  
 (2) - Found here typically as a component of or weed in lawns.  
 (3) - A federally listed species (threatened or endangered).  
 (4) - Specimen(s) observed lacked a key feature (flower, fruit, etc.) needed for positive identification.
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The undeveloped lands at the extreme north end of the property are included in the disturbed areas accounting as this area has been disturbed, although not in recent decades. The vegetation here is mostly fountain grass (*Pennisetum purpureum*) with scattered *kiawe* (*Prosopis pallida*) and *klu* (*Aciacia farnesiana*). Abundant here as well is shrubby *koa haole* (*Leucaena leucocephala*) and *'uhaloa* (*Waltheria indica*). A single specimen of the native endemic, *maiapilo* (*Capparis sandwichiana*), was observed in the north corner of the property. This plant is relatively common on the neighboring Queen Emma Estate parcel, and several specimens are being grown in the community garden area.

Areas of undisturbed strand vegetation occur at the north and south ends of the park, with scattered areas between having various levels of disturbance dependent upon beach use, water access, etc. The vegetation typical of this area is mostly native and includes *'aki'aki* (*Sporobolus virginicus*), tree heliotrope (*Tournefortia argentea*; non-native), *naupaka* (*Scaevola taccada*), *pōhuehue* (*Ipomoea pes-caprae*), and *'akulikuli* (*Sesuvium portulacastrum*). The transition to the disturbed areas inland supports tree heliotrope and *naupaka*, with coconut palms (*Cocos nucifera*; many recently planted), Bermuda grass (*Cynodon dactylon*), *'uhaloa*, and false alena (*Boerhavia coccinea*) common to abundant. Depressed areas are covered with pickleweed (*Batis maritima*), an indication of occasional flooding.

As noted, two areas are highly maintained and regularly watered, thus supporting a wide range of plantings (mostly ornamentals): 1) the Maka'eo Jogging Path and associated lawn and community gardens, and 2) the lawns and playing fields of the sports complex at the south end of the site. A wide variety of ornamental trees have been planted in these areas, including monkeypod (*Samanea saman*), St. Thomas tree (*Bauhania monandra*), Cook pine (*Araucaria columnaris*), *kamani* (*Calophyllum inophyllum*), *kou* (*Cordia subcordata*), frangipani (*Plumeria rubra* cultivars, mostly), among many others. Commonly planted around buildings and other structures are various cultivars of Chinese hibiscus (*Hibiscus rosa-sinensis* cultivars), gardenia (*Gardenia taitensis* and *G. sp.*), croton (*Codiaeum variegatum*), and other shrubs, as well as several palms: golden-fruited palm (*Dyopsis lutescens*), Macarthur palm (*Ptychosperma macarthurii*), coconut palm, etc.

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### ***Avian Survey Methods***

Ten avian count stations were sited approximately 300-meter apart along two transects that ran from north-to-south within the vegetated areas on either side of the runway. Eight-minute point counts were made at each of the 10 count stations. Each station was counted once. Field observations were made with the aid of Leitz 10 X 42 binoculars and by listening for vocalizations. Counts were concentrated between 06:30 a.m. and 10:00 a.m., the peak of daily bird activity. Additionally, the zoologist walked the site in a similar fashion as the botanist, to ensure that no additional species or habitats not encountered during the time dependant avian counts were present on the site.

### ***Avian Survey Results***

A total of 742 individual birds of 18 different species, representing 13 separate families, were recorded during station counts (Table 2). Two of the species recorded, Pacific Golden-Plover (*Pluvialis fulva*), and Ruddy Turnstone (*Arenaria interpres*) are native species. Both of these species are indigenous migratory shorebird species that nests in the high Arctic during the late spring and summer months, returning to Hawai'i and the Tropical Pacific to spend the fall and winter months each year. They usually leave Hawai'i for their trip back to the Arctic in late April or the very early part of May each year. The remaining 16 avian species detected are all considered to be alien to the Hawaiian Islands. No avian species currently listed, or proposed for listing under either the federal or State of Hawaii endangered species statutes was detected during the course of this survey.

Avian diversity and densities were in keeping with the habitat present within the project area and its location. Three species: Zebra Dove (*Geopelia striata*), Saffron Finch (*Sicalis flaveola*), and House Sparrow (*Passer domesticus*), accounted for slightly less than 56 percent of the total number of birds detected. The most common avian species recorded was Zebra Dove, which accounted for slightly less than 30 percent of the total number of individual birds recorded. An average of 74 individual birds was recorded per station count.

**Table 2 – Avian Species Detected Within the Kailua Park Project Site**

<i>Common Name</i>	<i>Scientific Name</i>	<i>ST</i>	<i>RA</i>
GALLIFORMES			
PHASIANIDAE - Pheasants & Partridges			
Phasianinae - Pheasants & Allies			
Gray Francolin	<i>Francolinus pondicerianus</i>	A	0.30
CHARADRIIFORMES			
CHARADRIIDAE - Lapwings & Plovers			
Charadriinae - Plovers			
Pacific Golden-Plover	<i>Pluvialis fulva</i>	IM	1.90
SCOLOPACIDAE - Sandpipers, Phalaropes & Allies			
Scolopacinae - Sandpipers & Allies			
Ruddy Turnstone	<i>Arenaria interpres</i>	IM	3.10
COLUMBIFORMES			
COLUMBIDAE - Pigeons & Doves			
Spotted Dove	<i>Streptopelia chinensis</i>	A	3.90
Zebra Dove	<i>Geopelia striata</i>	A	22.20
PSITTACIFORMES			
PSITTACIDAE - Lories Parakeets, Macaws & Parrots			
Arinae - New World Parakeets, Macaws & Parrots			
Mitred Parakeet	<i>Aratinga mitrata</i>	A	0.70
PASSERIFORMES			
ZOSTEROPIDAE - White-eyes			
Japanese White-eye	<i>Zosterops japonicus</i>	A	1.00
MIMIDAE - Mockingbirds & Thrashers			
Northern Mockingbird	<i>Mimus polyglottos</i>	A	0.50
STURNIDAE - Starlings			
Common Myna	<i>Acridotheres tristis</i>	A	6.90
EMBERIZIDAE - Emberizids			
Saffron Finch	<i>Sicalis flaveola</i>	A	10.00
Yellow-billed Cardinal	<i>Paroaria capitata</i>	A	0.40
CARDINALIDAE - Cardinals & Allies			
Northern Cardinal	<i>Cardinalis cardinalis</i>	A	0.80
FRINGILLIDAE - Fringilline and Carduleline Finches & Allies			
Carduelinae - Carduline Finches			
House Finch	<i>Carpodacus mexicanus</i>	A	5.80
Yellow-fronted Canary	<i>Serinus mozambicus</i>	A	0.30
PASSERIDAE - Old World Sparrows			
House Sparrow	<i>Passer domesticus</i>	A	9.10

Table 2 continued

<i>Common Name</i>	<i>Scientific Name</i>	<i>ST</i>	<i>RA</i>
ESTRILDIDAE - Estrildid Finches			
Estrildinae - Estrildine Finches			
African Silverbill	<i>Lonchura cantans</i>	A	0.30
Nutmeg Mannikin	<i>Lonchura punctulata</i>	A	1.60
Java Sparrow	<i>Padda oryzivora</i>	A	5.40

**KEY TO TABLE 1**

**ST** Status

A Alien – Introduced to the Hawaiian Islands by humans

IM Indigenous Migratory Species – Native to Hawai‘i, but also found elsewhere naturally, does not nest in Hawai‘i

**RA** Relative Abundance - Number of birds detected divided by the number of count stations (10)

**Mammalian Survey Methods**

With the exception of the endangered Hawaiian hoary bat (*Lazarus cinereus semotus*), or ‘ōpe‘ape‘a as it is known locally, all terrestrial mammals currently found on the Island of Hawai‘i are alien species. Most are ubiquitous. The survey of mammals was limited to visual and auditory detection, coupled with visual observation of scat, tracks, and other animal sign. A running tally was kept of all vertebrate species observed and heard within the project area.

**Mammalian Survey Results**

A total of four mammalian species were detected during the course of this survey. Numerous cats (*Felis c. catus*) were seen within the site, usually close to cat feeding stations located within the site. A total of 10 small Indian mongooses (*Herpestes a. auropunctatus*) were seen, usually associated with the cat feeding stations or in close proximity to the trash cans. Additionally numerous dogs (*Canis f. familiaris*) were observed, most being walked by humans (*Homo sapiens*).

**Discussion**

**Botanical Resources**

Most of the site is highly disturbed from a natural vegetation perspective; only the coastal strand provides a glimpse of what the vegetation would have been like several centuries ago (Figure 7). Only two native endemics of note were recorded: *maiapilo* or Hawaiian caper and *Hibiscus clayi*. *Capparis sandwichiana* is becoming rather rare in the islands, and the lowland slopes north of Kailua-Kona town constitute one area where the plant is relatively common. One specimen was found at the north end of the park property, but several are being grown to large size in the community garden area. *Hibiscus clayi* is listed as an endangered species (USFWS, 1994, 2009).

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This location would not support *H. clayi* (a species native to eastern Kauai's) were it not for the regular care and watering that these specimens receive in the community garden.

The coastal strand at the north end of the project area (shown in Figure 4) and at the south end of the beach park section supports a mostly native assemblage of plants. The latter area (shown in Figure 7) is particularly weed free and the native grass appears exceptionally robust considering the time of year, suggesting this area may be receiving some care.



Figure 7. Extensive growth of 'aki'aki on dune sand at southern end of beach park section; trees in the background are tree heliotrope.

### ***Avian Resources***

The findings of this survey are consistent with the habitat present on the site, and it's coastal location. The findings are also consistent with the results of several other avian surveys conducted in the Kailua, Kona in the recent past (David 2000a, 2000b, 2000c, 2000d, 2001, 2003, 2004a, 2004b, 2005, 2006a, 2006b, 2006c, 2007, 2008, 2009a, 2009b, 2009c, David and Guinther 2006, David et al., 2008, Guinther et al., 2005, 2009).

During the course of this survey a total of 18 avian species were recorded during the time spent within the project area (Table 2). Two of the species recorded, Pacific Golden-Plover and Ruddy

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Turnstone are native species. Both of these species are indigenous migratory shorebird species that nest in the high Arctic during the late spring and summer months, returning to Hawai'i and the Tropical Pacific to spend the fall and winter months each year. They usually leave Hawai'i for their trip back to the Arctic in late April or the very early part of May each year. The remaining 16 avian species detected are considered to be alien to the Hawaiian Islands (Table 2). Avian diversity and densities were in keeping with the habitat present within the project area, and its location. No species currently listed, or proposed for listing under either the federal or the State of Hawai'i endangered species programs were detected during the course of this survey.

Although not detected during this survey, it is possible that small numbers of the endangered endemic Hawaiian Petrel (*Pterodroma sandwichensis*), and the threatened Newell's Shearwater (*Puffins auricularis newelli*), over-fly the project area between the months of May and November (Banko 1980a, 1980b, Harrison 1990, Day et al. 2003a). Recent surveys using ornithological radar have recorded these species flying inland along the Kona coast (Day et al. 2003a). There is no suitable nesting habitat within or close to the proposed project site for either of these pelagic seabird species.

Hawaiian Petrels were formerly common on the Island of Hawai'i (Wilson and Evans 1890–1899). This pelagic seabird reportedly nested 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 Hualālai. It has, within recent historic times, been reduced to relict breeding colonies located at high elevations on Mauna Loa and, possibly, Mount Hualālai (Banko 1980a, Banko et al. 2001, Cooper and David 1995, Cooper et al. 1995, Day et al. 2003a, Harrison 1990, Simons and Hodges 1998). Hawaiian Petrels were first listed as an endangered species by the USFWS in 1967 and by the State of Hawai'i in 1973 (Federal Register 1967, DLNR 1998)

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 Moloka'i. Newell's Shearwater populations have dropped precipitously since the 1880s (Banko 1980b, Day et al., 2003b). This pelagic species nests high in the mountains in burrows excavated under thick vegetation, especially *uluhe* (*Dicranopteris linearis*) fern. Newell's Shearwater was listed as a threatened species by the USFWS in 1975 and by the State of Hawai'i in 1973 (Federal Register 1975, DLNR 1998).

The primary cause of mortality in both Hawaiian Petrels and Newell's Shearwaters is thought to be predation by alien mammalian species at the nesting colonies (U.S. Fish & Wildlife Service 1983, Simons and Hodges 1998, Ailey et al. 2001, Hue et al., 2001). Collision with man-made 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 (Hadley 1961, Telfer 1979, Sincok 1981, Reed et al. 1985, Telfer et al. 1987, Cooper and Day 1998, Podolsky et al. 1998, Ainley et al. 2001).

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### ***Mammalian Resources***

The findings of this survey are consistent with the habitat present on the site, and its location on the Big Island at the coast. The findings are also consistent with the results of several other avian surveys conducted in the Kailua, Kona in the recent past (David 2000a, 2000b, 2000c, 2000d, 2001, 2003, 2004a, 2004b, 2005, 2006a, 2006b, 2006c, 2007, 2008, 2009a, 2009b, 2009c, David and Guinther 2006, David et al., 2008, Guinther et al., 2005, 2009).

Although not detected during the course of this survey, it is probable that Hawaiian hoary bats use resources within the Park on a seasonal basis, as bats have been documented in the general Kailua Kona area on a seasonal basis (David 1990, 2009c, Jacobs 1994).

Although no rodents were detected during the course of this survey it is probable that the four established alien rodents known from the Island of Hawai‘i, roof rat (*Rattus r. rattus*), Norway rat (*Rattus norvegicus*), Polynesian rat (*Rattus exulans hawaiiensis*), and European house mice (*Mus musculus domesticus*), use resources within the project site on occasion.

All of the other mammalian species recorded during the course of this survey are commonly occurring species in the urban and park settings in Kona. All of the quadrupeds recorded are considered to be alien to the Hawaiian Islands, and none are protected under either state or the federal endangered species statutes.

### ***Stream and Wetland Resources***

This area is too dry and the ground too porous (geologically recent lava flows and soil mostly derived from wind-blown beach sand) to support streams. However, the low elevation in proximity to the coast sets up an opportunity for the formation of brackish pools at essentially sea level. Pools isolated from the sea (that is, lacking an overland connection) and having water with measurable salinity and showing tidal action are termed *anchialine*, comprising a special habitat type protected by state and federal statutes. Three areas on the subject property have potential to be defined as anchialine and/or possibly as jurisdictional wetlands. The first is a pond at the far north end at the edge of a large boulder dump. The pool here is on the order of 6 by 12 feet (2 by 3 meter) and roughly 2 feet (0.8 meter) deep. We were not equipped to sample salinity, but the pool harbored populations of a small *poeciliid* (perhaps a molly) and a shrimp characteristic of anchialine ponds called ‘*ōpae‘ula* (*Halocaridina rubra*). This pond is heavily shaded by several *kiawe* trees and surrounded by a thick growth of ‘*akulikuli*.

A second feature is a small pool in the community garden area. This pool is only about 1.5 m in diameter and less than 0.25 m deep. The pool occupies a natural basin in the *pāhoehoe* surface and thought not to be anchialine; it may be a natural, impermeable basin fed by water from a hose. The pool supports a dense population of *poeciliids* (mostly guppies) that crowd at the surface when approached, indicating the fish are being fed.

A couple of areas support dense growth of pickleweed or ‘*akuluikuli kai* (*Batis maritima*). It is difficult to determine what the source of water may be for these areas; they were dry when

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inspected on October 21. However, pickleweed is regarded as an obligate, wetland plant in Hawai'i. Therefore, an area with hydrology (a water source) dominated by pickleweed, has the potential for being classified as a wetland under federal jurisdiction. One area wedged between the runway and the low coastal dunes is probably a depression that floods on occasion, or may have saline groundwater close to the surface. Pickleweed grows in areas of saline soils and sediments, including coastal fishponds and anchialine features.

### ***Potential Impacts to Protected Species***

The redevelopment and expansion of the Park facilities is not expected to result in deleterious impacts to any botanical, avian or mammalian species currently listed or proposed for listing under either the federal or state of Hawaii endangered species statutes.

#### ***Botanical Resources***

The only protected species (*Hibiscus clayi*) found during the course of this survey is located in the community garden where several specimens have been planted as ornamentals in a garden focused on native plants (Figure 6). This is a Kaua'i Island endemic and is not known from the Island of Hawai'i in any setting other than gardens. As there are no plans to remove the garden, but rather plans to further enhance it, this action is not likely to impact this listed ornamental planting.

#### ***Hawaiian Petrel and Newell's Shearwater***

The principal potential impact that construction and operation of the proposed Park facilities poses to Hawaiian Petrels and Newell's Shearwaters is the increased threat that birds will be downed after becoming disoriented by lights associated with the project during the nesting season. The two main areas that outdoor lighting could pose a threat to these nocturnally flying seabirds is if, 1) during construction it is deemed expedient, or necessary to conduct nighttime construction activities, 2) following build-out the potential operation of streetlights and athletic field lighting.

#### ***Hawaiian Hoary Bat***

As previously discussed, it is possible that Hawaiian hoary bats over-fly portions of the site on a seasonal basis. They may also forage for volant insects that are attracted to the athletic field lighting on a seasonal basis. It is not currently known if any individual bats roost within the Park.

The principal potential impact that the development Kailua Park poses to bats is during the clearing and grubbing phases of construction as vegetation is removed. The removal of vegetation within the project site may temporarily displace individual bats, which may use the vegetation as roosting locations. As bats use multiple roosts within their home territories the potential disturbance resulting from the removal of the vegetation is likely to be minimal. During the pupping season female carrying their pups may be less able to rapidly vacate a roost site as the vegetation is cleared. Additionally adult female bats sometimes leave their pups in the roost tree while they themselves forage. Very small pups may be unable to flee a tree that is being felled. Potential adverse effects from such disturbance can be avoided or minimized by not clearing

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woody vegetation that is 4.5 meters (15 feet) or taller during the pupping season, which currently is considered to run between April 15 and August 15.

### ***Recommendations***

If nighttime construction activity or equipment maintenance is proposed during the construction phases of the project, all associated lights should be shielded, and when large flood/work lights are used they should be placed on poles that are high enough to allow the lights to be pointed directly at the ground.

If streetlights or facility lighting is installed in conjunction with the Park, it is recommended that lights be shielded to reduce the potential for interactions of nocturnally flying Hawaiian Petrels and Newell's Shearwaters with external lights and man-made structures (Reed et al. 1985, Telfer et al. 1987). This minimization measure would serve the dual purpose of minimizing the threat of disorientation and downing of Hawaiian Petrels and Newell's Shearwaters, while at the same time complying with the Hawaii County Code § 14 – 50 *et seq.* which requires the shielding of exterior lights so as to lower the ambient glare caused by unshielded lighting to the astronomical observatories located on Mauna Kea.

The existing athletic field lighting is a mix of shielded and unshielded lights. It is recommended that any existing unshielded athletic field lights be replaced with shielded lights or retrofitted with shields, and that any new athletic field lighting be shielded.

To remove the potential the clearing and grubbing of vegetation during the construction phases of the project do not result in deleterious impacts to roosting bats that may be tending young it is recommended that woody vegetation that is 4.5 meters (15 feet) or taller not be cleared between April 15 and August 15, which is when are most vulnerable to roost site clearing.

The anchialine feature at the north end of the park must be preserved and could be enhanced by removal of the *poeciliid* fish and removal of the *kiawe* trees. Since this area is not proposed for modification, further effort need not be expended. However, the adjacent massive boulder field is unstable and potentially dangerous to hikers and clearly inappropriate in a park setting. The boulders should be removed or stabilized in place.

Potential wetland/anchialine areas marked by a growth of pickleweed may need to be investigated further if plans call for alteration of the landscape in these areas. As a general rule, removal of the pickleweed would be a benefit, as this plant is regarded as an aggressive invasive. Problems could arise with respect to Clean Water Act violations if fill were to be placed in the areas of pickleweed prior to determination of the need for a Department of the Army permit for fill in wetlands.

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***Glossary:***

Alien – Introduced to Hawai‘i by humans

Anchialine - A land locked body of water with a subterranean connection to the ocean

Commensal - Animals that share humans’ food and shelter, such as rats and mice

Endangered – Listed and protected under the Endangered Species Act of 1973, as amended as an endangered species.

*Hālau* – A school, academy, group or club, in this instance a canoe club

*Hale* – House or building

Indigenous – Native to the Hawaiian Islands, but also found elsewhere naturally

*Mauka* – Upslope, towards the mountains

*Makai* – Down-slope, towards the ocean

Nocturnal – Night-time, after dark

*‘Ōpae‘ula* – Hawaiian native anchialine shrimp

*‘Ōpe‘ape‘a* – Hawaiian hoary bat

*Pāhoehoe* – Sheet lava formed by relatively fast moving lava flows

Pelagic – An animal that spends its life at sea – in this case seabirds that only return to land to nest and rear their young

Phylogenetic – The evolutionary order that organisms are arranged by

Poeciliid – Family of fresh-water fish, which are live bearing. The order includes well known aquarium fish such as guppy, molly and swordtails

Sign – Biological term referring tracks, scat, rubbing, odor, marks, nests, and other signs created by animals by which their presence may be detected

Threatened – Listed and protected under the ESA as a threatened species

Volant – Flying, capable of flight, as in flying insect

Xeric - Extremely dry conditions or habitat

ASL – Above mean sea level

DLNR – Hawaii State Department of Land & Natural Resources

TMK – Tax Map Key

USFWS – United State Fish & Wildlife Service

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***Literature Cited:***

- Ainley, D. G, R. Podolsky, L. Deforest, G. Spencer, and N. Nur. 2001. The Status and Population Trends of the Newell's Shearwater on Kaua'i: Insights from Modeling, *In: Scott, J. M, S. Conant, and C. Van Riper III (editors) Evolution, Ecology, Conservation, and Management of Hawaiian Birds: A Vanishing Avifauna*. Studies in Avian Biology No. 22:. Cooper's Ornithological Society, Allen Press, Lawrence, Kansas. (Pg. 108-123)
- American Ornithologist's Union. 1998. *Check-list of North American Birds*. 7th edition. AOU. Washington D.C. 829pp.
- \_\_\_\_\_. 2000. Forty-second supplement to the American Ornithologist's Union *Check-list of North American Birds*. *Auk* 117:847-858.
- Banks, R. C., C. Cicero, J. L. Dunn, A. W. Kratter, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, and D. F. Stotz. 2002. Forty-third supplement to the American Ornithologist's Union *Check-list of North American Birds*. *Auk* 119:897-906.
- \_\_\_\_\_. 2003 Forty-fourth supplement to the American Ornithologist's Union *Check-list of North American Birds*. *Auk* 120:923-931.
- \_\_\_\_\_. 2004 Forty-fifth supplement to the American Ornithologist's Union *Check-list of North American Birds*. *Auk* 121:985-995.
- \_\_\_\_\_. 2005 Forty-sixth supplement to the American Ornithologist's Union *Check-list of North American Birds*. *Auk* 122:1031-1031.
- \_\_\_\_\_. 2006 Forty-seventh supplement to the American Ornithologist's Union *Check-list of North American Birds*. *Auk* 123:926-936.
- Banks, R. C., C. R. Terry Chesser, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, and D. F. Stotz. 2007 Forty-eighth supplement to the American Ornithologist Union *Check-list of North American Birds*. *Auk* 124:1109-1115.
- Banks, R. C., C. R. Terry Chesser, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, and D. F. Stotz, and K. Winker. 2008 Forty-ninth supplement to the American Ornithologist Union *Check-list of North American Birds*. *Auk* 125:758-768.
- Chesser, R. T., R. C. Banks, F. K. Barker, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, and D. F. Stotz, and K. Winker. 2009. Fiftieth supplement to the American Ornithologist Union *Check-list of North American Birds*. *Auk* 126:1-10.
- Banko, W. E. 1980a. Population Histories- Species Accounts Seabirds: Hawaiian Dark-rumped Petrel ('Ua'u). Cooperative National Park Resources Studies Unit, University of Hawaii at Manoa, Department of Botany, Technical Report #5B.

- 
- \_\_\_\_\_. 1980b. Population Histories- Species Accounts Seabirds: Newell's Shearwater ('A'o). Cooperative National Park Resources Studies Unit, University of Hawaii at Manoa, Department of Botany, Technical Report #5A.
- Banko, P. C., R. E. David, J. D. Jacobi, and W. E. Banko. 2001. Conservation Status and Recovery Strategies for Endemic Hawaiian Birds, *In*: : Scott, J. M, S. Conant, and C. Van Riper III (editors) *Evolution, Ecology, Conservation, and Management of Hawaiian Birds: A Vanishing Avifauna*. Studies in Avian Biology No. 22. Cooper's Ornithological Society, Allen Press, Lawrence, Kansas (Pg. 359-376).
- Cooper, B. A. and R. E. David. 1995. Radar and Visual Surveys of Seabirds in the HELCO SSP Unit 71, Puna, Hawaii, During July 1995. Prepared for R. M. Towill Corporation & Hawaii Electric Light Co.
- Cooper, B.A., R.E. David, and R.J. Blaha. 1995. Radar and Visual Surveys of Endangered Seabirds and Bats in the Pohakuloa Training Area, Hawai'i, During Summer 1995. Prepared for R.M. Towill Corporation and the U.S. Army Corps of Engineers, Pacific Division (POD).
- Cooper, B. A and R. H. Day. 1998. Summer Behavior and Mortality of Dark-rumped Petrels and Newells' Shearwaters at Power Lines on Kauai. *Colonial Waterbirds*, 21 (1): 11-19.
- David, R. E. 1990. North Kona Christmas Count 1989. 'Elepaio Vol. 50, No. 5. (Pg. 41-42).
- \_\_\_\_\_. David, R. E. 1999. Faunal Survey of Terrestrial Vertebrate Species, within the Proposed University of Hawai'i Center at West Hawai'i Site, North Kona, Hawai'i. Hawai'i Community College Long Range Development Plan. Prepared for: Wil Chee Planning.
- \_\_\_\_\_. 2000a. Faunal Survey of Avian and Mammalian Species within the Proposed Kaloko-Honokohau Business Park Site, Kaloko, North Kona District, Island of Hawai'i. Prepared for: William L. Moore Planning & Lanihau Partners, L.P.
- \_\_\_\_\_. 2000b. Faunal Survey of Avian and Mammalian Species, Kona International Airport Master Plan Update. Keahole, North Kona, Hawai'i. Prepared for: Edward K. Noda & Associates & Department of Transportation Airports Division (HDOT-AIR).
- \_\_\_\_\_. 2000c. Faunal Survey of Avian and Mammalian Species Kaloko Industrial Park, Phases III & IV, Kaloko, North Kona, Hawai'i. Prepared for: Wilson Okamoto & Associates and TSA International, Ltd.
- \_\_\_\_\_. 2000d. A Survey of Avian and Mammalian Species, Various Sites at Ka-'u-pulehu. North Kona District, Island of Hawai'i. Hawai'i. Prepared for: Belt Collins Hawaii, Ltd.
- \_\_\_\_\_. 2001. Faunal Survey of Avian and Mammalian Species on the DHHL Kealakehe Project Site at, North Kona District, Hawai'i. Prepared for: PBR Hawaii, Inc. and The Department of Hawaiian Homes. 14 pp.
- \_\_\_\_\_. 2003. A Survey of Avian and Terrestrial Mammalian Species on the Verizon Hawaii, Inc. Lot TMK: 3/7-4-08:20, at Keahuolu, North Kona District, Hawai'i. Prepared for: Blu Croix Ltd., and Verizon Hawaii, Ltd.
-

- 
- David, R. E. 2004. A Survey of Avian and Terrestrial Mammalian Species on TMK: 7-3-08:47, North Kona District, Island of Hawai‘i. Prepared for: Smith & Collins L.L.C., Dallas, Texas.
- \_\_\_\_\_. 2004. A Survey of Avian and Terrestrial Mammalian Species for the Proposed Hina Lani Reservoir and Transmission Line, North Kona District, Island of Hawai‘i. Prepared for: Wilson Okamoto Corporation & Hawaii County Department of Water Supply
- \_\_\_\_\_. 2005. A Botanical Survey of an Eight Acre Portion of TMK(7)3-09:28, North Kona District, Island of Hawai‘i. Prepared for: Wilson Okamoto Corporation, Ltd.
- \_\_\_\_\_. 2006. A Survey of Avian and Terrestrial Mammalian Species, Kona Kai Ola at Kealakehe, lands of KeahouLū, North Kona District, Island of Hawai‘i. Prepared for: Oceanit Laboratories, Inc. and Jacoby Development, Inc
- \_\_\_\_\_. 2006. Biological Surveys of TMK(7)3-10:003, 051, 052, 053 & 054, as well as Portions of the Proposed Homestead Road Conducted for the Lokahi Ka‘ū Development, North Kona District, Island of Hawai‘i. Prepared for: Westpro Holdings, LLC.
- \_\_\_\_\_. 2006. A Survey of Avian and Terrestrial Mammalian Species on TMK (3) 7-3- 09:17, 25, 26, and 28, at Kaloko, and Kohanaiki, North Kona District, Island of Hawai‘i. Prepared for: Wilson Okamoto Corporation.
- \_\_\_\_\_. 2007. A Survey of Avian and Terrestrial Mammalian Species for the Proposed Ane Keohokalole Highway North Kona District, Island of Hawai‘i. Prepared for: Belt Collins Hawaii, and the Hawaii County, Department of Public Works.
- \_\_\_\_\_. 2008. Surveys of Avian and Terrestrial Mammalian Species for the Proposed Ane Keohokalole Highway North Kona District, Island of Hawai‘i. Prepared for: Belt Collins Hawaii, and the Hawaii County, Department of Public Works.
- \_\_\_\_\_. 2009. Biological Surveys Conducted on Saint Michael the Archangel Church Property, Kailua, North Kona District, Island of Hawai‘i. Prepared for: The North Kona Catholic Community Parish.
- \_\_\_\_\_. 2009. Biological Surveys for the Proposed Palani Road Widening Project, North Kona District, Island of Hawai‘i. Prepared for: Belt Collins Hawaii, and the County of Hawai‘i, Department of Public Works.
- \_\_\_\_\_. 2009c. Unpublished Field Notes – Island of Hawai‘i: 1985-2009.
- David, R. E., and E. B. Guinther 2006. A Survey of Botanical, Avian and Terrestrial Mammalian Species for the Proposed Kona Heights Subdivision, North Kona District, Island of Hawai‘i. Prepared for: Group 70 International, and Kona Heights LLC.
- David, R. E., E. B. Guinther, and S. Burr 2008. Biological Surveys Conducted as Part of the Makalawena Master Plan, North Kona District, Island of Hawai‘i. Prepared for Belt Collins Hawaii Ltd. & Kamehameha Schools.

- 
- Guinther, E. B., R. E. David and S. Montgomery 2005. Biological surveys of the University of Hawaii Center at West Hawaii (UHCWH) Main Street Collector Road, North Kona District, Island of Hawaii. Prepared for: Wil Chee Planning, Inc.
- \_\_\_\_\_. 2009. Biological surveys for the University of Hawaii Center at West Hawaii (UHCWH), North Kona District, Island of Hawai'i. Prepared for: Wil Chee Planning, Inc.
- Day, R. H., B. Cooper, and R. J. Blaha. 2003a. Movement Patterns of Hawaiian Petrels and Newell's Shearwaters on the Island of Hawai'i. *Pacific Science*, 57, 2:147-159.
- Day, R. H., B. Cooper, and T. C. Telfer. 2003b. Decline of Townsend's (Newell's Shearwaters (*Puffinus auricularis newelli*) on Kauai, Hawaii. *The Auk* 120: 669-679.
- Department of Land and Natural Resources. (DLNR). 1998. Indigenous Wildlife, Endangered and Threatened Wildlife and Plants, and Introduced Wild Birds. Department of Land and Natural Resources. State of Hawaii. Administrative Rule §13-134-1 through §13-134-10, dated March 02, 1998.
- Federal Register. 1967. Department of the Interior, Fish and Wildlife Service, Endangered and Threatened Wildlife and Plants. Appendix D – United States List of Endangered Native Fish and Wildlife; *Federal Register*, 32 (March 11, 1967) : 4001.
- \_\_\_\_\_. 1975. Department of the Interior, Fish and Wildlife Service, List of Endangered and Threatened Fauna. *Federal Register*, 40 No. 205 (September 25, 1975): 44149-44151.
- \_\_\_\_\_. 2005. Department of the Interior, Fish and Wildlife Service, 50 CFR 17. Endangered and Threatened Wildlife and Plants. Review of Species That Are Candidates or Proposed for Listing as Endangered or Threatened; Annual Notice of Findings on Resubmitted Petition; Annual Description of Progress on Listing Actions. *Federal Register*, 70 No. 90 (Wednesday, May 11, 2005): 24870-24934.
- Hadley, T. H. 1961. Shearwater calamity on Kauai. *Elepaio* 21:60.
- Harrison, C. S. 1990. *Seabirds of Hawaii: Natural History and Conservation*. Cornell University Press, Ithica, N.Y. 249 pp.
- Henshaw, H.W. 1902. *Complete list of birds of the Hawaiian Possessions with notes on their habits*. Thrum, Honolulu. 146 pp.
- Hue, D., C. Glidden, J. Lippert, L. Schnell, J. MacIvor and J. Meisler. 2001. Habitat Use and Limiting Factors in a Population of Hawaiian Dark-rumped Petrels on Mauna Loa, Hawai'i. , in: : Scott, J. M, S. Conant, and C. Van Riper III (editors) *Evolution, Ecology, Conservation, and Management of Hawaiian Birds: A Vanishing Avifauna*. Studies in Avian Biology No. 22. Cooper's Ornithological Society, Allen Press, Lawrence, Kansas (Pg. 234-242).
- Jacobs, D. S. 1994. Distribution and Abundance of the Endangered Hawaiian Hoary Bat, *Lasiurus cinereus semotus*, on the Island of Hawai'i. *Pacific Science*, Vol. 48, No.
-

- 
- 2: 193-200.
- Podolsky, R., D.G. Ainley, G. Spencer, L. de Forest, and N. Nur. 1998. "Mortality of Newell's Shearwaters Caused by Collisions with Urban Structures on Kaua'i". *Colonial Waterbirds* 21:20-34.
- Pukui, M. K., S. H. Elbert, and E. T. Mookini. 1974. *Place Names of Hawaii*. University of Hawaii Press. Honolulu, Hawai'i. 289 pp.
- Reed, J. R., J. L. Sincock, and J. P. Hailman 1985. Light Attraction in Endangered Procellariiform Birds: Reduction by Shielding Upward Radiation. *Auk* 102: 377-383.
- Simons, T. R., and C. N. Hodges. 1998. Dark-rumped Petrel (*Pterodroma phaeopygia*). In A. Poole and F. Gill (editors). *The Birds of North America*, No. 345. The Academy of Natural Sciences, Philadelphia, PA. and the American Ornithologists Union, Washington, D.C.
- Sincock, J. L. 1981. Saving the Newell's Shearwater. Pages 76-78 in *Proceedings of the Hawaii Forestry and Wildlife Conference*, 2-4 October 1980. Department of Land and Natural Resources State of Hawaii, Honolulu.
- Staples, G. W. and D. R. Herbst. 2005. *A Tropical Garden Flora. Plants Cultivated in the Hawaiian Islands and other Tropical Places*. Bishop Museum, Honolulu. 908 pp.
- Telfer, T. C. 1979. Successful Newell's Shearwater Salvage on Kauai. *'Elepaio* 39:71
- Telfer, T. C., J. L. Sincock, G. V. Byrd, and J. R. Reed. 1987. Attraction of Hawaiian seabirds to lights: Conservation efforts and effects of moon phase. *Wildlife Society Bulletin* 15:406-413.
- Tomich, P.Q. 1986. *Mammals in Hawaii*. Bishop Museum Press. Honolulu, Hawaii. 37 pp.
- U.S. Fish & Wildlife Service (USFWS) 1983. Hawaiian Dark-Rumped Petrel & Newell's Manx Shearwater Recovery Plan. USFWS, Portland, Oregon. February 1983.
- \_\_\_\_\_. 1994. Final listing endangered and threatened wildlife and plants; determination of endangered or threatened status for 24 plants from the island of Kauai, **HI**. *Federal Register* 59(38): 9304-9329.s
- \_\_\_\_\_. 2005. Endangered and Threatened Wildlife and Plants. 50CFR 17:11 and 17:12 (Tuesday, November 1, 2005).
- \_\_\_\_\_. 2009. USFWS Threatened and Endangered Species System (TESS), online at [http://ecos.fws.gov/tess\\_public/StartTESS.do](http://ecos.fws.gov/tess_public/StartTESS.do)
- Wagner, W.L., D.R Herbst, and S.H. Sohmer. 1990. *Manual of the Flowering Plants of Hawai'i*. University of Hawaii Press, Honolulu, Hawaii 1854 pp.
-

---

Wagner, W.L. and D.R. Herbst. 1999. *Supplement to the Manual of the flowering plants of Hawai'i*, pp. 1855-1918. In: Wagner, W.L., D.R. Herbst, and S.H. Sohmer, Manual of the flowering plants of Hawai'i. Revised edition. 2 vols. University of Hawaii Press and Bishop Museum Press, Honolulu.

Wilson, S. B., and A. H. Evans. 1890-1899. *Aves Hawaiiensis: The birds of the Sandwich Islands*. R. H. Porter, London.

## **Appendix B**

Phase I, Environmental Site Assessment  
Kimura International, Inc.  
July 2009

# **PHASE I ENVIRONMENTAL SITE ASSESSMENT**

**KAILUA PARK  
75-5530 KUAKINI HIGHWAY  
KAILUA -KONA, HAWAI'I 96816**

**TMKS:  
(3) 7-5-005: PARCEL 007  
(3) 7-5-005: PARCEL 083**

Prepared For:  
**County of Hawai'i  
Parks & Recreation**  
101 Pauahi Street, Suite 6  
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July 2009

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## ACRONYMS

AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CERC-NFRAP	CERCLIS No Further Remedial Action Planned
CESQG	Conditionally Exempt Small Quantities Generator
CORRACTS	TSD facility subject to Corrective Action under RCRA
DLNR	Hawai'i State Department of Land and Natural Resources
EDR	Environmental Data Resources, Inc.
EPA/USEPA	U.S. Environmental Protection Agency
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
FINDS	Facility Index System/Facility Identification Initiative Program Summary Report
FTTS INSP	Federal Insecticide, Fungicide, and Rodenticide Act/TSCA
HDOH	Hawai'i Department of Health
HECO	Hawaiian Electric Company
HWS	State Hazardous Waste Sites
HEER	HDOH, Hazard Evaluation and Emergency Response Office
HMS	Hazardous Materials Survey
LUST	Leaking Underground Storage Tank
LUST	HDOH Leaking Underground Storage Tank Database
NFA	No Further Action
NFRAP	No Further Remedial Action Planned
NGPC	Notice of General Permit Coverage
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
PADS	PCB Activity Database System
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery (RCRA) Information System
SARA	Superfund Amendments and Reauthorization Act
SHWB	HDOH, Solid and Hazardous Waste Branch
SHWS	State Hazardous Waste Sites List
SPILLS	HDOH HEER Office State Spills List
TMK	tax map key
TPH	total petroleum hydrocarbons
TSD	treatment, storage and disposal
USDA	United States Department of Agriculture
USGS	U.S. Geological Survey
UST	Underground Storage Tank
UST	HDOH Registered Underground Storage Tanks Database

## 1.0 CERTIFICATIONS AND LIMITATIONS

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The findings and conclusions presented in this report are professional opinions based solely upon limited visual observations of the property and vicinity, the interpretation of historical information and documents available, and interviews with representatives of the current landowner. This report is intended for the use of the County of Hawai'i (COH), exclusively for the property indicated.

Kimura International makes no guarantee or warranty; either expressed or implied, except that our services are consistent with good commercial or customary practices designed to conform to acceptable industry standards. This Phase I ESA was prepared in accordance with the scope and limitations of ASTM Practice E1527-05 for TMKs (3) 7-5-005: Parcel 007 and (3) 7-5-005: Parcel 083. Any exceptions to, or deletions from, this practice are described within the Executive Summary and body of this report.

It is impossible to dismiss absolutely the possibility that parts of the site, or adjacent properties, may be adversely impacted by recognized environmental conditions. There is always a possibility that undisclosed contamination may exist from the improper handling or disposal of hazardous substances or petroleum products at the property. No warranty or representation, either expressed or implied, is included or intended in its proposal, contracts or reports.

Opinions presented in this report apply only to the property as outlined and represents the conditions present at the time of our investigation; they cannot account for site changes that may occur after the completion of the site inspection.

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §312.10 of 40 CFR Part 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed all the appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.



---

Brandis Ueyama  
Environmental Scientist  
Kimura International, Inc.

21 July 2009  
Date

## 2.0 EXECUTIVE SUMMARY

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This report presents the results of Kimura International's (KI) Phase I Environmental Site Assessment (Phase I ESA), performed in conformance with the scope and limitations of the American Society for Testing and Materials (ASTM) Practice E1527-05.

The following summarizes the independent conclusions representing Kimura International's best professional judgment based on available information. Information regarding operational conditions provided by the client or their representatives has been assumed to be correct and complete. The conclusions presented are based on the conditions that existed at the time of the assessment.

The subject property ("site"), referred to as the Kailua Park, is identified by TMKs: (3) 7-5-005: Parcel 007 and (3) 7-5-005: Parcel 083. The site is located in Kailua-Kona, Hawai'i, on the island of Hawai'i (Appendix A, Figure 1), at an elevation of approximately thirteen (13) feet above mean sea level (msl). A map of the TMKs is provided as Appendix A, Figure 2. The property encompasses approximately 117 acres of land and is currently used as a recreational park. Facilities include a swimming pool, gymnasium, tennis courts, basketball courts, sports fields, an in-line skating rink, a skateboarding park, an events pavilion, canoe club storage, facilities maintenance storage, children's play equipment, parking lots, a beach park, a walking path, and undeveloped land.

On March 31, 2009, KI performed a site reconnaissance to identify the use, storage, generation, and/or disposal of potentially hazardous materials and petroleum products. KI observed various chemicals and solvents related to the everyday maintenance and use of the property being stored on-site. In addition, two (2) 55-gallon drums of acetone were located in the canoe halau portion of the old terminal building. The acetone was being used by members of the halau for canoe finishing and maintenance. At the time of the survey, these drums were not labeled and were not being stored according to Occupational Safety and Health Administration (OSHA) standards. An old, rusted 55-gallon drum in poor condition was also observed adjacent to the horseshoe pit shelter. It was unlabeled, and its contents unknown. However, there were no indications of gross staining, stressed vegetation or olfactory observations to indicate that any of the chemicals or solvents has contaminated the site.

A visual inspection for hydraulic and electrical equipment, or electrical components, that use fluid that may contain polychlorinated biphenyls (PCB) was also conducted. Thirteen (13) utility pole-mounted and two (2) vault electrical transformers were observed on-site. An inquiry with Hawaiian Electric Light Company disclosed that eight of the thirteen pole-mounted transformers did not have testing information and must therefore be considered to contain PCBs. The transformers were in good condition and according to HELCO, did not have any history of leaks. The two vault transformers were found to be "PCB-free."

The site reconnaissance did not reveal any signs of illegal dumping of hazardous materials. However, on the northwest end of the old airport runway, an empty quart bottle of motor oil was found next to an oil stain, suggesting that someone in the general public may have performed an

illegal oil change on a personal vehicle on County property. The minimal size of the oil stain and the fact that no other stains were found suggests that the spill was most likely an isolated incident and therefore is not an environmental concern.

KI also noted that a number of telephone poles have been used as a landscaping element to provide a border around the area leased to two canoe halau by the state. Based on a visual inspection of the telephone poles, it is highly possible that they had been treated with creosote. Creosote is a thick, oily liquid derived from coal tar, to help preserve the wood. Creosote has been listed as a probable human carcinogen by the International Agency for Research on Cancer (IARC). There has been some concern of the affects of creosote treated telephone poles on the environment, as creosote may leach from the wood and into groundwater over time. As a result, its use is slowly being phased out. The poles have been painted with green paint which prevents the creosote from leaching into the soil below.

A number of wooden structures and components were present on site at the time of the survey. Much of this wood, if used in a location where they would be exposed to the elements, may have been treated with chromated copper arsenate (CCA). The arsenic component of CCA is of primary concern, and it appears on OSHA's Hazard Communications list. While unlikely, it has been shown that CCA can leach from treated lumber that is not sealed or protected. However, there are **no** regulations in place that require the removal of treated lumber from existing structures. The Environmental Protection Agency (EPA) does recommend that treated lumber be sealed and maintained to prevent possible leaching of CCA out of the wood and into the environment.

A visual lead paint and asbestos survey was conducted on the structures located on-site. Samples for laboratory analysis were **not** taken and given the age of the structures, certain building materials could possibly contain lead and/or asbestos containing materials. Suspect asbestos containing building materials identified are mastics, grouting, pipe insulation, vinyl floor tiles, drywall, joint compound, window/door caulking, roofing materials, siding weatherproofing, Galbestos roofing and Transite piping. All painted surfaces and their underlying layers could be lead-containing. The structures featuring these components are discussed in Section 6 of this document. However, at the time of the survey, **none of these suspect asbestos or lead containing materials were in a condition that would be cause for environmental or human health concern.**

KI reviewed local, state, and federal agency lists and available records to determine if the site and the surrounding properties have any history of hazardous waste generation, contamination, or any general environmental concerns. The site was **not** listed on any of the available state or federal environmental databases reviewed. Additionally, the contracted database search did not identify any properties adjacent to the site, within the recommended search radius, on any federal lists or databases. There were no State Landfills or Solid Waste Disposal Sites within a 1-mile radius, no State Hazardous Waste Sites (SHWS) listed within a 0.5-mile radius, and no registered Underground Storage Tanks (UST) within a 0.25-mile radius of the subject property. One (1) Leaking Underground Storage Tank (LUST) site was found within a 0.5-mile radius of the site:

The *Kona Radio Station/Baseyard* was found to have two cases of “Confirmed Releases” from a LUST. In both cases site cleanup has been completed and “No Further Action” (NFA) was issued by the State of Hawaii Department of Health (HDOH). Based on the facility’s status of NFA, as well as its location downgradient (lower) from the subject property, KI believes that the LUST does not pose any environmental concerns to Kailua Park.

A 1000-gallon above ground storage tank filled with propane is present on the property. Used for pool operations, the tank was in good condition and properly labeled at the time of the survey.

## **FINAL RECOMMENDATIONS**

Kimura International has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-05 for TMKs (3) 7-5-005: Parcel 007 and Parcel 083. Kimura International did not find evidence of gross contamination or illegal dumping of hazardous materials anywhere on site. Based upon this fact, as well as a historical records review, it is Kimura International’s opinion that a Phase II assessment is **not** warranted at this time.

However, Kimura International would like to offer the following recommendations for proactive environmental health and safety measures:

- The two 55-gallon drums of acetone in the canoe halau should be properly labeled and stored according to OSHA regulations (29 CFR §1910.106)
- The 55-gallon drum of unknown contents at the horseshoe pit should either be properly labeled and safely stored as required by their contents or removed from the premises.
- The telephone poles used as a border around the canoe halaus should be regularly inspected to ensure the creosote does not impact the soil.
- Wooden structures that may have been constructed with treated wood should be regularly inspected and maintained to reduce the risk of arsenic exposure to members of the public.
- If buildings on site are to be renovated or demolished, a comprehensive survey should be conducted to identify, quantitatively, all building materials containing asbestos, lead paint, arsenic, PCBs and other hazardous materials to ensure proper handling and disposal.

### **3.0 INTRODUCTION**

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Kimura International has completed a Phase I ESA of the property referred to as the Kailua Park, Kailua-Kona, Hawai‘i, TMKs (3) 7-5-005: Parcel 007 and (3) 7-5-005: Parcel 083. This Phase I ESA was prepared for Hawai‘i County. In December of 2008, Parcel 007, formerly known as the Old Kona Airport State Recreation Area, was transferred from the State of Hawai‘i to the County of Hawai‘i. This Phase I ESA was conducted as part of the County of Hawai‘i’s due diligence efforts regarding acquiring the parcel for the expansion and improvements of Kailua Park.

#### **3.1 PURPOSE**

Under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), owners and operators of real estate where there is hazardous substance contamination may be held strictly liable for the costs of cleaning up contamination found on their property. No evidence linking the owner/operator with the placement of the hazardous substances on the property is required.

Congress, in response to pressure from business and academic groups, established the “innocent landowner defense” in the 1986 amendments to CERCLA. These are known as the Superfund Amendments and Reauthorization Act (SARA). To establish innocent landowner status, the landowner “must have undertaken, at the time of acquisition, all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial and customary practice in an effort to minimize liability.”

In an effort to clarify what constitutes “all appropriate inquiry,” the American Society for Testing and Materials (ASTM) has developed a standard that provides specific definition of the steps one should take when conducting a “due diligence” Phase I environmental site assessment for commercial real estate. The site assessment documented herein complies with the current ASTM E1527-05 Standard Practice for Environmental Site Assessments.

This investigation was initiated as a requirement regarding the lease of the property. The purpose of the investigation is to identify and evaluate evidence that may indicate any recognized environmental conditions at the site due to past or current management of chemicals or other materials that, if released or not properly controlled, could present a risk to human health or the environment.

#### **3.2 SCOPE OF WORK**

The purpose of this Phase I ESA was to identify whether surficial or historical evidence indicated that the presence of recognized environmental conditions, as defined by ASTM E1527, that may adversely impact the Property and whether additional investigation is warranted. This Phase I ESA was conducted using the scope and limitations of ASTM E1527. The information provided is assumed to be correct and complete, unless noted otherwise. The scope of work included the following:

- Summarize general geologic and hydrogeologic conditions onsite based on available literature and professional experience.
- Review historical aerial photographs, information of past ownership, and conduct interviews with knowledgeable persons to evaluate historic land use.
- Conduct a review of local, state, and federal agency lists and available files of reported hazardous waste sites and hazardous substance/petroleum sources and releases. KI queried the Environmental Data Resources, Inc. (EDR) database of federal and state environmental release listings. The EDR database provides results in proximity to the site following American Society for Testing and Materials (ASTM) search distance guidelines, is continually updated, and is considered one of the most comprehensive in the industry.
- Conduct a site reconnaissance visit to evaluate current on-site use/storage of hazardous materials and visual indications that this use may have impacted the site.
- Prepare this report summarizing the findings of the Phase I ESA and present any recommendations for additional site investigation activities and/or corrective actions for the site, if warranted.

## **4.0 SITE DESCRIPTION**

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### **4.1 LOCATION AND DESCRIPTION**

The site (TMKs 7-5-005: Parcel 007 and 7-5-005: Parcel 083) consists of approximately 117 acres of land in Kailua-Kona on the island of Hawai'i (Appendix A, Figure 1). The subject property is used as a community park and recreational center. Currently the site consists of baseball/softball fields, soccer fields, multiuse football and soccer fields, tennis courts, basketball courts, a swimming pool, a gymnasium, maintenance storage facilities, a Department of Land and Natural Resources (DLNR) warehouse, a former DMV facility, canoe club storage, an in-line skating rink, playground, an events pavilion, a skateboarding park, beach access, beach pavilions, restroom facilities and parking areas. The site is bordered by undeveloped land to the north and south; the Swing Zone Golf Facility and undeveloped land to the east; and residential homes and the Pacific Ocean to the west.

The surface area of Parcel 007 generally consists of asphalt groundcover where the Old Kona Airport Runway is found. Areas adjacent to the shoreline are lightly landscaped with grass and sand groundcover. Parcel 007 also encompasses parts of the Kailua Park. The groundcover for this area is mainly grass, with concrete and asphalt found at the swimming pool and gymnasium. The ground cover for Parcel 083 consists of grass concrete and asphalt. Visual observation of the accessible portions of the property did not identify evidence of onsite pits, dry wells, or illegal chemical dumping.

### **4.2 SITE AND VICINITY GENERAL CHARACTERISTICS**

#### **4.2.1 SITE TOPOGRAPHY AND DRAINAGE**

Topographic map coverage of the site vicinity is provided by the United States Geological Survey, Island of Hawai'i 7.5-minute Keahole Point Quadrangle, 1996. The elevation of the subject property is approximately thirteen (13) feet above msl. The site and surrounding areas appeared relatively flat, with no discernible gradient. The nearest body of water is the Pacific Ocean, located approximately 20 feet west of the site. The groundcover within the vicinity of TMK 7-5-005: Parcel 083, which comprises an area of the current park, is generally grass, with areas covered by asphalt and concrete. The groundcover within the vicinity of TMK 7-5-005: Parcel 007, which comprises the runway for the Old Kona Airport and the remainder of the Kailua Park, is generally asphalt and concrete, except along the edge of the shoreline where sand and some grass cover can be found. The northern boundary of this parcel is covered by old lava flows. The area of the park that is found within Parcel 007 is primarily grass with areas of concrete and asphalt near the gymnasium and swimming pool.

#### **4.2.2 HYDROGEOLOGY**

The primary drinking water in the Hawaiian Islands is drawn from basal groundwater. Basal groundwater is formed by rainwater percolating down through the residual soils and permeable volcanic rock. The entire island situated below sea level, except within rift zones of the volcanoes, is saturated with ocean salt water. Freshwater forms a basal lens called the "Ghyben-Herzberg" lens that floats on the salt water. A zone of transition between the fresh groundwater

and the ocean salt water occurs due to the constant movement of the interface because of tidal fluctuations, seasonal fluctuations in recharge and discharge, and aquifer development (Macdonald, et al., 1983).

Downward percolation of rainwater may be stopped by impermeable layers such as dense lava flows, alluvial clay layers and volcanic ash. The groundwater then forms a perched or high-level aquifer, which is not in contact with salt water. Recharge of the aquifer occurs in areas of high rainfall, which are the interior mountainous areas. The groundwater flows from the recharge areas to the areas of discharge along the shoreline. Frictional resistance to groundwater flow causes it to pile up within the island until it attains sufficient hydraulic head to overcome friction. Thus, basal groundwater tends to slope toward the shoreline.

The site is underlain by the Keauhou Aquifer System, which is part of the Hualalai Aquifer Sector on the island of Hawai'i. The aquifer is classified by Mink and Lau, 1990, with the system identification number 80901111 (11211). This system includes an unconfined basal aquifer in flank (horizontally extensive lavas) lithology. The groundwater in this aquifer is described as currently used and containing groundwater with a low salinity [250 to 1,000 milligrams/liter (mg/l) Chloride (Cl<sup>-</sup>)]. The groundwater is a drinking water source, and is described as irreplaceable with a high vulnerability to contamination (Mink and Lau, 1990).

#### **4.2.3 GEOLOGY**

The island of Hawai'i is the largest of the Hawaiian Islands. Hawai'i consists of five shield volcanoes. Kohala in the north is the oldest, Hualalai on the west is a dormant volcano, Mauna Kea, also dormant, is the largest of the volcanoes, Mauna Loa and Kilauea on the south are the most active on the island. The subject property is located at the western base of Hualalai.

#### **4.2.4 SOILS**

The soil at the site is mapped as pahoehoe lava flows. Pahoehoe lava flows have a billowy, glassy surface that is relatively smooth. However, in some areas the surface is rough and broken, with hummocks and pressure domes. Pahoehoe lava has no soil coverings and is typically bare of vegetation except for mosses and lichens. Elevations range from sea level to 13,000 feet above mean sea level and the annual rainfall amounts range from 10 to 140 inches per year. (USDA, 1972).

## 5.0 RECORDS REVIEWED

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A comprehensive review of historical data for the site was conducted for the purpose of evaluating whether past or current practices (i.e., the use, storage, treatment, generation, and/or disposal of hazardous substances or petroleum products) on-site or at adjacent properties may be of environmental concern. The following sections lists the historical information sources reviewed. They include the Environmental Data Resources, Inc. (EDR) report that describes federal, state, and local lists and available files of reported hazardous substance/petroleum product sources and releases, relevant aerial photographs, and relevant property transaction records.

### 5.1 STANDARD ENVIRONMENTAL RECORD SOURCES

To obtain information concerning recognized environmental conditions at or near the parcels, Kimura International contracted Environmental Data Resources, Inc. (EDR) to conduct an environmental database search. EDR is a company that specializes in the review of public regulatory environmental databases in accordance with ASTM E 1527-05. Lists were reviewed for incidents and releases at the site and at properties within the vicinity, according to or exceeding the ASTM recommended search distances. The complete EDR report is located in Appendix B.

Federal and State databases reviewed are provided below.

#### *Federal Databases:*

- National Priorities List (NPL)
- Proposed NPL
- Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)
- CERCLIS No Further Remedial Action Planned (CERC-NFRAP)
- Corrective Action Report (CORRACTS)
- Resource Conservation and Recovery Information System – treatment, storage, and disposal facilities (RCRIS-TSD)
- Resource Conservation and Recovery Information System – large quantity generators (RCRIS-LQG)
- Emergency Response Notification System (ERNS)
- Biennial Reporting System (BRS)
- Superfund (CERCLA) Consent Decrees
- Records of Decision (ROD)
- De-listed National Priority List (NPL)
- Facility Index System/Facility Identification Initiative Program Summary Report (FINDS)
- Hazardous Materials Information Reporting System (HMIRS)
- Material Licensing Tracking System (MLTS)
- Mines Master Index File (MINES)
- NPL Liens

- PCB Activity Database System (PADS)
- Department of Defense Sites (DOD)
- Storm Water General Permits
- Listing of Brownfields Sites
- Risk Management Plans (RMP)
- RCRA Administrative Action Tracking System (RAATS)
- Toxic Chemical Release Inventory System (TRIS)
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act/TSCA (FTTS INSP)
- Section 7 Tracking Systems (SSTS)
- Integrated Compliance Information System (ICIS)

*State Databases:*

- State Hazardous Waste Sites List (SHWS)
- State of Hawai'i Department of Health (DOH) Leaking Underground Storage Tank (LUST) Database
- DOH Registered Underground Storage Tanks (UST) Database
- Voluntary Response Program Sites (VCP)
- DOH Hazard Evaluation and Emergency Response (HEER) Office State Spills List (SPILLS)
- Sites with Institutional Controls (INST CONTROL)
- Brownfields Sites (BROWNFIELDS)
- List of Permitted Facilities (AIRS)
- Permitted Dry Cleaner Facility Listing (DRYCLEANERS)

*Other Databases:*

- Historical Topographic Maps

**The subject property was not identified in any of the above-mentioned databases.**

However, various properties in the vicinity of the site were listed in the databases as either historically or presently an area with possible environmental concerns.

### **5.1.1 FEDERAL NPL**

The National Priorities List (NPL) is a subset of the CERCLIS or the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Information System (CERCLIS). The NPL lists over 1,150 of the nation's most dangerous uncontrolled or hazardous waste sites requiring cleanup. There were no NPL sites identified within a one-mile radius of the site.

### **5.1.2 FEDERAL CERCLIS**

CERCLIS is a Federal database maintaining national information on over 15,000 sites identified as hazardous or potentially hazardous, which may require action. These sites are currently being investigated or an investigation has been completed regarding the release of hazardous substances. The most serious of this list as ranked by the hazardous ranking system are

transferred to the NPL. No active CERCLIS sites were identified within a 0.5-mile radius of the target property.

### **5.1.3 FEDERAL RCRA**

The Resource Conservation and Recovery (RCRA) Information System (RCRIS) is a national system used to track events and activities that fall under the jurisdiction of RCRA. There are three significant subsets to RCRIS:

- RCRA treatment, storage, and disposal facilities (TSDs). Includes facilities that treat, store, dispose, or incinerate hazardous waste.
- RCRA generators. Includes small quantity generators (SQG), which create between 100 kilograms (kg) and 1,000 kg of hazardous waste per month or meet other RCRA requirements, and large quantity generators (LQG) which create more than 1,000 kg of hazardous waste per month.
- RCRA Corrective Action Sites (CORRACTS). Includes sites with reported corrective actions.

The site itself was not a listed RCRA facility. Additionally, the database search did not identify any RCRA CORRACTS facilities within a 1-mile radius of the site. RCRA TSD facilities were not found within a 0.5-mile radius of the site. RCRA LQGs and SQGs were also not identified within a 0.5-mile radius of the site.

### **5.1.4 FEDERAL ERNS**

The Emergency Response Notification System (ERNS) is a national database, which contains information on specific notifications of releases of oil and hazardous substances into the environment. The system stores data regarding the site of the spill, the material released, and the medium into which it occurred. The site was not listed as an ERNS facility. No surrounding properties within a 0.5-mile radius of the site were identified in the database.

### **5.1.5 STATE HAZARDOUS WASTE SITES**

The CERCLIS List is a compilation of known or suspected uncontrolled or abandoned hazardous waste sites. These sites either have been investigated or are currently under investigation by the EPA for the release, or threatened release, of hazardous substances. Once a site is placed in CERCLIS, it may be subjected to several levels of review and evaluation and ultimately placed on the National Priorities List. The State of Hawai‘i does not have a formal “State Superfund” program. Therefore, the State Hazardous Waste Sites (SHWS) are the State of Hawai‘i’s equivalent to the federal EPA’s CERCLIS database. Additionally, because this information is acquired from the State of Hawai‘i Hazard Evaluation and Emergency Response office, these sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup that use state funds (state equivalent superfund) are identified along with sites where cleanup is paid for by the potentially responsible parties. The EDR database did not identify the site as a SHWS. Additionally, the database search did not identify any SHWS facilities within a 0.5-mile radius of the subject property.

### **5.1.6 STATE LANDFILL AND/OR SOLID WASTE DISPOSAL SITE LISTS**

The Hawai'i State Department of Health (DOH), Solid and Hazardous Waste Branch (SHWB) has on record, facilities that have received a solid waste management permit, including solid waste landfills, transfer stations, and incinerators. The database search identified no such facilities within a one-mile radius of the site.

### **5.1.7 STATE USTs**

Certain underground storage tanks (USTs) are required to be registered by federal or state regulations. For regulated USTs, notifications must be filed for existing USTs, USTs closed in place, and new USTs. The subject parcel was not identified as a UST facility. Additionally, the database search did not identify any UST facilities located within a 0.25-mile radius of the site.

### **5.1.8 STATE LUSTs**

The DOH maintains a report on leaking underground storage tanks (LUSTs). The report is a comprehensive listing of reported LUSTs in Hawai'i. The subject property was not listed as a LUST facility. However, the database search did identify one (1) LUST facility within a 0.5-mile radius of the site.

The *Kona Radio Station/Baseyard* was found to have two cases of "Confirmed Releases" from a LUST. In both cases site cleanup has been completed and "No Further Action" (NFA) was issued by HDOH. Based on the facility's status of NFA, as well as its location downgradient (lower) from the subject property, KI believes that the *Kona Radio Station/Baseyard* does not pose an environmental threat.

## **5.2 ADDITIONAL ENVIRONMENTAL RECORD SOURCES**

### **5.2.1 HEER RELEASES LIST**

Kimura International reviewed the most recent DOH HEER Office Releases List, for information regarding reported spills or releases of petroleum products or hazardous substances on the site. The site was not listed on the HEER Release List.

### **5.2.2 OTHER FEDERAL REGULATORY DATABASES**

The EDR database also included a number of other regulatory databases that are not specified by the ASTM Standard. The EDR database did not identify the Property in any of these regulatory databases. The EDR database included the following:

- CONSENT – Superfund (CERCLA) Consent Decrees
- ROD – Records of Decision
- Delisted NPL – National Priority List Deletions
- FINDS – Facility Index System/ Facility Identification Initiative Program Report
- HMIRS – Hazardous Materials Information Reporting System
- MLTS – Material Licensing Tracking System
- MINES – Mines Master Index File
- NPL Liens – Federal Superfund Liens
- PADS – PCB Activity Database System

- RAATS – Toxic Chemical Release Inventory System
- TRIS – Toxic Chemical Release Inventory System
- TSCA – Toxic Substances Control Act
- SSTS – Section 7 Tracking System
- FTTS – FIFRA/TSCA Tracking System – FIFRA (Federal Insecticide, Fungicide, and rodenticide Act)/ TSCA

### **5.3 AERIAL PHOTOGRAPHS AND HISTORIC MAPS SOURCES**

Aerial photographs of the site were obtained from R.M. Towill Corporation. Aerial photographs reviewed for the site were for the years 1953, 1968, 1977, 1989 and 2000 (Appendix E).

In the 1953 aerial photograph, the subject property has been developed and used as the old Kona Airport. The structures present onsite were most likely associated with the everyday operations of the airport. The runway stretches from north to south. Development surrounding the site is limited, except along the shoreline to the south.

The 1968 aerial photograph shows that the runway had been extended to the north. A new structure, which looks like the passenger terminal, has been built. Development continues to expand to the south of the site. Queen Ka‘ahumanu Highway has also been built since the previous aerial photo.

In the 1977 aerial photograph, the southern end of the runway has begun its transformation into a recreational park. In the surrounding areas, most noticeable is the completion of Kaiwi Street to the southwest of the site. A number of structures have been built along Kaiwi Street, Kuakini Highway, and Palani Road.

The 1989 aerial photo starts to show what the site and its surroundings look like today. The softball field and tennis courts can be identified and the Events Pavilion has been built. The area to the south and southwest has continued to grow and develop. Development has now expanded beyond Palani Road. Residential homes have begun to appear along the shoreline, west of the site.

The 2000 aerial photograph depicts how the site appears today. Additions from the previous aerial photograph include the gymnasium, swimming pool, in-line hockey rink, and baseball field. In the surrounding areas, Makala Boulevard and Loluku Street have been built to the east and additional homes are visible to the west. Development has continued to expand to the south and southwest.

### **5.4 OWNERSHIP HISTORY INFORMATION**

#### TMK (3) 7-5-005: Parcel 007

A title search, conducted at the State of Hawai‘i Bureau of Conveyances (Appendix D), identified the State of Hawai‘i as the current fee owners for TMK (3) 7-5-005: Parcel 007. The earliest transaction record dated March 19, 1949, listed the Territory of Hawai‘i/Hawai‘i

Aeronautics Commission, as the property owner of parcel 007. Records throughout the years show that the Territory of Hawai‘i, which became the State of Hawai‘i in 1959, remained the owner of parcel 007. Based on interviews, parcel 007 was transferred to the County of Hawai‘i in December 2008

TMK (3) 7-5-005: Parcel 083

A title search, conducted at the State of Hawai‘i Bureau of Conveyances, identified Hawai‘i County as the current fee owner for TMK (3) 7-5-005: Parcel 083. The earliest transaction record dated February 28, 1978, listed the State of Hawai‘i as the original property owner. It is not clear when parcel 083 was then transferred to the County of Hawai‘i, but records show that the parcel was set aside for the purpose of a park in 1978.

## 6.0 SITE RECONNAISSANCE

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The purpose of the site reconnaissance was to observe and document visual evidence of the use, storage, generation, and disposal of potentially hazardous substances and petroleum products at the site. KI personnel conducted the site reconnaissance on March 31, 2009, during which potentially hazardous materials present at the site were identified and cataloged. In addition, KI personnel sought out physical evidence of possible releases of hazardous substances or petroleum products, such as discolored soil, flooring or paving; visible leaks; odors; and signs of stressed vegetation. A visual survey of the adjacent properties from public thoroughfares was also conducted. However, **no** samples were taken of any material to verify hazardous materials content. *Unless specifically noted otherwise, none of the suspected asbestos, lead or arsenic containing material posed an immediate threat to the environment or human health, at the time of the site reconnaissance.* Site photos are included in Appendix C. The following discussion presents the observed conditions of the subject site and surrounding properties, and identifies suspect hazardous material.

### 6.1 OBSERVATIONS AT TMK 7-5-005: PARCEL 083

TMK 7-5-005: Parcel 083 encompasses 14 acres near the center of the area known as Kailua Park/Old Kona Airport Park/Maka‘eo. Currently located on this parcel is the old terminal building housing two canoe halau and park maintenance facilities, a lighted baseball/softball field, a restroom building, four tennis courts and a tennis pavilion, the Na Kamalei Toddler Playground, horseshoe pits and an asphalt basketball court.

#### 6.1.1 CANOE HALAU/PARK MAINTENANCE STORAGE AND OFFICES

This single story building, approximately 60’ wide and 315’ long, was once the terminal facility for the old Kona Airport. Today it is used by COH Park Maintenance as offices, locker rooms, storage and maintenance areas, by two (2) canoe halau for storage and maintenance of canoes, and by a boxing club to hold equipment and to provide training space.

#### ***CHEMICALS, HAZARDOUS MATERIALS, AND HAZARDOUS WASTES***

Housed within this structure are a variety of materials that can be considered hazardous and are used by Park Maintenance crews and members of the canoe halaus. These materials include a variety of paints, solvents, finishes, lubricants and thinners. However, all of these materials appeared to be properly stored, and KI personnel observed no evidence of spills or leaking storage containers. The largest volume of liquid material was two 55-gallon drums of acetone found in the canoe halau portion of the building. While the drums were in excellent condition, no labels were evident indicating their contents and were improperly stored. OSHA regulations require that such volumes of solvents be located in an indoor storage room to reduce the risk of fire and to ensure containment in the event of a spill. Also observed within this structure were two pallets of fertilizer in 50 lbs. bags. All of the bags appeared to be in good condition, were protected from the elements, and showed no signs of leaking. The west end of the structure was used for lawnmower maintenance. Observed in this area were spare tires and two spare batteries. The batteries appeared to be used, but were still in acceptable condition and were awaiting proper disposal. A fenced area on the north side of the building was used to store empty 55-

gallon drums and spare tires. There were no indications of hazardous waste storage or disposal at this facility.

#### ***ASBESTOS CONTAINING BUILDING MATERIALS***

The structure, built in 1947, was used as the old Kona Airport terminal building. While a number of renovations to the building appear to have taken place since then, much of the structure appears to be original. As a result, the building may contain a variety of asbestos containing materials. From the observations made during the site reconnaissance, these materials may include, but not be limited to, mastics along the roofline and under roofing material, window and door caulking and drywall joint compound. Tile grout within the public restrooms is also a suspect asbestos containing materials. However, the newer age of the restrooms greatly reduces this possibility. Other building components that were not visibly accessible at the time of the survey may also contain asbestos, such as pipe insulation and/or Transite piping.

#### ***LEAD BASED PAINT***

The variety of paint colors were observed on both the interior and exterior of the structure, including green, white, brown and yellow paints. Typically these colors exhibit high lead concentrations, often greater than the EPA and HUD threshold of 0.5% lead by weight. As a result, there is a high probability that these paints would be considered to be lead-based paints. Paints containing any analytically detectable lead concentrations would be considered lead-containing paints by OSHA and HIOSH. Due to its age, it is expected that the majority of the painted surfaces within and on the structure would be categorized as lead-containing paint.

#### ***POLYCHLORINATED BIPHENYL (PCB) CONTAINING EQUIPMENT***

Fluorescent light ballasts manufactured before 1978 may contain capacitors with small amounts of PCBs. A number of fluorescent light fixtures were observed throughout the structure and appeared to serve as the building's primary source of lighting. Due to the age of the building, it is likely that a number of these fixtures may house PCB containing ballasts. Despite this fact, the fixtures appeared to be in good condition and there were no leaks observed from any ballasts.

#### ***ARSENIC CONTAINING MATERIALS***

Being an old, wooden structure, there is a high probability that much of the lumber used to construct the building was treated with chromated copper arsenate (CCA) to increase longevity and prevent attack from termites. The arsenic component of CCA is of primary concern, and appears on OSHA's Hazard Communications list. It was noted that much of the wooden ceiling was in poor condition and was rotted through in many locations. While unlikely, it has been shown that CCA can leach from treated lumber that is not sealed or protected; therefore the rotting wooden ceiling may be some cause for concern if the lumber has been treated with CCA.

#### **6.1.2 FIELD D – LIGHTED BASEBALL AND SOFTBALL FIELDS**

Field D covers approximately 5.22 acres and features four baseball and softball fields in each corner. Two of the fields, roughly oriented in a north-south direction, are skinned and marked for baseball games with 90' diamonds. The two remaining fields, roughly oriented east-west, are marked for informal softball games. Field D is surrounded by 10 light towers each holding 8 high intensity field lights.

### ***CHEMICALS, HAZARDOUS MATERIALS, AND HAZARDOUS WASTE***

No chemicals, hazardous materials, or hazardous waste were observed on this portion of the site. Two scorers' booth and storage areas have been constructed behind north and south facing lighted ball fields. These areas do not contain any chemicals or hazardous materials.

### ***ASBESTOS CONTAINING MATERIALS***

Structures on this portion of the site with potential asbestos containing materials are the scorers' booths and dugouts behind the north and south facing baseball fields. Suspect materials include roofing material (shingles) and associated mastics and any window/door caulking used on the structures. In addition, an electrical switchbox located on the northeast corner of the fields exhibited a mastic around its door that may contain asbestos.

### ***LEAD BASED PAINT***

All painted surfaces may contain detectable levels of lead. These surfaces would include the scorers' booths and dugout roofs on the north and south fields, the dugout benches on the south field, the electric scoreboard on the north field, and the two yellow football goal posts bisecting the ball fields. The condition of the all the paint is fair to good, with some flaking observed on the scoreboard and the goal posts.

### ***POLYCHLORINATED BIPHENYLS (PCB) CONTAINING EQUIPMENT***

Potential sources of PCBs on this portion of the site are the field lights surrounding the four baseball diamonds. There are ten poles supporting 8 high intensity stadium-style lights. Each of these may hold PCB containing ballasts. However their height made them inaccessible at the time of the survey, and their PCB contents could not be verified. Another potential source of PCBs is the electric scoreboard on the north field. In addition, the electrical switchbox used to turn on the field lights, located at the northeast corner of the fields, housed a number of components that may use PCB containing oils. A "NO PCB" label was not present on the outside of the electrical box; therefore it should be assumed that the components do contain PCBs unless sampling and laboratory analysis proves otherwise.

### ***ARSENIC CONTAINING MATERIALS***

The wooden scorers' booths and wooden dugout benches are probable sources of arsenic, as they may be constructed from treated lumber.

### **6.1.3 LIGHTED BALL FIELD RESTROOM BUILDING**

This building, located on the east end of the fields, is a single story CMU structure covering approximately 700 sq. ft. and features men's and women's public bathrooms.

### ***CHEMICALS, HAZARDOUS MATERIALS, AND HAZARDOUS WASTE***

No chemicals or hazardous waste were present or observed at this location during the time of the survey.

#### ***ASBESTOS CONTAINING MATERIALS***

Potential asbestos containing materials include the grout used for the ceramic tile within the restrooms, sink insulation, and any mastics or caulking used for the sinks, toilets and stalls. In addition, the roof may be constructed using asbestos containing building components such as weatherproofing or mastics.

#### ***LEAD BASED PAINT***

The interior of the building featured CMU walls with a white, possibly lead-containing/based paint. Portions of the roof and eave were also painted, possibly with a lead-containing/based brown paint.

#### ***POLYCHLORINATED BIPHENYLS (PCB) CONTAINING EQUIPMENT***

The fluorescent light fixtures within the restroom facility may hold PCB containing ballasts.

#### ***ARSENIC CONTAINING MATERIALS***

The roof structure is primarily made of wood that may have been treated. The treatment process often infuses the wood with significant amounts of arsenic.

#### **6.1.4 NA KAMALEI TODDLER PLAYGROUND**

The Na Kamalei Toddler Playground covers approximately 5,600 sq. ft. just east of the canoe halau and park maintenance building. The area features a high density polyethylene (HDPE) play structure for toddlers and a larger steel jungle gym and swing set for older children, as well as a small wooden shelter/pavilion with wooden benches and a table.

#### ***CHEMICALS, HAZARDOUS MATERIALS, AND HAZARDOUS WASTE***

No chemicals or hazardous waste were observed at the Na Kamalei Playground during the time of the site reconnaissance survey.

#### ***ASBESTOS CONTAINING MATERIALS***

Suspect asbestos containing materials were identified in the playground shelter, and consisted of caulking, mastic and roofing materials. No suspect asbestos containing materials were observed on the playground equipment.

#### ***LEAD BASED PAINT***

Wooden surfaces on the shelter, including the walls, benches and tables all were covered with paint that may contain lead. In addition, the steel playground equipment may have coats of paint with detectable levels of lead. Finally, three light posts surrounding the playground appear to have a coat of light brown paint that may contain lead. The paint on all these surfaces was in fair to good condition.

#### ***POLYCHLORINATED BIPHENYLS (PCB) CONTAINING EQUIPMENT***

The light fixtures surrounding the playground may hold PCB containing equipment.

### ***ARSENIC CONTAINING MATERIALS***

The wooden shelter may have been constructed of lumber treated with an arsenic containing chemical, and may therefore contain significant amounts of arsenic.

### **6.1.5 TENNIS COURTS AND PAVILION**

This portion of the site, located on the southeastern end of the TMK parcel, consists of four tennis courts and a small tennis pavilion to the east of the courts. Site reconnaissance observations are as follows.

### ***CHEMICALS, HAZARDOUS MATERIALS, AND HAZARDOUS WASTE***

No chemicals, hazardous materials or hazardous waste were observed on this portion of the site.

### ***ASBESTOS CONTAINING MATERIALS***

Suspect asbestos containing materials would include caulking and mastics that are associated with the aluminum roof or other building components, such as the door to the storage room of the pavilion. Asbestos containing materials were not observed on the tennis courts themselves.

### ***LEAD BASED PAINT***

All painted surfaces may contain detectable levels of lead. These surfaces would include the net posts, benches and green CMU “warm-up” walls on the tennis courts, and all of the walls on the tennis pavilion.

### ***POLYCHLORINATED BIPHENYLS (PCB) CONTAINING EQUIPMENT***

The tennis courts features old fluorescent light fixtures to allow for night play. These fixtures may hold PCB containing ballasts. In addition, fluorescent light fixtures within the pavilion may also hold PCB containing ballasts.

### ***ARSENIC CONTAINING MATERIALS***

Any structures constructed of treated lumber may contain significant amounts of arsenic. These would include the benches used on the tennis courts and the tennis pavilion.

### **6.1.6 HORSESHOE PITS**

The horseshoe pits are located just south of the tennis courts on the southeastern end of the TMK parcel. The area covers approximately 7,900 sq. ft. and features 12 pits, a number of picnic benches, a small shelter on the west end and a shed on the east end.

### ***CHEMICALS, HAZARDOUS MATERIALS, AND HAZARDOUS WASTE***

The shelter area appears to be used to store cans of paint, a lawnmower, and a rusty, unlabeled 55-gallon drum with unknown contents. These items are adjacent to the shelter and exposed to the elements. The 55-gallon drum is resting directly on sandy ground.

### ***ASBESTOS CONTAINING MATERIALS***

A used sink/counter top was found resting against the small shed on the east end of the horseshoe pits. The underside of the sink may contain an asbestos containing insulation. Both sheds may also feature asbestos containing building components, such as mastics and caulking.

### ***LEAD BASED PAINT***

All painted surfaces may feature lead-containing or lead-based paint. These include both sheds and the scoreboards for the horseshoe pits. Additionally, the picnic benches may have also been painted with lead-containing/based paint.

### ***POLYCHLORINATED BIPHENYLS (PCB) CONTAINING EQUIPMENT***

No potential sources of PCBs were identified here at the time of the site reconnaissance.

### ***ARSENIC CONTAINING MATERIALS***

Any structures made of treated lumber, such as the shelters, scoreboards and picnic benches may contain significant amounts of arsenic.

#### **6.1.7 BASKETBALL COURT**

A lone asphalt basketball court is located between the tennis courts and the horseshoe pits on the southeastern most border of the TMK parcel. The court is unlit and is separated from an adjacent parking lot by a series of 2 foot concrete pillars.

No chemicals, hazardous waste, asbestos or arsenic containing materials, or PCB containing equipment were observed at this location during the time of the site reconnaissance survey. The concrete pillars were painted with a yellow, possibly lead-containing, paint. This paint was in fair condition, and was flaking in various areas.

#### **6.2 OBSERVATIONS AT TMK 7-5-05: PARCEL 007**

TMK 7-5-05: Parcel 07 covers almost 103 acres along the eastern coast of the island of Hawai‘i and encompasses the area formerly known as the Kona Airport. Today, the area is referred to as Kailua Park/Old Kona Airport Park or Maka‘eo, and completely surrounds TMK 7-5-005: Parcel 083. A variety of facilities are now located on this parcel, including the Simmons Baseball Field, three outdoor basketball courts, Kekuaokalani Gym, the Kona Community Aquatics Center, two multi-purpose fields and a dedicated soccer field, an inline skating rink, a former DMV office, State DLNR/DOCARE Baseyard and Offices, an interim skateboarding park located on the foundations for two future canoe halaus, a central events pavilion, a community built walking and jogging path, beach pavilions and a long strip of asphalt that covers the former airport runway and now serves as an access road and parking area for beachgoers. Potential environmental hazards at each of these facilities are presented below.

### **6.2.1 FIELD A – SIMMONS BASEBALL FIELD**

Field A is a dedicated baseball diamond known as the Simmons Baseball Field. Located here are a two story scorers' booth, fenced dugouts and aluminum bleachers.

#### ***CHEMICALS, HAZARDOUS MATERIALS, AND HAZARDOUS WASTE***

No chemicals or hazardous waste were observed at the field during the site reconnaissance survey.

#### ***ASBESTOS CONTAINING MATERIALS***

Suspect asbestos containing materials identified at the field include building components of the scorers' booth, including mastics used for the roofing material and any caulking potentially used around the doors of the structure. While unlikely, asbestos weatherproofing material may have been applied to the roofs of the scorers' booth and the dugouts.

#### ***LEAD BASED PAINT***

All painted surfaces could potentially be coated with lead containing/based paint. These surfaces include the scorers' booth and areas of the grandstands. KI personnel also observed spots of gray paint applied to areas of the dugout fences, presumably to protect fence joints from the elements.

#### ***POLYCHLORINATED BIPHENYLS (PCB) CONTAINING EQUIPMENT***

No suspect PCB containing equipment was observed on this portion of the parcel.

#### ***ARSENIC CONTAINING MATERIAL***

Suspect arsenic containing material at Simmons Field would include all of the wood used to construct the scorers' booth. If the lumber used was treated, significant amounts of arsenic could be present within it.

### **6.2.2. OUTDOOR BASKETBALL COURTS**

Three outdoor basketball courts were recently constructed in the northeast corner of the parcel. The courts feature all-weather surfaces similar to those found on traditional tennis courts and backboards and rims that are in excellent condition.

At the time of the survey, no chemicals, hazardous waste, asbestos containing materials, lead based paint, or arsenic containing materials were observed on this portion of the property.

Five light posts with fluorescent lights were present at the site. Electrical boxes were attached to two of the posts, approximately 10 feet off the ground. The light fixtures and electrical equipment may house PCB containing material. However, no further investigation of the electrical components was performed at the time of the survey.

### **6.2.3 KEKUAOKALANI GYMNASIUM**

The Kekuaokalani Gymnasium is a complex that covers nearly a half an acre and features office space, public restrooms and basketball court facilities.

#### ***CHEMICALS, HAZARDOUS MATERIALS, AND HAZARDOUS WASTE***

A closet in one of the gym offices was being used to store a variety of cleaners for the gym facility. All substances were properly stored, and no leaks were evident at the time of the survey. A second room in the same office was also being used as a dark room for a photography hobbyist and contained a number of chemicals necessary for the development of film. All chemicals were properly stored, and no leaks were evident.

#### ***ASBESTOS CONTAINING MATERIAL***

The gym offices featured 12" x 12" vinyl floor tile (VFT) and black cove base, both materials that commonly contain asbestos. Additionally, the mastics used to adhere these materials to surfaces also commonly contain asbestos. Other suspect materials in the building include the drop acoustic ceiling tiles found in the offices and the bathrooms, window and door caulking, and the grout used on the tiles in the bathrooms. Within the gym, the wooden floor may be adhered to concrete foundation using an asbestos containing mastic or caulking. Finally, there may also be asbestos containing material on the roof of the structure in the form of mastics and caulking flashing or other roofing material.

#### ***LEAD BASED PAINT***

All painted surface could feature layers of lead containing paint. These would include all interior and exterior walls of the gym, bathrooms and offices.

#### ***POLYCHLORINATED BIPHENYLS (PCB) CONTAINING EQUIPMENT***

The gym offices and bathrooms use fluorescent lighting for interior illumination. These fluorescent light fixtures may house PCB containing ballasts. The gym uses high intensity lamps that may also contain PCB ballasts.

#### ***ARSENIC CONTAINING MATERIALS***

No suspected arsenic containing materials were observed at the time of the site reconnaissance.

### **6.2.4 KONA COMMUNITY AQUATIC CENTER**

The Kona Community Aquatic Center is adjacent to the west end of Kekuaokalani Gym and consists of a 50 meter pool, wading pool, a pump room and an office and locker room building.

#### ***CHEMICALS, HAZARDOUS MATERIALS AND HAZARDOUS WASTE***

The pump room is used for the storage of a variety of chemicals necessary for the daily maintenance of the pool. These include various cleaners and bleach, pool conditioner, and a large volume of hydrochloric acid (HCl). The hydrochloric acid is used as a chlorine source for the pool. Approximately 36, one gallon bottles of concentrated HCl were being stored along one wall of the pump room. Also present was a 100+ gallon storage tank containing diluted HCl that was incorporated into the pump system for the pool. All chemicals were properly stored and

their containers were in good condition. There was no evidence of leaks or discharges at the time of the site reconnaissance.

To the south of the pump room is a 1000-gallon above ground storage tank (AST) containing propane. The tank rests on two concrete blocks on a concrete foundation and is surrounded by a CMU wall approximately 8 feet high. The tank was properly labeled and in good condition at the time of the survey.

#### ***ASBESTOS CONTAINING MATERIALS***

A variety of suspect asbestos containing material was observed in the pump room, office space and locker room building around the pool area. In the pump room, suspect materials included the textured insulation around the pool pumps and insulation around the piping. In the office space, a variety of vinyl floor tile was observed, as well as cove base along the base of the walls. The tiles, cove base and the mastic associated with them often contain asbestos. Other suspect materials include the caulking around the doors and windows, caulking around the sink in the kitchen area, drywall joint compound, acoustic ceiling tile, tile grout and the skim coating on the walls of the office building. Finally, many roofing components such as mastics and caulking often contain asbestos, and may they may be present on the roofs of the pump room and office building.

#### ***LEAD BASED PAINT***

The painted surfaces such as the walls of the interior and exterior of the office building and locker room area, pump room, and CMU wall around the propane AST may all have layers of lead containing/based paint. In addition, other suspect paint would include the lockers in the changing rooms.

#### ***POLYCHLORINATED BIPHENYLS (PCB) CONTAINING EQUIPMENT***

The fluorescent light fixtures in the office building, pump room and surrounding the pool all may house PCB containing ballasts. Finally, the electrical equipment within the pump room, such as the transformer, may hold PCB containing oil.

#### ***ARSENIC CONTAINING MATERIALS***

Any treated lumber used in the construction of the pump room or the office building may contain significant amounts of arsenic. However, suspect lumber appears to only have been used on the roofs of the buildings.

### **6.2.5 FIELDS B, C AND E – MULTIUSE FIELDS**

Fields B, C and E surround the gym and pool complex to the south and west. Field B is a multiuse field often marked for football and soccer practices. Field C has two dedicated Little League baseball fields that can also be used for softball games. The fields both feature bleachers and dugouts. Field E is a dedicated AYSO soccer field, were two games can be run simultaneously.

No chemicals, hazardous waste, asbestos or arsenic containing material, or PCB containing equipment were observed in these areas at the time of the survey. The only painted surfaces are the dugout benches found on Field C. This paint may contain lead.

#### **6.2.6 AYSO STORAGE PAVILION**

A storage pavilion used primarily by the AYSO soccer association is located between Field C and Field E. The single story wooden structure appears to be used for storage and a meeting area.

##### ***CHEMICALS, HAZARDOUS MATERIALS, AND HAZARDOUS WASTE***

No chemicals or hazardous waste were observed at this location during the time of the survey.

##### ***ASBESTOS CONTAINING MATERIALS***

Suspect asbestos containing material at this location included various roofing material components, such as mastics and flashing and door caulking.

##### ***LEAD BASED PAINT***

The structure appears to be relatively new, and therefore the use of lead based paint is not likely. However, the paint used may contain detectable amounts of lead and still be subject to OSHA and HIOSH regulations.

##### ***POLYCHLORINATED BIPHENYLS (PCB) CONTAINING EQUIPMENT***

No PCB containing equipment was observed at this location.

##### ***ARSENIC CONTAINING MATERIALS***

The wooden structure may have been constructed using treated lumber. As a result, the wood may have been infused with significant amounts of arsenic.

#### **6.2.7 FORMER DMV OFFICE**

This single story wooden structure is located immediately west of the old terminal building, and covers approximately 3,700 sq. ft. It was formerly used as a Department of Motor Vehicles Office, but now appears to be used as a meeting area and office space for community organizations. An area behind the house is used to store canoes.

##### ***CHEMICALS, HAZARDOUS MATERIALS, AND HAZARDOUS WASTE***

No chemicals or hazardous waste were observed at this location during the time of the survey.

##### ***ASBESTOS CONTAINING MATERIALS***

Suspect asbestos containing material at this location include 12" x 12" VFT, cove base and their associated mastics, drywall joint compound, window and door caulking, and roofing material components such as shingle or flashing caulking.

##### ***LEAD BASED PAINT***

The exterior of the building was covered with a blue paint that may contain detectable levels of lead. In addition, this paint may be covering layers of paint that contain higher levels of lead.

The interior of the building featured white paint, which may also contain detectable levels of lead.

***POLYCHLORINATED BIPHENYLS (PCB) CONTAINING EQUIPMENT***

No PCB containing equipment was observed at this location.

***ARSENIC CONTAINING MATERIALS***

This wooden structure may have been built with treated lumber which may contain significant amounts of arsenic.

**6.2.8 DEPARTMENT OF LAND AND NATURAL RESOURCES WAREHOUSE**

This structure, located immediately west of the former DMV building, is an old warehouse covering some 7,000 sq. ft. The structure was one of three original buildings on the site and served as an airplane hangar in the past. Today it is used as a DLNR warehouse where maintenance equipment and boats and vehicles confiscated by DLNR are stored.

***CHEMICALS, HAZARDOUS MATERIALS, AND HAZARDOUS WASTE***

At the time of the survey, several hazardous materials and chemicals were identified, including lubricants, oils and cleaners, and at least one gasoline container. Also observed was a mobile welding unit of unknown type.

***ASBESTOS CONTAINING MATERIALS***

The structure consists primarily of corrugated metal sheeting over a steel frame skeleton. There is a possibility that a weatherproofing material that may contain asbestos was used on the corrugated sheet metal to improve its durability. Additionally, the roof of the structure may be made of a material known as Galbestos. Galbestos, used in the past on similar structures, has a corrugated appearance similar to that of corrugated sheet metal but contains asbestos to increase durability and longevity. This product has been used on warehouses of similar design and age in Hilo, Hawai'i.

***LEAD BASED PAINT***

The entire structure featured shades of aged blue and green paint. There is a strong probability that these paints contain detectable amounts of lead.

***POLYCHLORINATED BIPHENYLS (PCB) CONTAINING EQUIPMENT***

No PCB containing equipment was observed at this location.

***ARSENIC CONTAINING MATERIALS***

No suspected arsenic containing materials were observed at this location.

**6.2.9 IN-LINE HOCKEY RINK**

The in-line hockey rink is located immediately west of Field D and at the eastern most end of the old Kona Airport runway. The regulation sized rink features fiberglass boards topped with plexiglass panels and a concrete playing surface. No chemicals, hazardous waste, or asbestos containing materials were identified at the rink.

Paint on the light posts, rails and benches on the south side of the rink may contain lead. The light fixtures may house PCB containing ballasts. Finally, the benches may have been made from treated lumber, which may contain significant amounts of arsenic.

#### **6.2.10 EVENTS PAVILION**

The Events Pavilion is a 14,400 sq. ft. facility located near the center of the parcel. The building is designed around a central space capable of holding large community events and includes a small stage along the west wall. On the perimeter of the building are a series of rooms, including two dressing rooms, an electrical closet, two storage closets, bathrooms, a kitchen and an office.

#### ***CHEMICALS, HAZARDOUS MATERIALS OR HAZARDOUS WASTE***

Various chemicals and hazardous materials were being stored in the office and storage closets of the pavilion. These include cleaners, insect repellent/poison, brake fluid, motor oil and Drano. All substances were properly labeled and stored. All containers appeared to be in good condition, and no leaks were evident at the time of the survey.

#### ***ASBESTOS CONTAINING MATERIAL***

Suspect asbestos containing material identified within the pavilion include vinyl floor tile of various colors (blue, green, brown, beige and gray), cove base and associated mastics, window and door caulking, acoustic ceiling tile and associated mastic, drywall joint compound, restroom tile grout, sink caulking and sink insulation. In addition, roofing materials such as mastics and flashing caulking may also contain asbestos.

#### ***LEAD BASED PAINT***

Various painted surfaces throughout the pavilion may contain detectable levels of lead. This includes the primary beige paint found throughout the building, all interior wall and door paint, and the brown paint used on the exterior of the building.

#### ***POLYCHLORINATED BIPHENYLS (PCB) CONTAINING EQUIPMENT***

Many of the rooms around the perimeter of the building feature fluorescent light fixtures. These fixtures may hold PCB containing ballasts.

#### ***ARSENIC CONTAINING MATERIAL***

Much of the roof and gables appear to have been made of wood. Depending on the age of the wood, there is a strong possibility that the lumber used may have been treated. If this is the case, then significant amounts of arsenic may have infused into the wood during the treatment process and may therefore be present.

### **6.2.11 BEACH PAVILIONS**

Several beach pavilions and public restroom facilities are located along the coastal border of the parcel. No chemicals or hazardous materials were found at any of these sites along the beach. Roofing components of the structures may contain asbestos, such as mastics and flashing caulking. Sink caulking and tile grout within the restrooms may also contain asbestos. It is possible that all painted surfaces may contain lead in the paint. This would include the picnic benches found at the pavilions. No PCB containing equipment was observed at the pavilions during the time of the survey.

If treated lumber was used in the construction of the pavilions, significant amounts of arsenic may be present. This is of some concern, as the condition of portions of the pavilions is very poor with clear evidence of rotting and deteriorating wood. This may allow the arsenic to leach out of the wood, if present, and lead to exposure to the general public.

### **6.2.12 PARK GROUNDS**

A walk through of the park grounds was the final component of the site reconnaissance survey. During the walk through, KI personnel sought out evidence of illegal dumping of hazardous materials, storage of chemicals, or other items that may be an environmental concern. All accessible areas of the park were visually inspected, with particular attention paid to areas along the beach and in the culturally sensitive area at the northwest end of the park.

No evidence of illegal dumping of hazardous materials was observed on any part of the parcel. Some trash was noticed in the brush within the culturally sensitive area, including an abandoned full-sized mattress. On the northwest end of the old airport runway, an empty quart bottle of motor oil was found next to an oil stain, suggesting that a member of the general public may have performed an illegal oil change on a personal vehicle on County property.

It was also noted that a number of telephone poles have been used as a landscaping element to provide a border around the area leased to two canoe halau by the state. Telephone poles are often treated with creosote, a thick, oily liquid derived from coal tar, to help preserve the wood. Creosote has been listed as a probable human carcinogen by the International Agency for Research on Cancer (IARC). There has been some concern of the affects of creosote treated telephone poles on the environment, as creosote may leach from the wood and into groundwater over time. As a result, its use is slowly being phased out.

However, the telephone poles being used have been covered with a green paint. This paint, which unfortunately may contain detectable amounts of lead, will prevent the leaching of creosote into soil beneath the poles. It is recommended that the paint coating be regularly inspected and maintained to prevent the leaching of creosote into the environment.

Finally, a number of components used for traffic flow and control, such as gates, concrete barriers, and fences, have been painted to improve visibility. Often, these paints contain detectable amounts of lead.

### **6.3 NEIGHBORING PROPERTIES**

During the site reconnaissance a visual survey of adjacent properties from public thoroughfares was also conducted. Much of the land immediately to the north of TMK 7-5-05: Parcel 007 is undeveloped. The only facility directly adjacent to the parcel on the north side is the Swing Zone Golf Course, which resides on approximately 11 acres across the street from the State DLNR Warehouse. The zoning of the land to the north of the parcel is divided into agricultural (A-5a) to the west and mixed commercial/industrial use (MCX-20) and the east. The division of the land bisects the Swing Zone Golf Course.

The land to the northeast of the parcel is zoned for general industrial use. Immediately adjacent to the Keuaokalani Gym parking lot is a natural gas and petroleum product provider. To the east of the parcel, the land is zoned for limited industrial use and holds a car dealership. To the southeast and south of the parcel, the land is zoned for residential use. Any hazardous material releases from any of these properties immediately adjacent to, and in the vicinity of, this parcel are addressed in Section 5.

### **6.4 HELCO TRANSFORMERS**

During the site reconnaissance survey, thirteen (13) pole mounted transformers were identified on the property. In addition, two (2) vault transformers were also found on the property. An inquiry to the Hawaiian Electric Light Company, Inc. (HELCO), revealed that none of the transformers with readily identifiable serial numbers contained PCBs.

Eight of the 13 observed transformers did not have serial numbers, and testing information could not be found by HELCO. Because these transformers may predate the July 1, 1979 PCB prohibition date, it must be assumed that these transformers contain PCBs. A copy of HELCO's confirmation correspondence is located in Appendix F. However, none of the transformers were visibly leaking, and therefore KI does not believe that they currently pose an environmental hazard to the property.

## 7.0 INTERVIEWS

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An interview with the following individual was conducted to obtain information about the property's history, use and surrounding area.

### **Mr. Ron Borkowski, District Recreation Supervisor, Kekuaokalani Gym**

Mr. Ron Borkowski has been associated with the Kailua Park/Old Kona Airport Park/Maka'eio for the past 22 years. At the time of the interview he was serving as District Recreation Supervisor for the County, and oversaw many of the daily operations of the park and its facilities. He was also took part in the construction of Fields A, B and C, and worked to coordinate the construction of the three outdoor basketball courts east of the Kekuaokalani Gym. Mr. Borkowski described the construction of the three ball fields to the south of the gymnasium, and noted that they began with raw lava fields. Mr. Borkowski also acknowledged that the fields often have drainage problems, and believed that it was the result of the fields being built directly on top of the old airstrip. As a result, many of the fields have only about a foot of topsoil before the pavement is reached. He had also mentioned that the State of Hawai'i had transferred the title of Parcel 007 to Hawai'i County in December Of 2008. In addition, Mr. Borkowski provided Kimura International with the following information regarding his prior knowledge of the subject property:

- They have no permits from the County, State or Federal Government for the operation of the facility.
- The sewer and water services are provided by the County of Hawai'i. All floor drains and restroom facilities are tied to the County sewer system.
- There are no sumps on the property. Cesspools did exist, but they were closed by the County "a few years back".
- There are no environmental liens on the property.
- There are no known underground storage tanks (USTs) on the property.

Mr. Borkowski did stress upon the efforts being made by park supervisors to provide an environmentally healthy and safe recreational facility for the Kona community.

## 8.0 CONCLUSIONS & RECOMMENDATIONS

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Kimura International has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-05 for TMKs (3) 7-5-005: Parcel 007 and Parcel 083. Kimura International did not find evidence of gross contamination or illegal dumping of hazardous materials anywhere on site. While many of the facilities featured suspect asbestos, lead, arsenic and/or PCB containing materials, none of these materials posed an immediate environmental or health hazard at the time of the site reconnaissance. Based upon this fact, as well as a historical records review, it is Kimura International's opinion that a Phase II assessment is **not** warranted at this time.

However, Kimura International would like to offer the following recommendations for proactive environmental health and safety measures:

- The two 55-gallon drums of acetone in the canoe halau should be properly labeled and stored according to OSHA regulations (29 CFR §1910.106)
- The 55-gallon drum of unknown contents at the horseshoe pit should either be properly labeled and safely stored as required by their contents or removed from the premises.
- The telephone poles used as a border around the canoe halaus should be regularly inspected to ensure the creosote does not impact the soil.
- Wooden structures that may have been constructed with treated wood should be regularly inspected and maintained to reduce the risk of arsenic exposure to members of the public.
- If buildings on site are to be renovated or demolished, a comprehensive survey should be conducted to identify, quantitatively, all building materials containing asbestos, lead paint, arsenic, PCBs and other hazardous materials to ensure proper handling and disposal.

## 9.0 REFERENCES

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- Environmental Data Resources, Inc., "The EDR Radius Map with GeoCheck," Report Inquiry No. 2253828.2s, June 25, 2008.
- Macdonald, G.A., A.T. Abbot, and F.L. Peterson, "Volcanoes and the Sea." University of Hawai'i Press, 1983.
- Mink, John F. and Stephen L. Lau, "Aquifer Identification and Classification for Oahu: Groundwater Protection Strategy for Hawai'i." May 1990.
- State of Hawai'i Department of Health, Hazardous Evaluation and Emergency Response Office, HEER Records.
- State of Hawai'i Department of Health, Solid and Hazardous Waste Branch, UST/LUST Records.
- State of Hawai'i Department of Health, Solid and Hazardous Waste Branch, RCRA Facility Records.
- State of Hawai'i Department of Health, Underground Storage Tank Program, "Technical Guidance Manual for Underground Storage Tank Closure & Release Response." March 2000.
- U.S. Department of Agriculture Soil Conservation Service, "Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawai'i." 1972.
- U.S. Department of Interior Geological Survey, "Honolulu Quadrangle, 7.5 Minute Series (Topographic Map)," 1998.

# Appendix A

FIGURES

# **Appendix B**

EDR RADIUS MAP W/ GEOCHECK

# Appendix C

## PHOTOGRAPHIC DOCUMENTATION

# **Appendix D**

TITLE GUARANTY OF HAWAI‘I, INC. DOCUMENTATION

# **Appendix E**

AERIAL PHOTOGRAPHS

# **Appendix F**

HELCO INQUIRY

## **Appendix C**

Archaeological Literature Review and Field Inspection  
Cultural Surveys Hawai'i, Inc.  
January 2010

Cultural Impact Assessment  
Cultural Surveys Hawai'i Inc.  
April 2010

# CULTURAL SURVEYS HAWAII

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October 27, 2009

2009 OCT 28 P 3:45

Ms. Nancy McMahon, Deputy Administrator  
State Historic Preservation Division  
Kākuhihewa Blvd., Suite 555,  
601 Kamōkila Boulevard  
Kapolei, Hawai'i 96707  
Phone: (808) 692-8019  
Fax: (808) 692-8020

Subject: Submittal of a : *Literature Review and Field Inspection for the Kailua Park Master Planning Project Keahuolū and Lanihau Ahupua'a, North Kona, Hawai'i, TMK: [3] 7-5-005:007 & 083 (Simonson et al 2009) for Possible SHPD Consideration re: the Kailua Park Master Planning Project and any Cultural Resource Management at the Kailua Park (Old Kona Airport), Keahuolū and Lanihau Ahupua'a, North Kona, Hawai'i and in support of Section 106 as well as 6E review*

Aloha Nancy McMahon:

On behalf of Kimura International and the County of Hawai'i, please find attached a copy of our draft *Literature Review and Field Inspection for the Kailua Park Master Planning Project Keahuolū and Lanihau Ahupua'a, North Kona, Hawai'i, TMK: [3] 7-5-005:007 & 083 (Simonson et al 2009)*

This study was prepared for a Master Planning Environmental Assessment to comply with Chapter 343 as well as NEPA (in case they go after federal funds for any park improvements) and is being supplied as a background document for the possible reference of the State Historic Preservation Division in consideration of the Kailua Park Master Planning Project and any further cultural resource management work at the Kailua Park as may be indicated. Because of the possibility of federal funding this document is being supplied to support Section 106 as well as 6E review.

Sincerely,

David W. Shideler  
Cultural Surveys Hawai'i, Inc.

LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION  
601 KAMOKILA BOULEVARD, ROOM 555  
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ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

January 6, 2010

Hallett H. Hammatt, Ph.D.  
Cultural Surveys Hawaii  
PO Box 1114  
Kailua, Hawaii 96734

LOG NO: 2009.4060  
DOC NO: 1001MD14  
Archaeology

Dear Dr. Hammatt:

**SUBJECT: Chapter 6E-42 Historic Preservation Review –  
Literature Review and Field Inspection of 117 Acres with New Sites  
Keahuolu & Lanihau Ahupua`a, North Kona District, Island of Hawai`i  
TMK: (3) 7-5-005:007 & 083**

This letter reviews the aforementioned report (*Simonson, Shideler and Hammatt 2009; Literature Review and Field Inspection for the Kalua Park Master Planning Project, Keahuolu and Lanihau Ahupua`a, North Kona, Hawaii TMK: [3] 7-5-005:007 & 083; CSH Job Code: KEAHUOLU 3*) which we received on November 2, 2009. We apologize for the delay in our reply. This document was prepared as part of the planning process for the Kailua Park Master Plan development.

This is a solid review of the current status and we have only minor revisions/clarifications requested (below). However, given the findings – that some sites could not be relocated, others have apparently been recently covered with mulch by grounds keeping crews, while new sites have additionally been located – and the lack of SIHP numbers for most of the sites, we recommend a full archaeological inventory survey be conducted in an effort to create a single volume incorporating past reviews and new findings. This is also necessary as a precursor to the recommended preservation and data recovery plans.

Please address the following in a revised version of this report:

- Page 22, 3.2, second paragraph needs clarification: “Four radiocarbon dates were determined for feature, which ranged...”
- Page 23, 3.2.1, the third paragraph from the bottom appears to be in contradiction with the final paragraph. The third paragraph indicates that sites may have been destroyed in the late 1940s, whereas the final paragraph appears to indicate that they were relocated in 1970.
- Page 30, 4.1, Table 2: Please correct “Orck Art.”
- Page 35, 4.1.1, second paragraph has empty brackets for a citation.
- We recommend including signage (as represented in Figure 53) in both Hawaiian and English.

Hallett H. Hammatt, Ph.D.

Page 2

If you have questions about this letter please contact Morgan Davis at (808) 896-0514 or [morgan.e.davis@hawaii.gov](mailto:morgan.e.davis@hawaii.gov).

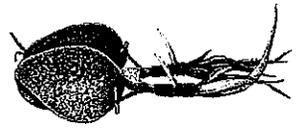
Aloha,

A handwritten signature in cursive script that reads "Nancy A. McMahon".

Nancy McMahon, Deputy SHPO/State Archaeologist  
and Historic Preservation Manager  
State Historic Preservation Division

# CULTURAL SURVEYS HAWAII

ARCHAEOLOGICAL, CULTURAL, AND HISTORICAL DOCUMENTATION SERVICES - SINCE 1982



February 2, 2010

Ms. Nancy McMahon, Deputy Administrator  
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Lāwai, Kaua'i

Subject: Resubmittal of *Literature Review and Field Inspection for the Kailua Park Master Planning Project Keahuolū and Lanihau Ahupua'a, North Kona, Hawai'i, TMK: [3] 7-5-005:007 & 083* (Simonson et al 2010)

Aloha Nancy McMahon:

On behalf of Kimura International and the County of Hawai'i, please find attached a copy of our revised *Literature Review and Field Inspection for the Kailua Park Master Planning Project Keahuolū and Lanihau Ahupua'a, North Kona, Hawai'i, TMK: [3] 7-5-005:007 & 083* (Simonson et al 2010) resubmitted for SHPD review. Based upon the SHPD review letter (January 6, 2010; Log No 2009.4060; Doc No 1001MD14; copy attached) the following amendments to the report have been made:

- 1) Clarification of the radiocarbon dates from a previous survey (p.22, Section 3.2, second paragraph)
- 2) Clarification of 1970 study (p.23, Section 3.2.1, third paragraph from the bottom)
- 3) Correction of "Rock Art" typo in Table 2 (p.30, Section 4.1)
- 4) Insertion of missing figure reference (p.45, Section 4.1.1, second paragraph)
- 5) Added recommendation to have proposed signage in both Hawaiian and English (p.82, Section 5.1.6)

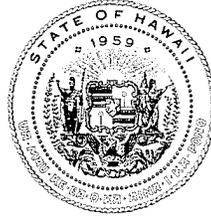
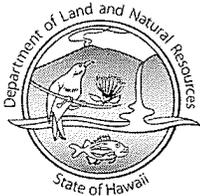
If you have any questions or comments, please feel free to call me at 262-9972 on O'ahu or toll free at 1-800-599-9962. You may also reach me by e-mail at [dshideler@culturalsurveys.com](mailto:dshideler@culturalsurveys.com).

Sincerely,

David W. Shideler  
Cultural Surveys Hawai'i, Inc.

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GOVERNOR OF HAWAII



STATE OF HAWAII  
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ENGINEERING  
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HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

August 12, 2010

Hallett H. Hammatt, Ph.D.  
Cultural Surveys Hawaii, Inc.  
PO Box 1114  
Kailua, Hawaii 96734

LOG NO: 2010.0793  
DOC NO: 1004MD26  
Archaeology

Dear Dr. Hammatt:

**SUBJECT: Chapter 6E-8 Historic Preservation Review –  
Revised Literature Review and Field Inspection of 117 Acres with New Sites  
Keahuolu & Lanihau Ahupua`a, North Kona District, Island of Hawai`i  
TMK: (3) 7-5-005:007 & 083**

This letter reviews the revised aforementioned report (*Simonson, Shideler and Hammatt 2010; Literature Review and Field Inspection for the Kailua Park Master Planning Project, Keahuolu and Lanihau Ahupua`a, North Kona, Hawaii; TMK: (3) 7-5-005:007 & 083; CSH Job Code: KEAHUOLU 3*), which we received on February 2, 2010. We apologize for the delay in our reply. This report was prepared as part of the planning process for the Kailua Park Master Plan development.

This is a solid review of the current status of the park. However, given the findings – that some sites could not be relocated, others have apparently been recently covered with mulch or dirt by grounds-keeping crews, while new sites have additionally been located – and the lack of SIHP numbers for most of the sites, we recommend a full archaeological inventory survey be conducted in an effort to create a single volume incorporating/updating past reviews and new findings. This is also necessary as a precursor to the recommended preservation and data recovery plans.

In our earlier correspondence we requested minor revisions (*Log No. 2009.4060, Doc No. 1001MD14*) which have been corrected. While this report does not qualify as an AIS pursuant to HAR §13-276, we will include it in our libraries for reference. Please submit a CD containing a searchable pdf to our Kapolei office so we can include it in our digital library.

If you have questions about this letter please contact Morgan Davis at (808) 896-0514 or via email to: [morgan.e.davis@hawaii.gov](mailto:morgan.e.davis@hawaii.gov).

Aloha,

A handwritten signature in black ink, appearing to read "Theresa K. Donham".

Theresa K. Donham  
Acting Archaeology Branch Chief  
State Historic Preservation Division